

Bhutan for Life

Environmental and Social Management Plan for Jigme Dorji National Park (2020)

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 land owners or formal users to receive compensation in such cases. Second, the WWF's SIPP require extensive community consultations as part of the development of various safeguards documents and during project activities. RGoB legislation does not include similar requirements. For the purposes of the BFL project, the provisions of the WWF's SIPP shall prevail over the RGoB legislation in all cases of discrepancy.

2. Environmental and Socio-Economic Conditions:

Administratively, JDNP encompasses fourteen Gewogs of four Dzongkhags: Gasa, Punakha, Thimphu, and Paro. Services to these districts are catered by six Park Range Offices: Lingzhi Park Range (Thimphu), Soe Park Range (Thimphu and Paro), Ruecheyna Park Range (Punakha), Gasa Park Range (Gasa), Laya Park Range (Gasa) and Lunana Park Range as shown in Figure 1. There are over 5000 people belonging to about 1000 households living inside JDNP, and they are dependent on the park's resources for daily sustenance. With its head office located at Damji in Gasa Dzongkhag, the park is currently manned by 78 staffs.

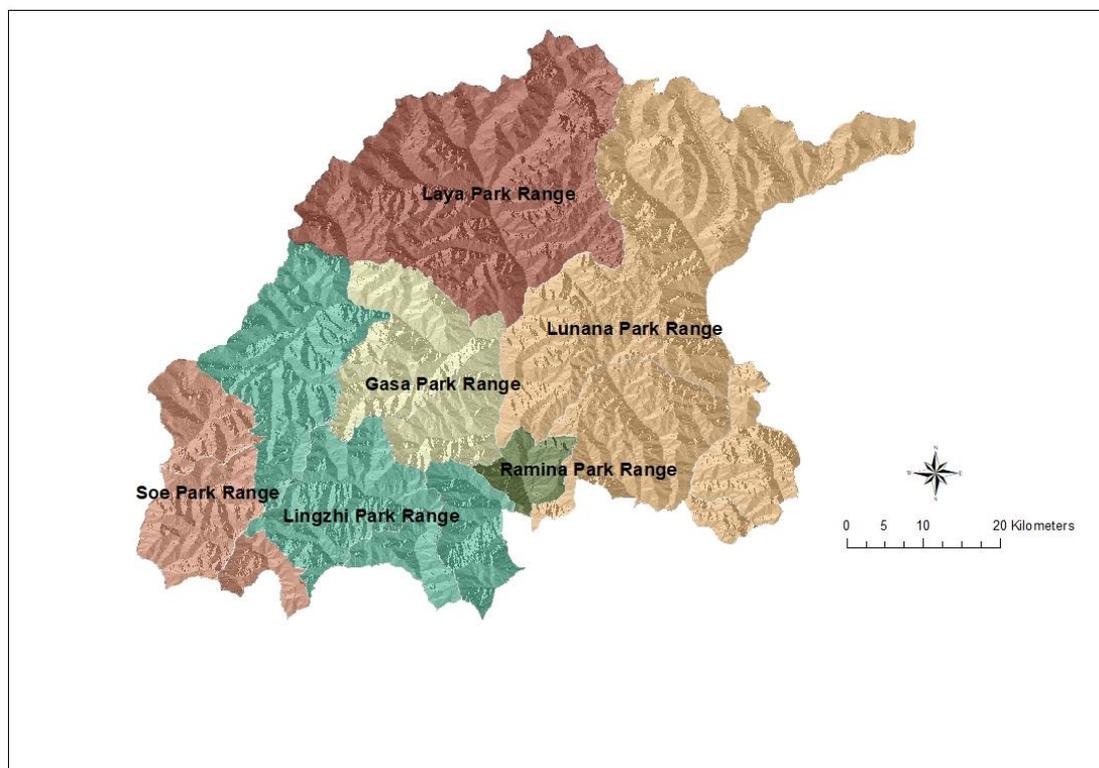


Figure 1: Map of JDNP with its range offices

Originally gazetted as a wildlife sanctuary in 1974 in fond memory of the country's much beloved Third King Jigme Dorji Wangchuk (1925-1972), Jigme Dorji National Park is one of the oldest protected areas in the country. The erstwhile wildlife sanctuary that covered almost entire northern belt of the country was confined to north-western regions of the country to cover only 3,900 km². It was later re-categorized into a national park during the nationwide review exercise conducted in 1993 and became operational only in 1995. The boundaries of the park were once again revised in 2008 and JDNP was resized to 4,316 km², making it the second largest protected area in the country, after Wangchuck Centennial National Park (WCNP).

Jigme Dorji National Park is truly a conservation jewel of Bhutan. It is the only park where there are thriving populations of the endangered Royal Bengal Tiger (*Panthera tigris*) and the endangered Snow Leopard (*Panthera uncia*). The park was recently recognized as the hotspot of snow leopard conservation in Bhutan.

As of now, 52 species of mammals belonging to 19 families and 43 genera are confirmed to be present inside JDNP. Of these, five are endangered, six are vulnerable, and nine are near threatened as per the International Union for Conservation of Nature's (IUCN) Red List of Threatened Species (IUCN 2014). In addition, 10 of these species are listed in the Schedule I of the Forest and Nature Conservation Act (FNCA) of 1995. Another salient feature that separates JDNP from the rest of Bhutan's protected areas is its harboring of the largest populations of Bhutan Takin (*Budorcas taxicolor whitei*), the national animal of Bhutan.

A total of 373 species of birds have been documented, and of which eight species are listed in the Schedule I of FNCA, 1995. The endangered Black-necked Crane (*Grus nigricolis*) makes an occasional visit to the national park during its migration to and from China. The critically endangered White-bellied Heron has feeding and nesting sites along the Phochhu and Mochhu rivers, especially in the three Gewogs of Toewang Chubu and Goenshari under Punakha Dzongkhag.

In the lower areas of the national park, the vegetation is temperate warm broadleaved forests and at an altitude of 2,000 to 3,500 masl, it is temperate cool broadleaved forests. In areas between 3,500 – 4,000 masl, the vegetation gradually transitions into mixed conifer forest. Ascending above 4,000 masl until 5,000 masl, there are thickets of stunted junipers, small-leaved rhododendrons. Areas immediately below the snow line are commonly known as alpine screes where dominant herb species of *Draba*, *Corydalis*, *Saxifraga*, *Androsace*, and *Geocarpus* abound.

JDNP has also recorded 1,434 species of vascular plants belonging to 144 families and 563 genera (9 genera and 13 species of gymnosperms and 554 genera and 1,421 species of angiosperms). Around 300 species of medicinal plants are found inside the national park, mostly in the alpine region. The most valuable and widely collected are the *Ophiocordyceps sinensis*, *Neopicrorhiza scrophulariiflora*, *Aconitum laciniatum* and *A. patulum*. In the lower areas, *Taxus baccata* (Himalayan yew) and several species of *Artemisa* are found such as the *A. dubia* and *A. myriantha* which are believed to have chemical contents that can cure many diseases.

3. Planned activities in Year 2020

The planned activities in JDNP that require an ESMP are the following:

1. Office Maintenance

This is a rehabilitation activity to maintain existing and new infrastructure in Damji and Soe Park Range at an area of 4316 square kilometer. There are 78 staffs who currently using the existing infrastructure as the office at JDNP. There are four government staff quarters nearby the project site. This activity will require wiring (electrification) of Park Range Office, and maintenance of staff quarter at Damji. The electrical wiring was done decades ago where in all wires, sockets and MCQ have become old posing serious threats to structure. Only one local electrician will be hired for electrical works. Whereas some workers will be employed to carry out maintenance works which will include plumbing, wall painting, repairing of wires. There are no households near the project site, and thus they will not be affected.

However, there will be generation of construction wastes such as old wires, sockets, bulb, tubes, and concrete waste.

2. Identify priority sites for design, and implement rural alternative energies such as biogas and solar technologies for population living inside PA

This is a new activity which is expected to enhance nature conservation and reduce dependency on natural resources. The activity will consist of installation of bio-gas plants to encourage communities to pursue clean renewable energy. This activity has been proposed mainly due to lack of electricity and low per capita income (no/less income generating sources).

Unlike the national parks and protected areas elsewhere, JDNP has large number of communities living inside the park as shown in Figure 2. The primary livelihood source of these communities is animal husbandry, agriculture farming and Non-Wood Forest Products (NWFPs) collection. It is impossible to relocate human settlements out of the park. Although, these native residents have co-existed harmoniously with the natural world, evidences of

disruptions are mounting in the wake of changing socio-economic and political situations in the country. Until a major shift occurs in the livelihoods of the people, there will always be a continuous pressure on resources inside the protected areas resulting in increasing demand for resources and encroachment into forests.



Figure 2: Remote village at Chebesa, Lingzhi in the park area

There is also instantaneous need to provide solar panels to historically significant Lhakhangs/Goendeys in remote locations where they have been denied forestry clearances (FC) for grid line connection for transmission of electricity. Therefore, households residing in remote areas have been considered. The solar lightings will also be supplied to few religious sites deprived of electricity.

The sites identified for this activity are at Khatoed, Khamoed, Laya and Lunana under Gasa Dzongkhag, Goenshari and Chhubu under Punakha Dzongkhag, Soe and Lingzhi under Thimphu Dzongkhag and Tsento under Paro Dzongkhag. The sites are located within the park area. There are 965 households at the project site and its vicinity, and about 100 households dependent on the project site. There are religious site and health centre in the area.

To pursue the promotion of alternative energy, there are three activities as follows:

i. Installation of bio-gas plants to pursue with renewable and clean energy in critical tiger habitat areas: The target beneficiaries are Khamoed Gewog (15), Goenshari Gewog (25), and Chhubu (20 HH). Due to rugged terrain, there are limited cultivable agricultural lands and thus, all most all residents rear livestock to support their living. They also largely depend on extraction of natural resources for cooking and heating their homes. Supporting them with biogas plants will largely minimize the pressure on extraction of natural resources particularly firewood. The critical tiger habitat area for JDNP also lies in these gewogs.

ii. Support solar lightings to herders in snow leopard habitat to minimize the use of shrub/trees for lighting purpose: The target beneficiaries are 100 herders in high alpine areas of Lunana, Soe, Lingzhi and Laya. The herders camp in JDNP are not connected with electric lines and they largely depend on dwarf rhododendron and juniper trees to light their herds.

iii. Support solar lightings to historically significant lhakhangs/Goendeys in remote locations in Park: The target beneficiaries are Tsechudra under Khamoed Gewog, Toenchey lhakhang, Tshojo Dzong, Noendro Lhakhang, Ramina Lhakhang, Lhedi Lhankhag under

Lunana Gewog, Rigsum Gonpa and Gonpachen under Goenshari Gewog. These lhakhangs/goendeys are still deprived of electricity lines due to their remoteness. The park denied for grid line connection for some of these Lhakhangs as it required cutting of unreasonable number of trees.

The expected quantity of water is 25000 liters during construction and operation of bio-gas plants. And, expected quantity of construction materials to be used are stone (200 MT), aggregate (200 MT), and sand (200 MT). Other resources required are cement (575 bags), iron rod (6 feet of 250 numbers), and gas stove (25 numbers).

Solid waste and odour from handling, storage, process and operations from the construction site is expected. There is also noise generation from construction works due to use of machines.

3. Manage salt licks, snags and waterholes, and manage and enhance climate-resilience of wetlands and Ramsar Sites, including enrichment planting (using climate information wherever relevant)

Under the Bhutan for Life project, the JDNP management will be improving waterholes in the identified sites at Lingzhi Park Range, Soe Park Range, Lunana Park Range & Gasa Park Range with an area of 745 square kilometer. The frequency of wildlife sighting in national parks engaged in salt lick and waterhole sites demonstrates the significance of the such areas. It also highlights the need to focus conservation efforts on their protection. The proposed areas for this activity falls inside the alpine meadows and on the gentle slope. There are 70 households at the project site and its vicinity, and about 50 households dependent on the project site or their livelihood. The primary livelihood source of the communities is animal husbandry, agriculture farming and NWFP collection.

The sub-activities are:

i. Divert the existing trail (from Chebesa to Jagaypasa) which goes through the salt lick area and develop new trail from above the salt lick area to minimize the disturbance to wildlife and make the area available to wildlife throughout the year. The workers will be camping at site, and there will be 5 workers for 2 weeks;

ii. Create waterholes in the blue sheep and snow leopard habitat under Lingzhi range and Soe range jurisdiction to make water available especially in winter season; and

iii. Improve waterhole at Geyzaringu and Kewana under Gasa and Lunana range jurisdiction

The local workers will be employed. The expected quantity of water is 3000 liters during construction and operation. And, expected quantity of construction materials to be used are stone (40 MT), aggregate (16 MT), and sand (16 MT). Other resources required is 10 bags of cement. Solid waste form the construction site is expected.

4. Lowland grassland

JDNP occupies northern part of Bhutan and almost 1,000 households live within the park. The people in these areas practice subsistence agriculture farming and animal husbandry besides huge income from Cordycep and other NWFPs collection. Majority of the community in alpine areas have been rearing yaks and horses for decades. However, due to rapid changes in socio-economic situation in the country, yak herding population is on the decline annually. At present, every household owns a small scale of pasture area in their registered land. To incentivize the yak herder in highland, the JDNP has proposed this activity in Soe and Laya.

The location of this activity is in Soe Yaksa and Soe Yoetey in Thimphu and Laya in Gasa Dzongkhag with an area of 50 acres (25 acres each in Soe and Laya). There are 310 households near the project area, and they depend on animal husbandry, agriculture farming, and NWFP

collection. This activity is expected to motivate alpine pastoralist to improve pasture land as they depend on livestock to support their livelihoods. The target beneficiaries are selected households in high alpine areas of Soe & Laya. The sub-activities include conducting consultation meeting with communities and livestock officials, supplying fodder seeds to selected households, and supplying fencing and barbered materials to selected households.

5. Riverbank protection

This is a new activity at the Lingzhi Park Range in Kawang Gewog, at an area of 745 sq. km. The project will be implemented at the Gypethang in Lingzhi Park Range under Jigme Dorji National Park. The proposed sites have been previously damaged by the natural disasters and developmental activities. The proposed project site has been recently damaged by construction of intake and sedimentation tank for Thimphu city water supply. It warrants immediate restoration and improvement. This activity is expected to achieve two most important objectives: a) to restore the damaged river bank and prevent from further erosion, and b) maintain and improve healthy riparian vegetation to provide natural habitat to aquatic animals.

The riverbank protection works will be carried out along the Wangchu river inside the mixed broadleaved forest on the gentle slope as shown in Figure 3. The activity will involve constructing retaining wall to avoid heavy water flow especially in the summer season. The river bank protection work involves stacking of boulders along the river banks and covering with mosses and lichens to prevent from flooding and further erosion as well as reduce the risk to infrastructure inside the recreational area. The river bank protection works will protect the existing Barshong road from flooding and significantly reduce risk to infrastructures inside the lone recreational area at Gypethang.

The improvement of riparian areas involves leveling of ground, filling with topsoil, broadcasting of grass seeds, planting of native species to provide natural habitat to aquatic animals with random placing of rocks wherever necessary. This will not only enrich the aquatic wildlife habitat but reduce river bank erosion. There will be minimum impact to the surrounding environment as locally available and eco-friendly materials will be used.

The workers including truck drivers and a machine operator will be engaged for transportation of project materials and arrangement or leveling of boulders. The expected quantity of water is 1000 liters during construction and operation. And, expected quantity of construction materials to be used are stone (80 MT), and soil (100 MT). Other resources required are seedlings (100 nos.) and grass seed (1 kg).



Figure 3: River bank protection sites

6. Physically demarcate all PAs/BCs and provide ongoing maintenance- combined zonation and Pillar fixing

This is a new activity in an area of 4316 sq. km in JDNP. This activity involves consultative meetings with stakeholders on Park boundary (National Land Commission, Nature Conservation Division, Dzongkhags, Gewogs, relevant ministerial departments, etc.). It will also re-work on zonation (mainly refining the zones as per the current guideline, boundary fixing, public consultation).

JDNP is located in the north western part of Bhutan covering approximately 1/10th of the total geographical area of the country. Community participation has played a vital role in the success of JDNP management over last four and half decades of its conservation history. The park envisions being ‘a conservation heritage of harmonious co-existence between human and nature in northwestern Bhutan, providing vital ecological services and natural resources in an equitable and sustainable manner’. However, due to its high biological diversity coupled with presence of settlements inside the park in its huge geographical settings, defining the management regimes based on different conservation zones became crucial to strike a balance while at the same time providing rights to the people to use the resources. Zoning will be based on consultative process and field data of both present and the past years by the park officials. The communities will not be affected.

4. Environmental and Social Impact and Mitigation measures

1. Office Maintenance

Environmental Impacts: The negative environmental impacts from the project are anticipated to be minimal. These are impacts, which are likely to be site-specific and could potentially include:

- Noise
- Waste management during construction

Social Risks/Impacts: Although most of the measures have taken into account prior to construction, some of the measures have to be taken into consideration as the project is just at the beginning phase. Some of the social risks associated with the project include:

- Occupational health and safety hazards, especially for construction workers.

2. River bank protection

Environmental Impacts: The negative environmental impacts from the project are anticipated to be minimal. These are impacts, which are likely to be site-specific and could potentially include:

- Water contamination as a result of construction

Social Risks/Impacts: Although most of the measures have taken into account prior to construction, some of the measures have to be taken into consideration as the project is just at the beginning phase. Some of the social risks associated with the project include:

- Occupational health and safety hazards, especially for construction workers.
- Waste management during construction
- Workers' health and safety

3. For zonation and demarcation

- community conflict regarding access and usage rights of natural resources
- waste from the meeting and pillars (workers)

4. For the improvement of waterholes

- Waste: soil from excavation activities and waste from construction activities
- Increase poaching
- Social impacts as workers' health and safety

5. Bio gas and solar initiatives

- Risk of an increased methane emission (foul smell and risk fire when methane comes in contact with oxygen)
- Risk that lack of proper maintenance of the solar panels will result in environmental waste

6. Lowland grassland

- Fodder seeds
- Waste
- Occupational health and safety

However, given the scale of the project, these risks are expected to be minimal, site-specific and those for which mitigation measures can easily be developed through standard and applicable regulations. These impacts are again site-specific, reversible and can be minimized/mitigated by developing appropriate measures. Specifically, to address these concerns, the project will comply with the relevant Acts and Rules and Regulations of the Kingdom of Bhutan. ESMP is prepared as per requirement based on ESMF to ensure adequate mitigation measures.

Therefore, for all the potential adverse impacts of environment and social related to each activity, mitigation measures have been prepared as shown in the table below.

1. Office maintenance at Soe Park Range and Damji

Potential impact	Impact scale	Proposed mitigation measures	Responsible party	Cost
Office maintenance at Soe Park Range and Damji				US\$ 70,000

<p><i>Noise disturbance:</i> Possible noise disturbance</p>	<p>Short term Minor</p>	<p><i>Pre-construction:</i> requirements to limit noise pollution 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"> • Noise level control should be performed before the startup of construction activities; • The equipment should be fitted with appropriate noise devices that will reduce sound level; • The construction work should not be permitted during the nights, the operations on site shall be restricted to the hours 7am-7pm; <p>Earplugs and protecting devices shall be provided to workers on site.</p>	<p>BFL focal person in JDNP</p> <p>Electrician</p>	<p>Incorporated in the contract agreement.</p>
<p><i>Waste:</i> generation of waste as a result of construction activities</p>	<p>Short term Minor</p>	<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; • Proper containers/waste bins should be provided; • Dumping of waste or in other non-designated places should be prohibited; • Collection, transportation and final disposal of all waste should be undertaken regularly [weekly]; • Burning of construction waste should be prohibited. <p><i>After construction:</i> All waste shall be removed from the project site.</p>	<p>BFL focal point in JDNP</p> <p>Electrician</p>	<p>Incorporated in the contract agreement.</p>
<p><i>Workers' health and safety</i></p>	<p>Short term Minor</p>	<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; 	<p>BFL focal point in JDNP</p> <p>Electrician</p>	<p>Incorporated in the contract agreement.</p>

		<ul style="list-style-type: none"> • Ensure that workers are employed on the principle of equal opportunity and fair treatment, and there is no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices; • Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. 		
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2. Installation of bio-gas and solar initiatives

Potential impact	Impact scale	Proposed mitigation measures	Responsible party	Cost
Installation of bio-gas and solar initiatives				US\$ 70,000
Risk of an increased methane emission (foul smell and risk fire when methane comes in contact with oxygen)	Short term Minor	<ul style="list-style-type: none"> • Properly cover and secure biogas plant and internal gas connections; • Consult and agree with community members on the most appropriate installation locations 	BFL focal person in JDNP	Incorporated from the activity cost Consultation cost: Nu13,000 = USD 184.4 [Khamoed Gewog $15 * 215 =$ $3225 / 70.5 = US\$ 45.74$ Goenshari Gewog $25 * 215 = 5375 / 70.5 =$ $US\$ 76.24$ Chhubhu Gewog $20 * 215 =$ $4300 / 70.5 = US\$ 60.99$]
Risk that lack of proper maintenance of the solar panels will result in environmental waste	Long term Minor	<ul style="list-style-type: none"> • Ensure that proper maintenance plan is in place and implemented 	BFL focal person in JDNP	Incorporated from the activity cost

3. River Embankment construction

Potential impact	Impact scale	Proposed mitigation measures	Responsible party	Cost
River Embankment construction				US\$ 3,000
Waste management during construction	Short term Minor	<ul style="list-style-type: none"> • Proper containers/waste bins should be provided at the project site; • Dumping of waste in the river, in its vicinity, or in other non-designated places should be strictly prohibited; 	BFL focal person in JDNP Contractor	Incorporated in the bidding document.

		<ul style="list-style-type: none"> Collection, transportation and final disposal of all waste should be carried out on a daily basis and not left in the river areas; <p>Burning of construction waste should be prohibited.</p>		
Water contamination as a result of construction	Short term Minor	<ul style="list-style-type: none"> Avoid pouring construction materials into the river. 	BFL focal person in JDNP Contractor	Incorporated in the bidding document.
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 employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices; Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns 	BFL focal person in JDNP Contractor	Incorporated in the bidding document.

4. Zonation and pillar fixing

Potential impact	Impact scale	Proposed mitigation measures	Responsible party	Cost
Zonation and pillar fixing				US\$10,000
Community conflict regarding access and usage rights of natural resources	Long term Minor	All project activities will only be undertaken upon consultation with local communities, local authorities and other members of the public who are affected or have a stake in local land use. Community management plans should be developed in a participatory and consultative manner to ensure that access rights are agreed upon among community members.	BFL focal person in JDNP	Incorporated from the activity cost.

5. Improvement/construction of waterholes

Potential impact	Impact scale	Proposed mitigation measures	Responsible party	Cost
Improvement/construction of waterholes				US\$4,761.90
Waste: soil from excavation activities and waste from construction activities	Short term Minor	<ul style="list-style-type: none"> • Proper containers/waste bins should 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; • Burning of construction waste should be prohibited. 	BFL focal person in JDNP Contractor	Incorporated in the contract agreement.
Workers' health and safety	Short term Minor	<ul style="list-style-type: none"> • Comply with the workers' health and safety guidelines; • Ensure that no underage workers, or children are engaged; • Ensure decent work conditions, including an appropriate salary, working hours, accommodation and food for workers shall be provided to all workers; • Ensure that workers are employed on the principle of equal opportunity and fair treatment, and there is no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices; • Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. 	BFL focal person in JDNP Contractor	Incorporated in the contract agreement.
Increase poaching	Short term Minor	<ul style="list-style-type: none"> • Construct waterholes in areas where poaching is limited; • Park authorities shall carry out increased patrolling during and after the waterhole construction. 	BFL focal person in JDNP Contractor	Patrolling as part of their regular patrolling.

6. Restoration of lowland grasslands

Potential impact	Impact scale	Proposed mitigation measures	Responsible party	Cost
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Restoration of lowland grasslands (supply fodder seeds to selected households, and supply fencing materials to selected household to improve pasture land)				US\$ 3,000
Use of non-native/invasive fodder seeds	Short term Minor	<ul style="list-style-type: none"> Ensure supply of native fodder seeds 	BFL focal person in JDNP	Incorporated in the activity cost
Community conflict regarding access and usage rights of natural resources	Short term Minor	<ul style="list-style-type: none"> Consultation with the communities 	BFL focal person in JDNP	$310 * 215 = Nu. 66,650 = US\$ 950.35$
Waste: soil from excavation activities and waste from construction activities	Short term Minor	<ul style="list-style-type: none"> Proper containers/waste bins should 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; Burning of construction waste should be prohibited. 	BFL focal person in JDNP Contractor	Incorporated in the contract agreement.
Workers' health and safety	Short term Minor	<ul style="list-style-type: none"> Comply with the workers' health and safety guidelines; Ensure that no underage workers, or children are engaged; Ensure decent work conditions, including an appropriate salary, working hours, accommodation and food for workers shall be provided to all workers; Ensure that workers are employed on the principle of equal opportunity and fair treatment, and there is no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices; Implement a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns 	BFL focal person in JDNP Contractor	Incorporated in the contract agreement.

5. ESMP Implementation arrangements

The implementation of project activities will be carried out by the BFL focal person JDNP. The focal person will be responsible for compliance with all procedures outlined in this ESMP, as well as compliance with any requirements to obtain clearances, permits, approvals, or consent documents from relevant authorities and stakeholders.

This ESMP should be part of the contract that the PA will sign with the Contractor(s) for implementation of the planned activities in JDNP in 2020. The Contractor is obligated to perform all proposed preventive or mitigation environmental and social measures in this plan and to keep the evidence of any documents related to applying these measures (e.g., letter asking the municipality for disposal of inert waste, records on OHS information session performed for all workers before start of activities, all developed EHS plans, etc.). An OHS information session should be organized by the Contractor for all workers prior start the project activities and prior any specific tasks with high health risks.

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

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

6. ESMP monitoring arrangements

The BFL focal person in JDNP 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.

JDNP is also fully responsible for the compliance of all external contractors and service providers working in the JDNP with the safeguards requirements outlined in the ESMP. The monitoring of activities under this ESMP will be carried out in the following manner:

1. Office maintenance at Soe Park Range and Damji

- Monitoring by implementing entities:
 - At least daily - August 2020 until completion
 - Monthly reports prepared by implementing entities and submitted to ESS consultants - September 2020 until completion
- Monitoring by ESS consultants:
 - At least one field visit by ESS consultants - October 2020
 - Reports by ESS consultants to the PCU (M&E officer) - within two weeks after the field visit and for annual reporting in December 2020
- Annual report by PCU (M&E officer) to Secretariat - January 15, 2021
- Annual reports of the Secretariat to WWF US (as part of mid-year and APR) - January 30, 2021

2. Installation of bio-gas and solar initiatives

- Monitoring by implementing entities:

- Field visits at least twice - during the intervention and three months after the intervention (please adapt based on field conditions) - August 2020, November 2020
- Reports by the implementing entities submitted to ESS consultants weekly during the intervention - November 2020
- Monitoring by ESS consultants:
 - Field visits by ESS consultants - at least once during the intervention-
 - Reports by ESS consultants to the PCU (M&E officer) - within two weeks after the field visit and for annual reporting in December 2020
- Annual report by PCU (M&E officer) to Secretariat - January 15, 2021
- Annual reports of the Secretariat to WWF US (as part of mid-year and APR) - January 30, 2021

3. River Embankment construction:

- Monitoring by implementing entities:
 - Field visits - at least weekly - October 2020 until completion
 - Monthly reports by the implementing entities submitted to ESS consultants - November 2020 until completion
- Monitoring by ESS consultants:
 - Field visits - at least twice during the construction activities - October 2020, December 2020
 - Reports by ESS consultants to the PCU (M&E officer) - within two weeks after the field visit and for annual reporting in December 2020
- Annual report by PCU (M&E officer) to Secretariat - January 15, 2021
- Annual report by the Secretariat to WWF US (as part of mid-year and APR) - January 30, 2021

4. Zonation and pillar fixing

- Monitoring by implementing entities:
 - Field visits - at least once during the intervention by implementing entities, and then three months after the intervention - August 2020, November 2020
 - Reports submitted by the implementing entities to ESS consultants once after the completion of the intervention, and then three months after the intervention - November 2020
- Monitoring by ESS consultants:
 - Field visits - at least once during the intervention - November 2020
 - Reports submitted once by ESS consultants within a week after the field visit, and then for annual reporting to the PCU (M&E officer) - November 2020, December 2020
- Annual report by PCU (M&E officer) to Secretariat - January 15, 2021
- Annual reports of the Secretariat to WWF US (as part of mid-year and APR) - January 30, 2021

5. Improvement of waterhole:

- Monitoring by implementing entities:

- Field visits at least twice - during the intervention and then monthly as part of the “SMART patrolling” activity (please adapt based on field conditions, and also based on the availability of SMART patrolling activities) - September 2020, October 2020
- Reports by the implementing entities submitted to ESS consultants weekly during the intervention and then monthly after the intervention is - November 2020, December 2020
- Monitoring by ESS consultants:
 - Field visits by ESS consultants - at least once during the intervention - November 2020
 - Reports by ESS consultants to the PCU (M&E officer) - within two weeks after the field visit and for annual reporting - November 2020, December 2020
- Annual report by PCU (M&E officer) to Secretariat - January 15, 2021
- Annual reports of the Secretariat to WWF US (as part of mid-year and APR) - January 30, 2021

6. Restoration of lowland grasslands

- Monitoring by implementing entities:
 - Field visits at least twice - during the intervention and within three months after the intervention - September 2020, December 2020
 - Reports by the implementing entities submitted to ESS consultants within a week after each field visit - October 2020, December 2020
- Monitoring by ESS consultants:
 - Field visits by ESS consultants - at least once during the intervention, together with the implementing party - December 2020
 - Reports by ESS consultants to the PCU (M&E officer) - within two weeks after the field visit and for annual reporting in December 2020
- Annual report by PCU (M&E officer) to Secretariat - January 15, 2021
- Annual reports of the Secretariat to WWF US (as part of mid-year and APR) - January 30, 2021

7. Capacity Need and Budget

Activities under this ESMP will be implemented by the BFL focal person, supervising engineer, and a contractor that will employ workers. The budget for each activity is as follows:

1. Office maintenance at Soe Park Range and Damji - US\$ 5800
2. Implementation of bio-gas and solar initiatives - US\$ 70,000
3. Riverbank Protection - US\$ 3,000
4. Zonation and pillar fixing - US\$10,000
5. Improvement of waterholes and salt licks - US\$4,761.90
6. Lowland grassland - US\$ 3000

A separate budget of US\$ 1128.37 will cover the implementation of the ESMP mitigation measures.

8. Consultation and Disclosure Mechanisms

This ESMP has been prepared in a participatory manner with WCNP. 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 proposed mitigation measures. The main issues that were raised during the consultation meeting include the following:

The detailed minutes of the consultation meeting 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 on the website of MoAF, BFL and WWF, Bhutan Program. Hard copies of the ESMP should also be available at the PA Management Office and at the PCU Office.

9. 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.

- For all construction activities (construction of offices and riverbank protection)—one consultation meeting has to be organized during the intervention period, and subsequent consultations have to be held annually (these can be combined with consultations for other BFL or non-BFL activities).
- Maintenance - consultation is not required as it is on an existing structure
- Lowland grassland - August 2020 (community)
- Solar - August 2020 (community)
- Bio gas - August 2020 (community)
- Pillar fixing - August 2020 (Gewog and Dzongkhag)
- Water holes- September 2020 (community)
- River bank - October 2020- (community)
- For activities that have no direct impact on communities (improvement of lowland grassland and waterhole rehabilitation)—consultation meetings have to be organized once a year (can be combined with consultations for other BFL or non-BFL activities).

The BFL focal person has to 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.