Bhutan for Life
Environmental and Social Management Plan for Wangchuck Centennial National Park (2021)

1. Introduction

(A) Project Background

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

BFL seeks to achieve the following objectives:

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

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

(B) Scope of ESMP

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

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

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

(C) Purpose of ESMP

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

- Minimizing any adverse environmental, social and health impacts resulting from the project activities;
- Conducting all project activities in accordance with the relevant RGoB Laws and WWF's safeguard operational policies and guidelines;

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

(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); 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; 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 landowners 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.

2. Environmental and Socio-Economic Conditions:

With the area coverage of 4914 sq.km, it is the largest protected area in the country. It covers the northern frontiers and the central part of the country. There are nine *gewogs* of five different *Dzongkhags* (Gasa, Wangduephodrang, Trongsa, Bumthang and Lhuentse), which falls wholly or partly under the Park's jurisdiction. It has around 860 households with more than 7300 residents inside the Park. Maximum population in the Park depends on farming for their livelihoods and there are some communities, whose livelihood is solely depended on the *Cordyceps*. With low-lying valleys to the snowcapped peaks, altitude of the Park ranges from 1390m to 7500m. The Park is home to 693 species of vascular plants, 43 mammal species, 250 birds and 246 species of butterflies. The fauna list includes some of iconic species such as Tiger, Snow leopard, Tibetan wolf, Bhutan takin, Himalayan black bear, Himalayan musk deer and Red panda as captured in Figure 1.

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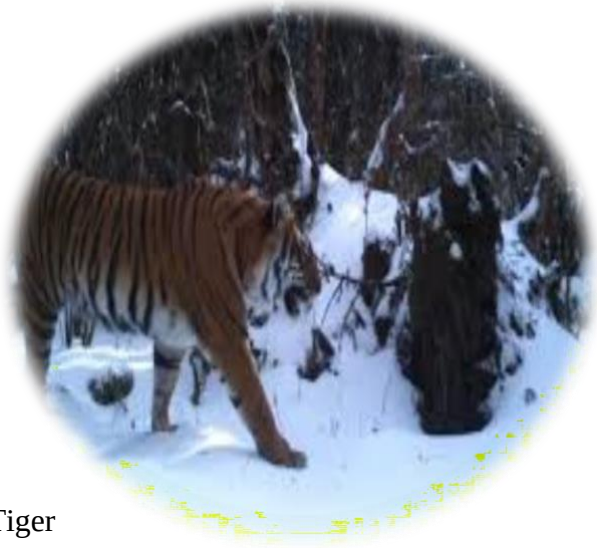
<td> 
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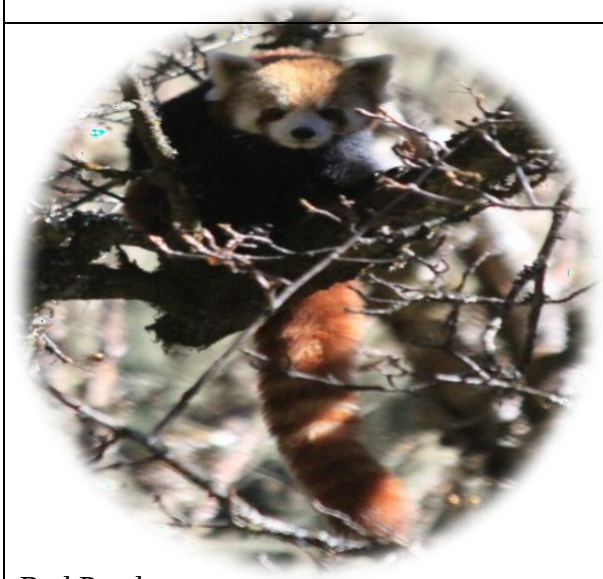
<td> 
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Bhutan Takin

Himalayan Musk Deer

Brown Trout

Himalayan Black bear

Figure 1: Mammals and other species in WCNP

3.Planned activities in Year 2021

1.Restoration of lowland grasslands

Budget: Nu.120, 000/-
Implementation timeline: Oct-Dec, 2021
Location: Rabung, Kurtoed Geog, Lhuentse under Dungkar Park Range
Size: 3 Acres

This is a new activity proposed under lowland grassland development. This activity aims to turn the degraded land into a proper grazing land for the cattle. Few years ago, the proposed land used to be the cultivation field but later was left fallow after knowing that the land is SRFL during land survey. Over the years, bushes, shrubs, grasses and few trees have appeared in the land. Through this project activity, the park will turn the land into a proper grassland that would benefit the nearby communities for grazing their cattle. The terrain of proposed site is plain to gentle slope.

Following are the sub-activities for restoration of lowland grassland:

1. Removal of the bushes/shrubs/trees and other unpalatable grass species: All the unpalatable grasses, bushes, shrubs and non-fodder tree species would be cleared and burnt. Proper field assessment and weather situation would be considered before conducting controlled burning to avoid wild fire. If need to be, a fire lines would be prepared prior to setting fires to burn the cleared debris. In this way, fire catastrophes would be avoided.
2. Ploughing the land for reseeding purpose: The land will be tilled using power tiller or other draught animals. This would/may trigger soil erosion but the degree of impact would be negligible. Once the grasses and fodder trees grow and are established, it would make the land stable/ resilient to soil erosion.
3. Procuring seeds/fodder tree saplings: Procuring the seed and fodder trees and choice of species would be carried out based on site feasibility and as per the technical recommendation from the relevant stakeholders. In any case, invasive species would be avoided.
4. Procure water pipes for watering the sown seeds or planted saplings: As the seeds need water for germination, water pipes will be used to fetch water to the field from nearby water sources. The Park/ project implementer would ensure that this activity do not bring in conflict with the community on water issue as watering would be needed for the initial phase of seed germination.
5. Fencing to protect the land from trampling before seed germination: To avoid the disturbance to the germinating seeds and saplings, the area would need fencing for proper growth of the seeds and fodder saplings.

Equipment or tools required for these activities.

Power chain saw: For cutting trees. We will hire chain saw from the local power chain operators.

Knives/sickles: For cutting grasses.

Power tiller: For ploughing. We will hire the machine from the Gewog administration.

Spades: For digging ground.

Poles and barbed wires: For fencing the sites.

However, the seeding and planting of fodder trees would depend on the season or as pe sowing or planting timing of the seeds/ fodders.

Approximately 15 workers will be hired for the work from nearby villages on daily wage system. Since the workers will be hired from nearby households, they would return to their houses after the work, hence, camping sites and other toilet facilities are not required at the project site. There are around seven households in the radius of 1km from the project site, who practice farming for their livelihood. The activity will benefit these communities by providing proper grazing ground for their cattle which were otherwise driven to forest for open grazing. This way of open cattle grazing in the forest has invited many incidences of HWC, as the unattended cattle in the forest becomes an easy prey to the wildlife. Thus, creation of grazing ground would ultimately; reduce the occurrences of HWC incidences in that community.

Some of the anticipated Environmental and Social impacts are as follows:

- Air pollution from burning/fire activity.
- Risk of forest fire
- Waste.
- Choice of fodder or grass species
- Worker's health and safety.
- Fencing

2.Conservation awareness and communication

Budget: Nu.210, 000/-
Implementation timeline: July-Dec, 2021
Location: In place of existing signboards and few boards in the new places.

This is a new activity proposed for replacing or updating the existing old signage in and around the Park. The Park initially was known as the Wangchuck Centennial Park, later 'National' was added, and the nomenclature was changed to Wangchuck Centennial National Park. All the old signboards have old nomenclature of the park on it therefore, this activity will replace all the signboards across the Park with proper name and other information. In addition, few new signboards for some of ecotourism sites, for instance, like hot springs will also be developed under this activity.
The placing of new signboards would not restrict the access to the place or habitat; rather it would create awareness to the visitors on Do's and Don'ts in that particular place. However, the Park will not install the signboards in the place of critical wildlife habitats (e.g. like musk deer habitat) as it may give information to the poachers and risk the animals safety. The signboards will be placed at the entry point of Park and on the way to some of the important sites.
Since the most of the signboards will be of informatory or precautionary message, it would not invite any social impacts and if need be, the Park will consult the concerned stakeholders before installing those signboards. For this activity, the Park will use its staff/manpower for fixing and installing smaller signboards. However, for bigger and larger signboards, local people will be hired for the job. The alternative option of awarding works to Technical Training Institute (Chumig, Bumthang) directly for constructing bigger/ main signboard of the Park has also been kept in case there are no skilled labors in the area.
Some of the Environmental and Social impacts:

- Waste
- Workers Health and Safety

3.Enrichment plantation/ sanitation operation in the Bark beetle infested forest.

Activity name: Enrichment plantation
Budget: Nu. 100,000/-
Implementation timeline: April – June 2021
Area (Bark beetle affected): 34.4 hectares

The activity has been proposed to control the bark beetle infestation at Dhur, Chokhor gewog under Bumthang Dzongkhag. The areas of beetle-affected is approximately 86 hectares of forest, of which around 40% (34.4 hectares) of the affected areas falls under the jurisdiction of the WCNP. Sanitation operations and setting trap logs/trees to contain further beetle infestation was recommended by species expert from UWICER.

Since maximum areas of infestation falls under territorial forest Division (FMU), NRDCL is going to

conduct sanitation logging operations in it. As recommended the sanitation felling would be concentrated on the periphery of the outbreak sites. In the area of infestation falling under jurisdiction of Park, trap logs/trees would be set before April (flight period of bark beetle).

Setting trap logs and sanitation operation are two activities which we need to implement for containing the beetle. However, the complete eradication of the beetle is not possible as well as not recommended as beetles play major role in decomposing the dead matter in the ecosystems. Burning of the beetle-infested trees/logs and other wood materials also possess a risk of forest fire but proper fire lines and other precautionary measures would be adopted to avoid forest fire.

Some of the anticipated Environmental and Social impacts are as follows:

- Risk of forest fire
- Waste generations
- Worker's health and safety

Note: Given the vastness of beetle-affected area, the budget proposed is insufficient to implement the measures to contain the beetle. However, with this budget, the Park will conduct assessment and setting the trap logs/trees and thereafter activities in the scope of the budget.

4.Construction of Ranger Transit Camp.

Budget: Nu.20, 00000/- or 2m

Implementation timeline: Oct-Dec, 2021

Location: Gomthang, Chokhor Geog

Size: 440 sq. meters

WCNP, the largest national park in the country encompasses the vast area of the alpine regions. These alpine regions are home to some of the flagship as well as iconic mammal species like Snow leopard, Tibetan wolf, Blue sheep, Takin, Himalayan musk deer, Marmots and many others. The medicinal

herbs like *Nardostachys grandiflora, Delphinium graciale, Fritillaria species, Veronica ciliata (substitute for bear bile), Neopicrorhiza scrophulariiflora, Meconopsis species* and many more are prevalent up there in the alpine meadows, thus forming it a trove of medicinal herbs. The famous fungus like the Cordyceps (*Ophiocordyceps sinensis*) grows abundantly in the park and is one of the highly valued and sought-after fungus in the world, thus making the Cordyceps business so lucrative for the collectors. Round the year, the park rangers conduct regular as well as ad hoc patrolling to counter attack the poachers and illegal medicinal herb hunters. During Cordyceps harvesting season, which is one of the major activities of the park, the rangers have to stay in the alpine regions monitoring the harvest of the Cordyceps for around three months. The monitoring is to ensure the sustainable harvest of the Cordyceps and to ward off the intruders. Due to its topographic setting, the park has around 200 glaciers, which are source of our freshwater ecosystems that is indispensable for all life forms. In these vast stretches of the alpine valleys, there lies around 483 lakes, which includes glacial as well as alpine lakes. Apart from provision of ecological services, these lakes are strongly rooted in cultural, spiritual and social wellbeing of the communities around it. The lakes are mostly revered and protected. Some of lakes have a very strong historical background associated with it. These believes ingrained in the people have indeed helped the land to protect and conserve the rich biodiversity that we have in the park. Having more than 200 glaciers and almost 483 glacial lakes, the park serves as the water tower for some of major river systems in the country like *Punatsang chhu, Mangde chhu, Chamkhar chhu* and *Kuri chhu.* Thus, the park greatly contributes to the revenue generation for the country.

Despite of great importance and conservation effort required to protect and conserve the mountain ecosystems, there is no proper structure for housing the park staff during altitude patrolling. Every year, the park staffs have to carry tents to house themselves from freezing cold. More often during important ad-hoc patrolling our staff take refuge in caves and underneath the giant trees. However, in winter it is extremely challenging to conduct high altitude patrolling, as there is no proper structure to stay. In several meetings and occasions, the staffs have been requesting the management to come up with a Ranger Transit Camp each at *Tsampa* and *Gomthang* areas. Due to lack of funding support, the management could not materialize the construction of RTC so far. Now with coming of BFL project, the park is hopeful that we could come up with Ranger Transit Camps, which would benefit the park in scaling up its patrolling effort in achieving the conservation milestones. Definitely, the construction of RTCs would benefit our rangers immensely; moreover, it would motivate and rejuvenate our rangers' energy in patrolling and conserving the fragile yet important mountain ecosystems and biodiversity therein.

Construction of the Ranger Transit Camp(RTC)

Currently there are around seven (six herder's camps/makeshifts house and one RBA outpost) built up structures at the vicinity (adjoining the construction site) of the proposed RTC site. There are rivers running from the both sides (roughly 50 meters away) of the proposed site (but both below its level). The site is situated at the base of mountain with no major vegetation cover. The proposed site is flat land. Through construction RTC, the people in the vicinity

would be benefitted directly or indirectly. The site is selected due to its strategic location. Moreover, there is army outpost at the selected site; this would be advantageous to the park management as we could communicate/pass messages to the park head office via army wireless operator. The Park official could further liaise and seek assistance from army personnel in times of emergencies. The rangers deployed at the transit camp can also avail medication from the army health personnel in the times of any ailments. The site is also the gateway to the Cordyceps collection site, so park can monitor the Cordyceps collection and issue 'Certificate of Origin' to the Cordyceps collectors on their return. There is also a permanent type settlement at an hour walk from the site. These people keep their yaks in the mountain valleys year around and they do not bring their yaks to the low valleys /village. Therefore, the park official can offer forestry services to these people effectively through this Transit Camp and keep eye on them on the other hand. Furthermore, most of the people (highlanders) visit *Pasalum tsachhu* (hot spring*)* via this site (route), so it RTC can function as checkpoint for people commuting through it. By this park can also curb the poaching and illegal trade of animal parts and other medicinal plants across the porous border.

This project is mainly to construct a Ranger Transit Camp, which can outreach forestry services to the highlanders and at the same time intensify the high altitude patrolling. Due to the nature and location of the site, it is expected that only few of contractors would part take in the tender for the construction work. Since the people living in the vicinity are herders and they would not participate in construction work, as they would be busy herding their yaks. However, these people and their animals (horses and yaks) would be involved in transporting construction materials from the lower valley (road head) as it is officially two days walk from the nearest road head. Regarding the construction work, the work will be be carried out mostly by the army personnel in the area who has skill (some army personnel are trained carpenters and masons) as well as workforce. Since it would be very difficult to lure the contractor to par take in the tender owing to the remote location and difficulty in terrain. Approximately, around 20-25 workers would be required for the construction work. The hiring and employing of the workers will be done based on their skills. The park management would make sure that workers are hired and employed fairly without any disparity, opportunities will be given if the communities nearby are willing to work.

The workers (army personnel) will reside in the army camp and use their resources like water, toilets and solar light. Moreover, if local people are hired, they too have their camps to live in. In case if workers come from other place, herders camp will be rented to them for accommodation since there are several huts in vicinity(some adjoining) of the construction site. Through this activity, it is obvious that there would be slight disturbances to the wildlife (felling of trees and transportation of timbers) living in the vicinity but this would be for a specific period only. The Park management will guide on dos and don'ts to the hired workers and the contractor before they venture into the actual contraction work. The Park would also conduct a time-to-time monitoring of the activity.

Materials and Equipment or tools such as Power chain saw (cutting and sawing the timbers), knives and saws, shovel and spades, hammer, poles, nails, CGI sheets, cement and sand ect will be required for the construction. The materials will be transported from the available source to the construction site.

Figure showing the landscape of the site selected for construction of the Ranger Transit Camp at Gomthang

Figure (Google earth) map showing the over view of the proposed site and its surrounding landscape.

Figure (Google earth) map showing the over view of the proposed site and its surrounding landscape.

Some of the anticipated Environmental and Social impacts are as follows:

1. Air pollution from burning/fire activity.
2. Waste.
3. Workers health and safety.
4. Damage to sacred trees

3. Environmental and Social Impacts and Mitigation Measures

Potential impact	Impact scale	Proposed mitigation measures	Responsible party	Cost (Nu.)
1. Restoration lowland grasslands				Nu. 1,20,000/-
Invasive species to improve the degraded land	Long term Minor	• Assess appropriateness of species in terms of biodiversity, water efficiency, forest fire, local needs, cultural sensitivity, survival, etc.; • Ensure that only native species are planted.	BFL focal person in WCNP	Included in the activity cost.
Waste: from workers/ other debris	Short term Minor	• Proper containers/waste bins would be provided at the project site; • Dumping of waste in the waterholes, on the sides of the road, on private land, or in other non-designated places should be strictly prohibited; • Dumping of 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 carried out on a daily basis and not left in the protected areas;	BFL focal person in WCNP	Incorporated in the contract agreement
Workers' health and safety including COVID (Refer to the full OHS guidelines attached where ever relevant)	Short term Minor	• Comply with the workers' health and safety guidelines; • Ensure that no underage workers, or children are engaged; • Ensure decent work conditions, including an appropriate wage/salary, working hours, as per existing rates at the communities. • 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. • Strictly abide by COVID prevention protocols (use masks, maintain distance, wash hands regularly etc.)	BFL focal person in WCNP Contractor	Incorporated in the contract agreement

Burning/ usage of fire	Short term Minor	• Avoid burning, if required do control burning	BFL focal person in WCNP Workers	Included in the activity cost.
2. Conservation awareness and communication				
Waste	Short term Minor	• Waste generated will be well taken care off. • Throwing and dumping waste in forest and undesignated areas will be prohibited. Non-degradable waste will be brought back.	BFL focal and staff	Included in the activity cost.
Workers' health and safety including COVID (Refer to the full OHS guidelines attached where ever relevant)	Short term Minor	• No underage or children would be hired for this work. • Decent wages will be paid • Awarding of the work will be done under fair and just principle. • No gender biased for recruiting the workers. • Strictly abide by COVID prevention protocols (use masks, maintain distance, wash hands regularly etc.)		
3. Enrichment plantation (Felling of the bark beetle infested trees and setting trap logs)				Nu. 100,000/-
Forest fire	Short term Minor	• Burning of debarked logs or felled trees will be carried out under proper supervision. • Controlled burning will be implemented after creating proper fire lines to avoid forest fire. •	BFL focal and staff	
Waste	Short term Minor	• Plastic wastes will be brought back. • Other biodegradable wastes will be buried in the ground to avoid wild animals from consuming it. • No wastes will be dumped or thrown into water bodies/left in the forest. •	BFL focal and Range officer/staff	
Workers' health and safety including COVID (Refer to the full OHS guidelines attached where ever relevant)	Long term Minor	• Professionals (NRDCL staff) will carry the logging operation. If need be, trained power chain operators would be hired to fell the trees. • Equipment and tools would be checked beforehand to avoid mishaps. • Proper safety measures would be adopted before venturing into the work. • Strictly abide by COVID prevention protocols (use masks, maintain distance, wash hands regularly etc.) •	BFL focal Operators	
4. Construction of the Ranger Transit Camp(RTC)				
Air quality: Generation of dust is likely from the construction works.	Short term Minor	• Construction site, transportation routes and materials handling sites should be water-sprayed on dry and windy days; • Workers should wear protective masks if dust appears; • Burning of plastic originated debris from ground clearance shall be prohibited.	BFL focal person in WCNP Contractor	
Noise: Generation of	Short term		BFL Focal person	

noises from power chain, hammering works and other works.	Minor	• The construction work should not be permitted during the nights, the operations on site shall be restricted to the hours 8am - 6pm; • Earplugs and protecting devices shall be provided to workers on site if the noise is unbearable.	in WCNP Contractor	
Waste: Generation waste from construction work and workers	Short term Minor	• Proper containers/waste bins would be provided at the project site; • Dumping of waste in the waterholes or rivers, on the sides of the path, on private land, or in other non-designated places should be strictly prohibited; • Dumping of 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 carried out on a daily basis and not left in the protected areas; • Should ensure that laborer's camps are located away from existing stream, river, or water sources, and that no discharge from camps is made into nearby water bodies	BFL focal person in WCNP Contractor	Incorporated in the contract agreement
Workers' health and safety: While cutting trees, while gathering and transportation of construction materials like timber and stones to the construction site.	Short term Minor	• Should comply with the workers' health and safety guidelines; • Should ensure that no underage workers, or children are engaged; • Should ensure decent work conditions, including an appropriate wage/salary, working hours, as per existing rates at the communities/national rates. • Should 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. •	BFL focal person in WCNP Contractor	Incorporated in the contract agreement
Damage to sacred trees	Short term Minor	• Should avoid any damage or disturbance to the sacred trees. Since, Bhutanese place high reverence to those sacred trees, the workers would rather worship and offer prayers than causing any damage to the trees. • Should provide utmost care not to cause any harm during construction work.	BFL focal person in WCNP and contractor. Workers	

5. ESMP Implementation arrangements

The BFL focal person in WCNP will carry out the implementation of project activities under its supervision. The focal person will be responsible for the compliance of 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 WCNP in 2021. The Contractor/Worker 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.). The Contractor should organize an OHS information session for all workers prior to the start the project activities and prior any specific tasks with high health risks.

The WCNP 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 measures and the evidence should be kept.
Disbursement of project funds to the Contractors will be contingent upon their full compliance with the safeguard's requirements.

5. ESMP monitoring arrangements

The BFL focal person in WCNP 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. WCNP is also fully responsible for the compliance of all external contractors and service providers working in the WCNP with the safeguards requirements outlined in the

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

Activity1. Restoration of lowland grassland				
Monitoring team	**Timeline**			**Means of verification**
	Start	**During**	**Complete**	
BFL Focal	October	November	December	Field visit and reports
ESS Officer	November, 2021			reports submitted by BFL focal
Activity 2. Enrichment Plantation/ sanitation operation				
BFL Focal	April	May	June	Field visit and reports
ESS officer	June, 2021			reports submitted by BFL focal
Activity 3. Conservation awareness and communication				

BFL Focal	July, 2021	October, 2021	December	Field visits and reports
ESS officer	October, 2021			reports submitted by BFL focal
Activity 4. Construction of the Ranger Transit Camp				
BFL Focal	October,2021	November, 2021	December, 2021	Field visits and reports
ESS officer	November, 2021			Field visit and report from focal

1. Restoration of lowland grasslands

Monitoring by implementing entities:

- Field visits at least twice—during the intervention and within three months after the intervention
- Reports by the implementing entities submitted to ESS officer within a week after each field visit

Monitoring by ESS officer at PCU:

- Field monitoring by ESS officer –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 – Annual report submitted to the BFL Fund Secretariat in January, 2022.
- Bi-annual reports of the Secretariat to WWF US (as part of mid-year and final APRs)

2. **Enrichment Plantation/ sanitation operation**

Monitoring by implementing entities (BA/BC focal):

- Field visits—at least weekly
- Monthly reports by the implementing entities submitted to ESS officer

Monitoring by ESS officer at PCU:

a. Field monitoring by ESS officer - monitoring through photographic/video evidence submitted by the IAs during the implementation as per the given dateline in the table above.

b. Reports by ESS officer to BFL Fund Secretariat – Annual report submitted to the BFL Fund Secretariat in January, 2022.

Bi-annual reports of the Secretariat to WWF US (as part of mid-year and final APRs)

Activity 4. Construction of the Ranger Transit Camp

Monitoring by implementing entities:

- At least weekly field visits
- Monthly reports prepared by implementing entities and submitted to ESS officer

Monitoring by ESS officer:

- Field monitoring by ESS officer – monitoring of the work once during the implementation and through field report from IAs after completion of the work.
- Reports by ESS officer to BFL Fund Secretariat – Annual report submitted to the BFL Fund Secretariat in January, 2022.

Bi-annual reports of the Secretariat to WWF US (as part of mid-year and final APRs)

6. Capacity Need and Budget

The BFL focal person and the Range Officer of jurisdiction will employ/hire the workers and shall implement these activities under this ESMP.

The activities for this year is of small scale and moreover, the activities does not entail major environmental and social impacts. Separate budget of Nu. 50,000(lump sum) is required for implementing mitigation measures for the construction of (Ranger Transit Camp) RTC , while most of other mitigation measures will be covered under the contract agreement or incorporated in the activity cost itself.

8. Consultation and Disclosure Mechanisms

This ESMP has been prepared in a participatory manner with Range officers/In-charges under whose jurisdiction the activity falls. A community consultation will be carried out as described in section 9. This is mainly to inform local communities regarding the planned project activities, solicit their opinions, and enable them to question the proposed mitigation measures. The main issues raised during the consultation meeting will be compiled as follows:

The detailed minutes of the consultation meeting/ official correspondences will be kept as a requirement for this ESMP, along with a full list of participants (disaggregated by gender and age).

The full English version of this ESMP, as well as an executive summary in Bhutanese, shall be disclosed/uploaded on the website of MoAF, BFL and WWF, Bhutan Program. The hard copies of the ESMP would be made available at the PA Management Office and at the PCU Office.

9. Stakeholder engagement plan

The local community who are near the planned BFL activities in WCNP will be engaged throughout the implementation of these activities. Even if we cannot involve them directly in our activities, we would consult them informally and indirectly to know their point of views and suggestions. However, for some of sensitive activities like waterholes creation or development for the endangered/ highly sought-after animals, engagement of local people would possess more risk to the animal, so for the such activities, we would engage our staff.

Since, the activities proposed in this ESMP for 2021 have no direct impact on the communities; however, consultation meetings will be arranged before the implementation of the activities to avoid any chances of unforeseen impacts to the communities nearby the activity sites.

- For the construction of RTC, the park office will conduct consultation meeting towards the end of September (between 20-25 September) at Gomthang and if possible at park head office (Nasiphel).

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 focal within one week after the completion of the consultation. The ESS focal 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 BFL: SUGGESTED OCCUPATIONAL HEALTH AND SAFETY STANDARDS

Employers and supervisors are obliged to implement all reasonable precautions to protect the health and safety of workers. Implementing entities should hire contractors that have the technical capability

to manage the occupational health and safety issues of their workers, extending the application of the hazard management activities through formal procurement agreements.

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

1. General Facility Design and Operation

Integrity of Workplace Structures

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

- Surfaces, structures and installations should be easy to clean and maintain, and not allow for accumulation of hazardous compounds.
- Buildings should be structurally safe, provide appropriate protection against the 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 stall 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. Legionnella 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 overglasses or prescription hardened glasses.

Welding / Hot Work

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

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

Working Environment Temperature

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

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

Ergonomics, Repetitive Motion, Manual Handling

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

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

Working at Heights

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

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

- Inclusion of rescue and/or recovery plans, and equipment to respond to workers after an arrested fall

Illumination

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

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

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.
- 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 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