

**Environmental and Social Considerations in Detailed Planning Survey**  
**(Technical Cooperation for Developing Planning)**

Date: 1 March 2021

**1. Full title of the Project**

Project for the Formulation of Southern Central Regional Plan (hereinafter referred to as “the Project”)

**2. Type of the Project**

Formulation of a master plan

**3. Categorization and Its Reason**

The Project shall formulate a Regional Plan and Regional Centre Structure Plan.

The Project is categorized as a “Category B” project because the Project is not likely to have significant adverse impact on the environment under the JICA Guidelines for Environmental and Social Considerations (2010) in terms of its sectors, characteristics and areas.

**4. Agency or Institution Responsible for the Implementation of the Project**

Department of Human Settlement under the Ministry of Works and Human Settlement of Bhutan

**5. Outline of the Project**

(1) Title of the Project

“Project for the Formulation of Southern Central Regional Plan”

(2) Expected Goals which will be attained after implementing the proposed plan

Linked Urban Centre and Regional Centre Concept proposed in the CNDP 2030 will be adopted.

(3) Outputs

Output 1 : Regional Plan

The Strategy for regional development in Sarpang Dzongkhag and surrounding

Dzongkhags (Tsirang and Zhemgang). The plan consists of Regional Development Strategy and Regional Spatial Plan.

Output2 : Sarpang-Gelephu Regional Centre Structure Plan

The Structure Plan for Sarpang-Gelephu linked urban centre including settlements along the Sarpang-Gelephu Corridor, between Sarpang town and Gelephu Thromde.

Output3: General Standards and Guidelines

The General Standards and Guidelines for nationwide application (to be applied in the urban/regional development in other regions).

**6. Description of the Project Site**

(1) Target Area

Regional Plan covering the three Dzognkhags of Sarpang, Tsirang and Zhemgang; and Sarpang-Gelephu Regional Centre Structure Plan covering the Sarpang-Gelephu Corridor area within Sarpang Dzognkhag.



**Figure: Target areas of the Project**

Source: JICA mission team

(2) Description of the Environment

① Natural Environment

i. Land cover

Based on Bhutan RNR Statistics (2015), land cover is composed in Sarpang Dzongkhag

of 88% of forest, 3.99% of agriculture and 0.19% of built-up, in Tsirang Dzongkhag of 87.34% of forest, 7.37% of agriculture and 0.27% of built-up and in Zhemgang Dzongkhag of 87.71% of forest, 1.7% of agriculture and 0.03% of built-up. Although forest is the major land cover, forest cover has decreased more than a 10% in 5 years (between 2010 and 2015) in target Dzongkhags.

Due to its relatively flat terrain and its location as a nodal point in central India and Bhutan, Sarpang-Gelephu corridor and especially the city of Gelephu and its surroundings are considered suitable for future development.

#### ii. Protected Areas

The following protected areas are located in the target area: Royal Manas National Park (IUCN Category II), Jigme Singye Wangchuck National Park (IUCN Category II), Phisboo Wildlife Sanctuary (IUCN Category IV) or Biological Corridor Number 3.

### ② Social Environment

#### i. Population

Based on the Population and Housing Census of Bhutan (2017), Sarpang Dzongkhag has a population of 45,638 for an area of 1,666 km<sup>2</sup>, Tsirang Dzongkhag has a population of 21,815 for an area of 638 km<sup>2</sup> and Zhemgang Dzongkhag has a population of 21,501 for an area of 2,416 km<sup>2</sup>.

The corridor from Sarpang to Gelephu is about 35.66 km. Major settlements along the corridor are Sarpang, Gelephu and Jigmeling. Sarpang Dzongkhag has a total population of 46,004 people and the gewogs through which the corridor passes have a population of 5,980 people in Dekiling, 2,801 in Samtenling, 6,457 in Gelephu and 1,486 in Sompangkha. Gelephu Thromde has a population of 9,858 and Sarpang town has 3,152 people. Thus, the approximate catchment population of any interventions made in the Sarpang-Gelephu corridor is 29,734.

#### ii. Income and Employment

Based on Bhutan Living Standard Survey (2012), average annual household is of 133,002 Nu in Sarpang Dzongkhag, 137,076 Nu in Tsirang Dzongkhag and 92,618 Nu in Zhemgang Dzongkhag.

Based on Annual Dzongkhag Statistics (2016) and Bhutan Living Standard Survey (2012), unemployment rate is of 4.6% in Sarpang Dzongkhag, 4.7% in Tsirang Dzongkhag and 1.3% in Zhemgang Dzongkhag.

## 7. Legal framework of the Environmental and Social Considerations in Bhutan

### (1) Relevant Laws

- The National Environment Protection Act 2007<sup>1</sup> gives all Bhutanese basic rights to a safe and healthy environment with an obligation to protect and promote the national environmental welfare. The law states that economic development and environmental protection should receive equal priorities, in line with Bhutan's guideline, the "Middle Path".
- The Forest and Nature Conservation Act of Bhutan<sup>2</sup> regulates the use of public and private forests, protects forests, wildlife and plants, and conserves soil and water resources. It was first enacted in 1995 and then updated in 2006, 2017 and 2020.
- The Rules on Biological Corridors<sup>3</sup> were enacted as an addendum to the above-mentioned Act.

### (2) Environmental Assessment including SEA

- Prior to the National Environmental Protection Act 2007, the Environmental Assessment Act<sup>4</sup>, enacted in 2000, stipulates the procedures for approval of environmental impact assessments for various projects.
- The act is supported by the following rules and guidelines aimed at guiding its implementation: Regulation for the Environmental Clearance of Projects 2016, General Guideline of Environmental Assessment 2012, Sector Environmental Assessment Guidelines (Forestry, Hydropower, Mines, Tourism, Highways and Roads, Power Lines, Urban Development, Industry) 2012.
- The Regulation on Strategic Environmental Assessment<sup>5</sup>, developed in 2002, is used to develop, change, update, or implement policies, plans, or programs that may have a significant impact on the environment. It stipulates guidelines that government agencies should follow. Strategic Environmental Assessment shall be conducted by the institution based on the principles outlined in Article 8. If a strategic environmental assessment is required, an environmental statement shall be included (Article 10).

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<sup>1</sup> National Environment Protection Act 2007 <http://extwprlegs1.fao.org/docs/pdf/bhu78334E.pdf>

<sup>2</sup> Forest and Nature Conservation Act of Bhutan 1995, 2020 [https://www.nationalcouncil.bt/assets/uploads/docs/acts/2017/Forest-and-Nature-Conservation-Act-of-Bhutan1995\\_English\\_1.pdf](https://www.nationalcouncil.bt/assets/uploads/docs/acts/2017/Forest-and-Nature-Conservation-Act-of-Bhutan1995_English_1.pdf)

<sup>3</sup> RGoB, Ministry of Agriculture, Department of Forests. *Rules on Biological Corridors as an Addendum to the Forest and Nature Conservation Rules 2006, 2007* <http://extwprlegs1.fao.org/docs/pdf/bhu82936.pdf>

<sup>4</sup> Environmental Assessment Act, 2000. <http://oag.gov.bt/wp-content/uploads/2010/05/Environmental-Assessment-Act-of-Bhutan-2000English-version.pdf>

<sup>5</sup> Regulation on Strategic Environmental Assessment, 2001. <http://extwprlegs1.fao.org/docs/pdf/bhu61364.pdf>

## 8. Provisional Scoping

The Project will formulate integrated regional and spatial plans for different target areas in the Sarpang-Gelephu region. Since the contents of each plan have not been specified at this stage, the impact on natural and social environment cannot be evaluated concretely. Therefore, preliminary scoping shown in below Table was performed based on the possible impact items. Planning of urban infrastructure (currently unknown), urban development, industrial development (agriculture, industry, tourism), social infrastructure service development, transportation, and water and sewage is assumed as development target sectors of the Project.

**Table: Provisional Scoping of the Project**

Category	No.	Environmental Item	Evaluation		Explanation of the Impacts
			Planning & Construction Stages	Operation Stage	
Pollution Control	1	Air quality	C	C	<p>Details of the impact are unknown since specific plans and proposals are still undecided, but the following should be noted.</p> <p><b>【During construction stage】</b></p> <ul style="list-style-type: none"> <li>- Air pollution caused by heavy construction equipment and vehicles</li> </ul> <p><b>【During operation stage】</b></p> <ul style="list-style-type: none"> <li>- Air pollution due to the establishment of industrial areas in industrial development</li> <li>- Exhaust gas pollution due to an increase in traveling vehicles due to urban development</li> </ul>
	2	Water quality	C	C	<p>Details of the impact are unknown since specific plans and proposals are still undecided, but the following should be noted.</p> <p><b>【During construction stage】</b></p> <ul style="list-style-type: none"> <li>- Water pollution caused by heavy construction equipment and vehicles</li> </ul> <p><b>【During operation stage】</b></p> <ul style="list-style-type: none"> <li>- Water pollution due to wastewater and sewage from newly established industrial estates and tourist areas such as hotels</li> <li>- Water pollution due to sewage treatment from new urban development and wastewater from waste treatment plants</li> </ul>

Category	No.	Environmental Item	Evaluation		Explanation of the Impacts
			Planning & Construction Stages	Operation Stage	
	3	Waste	C	C	<p>Details of the impact are unknown since specific plans and proposals are still undecided, but the following should be noted.</p> <p><b>【During construction stage】</b></p> <ul style="list-style-type: none"> <li>- Waste from construction workshops, etc.</li> </ul> <p><b>【During operation stage】</b></p> <ul style="list-style-type: none"> <li>- Waste from the establishment of industrial areas and tourist areas such as hotels</li> <li>- Urban waste from new urban development</li> <li>- Disposal of medical waste from newly established medical facilities according to the development of social infrastructure</li> </ul>
	4	Soil contamination	C	C	<p>Details of the impact are unknown since specific plans and proposals are still undecided, but the following should be noted.</p> <p><b>【During construction stage】</b></p> <ul style="list-style-type: none"> <li>- Soil pollution due to heavy construction machinery, vehicle oil, etc.</li> </ul> <p><b>【During operation stage】</b></p> <ul style="list-style-type: none"> <li>- Soil pollution due to the establishment of industrial areas</li> <li>- Soil pollution due to new urban development</li> <li>- Soil pollution caused by sewage treatment plants and waste treatment plants</li> </ul>
	5	Noise & vibrations	C	C	<p>Details of the impact are unknown since specific plans and proposals are still undecided, but the following should be noted.</p> <p><b>【During construction stage】</b></p> <ul style="list-style-type: none"> <li>- Noise and vibration from heavy construction equipment and vehicles</li> </ul> <p><b>【During operation stage】</b></p> <ul style="list-style-type: none"> <li>- Noise in the to be developed area around Gelephu Airport</li> </ul>
	6	Subsidence	C	C	<p>Details of the impact are unknown since specific plans and proposals are still undecided, but the following should be noted.</p> <p><b>【During planning stage】</b></p>

Category	No.	Environmental Item	Evaluation		Explanation of the Impacts
			Planning & Construction Stages	Operation Stage	
					- Formulate a land use plan that avoids risks of landslides in the target area and does not affect the stability of the ground.
	7	Odor	C	C	<p>Details of the impact are unknown since specific plans and proposals are still undecided, but the following should be noted.</p> <p><b>【During construction stage】</b></p> <ul style="list-style-type: none"> <li>- Bad odor caused by waste and sewage from construction sites</li> </ul> <p><b>【During operation stage】</b></p> <ul style="list-style-type: none"> <li>- Bad odor from waste, wastewater, and sewage caused by the establishment of industrial areas and tourist areas such as hotels</li> <li>- Bad odor due to waste from new urban development areas</li> <li>- Bad odor from new waste treatment plant</li> </ul>
	8	Sediment	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.
Natural Environment	9	Protected areas	C	C	<p>Details of the impact are unknown since specific plans and proposals are still undecided, but the following should be noted.</p> <p><b>【During planning stage】</b></p> <ul style="list-style-type: none"> <li>- Although large-scale development are not planned in Royal Manas National Park (IUCN Category II), Jigme Singye Wangchuck National Park (IUCN Category II), Phisboo Wildlife Sanctuary (IUCN Category IV) or Biological Corridor Number 3 located in the target area, it is necessary to consider how to improve the lives of the people settled in or in the vicinity of protected areas</li> <li>- While planning future road network in the transportation sector, consider avoiding the crossing of protected areas or Biological Corridor Number 3.</li> </ul> <p><b>【During operation stage】</b></p> <ul style="list-style-type: none"> <li>- In the case the development site is close to a protected area,</li> </ul>

Category	No.	Environmental Item	Evaluation		Explanation of the Impacts
			Planning & Construction Stages	Operation Stage	
					appropriate monitoring is required.
	10	Ecosystem	C	C	<p>Details of the impact are unknown since specific plans and proposals are still undecided, but the following should be noted.</p> <p><b>【During planning stage】</b></p> <ul style="list-style-type: none"> <li>- As listed in one of the four pillars of GNH, protection of the natural environment (including ecosystems other than protected areas) is recognized as an important development philosophy to formulate a plan.</li> <li>- In the target area, coexistence of wildlife and people has become an issue, and a plan that takes into consideration the ecosystem and routes of elephants shall be formulated.</li> </ul> <p><b>【During operation stage】</b></p> <ul style="list-style-type: none"> <li>- Appropriate monitoring is required if there are important ecosystems or routes in the vicinity of development zones</li> </ul>
	11	Hydrology	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.
	12	Topography & geology	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.
Social Environment	13	Involuntary resettlement	C	C	<p>Details of the impact are unknown since specific plans and proposals are still undecided, but the following should be noted.</p> <p><b>【During planning stage】</b></p> <ul style="list-style-type: none"> <li>- Since the population density is low in the target area, it is expected to formulate a plan that will not cause involuntary relocation of residents in the case of construction of facilities etc.</li> </ul>
	14	Poverty	C	C	The details of the impact are unknown because the details of the specific plans and proposals are undecided, but this Project, in line with CNDP 2030, aims at sustainable and interregional socio-economic development and consider poverty reduction.



Category	No.	Environmental Item	Evaluation		Explanation of the Impacts
			Planning & Construction Stages	Operation Stage	
	15	Indigenous or ethnic minority	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.
	16	Local economies, employment, livelihood	B+	A+	It is expected that the Project contributes to the development of local economy, by the creation of employment and livelihood means, by integrating urban development, infrastructure development, industrial promotion, and social infrastructure service development both during construction and operation phases.
	17	Land use & utilization of local resources	C	C	Details of the impact are unknown since specific plans and proposals are still undecided, but the following should be noted. <b>【During planning stage】</b> - As stated as one of the strategic objective of the National Environment Strategy 2020, a balanced land use plan is emphasized, and the Project shall consider those recommendations
	18	Water usage	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.
	19	Social infrastructure & services	C	A+	Details of the impact are unknown since specific plans and proposals are still undecided, but the following should be noted. <b>【During operation stage】</b> - It is expected that the lives of local people will be improved by improving existing social infrastructure and services and planning further development.
	20	Misdistribution of damage and benefits	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.
	21	Local conflicts of interest	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.
	22	Cultural heritage	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.
	23	Landscape	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.

Category	No.	Environmental Item	Evaluation		Explanation of the Impacts
			Planning & Construction Stages	Operation Stage	
	24	Gender	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.
	25	Children's rights	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.
	26	Infectious diseases such as HIV/AIDS	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.
	27	Labor conditions	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.
Others	28	Accidents	C	C	Details of the impact are unknown since specific plans and proposals are still undecided.
	29	Trans-boundary impacts & global warming	C	C	The details of the impact are unknown because the specific contents of the plan and proposals are undecided, but since the target area of the Project is adjacent to the Indian border, there are concerns in terms of trans-boundary impact.

A+/- : Significant positive/negative impact is expected

B+/- : Positive/negative impact is expected to some extent

C : Extent of positive/negative impact is unknown. A further examination is needed.

D : No impact is expected

## 9. Terms of Reference for the Environmental and Social Considerations

1. This document describes a draft framework of the terms of reference for a Strategic Environmental Assessment (hereinafter referred to as "SEA") for the Project. The contents of the document are tentative and subject to change. The details of the SEA shall be discussed through the process of Project implementation.
2. The SEA is environmental assessment at Policy (P), Planning (P), and Program (P), (PPP) level. It has a profound significance in the plans for proactive environmental and social considerations into the higher levels of decision-making processes by early warning on environmental and social impacts, broad and long-term perspective.
3. Spatial Planning Standards 2017, which details the documentation requirements for regulatory urban plans, mentions the optional implementation of a SEA, if deemed necessary, for Structure Plans.
4. It is required to conduct the SEA as the Environmental and Social Considerations for the Project following the Bhutanese laws and regulations of Environmental Assessment Act 2000 and Regulation on Strategic Environment Assessment 2002 as well as under JICA Guidelines for Environmental and Social Considerations 2010.
5. National Guidelines for SEA in Bhutan (Bhutan SEA Guidelines) has been drafted in 2016 but has not been officialized so far. Since the SEA for the CNPD has been

conducted in accordance with Draft Bhutan SEA Guidelines, the latter may be used indicatively as a reference for the SEA of the Project.

6. Then, the SEA will be conducted based on the above-mentioned documents as described below. However, through the Project study, when JICA, the counterparts and the stakeholders reach a conclusion, the SEA will be conducted under the legislation pertaining to the SEA, as necessary.
7. Main items of the SEA are as follows.
  - (1) Review the existing development plans (upper level/related plans), development projects, studies, and policies;
  - (2) Examine the issues on environmental and social aspects for urban development planning;
  - (3) Confirmation of legal framework and institution of the RGOB on environmental and social considerations, and SEA cases in Bhutan:
    - i. Laws, regulations and standards related to environmental and social considerations (environmental impact assessment, resettlement, public participation, information disclosure and others);
    - ii. Gaps between the “JICA Guidelines for Environmental and Social Considerations, April 2010” and legal framework of Bhutan on environmental and social considerations;
    - iii. Outlines of relative agencies and institutions responsible for the implementation of the Project;
    - iv. SEA cases conducted in Bhutan.
  - (4) Examine the methods to implement the SEA for the Project;
  - (5) Examine the plans, and configure alternatives, which are subject to the SEA;
  - (6) Study the baseline situation on environmental and social aspects of the plans subject to the SEA;
  - (7) Conduct scoping (clarify extremely important items on environmental and social impacts and its evaluation methods at the time of decision making such as policy, plan, and program levels);
  - (8) Predict the environmental and social impacts of each alternative based on the results of scoping;
  - (9) Compare and evaluate the alternatives including ‘without project’ option from technical, financial, and impacts of environmental and social points of view, and select the optimal plan;
  - (10) Study the mitigation measures in the optimal plan (to be avoided, minimized and compensated);
  - (11) Study the monitoring method based on the mitigation measures;
  - (12) Support to hold stakeholder consultations hosted by the counterparts, and incorporate the outputs into the Project;
  - (13) Submit the SEA Report to the National Environmental Commission (NEC) for approval.

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