

Bhutan For Life

**Environmental and Social
Management Plan for Biological
Corridor 02**

January 2023 - June 2024

Biological Corridor 02
Divisional Forest Office / Wangdue

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Bhutan for Life
Environmental and Social Management Plan for Biological Corridor 2 (Wangdue) for
January 2023 - June 2024

1. Introduction

1.1 Project Background

The Bhutan for Life (BFL) project aims to ensure a robust network of Protected Areas (PAs) and Biological Corridors (BCs) that secure human well-being, biodiversity conservation and increase climate resilience in Bhutan. The project shall sustain for 14-years, in this duration an immediate improvement to the management of Bhutan's protected areas for climate resilience and biodiversity gains are sought. Meanwhile the country would gradually ratchet 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 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; and
- 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.

1.2 Scope of ESMP

The preparation of this Environmental and Social Management Plan (ESMP) was deemed necessary in order to manage the environmental and social impacts. The mitigation actions required to implement the project was 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 the 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.

1.3 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; and
- Ensuring that all stakeholders are engaged in the project activities' preparation and implementation, and their concerns are fully addressed.

1.4 Applicable law, policies, and regulation

This ESMP is developed in strict adherence and compliance to the guidelines set forth in 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), and Local Government Act of Bhutan, 2009.

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;
- General standards on both occupational and community health and safety and 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. Regarding environmental impacts, there are no direct contradictions between the RGoB laws and regulations and the WWF's SIPP, but the requirement of the latter is more extensive. All project activities should fully comply both with the RGoBs Regulations on the Environmental Clearance of Projects, and with the procedures and mitigation measures prescribed in this ESMF. In case the

WWF's SIPP requirements turn out to be extensive, strict, or detailed compared to RGoB legislation and policies, the former will apply to all project activities.

Regarding social impacts, the status of non-title holders and informal land use, and the commitment to participatory decision-making processes conclude the primary discrepancies between the RGoB laws and regulations and the WWF's SIPP. 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 during the project in order to develop various safeguards documents. RGoB legislation does not include three requirements reflected in SIPP. For the purpose of the BFL project, the provisions of the WWF's SIPP shall prevail over the RGoB legislation in all cases of discrepancy.

2. Environmental and Socio-Economic Conditions

2.1 Geological and topographical conditions

Biological Corridor 2 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.

Objective 1. To ensure ecological connectivity between Jigme Dorji National Park and Jigme Singye Wangchuck National Park, and provides resilience to changing climate and land use.

Objective 2. To reduce the direct and indirect threats to focal species, other biodiversity and ecosystems in the corridor.

Objective 3. To sustain livelihood of local communities through sustainable forest management, to look into objectives from other approved BC mgt plan.

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 and 40 degrees Steep slopes are distributed through the corridor, but the southern areas of the corridor have more steep-sloped areas (Fig. 1).

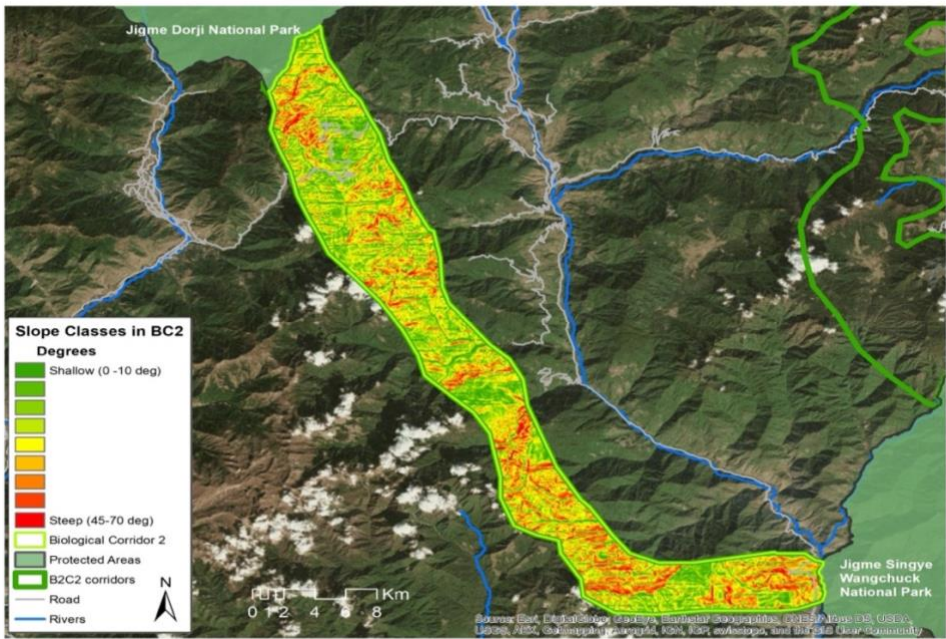


Figure 1: Distribution of slope categories in Biological Corridor 2 landscape

2.2 Climatic conditions

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

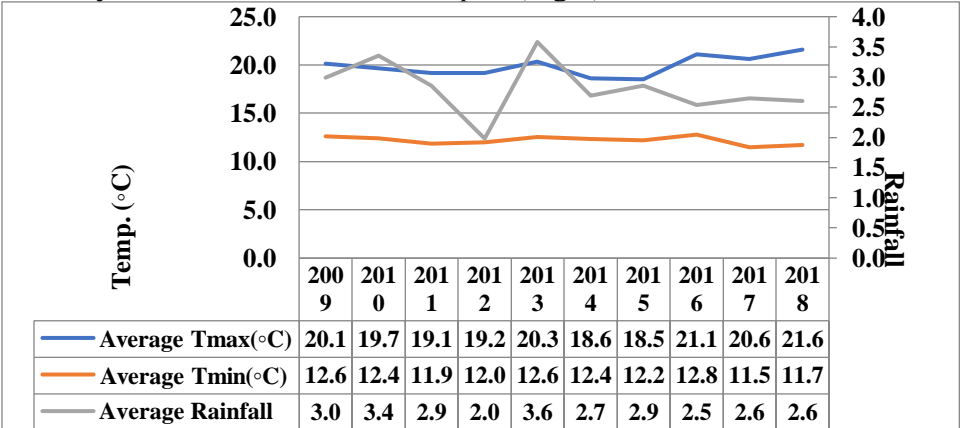


Figure 2: Avg. maximum, minimum temperatures and avg. rainfall from Thinleygang weather station

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.

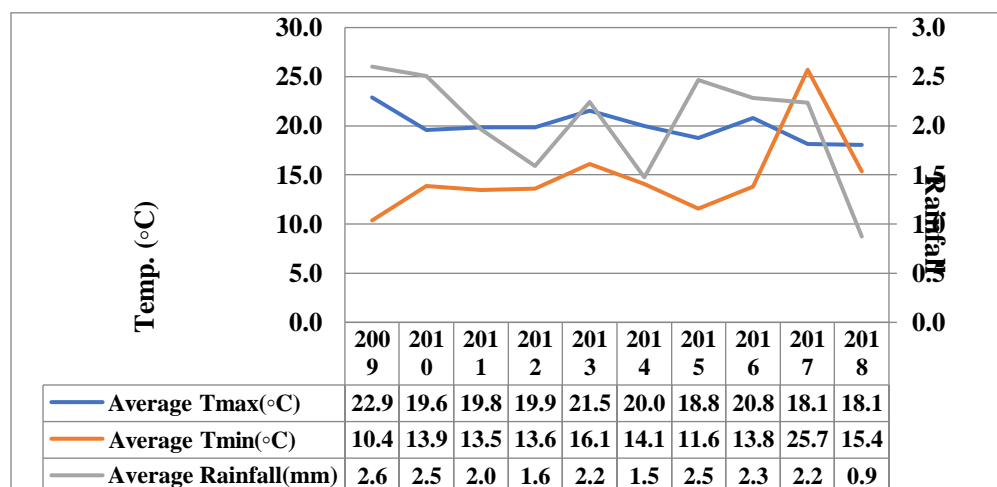


Figure 3: Avg. maximum, minimum temperatures and avg. rainfall from Gasello weather station

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). Southern part of Biological Corridor-02 was reference from Gasello meteorological data station, Wangdue Dzongkhag.

2.3 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 within BC 02 due to lack of equipment such as water testing kits and required expertise.

2.4 Flora and fauna

The national land use and land cover map (2010) identifies several forest types in the corridor, with the broadleaf forests pre-dominating the vegetation types. The floral richness in the corridor forests can be extrapolated from surveys conducted in Jigme Singye Wangchuck National Park and Jigme Dorji National Park, since the vegetation and species composition can be expected to be similar.

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.

Camera trap surveys, conducted in the corridor have confirmed the presence of 15 mammal species and 145 species of birds. Although red panda and musk deer two of the original focal species for justification of this corridor were not recorded from the corridor during the recent surveys (conducted in 2017/18/19/20), previous data have confirmed the presence of the elusive red panda

from the northern parts of the corridor, close to Jigme Dorji National Park. Red panda have also been confirmed from the northern areas of Jigme Singye Wangchuk National Park, and a habitat suitability map shows the presence of good red panda habitat along the mid and upper sections of the corridor. The analysis also indicates that the southernmost region of the corridor seems unsuitable for red panda, but there is good habitat in the south-western regions outside the corridor, and these habitats are contiguous with the habitat inside the corridor, extending northwards all the way to Jigme Dorji National Park. There are no point locations available for musk deer from the corridor, but because musk deer have been identified as a focal species for this corridor, a habitat suitability model based on expert opinion was used to assess habitat availability in the corridor. The analysis indicates that the suitable habitat for musk deer is restricted to the north-western part of the corridor; i.e., to the mixed conifer and Blue Pine forests. But most of the suitable habitat for musk deer is outside this corridor, and in eastern corridor complex between Jigme Dorji National Park and Jigme Singye Wangchuk National Park.

The tiger is another important focal species for this corridor, and has been confirmed from the corridor. A habitat suitability model indicates there is 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. These prey species are a vital ecological resource for tigers, and is one critical indicator of tiger occupancy.

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. It is likely that survey effort in the lower elevations were inadequate. Another possible reason could be that these species are being displaced from the lower elevations due to anthropogenic activities, but both are usually tolerant of relatively high human presence and activities.



Figure 4: Tiger captured in camera trap in BC2



Figure 5: Bhutan Giant Flying Squirrel carcass



Figure 6: Animals captured in camera traps from the corridor (lower left - Golden cat; lower right - wild dog; upper right - Asiatic black bear; upper left – clouded leopard)

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 (*Trochaloxyeron lineatum*), yellow cheeked tit (*Parus sibilans*), 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. Studies of montane bird assemblages in Nepal have recorded several resident and migratory bird species over 300 m above their previous known distributions (Katuwal et al. 2016). Some of these species included White-browed Fulvetta (*Alcippe vinipectus*), Rufous Sibia (*Heterphasia capistrata*), Spotted Nutcracker (*Nucifraga caryocatactes*), and Large-billed Leaf Warbler (*Phylloscopus magnirostris*). These are also birds that recorded from this corridor. The range shift exhibited by birds in the Nepal study was tentatively attributed, at least in part, to climate change (Katuwal et al. 2016).

Thus, the corridors in Bhutan, including Biological Corridor 2 could become important climate corridors for birds and other flora and fauna. The study also showed that insectivorous birds responded more strongly to seasonal changes, brought about by monsoonal rains, which affected species richness of the bird assemblages due to migrations and altitudinal movements. Thus, elevation and seasonality combine to influence bird species assemblages through food availability, and habitat corridors are important to allow these ecological behaviours to persist in mountain areas.

2.5 Socio-economic conditions

The BC 2 area covers 6 Gewogs under three Dzongkhags (Thimphu, Wangdue, and Punakha). It has 197 households residing within the area.

People living within BC 2 are mostly dependent on agriculture of 96.88%, 76.56% on vegetable production. Their main cash crops are orange, chilli, potato and cardamom with average net income of Nu. 13000.00 annually. Agricultural lands inside the corridor are small, and account for just about 200 ha, and are mostly distributed as small patches along the northeastern and southern boundaries of the corridor. Most of the agriculture is Chhuzhing, or terraced, rain-fed paddy lands, which cover about 150 ha, with lesser areas of un-terraced, dry, Kamzhing Lands.

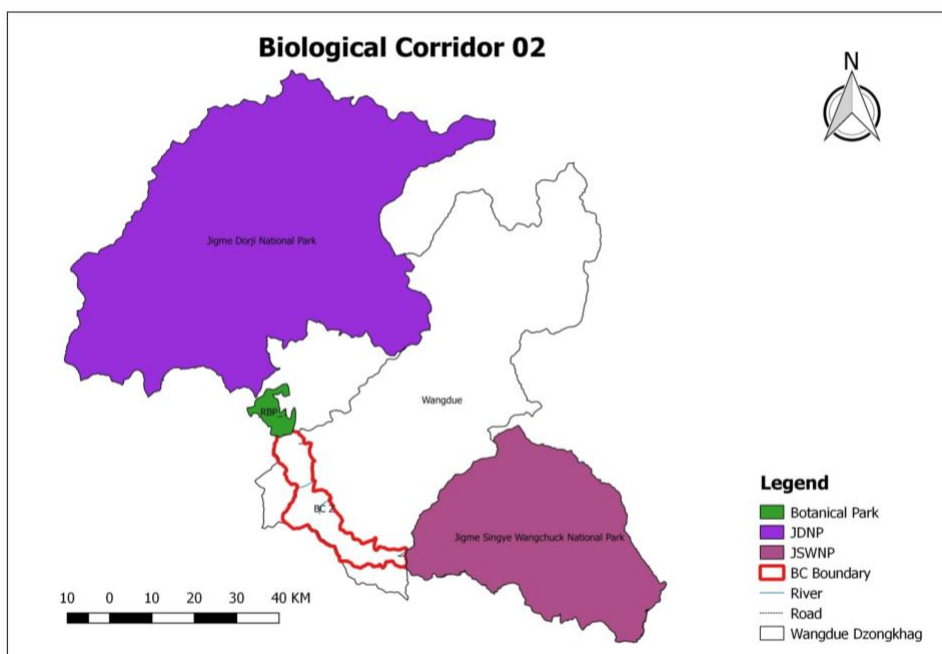


Figure 3: Revised map for BC-02

3. Planned activities for January 2023 - June 2024

3.1 Development of waste disposal site at Gangtey

- Budget: Nu. 2,400,000
- Timeline: July - December, 2023
- Location: Eusa, Gangtey Gewog, Wangdue Phodrang

The site has been used as landfill of two gewogs (Gangtey and Phobji) since decades benefiting more than 500 households developed with the financial support from Royal Society for Protection of Nature (RSPN). With increasing number of visitors, the quantity of waste drastically increased making environment polluted. Some mitigation measures had been carried out by the local communities coordinated by gewog administrations. However owing to improper fencing, approach road and segregation house had hampered the management of landfill. Further the free ranging animals easily displace the waste. To improve the existing landfill, the activity is proposed with an estimated amount of Nu. 2.4 million to be implemented in 3rd quarter of year 2023.

The activity will be outsourced involving the following works however details will be mentioned in Bill of Quantity (BOQ):

1. Subgrade preparation, providing and laying GSB for maintenance of approach road.
2. Earth work, fixing of M/S angle and PCC works for fencing.
3. Construction of waste segregation shelter.

3.2 Habitat improvement for Black Necked Crane (BNC) at Gangtey-Phobji RAMSAR site

a. Budget: Nu. 50,000

b. Timeline: July - September, 2023

c. Location: Gangtey-Phobji RAMSAR Site, Gangtey-Phobji gewog

Habitat management is mainly carried out to increase availability of food and cover for the species. The management interventions also manipulate the habitats for provisioning of water and removal of invasive/unwanted species. The management interventions are targeted to enhance one or more habitat components like food, water, cover and space. The purpose of habitat management is to improve the existing habitat to benefit BNC and also maintain a productive and healthy ecosystem.

Maintenance of identified annual roosting site of BNC will be carried out. The maintenance work will mainly involve removal of vegetation and cleaning of shallow ponds of areas ranging from 20 X 20 meters to 50 X 50 meters. The activity will involve around 10-15 workers, which will be divided into smaller groups to cover all roosting sites of RAMSAR site. The workers will be based on voluntary as well as paid workers from the locality. There won't be many disturbances to Black-necked crane as it will be done during the season when it had migrated away, therefore the waste generation will be very minimal. Looking at the nature of work, minimal risk is associated to the workers as it doesn't involve construction or climbing high areas. As it will be done in the RAMSAR area, there will be no disturbance to the local community.

3.3 Habitat improvement for Black Necked Crane (BNC) at Khotokha RAMSAR site

a. Budget: Nu. 50,000

b. Timeline: July - September, 2023

c. Location: Khotokha RAMSAR Site, Ruebisa and Bjena Gewog, Wangdue Phodrang

Habitat management is mainly carried out to increase availability of food and cover for the species. The management interventions also manipulate the habitats for provisioning of water and minerals and removal of invasive/unwanted species. The management interventions are targeted to enhance one or more habitat components like food, water, cover and space. The purpose of habitat management is to improve the existing habitat to benefit BNC and also maintain a productive and healthy ecosystem.

Maintenance of identified annual roosting site of BNC will be carried out. The maintenance work will mainly involve removal of vegetation and cleaning of shallow ponds of areas ranging from 20 X 20 meters to 50 X 50 meters. The activity will involve around 10-15 workers, which will be divided into smaller groups to cover all roosting sites of RAMSAR site. The workers will be based on voluntary as well as paid workers from the locality. There won't be many disturbances to Black-necked crane as it will be done during the season when it had migrated away, therefore the waste generation will be very minimal. Looking at the nature of work, minimal risk is associated to the

workers it doesn't involve construction or climbing high areas. As it will be done in the RAMSAR area, there will be no disturbance to the local community.

3.4 Maintenance of Dikchhu Park

- a. Budget: Nu. 100,000
- b. Timeline: October - December, 2023
- c. Location: Kamichhu, Athang Gewog, Wangdue Phodrang

The Dikchhu Park falls near the confluence of Dikchhu River and Puna Tshangchhu. The park is the breeding area for Golden Mahseer. The maintenance is required occasionally for the protection and functioning of the park. The activity includes:

1. Maintenance of fire line measuring 1528m x 5m which includes clearing of bushes
2. Construction of resting shed and toilet for guest mainly of wood and bamboo
3. Construction of wooden bridge
4. Clearing of bushes along footpath

3.5 High-end trout fishing and trail development

- a. Budget: Nu. 500,000
- b. Timeline: July - December, 2023
- c. Location: Khebethang, Phobji Gewog, Wangdue Phodrang

The Phobjikha RAMSAR is a tourist destination for both local and international travelers. For boosting of the local economy, fishing and trail development in Khebethang will be done which is located about 2 km away from the RAMSAR site.

The activity involves:

1. Construction of shed/Gazebo made of wood for fishing and resting in between trail
2. Development of trail of 2.7 km from Zizi to Khebethang and development of fishing area in between. Dustbin for waste collection will be installed for waste disposal. Earth works including removal of soil for proper path. Laying of gravels in the trail whereby the gravels will be sourced from nearby available area.

4. Potential social and environmental impacts

4.1 Development of waste disposal site at Gangtey

Following are some the possible common environmental and social impacts foreseen during the implementation of the proposed activities:

i. Environment Impacts:

- Waste: generation of waste as a result of construction activities
- Air quality: dust as a result of construction works and possible emissions from transportation vehicles

ii. Social Impacts

- Occupational health and safety of the workers

4.2 Habitat improvement for Black Necked Crane (BNC) at Gangtey-Phobji RAMSAR site

Following are some the possible common environmental and social impacts foreseen during the implementation of the proposed activities:

i. Environment Impacts: None anticipated

ii. Social Impacts

- Occupational health and safety of the workers

4.3 Habitat improvement for Black Necked Crane (BNC) at Khotokha RAMSAR site

Following are some the possible common environmental and social impacts foreseen during the implementation of the proposed activities:

i. Environment Impacts: None anticipated

ii. Social Impacts

- Occupational health and safety of the workers

4.4 Maintenance of Dikchhu Park

Following are some the possible common environmental and social impacts foreseen during the implementation of the proposed activities:

i. Environment Impacts: None anticipated

ii. Social Impacts

- Occupational health and safety of the workers

4.5 High-end trout fishing and trail development

Following are some the possible common environmental and social impacts foreseen during the implementation of the proposed activities:

i. Environment Impacts:

- Harm to the aquatic life during operation
- Generation of wastes during trail improvement and development of gazebos/resting places

ii. Social Impacts

- Worker’s health and safety

5. Mitigation Measures for Environmental and Social Impacts

Potential impacts to the environment and society along with the mitigating measures are listed below in the table:

Potential impact	Impact scale	Proposed mitigations measures	Responsibility party	Cost
Activity 1: Development of waste disposal site at Gangtey				Nu. 2,400,000
1. Generation of waste as a result of construction activities	Short term Minor	<i>Pre-construction:</i> requirements for appropriate waste management should be included in the bidding documents, as a precondition for the contractor’s selection <i>During construction:</i>	Contractor and BC-02 Focal	To be incorporated in the bidding document

		<ul style="list-style-type: none"> • 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.). 		
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		<ul style="list-style-type: none"> Burning of construction waste should be prohibited. <p><i>After construction:</i></p> <ul style="list-style-type: none"> All waste shall be removed from the project site. 		
2. Air quality: dust as a result of construction works and possible emissions from transportation vehicles	Short term Minor	<ul style="list-style-type: none"> Carry out consultations with affected communities and local government before and during construction activities to mitigate any adverse impacts on the community Avoid sites that are in close proximity to dzongs, monasteries or other sacred sites Ensure that sites identified for construction are located beyond 500 meters from a monastery, Dzong or any cultural monument Redesign construction plans as needed to avoid obstruction (e.g., to avoid view disturbance of a monastery) 	Contractor and BC-02 Focal	To be incorporated in the bidding document
3. Workers' health and safety	Short term Minor	<ul style="list-style-type: none"> 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 	Contractor and BC-02 Focal	To be incorporated in the bidding document

		<p>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.</p> <ul style="list-style-type: none"> • Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns 		
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Activity 2: Habitat improvement for Black Necked Crane (BNC) at Gangtey-Phobji RAMSAR site				Nu. 50,000
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1.Workers' health and safety	Minimum/ minor (Short term)	<ul style="list-style-type: none"> • Comply with the BFL's occupational health and safety guidelines; • Ensure regular health screening for the workers pre and during 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, 	BC-02 Focal	To be part of the activity cost
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		<p>promotion, termination of employment or retirement, and disciplinary practices;</p> <ul style="list-style-type: none"> • Ensure first aid kit is available at construction site all the time; and • Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. 		
Activity 3: Habitat improvement for Black Necked Crane (BNC) at Khotokha RAMSAR site				Nu. 50,000
1. Workers' health and safety	Minimum/ minor (Short term)	<ul style="list-style-type: none"> • Comply with the BFL's occupational health and safety guidelines; • Ensure regular health screening for the workers pre and during 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; 	BC-02 Focal	To be part of the activity cost

		<ul style="list-style-type: none"> • Ensure first aid kit is available at construction site all the time; and • Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. 		
Activity 4: Maintenance of Dikchhu Park				Nu. 100,000
1.Workers' health and safety	Minimum/ minor (Short term)	<ul style="list-style-type: none"> • Comply with the BFL's occupational health and safety guidelines; • Ensure regular health screening for the workers pre and during 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; • Ensure first aid kit is available at construction site all the time; and • Implement a grievance mechanism for workers (and their organizations, where 	BC-02 Focal	To be part of the activity cost

		they exist) to raise workplace concerns.		
Activity 5: High-end trout fishing and trail development				Nu. 500,000
1. Harm to the aquatic life during operation	Short term Minor	<ul style="list-style-type: none"> The laborers will be briefed and made aware of polluting the river and the forestry official will monitor regularly. 	BC-02 Focal	To be part of the activity cost
2. Generation of wastes during trail improvement and development of gazebos/resting places	Short term Minor	<p><i>Pre-construction:</i> requirements for appropriate waste management should be included in the bidding documents, as a precondition for the contractor's selection</p> <p><i>During construction:</i></p> <ul style="list-style-type: none"> 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 	BC-02 Focal	To be part of the activity cost

		<p>separately and authorized collector and transporter should be sub-contracted to transport and finally dispose;</p> <ul style="list-style-type: none"> • 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. <p><i>After construction:</i></p> <ul style="list-style-type: none"> • All waste shall be removed from the project site. 		
3.Workers' health and safety	Minimum/ minor (Short term)	<ul style="list-style-type: none"> • Comply with the BFL's occupational health and safety guidelines; • Ensure regular health screening for the workers pre and during 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 	BC-02 Focal	To be part of the activity cost

		<p>employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices;</p> <ul style="list-style-type: none"> • Ensure first aid kit is available at construction site all the time; and • Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. 		
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6. ESMP Implementation arrangements

The project activities will be implemented by the BFL focal person. The focal person will be responsible for aligning the procedures with ESMP. Compliance with existing rules to obtain clearances, permits, approvals, or consent documents from relevant authorities and stakeholders will also be monitored by the focal person.

This ESMP should be part of the contract that the BC-02 management will sign with the contractor(s) in order to implement the planned activities in BC-02 for the implementing period January 2023 to June 2024. The contractor is obligated to perform the proposed preventive or mitigating environmental and social measures. Any documents related to the application of these measures are advised to be stored as evidence (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 to the start of the project activities and prior to any specific tasks with high health risks.

The BC-02 Supervisor (Engineer) needs to monitor the implementation of the proposed measures by the Contractor or Contractor’s subcontractors. This should be done through visual checks and review of the records of evidence. Non-compliances should be recorded in a non-compliance report and submit to the BC-02 Focal Officer immediately who will report it to the ESS Focal Officer at the PCU. Any non-compliance should be dealt with appropriate measures and the evidence should be maintained.

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

7. ESMP monitoring arrangements

The BFL focal of 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. The terms and conditions included in the environment clearances issued by RGoB’s national authorities wherever and whenever required must be strictly followed. The BC-02 management is also fully responsible for the compliance of all external contractors and service providers with the safeguard

requirements outlined in the OHS annexed. Protocol for monitoring of activities under this ESMP will be carried out as follow:

Sl. No.	Activities	Monitoring team	Timeline		Location	Means of Verification
			Start	Complete		
1	Development of waste disposal site at Gangtey	Field Focal	July 2023	December 2023	Eusa, Gangtey, Wangdue Phodrang	Field visits
		ESS Focal	October 2023	December 2023		Reports and field visits
		BFLFS	December 2023	December 2023		Reports
2	Habitat Improvement of Black-necked crane at Gangtey-Phobji	Field Focal	July 2023	December 2023	Gangtey-Phobji Ramsar site	Field visits
		ESS Focal	October 2023	December 2023		Reports and field visits
		BFLFS	December 2023	December 2023		Reports
3	Habitat Management of Black-necked crane at Khotokha	Field Focal	July 2023	December 2023	Khotokha Ramsar site	Field visits
		ESS Focal	October 2023	December 2023		Reports and field visits
		BFLFS	December 2023	December 2023		Reports
4	Maintenance of Dikchhu Park	Field Focal	July 2023	December 2023	Kamichhu, Daga Gewog, Wangdue	Field visits
		ESS Focal	October 2023	December 2023		Reports and field visits
		BFLFS	December 2023	December 2023		Reports
5	High-end trout and trail development	Field Focal	July 2023	December 2023	Khebethan g, Phobji Gewog, Wangdue	Field visits
		ESS Focal	October 2023	December 2023		Reports and field visits
		BFLFS	December 2023	December 2023		Reports

Monitoring by ESS Focal officer at PCU:

- Monitoring through photographic/video evidence submitted by the IAs during the implementation as per the given dateline in the table above;
- Reports by ESS officer to BFL Fund Secretariat - Semi-annual report submitted to the BFL Fund Secretariat in July, 2023; and
- Bi-annual reports of the Secretariat to WWF US (as part of mid-year and final Annual Performance Reports).

8. Capacity Need and Budget

The two activities under this ESMP will be implemented by the BFL focal person, Chief Forestry Officer, supervising engineer, and a contractor that will employ workers as mentioned in the contract agreement.

Sl. No.	Activity	Amount (Nu.)	Budget for ESS mitigation
1	Development of waste disposal site at Gangtey	2,400,000	To be part of the activity cost
2	Habitat Improvement of Black-necked crane at Gangtey-Phobji	50,000	To be part of the activity cost
3	Habitat Management of Black-necked crane at Khotokha	50,000	To be part of the activity cost
4	Maintenance of Dikchhu Park	100,000	To be part of the activity cost
5	High-end trout and trail development	500,000	To be part of the activity cost
Total		3,100,000	

The proposed activities are of very small scale and there are no adverse social and environmental impacts which require mitigation measures. Therefore, separate fund for mitigation measures is not proposed.

9. Consultation and Disclosure Mechanisms

This ESMP has been prepared in a participatory manner by the BC-02 management based on the concerns and need by the community and local government. The RAMSAR intervention plans of Khotokha and Gangtey-Phobji have included the above activities after consultation with public, local government and relevant sectors. However relevant clearance will be sought if needed. As for maintenance of Dikchhu Park, as it is small activity and maintenance, approval and clearance is not required.

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.

10. Stakeholder engagement plan

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

The BFL focal person will submit the official minutes of consultation meetings (along with a list of participants, disaggregated by gender and age) to ESS consultants within one week after the completion of the consultation. The ESS consultants 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.

Annexure 1

BFL: Suggested Occupational Health and Safety Standards

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

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

1. General Facility Design and Operation

Integrity of Workplace Structures

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

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

Severe Weather and Facility Shutdown

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

Workspace and Exit

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

Fire Precautions

The workplace should be designed to prevent the start of fires through the implementation of fire codes applicable to industrial settings. Other essential measures include:

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

- Workers shall wear shoes without iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction.
- Smoking, lightening, or carrying of matches, lighters or smoking materials shall be prohibited.
- All other precautions, as are reasonably practicable, shall be taken to prevent initiation of ignition from all other possible sources such as open flames, frictional sparks, overheated surfaces of machinery or plant, chemical or physical, chemical reaction and radiant heat.
- At every workplace adequate provision of water supply for firefighting shall be provided and maintained.
- Equipping facilities with firefighting equipment (e.g., fire extinguishing bottle). The equipment should be maintained in good working order and be readily accessible. It should be adequate for the dimensions and use of the premises, equipment installed, physical and chemical properties of substances present, and the maximum number of people present.
- Manual firefighting equipment shall be easily accessible and simple to use.
- Fire extinguishers and emergency alarm systems that are both audible and visible should be in place.

Lavatories and Showers

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

Potable Water Supply

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

Clean Eating Area

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

Lighting

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

Safe Access

- Passageways for pedestrians and vehicles within and outside buildings should be segregated and provide for easy, safe, and appropriate access.
- Equipment and installations requiring servicing, inspection, and/or cleaning should have unobstructed, unrestricted, and ready access.
- Covers should, if feasible, be installed to protect against falling items.
- Measures to prevent unauthorized access to dangerous areas should be in place.

First Aid

- The employer should ensure that qualified first-aid can be provided at all times. A sufficient number of first aid boxes or cupboards shall be provided and maintained so as to be readily available during all working hours, provided that the distance of the nearest first aid box or a cupboard shall be not more than 200m from any working place.
- First aid kits include all equipment outlined in Annex 1 to these Guidelines.
- Remote sites should have written emergency procedures in place for dealing with cases of trauma or serious illness up to the point at which patient care can be transferred to an appropriate medical facility.

Work Uniform

- The contractor shall provide a working uniform to each worker.
- All workers shall be required to attend the duty in proper uniform unless otherwise instructed by the Contractor.

Air Supply

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

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

- The Contractor is responsible to hold an information session to familiarize all workers with the OHS procedures specified in these guidelines, in order to ensure they are apprised of the basic site rules of work at / on the site and of personal protection and preventing injury to fellow workers.
- The information session should consist of basic hazard awareness, site-specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. Any site-specific hazard or color coding in use should be thoroughly reviewed as part of orientation training.

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 85 dB(A) for a duration of more than 8 hours per day without hearing protection. In addition, no unprotected ear should be exposed to a peak sound pressure level (instantaneous) of more than 140 dB(C).
- The use of hearing protection should be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110dB(A). Hearing protective devices provided should be capable of reducing sound levels at the ear to at least 85 dB(A).
- Although hearing protection is preferred for any period of noise exposure in excess of 85 dB(A), an equivalent level of protection can be obtained, but less easily managed, by limiting the duration of noise exposure. For every 3 dB(A) increase in sound levels, the ‘allowed’ exposure period or duration should be reduced by 50 percent.
- Prior to the issuance of hearing protective devices as the final control mechanism, use of acoustic insulating materials, isolation of the noise source, and other engineering controls should be investigated and implemented, where feasible.
- Periodic medical hearing checks should be performed on workers exposed to high noise levels.

Vibration

Exposure to hand-arm vibration from equipment such as hand and power tools, or whole-body vibrations from surfaces on which the worker stands or sits, should be controlled through choice of equipment, installation of vibration dampening pads or devices, and limiting the duration of exposure.

Electrical

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

- Marking all energized electrical devices and lines with warning signs
- Locking out (de-charging and leaving open with a controlled locking device) and tagging-out (warning sign placed on the lock) devices during service or maintenance
- Checking all electrical cords, cables, and hand power tools for frayed or exposed cords and following manufacturer recommendations for maximum permitted operating voltage of the portable hand tools
- Double insulating / grounding all electrical equipment used in environments that are, or may become, wet; using equipment with ground fault interrupter (GFI) protected circuits
- Protecting power cords and extension cords against damage from traffic by shielding or suspending above traffic areas

- Appropriate labeling of service rooms housing high voltage equipment (‘electrical hazard’) and where entry is controlled or prohibited
- Establishing “No Approach” zones around or under high voltage power lines
- Rubber tired construction or other vehicles that come into direct contact with, or arcing between, high voltage wires may need to be taken out of service for periods of 48 hours and have the tires replaced to prevent catastrophic tire and wheel assembly failure, potentially causing serious injury or death
- Conducting detailed identification and marking of all buried electrical wiring prior to any excavation work

Eye Hazards

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

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

Welding / Hot Work

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

- Provision of proper eye protection such as welder goggles and/or a full-face eye shield for all personnel involved in, or assisting, welding operations. Additional methods may include the use of welding barrier screens around the specific work station (a solid piece of light metal, canvas, or plywood designed to block welding light from others). Devices to extract and remove noxious fumes at the source may also be required.

Working Environment Temperature

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

Ergonomics, Repetitive Motion, Manual Handling

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

- Facility and workstation design with 5th to 95th percentile operational and maintenance workers in mind
- Use of mechanical assists to eliminate or reduce exertions required to lift materials, hold tools and work objects, and requiring multi-person lifts if weights exceed thresholds
- Selecting and designing tools that reduce force requirements and holding times, and improve postures
- Incorporating rest and stretch breaks into work processes, and conducting job rotation
- Implementing quality control and maintenance programs that reduce unnecessary forces and exertions

Working at Heights

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

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

Illumination

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

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

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

2. Drainage

- The site is adequately drained.

3. Heating, air conditioning, ventilation and light

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

4. Water

- Workers have easy access to a supply of clean/ potable water in adequate quantities.
- The quality of the water complies with national/local requirements or WHO standards.
- Tanks used for the storage of drinking water are constructed and covered to prevent water stored therein from becoming polluted or contaminated.
- The quality of the drinking water is regularly monitored.

5. Wastewater and solid waste

- Wastewater, sewage, food and any other waste materials are adequately discharged in compliance with national and/or international standards and without causing any significant impacts on camp residents, the environment or surrounding communities.
- Specific containers for rubbish collection are provided and emptied on a regular basis.
- Pest extermination, vector control and disinfection are undertaken throughout the living facilities at least once.

6. Rooms/dormitories facilities

- Rooms/dormitories are kept in good condition.
- Rooms/dormitories are aired and cleaned at regular intervals.
- Rooms/dormitories are built with easily cleanable flooring material.
- Rooms/dormitories and sanitary facilities are located in the same buildings.

- Residents are provided with enough space.
- The number of workers sharing the same room/dormitory is minimized.
- Doors and windows are lockable and provided with mosquito screens when necessary.
- Mobile partitions or curtains are provided.
- Adequate number of furniture such as table, chair, mirror, and lamps are provided for all workers.
- Separate sleeping areas are provided for men and women.

7. Bed arrangements and storage facilities

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

8. Sanitary and toilet facilities

- Sanitary and toilet facilities are constructed from materials that are easily cleanable.
- Sanitary and toilet facilities are cleaned frequently and kept in working condition.
- Toilets, showers/bathrooms and other sanitary facilities are designed to provide workers with adequate privacy including ceiling to floor partitions and lockable doors.
- Separate sanitary and toilet facilities are provided for men and women.
- Toilet facilities are conveniently located and easily accessible.
- Toilet facilities are environmentally friendly (e.g., pit toilet) and sewage is not disposed into the worksite.
- Open defecation in the vicinity of project sites should be prohibited.
- An adequate number of hand wash basins and showers/bathrooms facilities are provided.
- Shower facilities are provided with water heating facilities.

9. Cooking and laundry facilities

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

10. Leisure, social and telecommunications facilities

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

Contents of first aid box or cup-boards

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

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