

**Government of Nepal**  
**Ministry of Agriculture and Livestock Development**  
**Nepal Livestock Sector Innovation Project**

**Environment and Social Management Plan**

**Construction of Livestock Market**

**Rangeli-9, Morang**



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**September 2020**

## Abbreviations and Acronyms

BoQ	Bill of Quantities
CBS	Central Bureau of Statistics
COVID	Coronavirus Disease
<sup>0</sup> C	Degree Celsius
DLSU	Decentralized Level Support Unit
EPA	Environment Protection Act
EPR	Environment Protection Rule
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
GCC	General Conditions of Contract
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
HHs	Households
Ha	Hectare
M	Metre
MT	Metric Ton
NLSIP	Nepal Livestock Sector Innovation Project
PCR	Polymerase Chain Reaction
PMU	Project Management Unit
PPE	Personal Protective Equipment
RCC	Reinforced Cement Concrete
TA	Technical Assistant
WB	World Bank

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## **CHAPTER I: INTRODUCTION**

### **1.1 Project Background**

NLSIP is a flagship Project in Nepal's livestock sector which became effective on 28 February 2018 and will end on 30 June 2023. The Project's main objectives are to increase productivity, enhancing value addition, and improving climate resilience of smallholder farms and agro-enterprises in selected livestock value-chains in Nepal. The Project's components are: a) strengthening critical regulatory and institutional capacity, b) promoting sector innovation and modernizing service delivery, c) Promoting Inclusive Value Chains for Selected Livestock Commodities; and d) Project Management and Knowledge Generation. The project will work in 291 municipalities of 28 districts with at least 200,000 primary beneficiaries (at least 45% women) and 500 small and medium size agro-enterprises.

NLSIP's major activities are: (a) small civil works, (b) farmer institutions development; (c) dairy, meat goat and Chyangra/ Pashmina production; (d) dairy/meat/Pashmina processing; (e) establishment of slaughterhouse and livestock markets; (f) vaccination campaigns; and (g) veterinary drugs and chemicals, and laboratory operation

However, in anticipation of potential adverse environmental and social impacts, the Project, as a precautionary measure, has developed an integrated ESMF which provides guidance to identify access and manage such impacts. As specified in ESMF, E&S screening is mandatory for each and every activity to be funded under the project. Based on the outcome of screening, the Project requires developing an ESMP to systematically address and manage adverse impacts.

### **1.2 Introduction and relevancy of Subproject**

The proposed subproject is upgrading of livestock market in Rangeli Municipality-9, Morang. The present proposed subproject site is the historical market place. The existing historical livestock market place which is in operation lacks proper infrastructure where the weekly market (haat-bazar) held. The construction work has not started yet. The site is open land and has no structures. The boundary walls and toilet are weak and vulnerable. So, the boundary walls will be renovated as well as toilet will be demolished. Rangeli Municipality has demanded upgrading the livestock market so that the weekly market could held far better.

The live animals at the weekly market include buffalo, cow, pig, goat brought from Damak, Morang, Sunsari and Saptari which will be supplied to the local farmers. The average live animal transaction in the market is estimated to be around 5,000 animals in two day market with an average revenue worth of NRs. 80,00,000 per year revenue is estimated to be collected by Municipality. Thus, NLSIP proposed upgrading of livestock market that enhances the service facility to the locals.

### **1.3 Relevancy of ESMP**

The proposed sub-project does not lie at or near by any protected area, conservation area, wet lands, buffer zone and vulnerable area and the scope of the sub-project does not trigger any clause of Environment Protection Act 2019 and Environment Protection Rule 2020. The sub-project does not cause any major social impacts to the people and communities. The Environmental and Social Screening Report of this sub-project suggests for preparation of Environmental and Social Management plan (ESMP) to address existing environmental impacts induced during construction and operation. Thus, the Environment and Social Management Plan (ESMP) has been prepared for the proposed subproject for managing the risk associated with the construction and operation activities of the proposed subproject and will integrate the findings of impacts identified from the planning (design) phase, construction and operation phase.

### **1.4 Objective of ESMP**

The Environment and Social Management Plan (ESMP) has been prepared to address the site-specific environmental and social problem arising from sub project activities.

### **1.5 Methodology**

Different approaches were applied for the preparation of this ESMP like desk top study, walk through survey (site visit) and stakeholder consultation meeting.

#### **Desk study (Literature Review)**

Different information required for the subproject were acquired from secondary sources such as district profile, topographic map, geological maps, Centre Bureau of Statistics (CBS), Department of Hydrology and Meteorology (DHM), National Planning Commission (NPC), Detail Engineering Survey Report etc.

#### **Walk through Survey (Site visit)**

A field visit was carried out to observe and collect information about the Livestock Market in 2<sup>nd</sup> December 2020. Site was observed with environmental and social settings of project site. A screening checklist that is prepared by the project was filled up and informal conversations with government officials were done. The potential impacts were analyzed and their mitigation plan was noted.

#### **Consultation Meeting**

It was conducted with the Government Officials, Local Government Representatives (Mayor, Deputy Mayor, Ward Chairperson, Members) and concerned local communities.

Consultation was carried on the topic concerned with land availability, impact on local communities, impact on indigenous/ethnic/marginalized people, single women & vulnerable communities, impact on existing social infrastructures/public utilities, impact on environment and grievances.

The consultation meeting concludes that there is no dispute on land ownership. Also, there is no adverse impact on local communities, indigenous/ethnic/marginalized people, single women & vulnerable communities. Moreover, there is no adverse impact on existing social infrastructures/public utilities and environment. There are no any grievances received from the local communities of the proposed subproject site. A copy of deed of inquiry consisting consultation topic with its decision is attached (Annex V).

The number of stakeholder participation with consultation topic and decision is shown (Table 1-1).

**Table 1-1: Stakeholder Engagement and Participation**

Date	No. of Participation			Discussion Topic	Decision
	Male	Female	Total		
2 <sup>nd</sup> Sept 2020	28	9	37	Land availability	No dispute on land availability
				Impact on local communities	No adverse impact on local communities
				Impact on indigenous/ethnic/marginalized people, single women & vulnerable communities	No adverse impact on indigenous/ethnic/marginalized people, single women & vulnerable communities
				Impact on existing infrastructures/public utilities	No adverse impact on existing infrastructures/public utilities
				Impact on environment	No adverse impact on environment
				Grievances	No any grievances received from the local communities of the proposed subproject site

### 1.6 Clearance and Permits

The drawings/design is in the process of approval from the concerned local government. The approved drawings/design of the proposed livestock market from the local government will be attached.

## CHAPTER II: INTRODUCTION TO SUBPROJECT

### 2.1 Type of Subproject

The proposed subproject is upgrading of Livestock Market at Ward-9 of Rangeli Municipality, Morang.

### 2.2 Location and Access

The proposed subproject is located at Rangeli Municipality-9, Morang district, Province-1 with the latitude and longitude as 26°40'12.0"N and 87°36'36.0"E.

East-West highway through Mangalbare Chowk towards East about 514m meets Dilip Hotel. The subproject site is about 686m North West from Dilip Hotel.

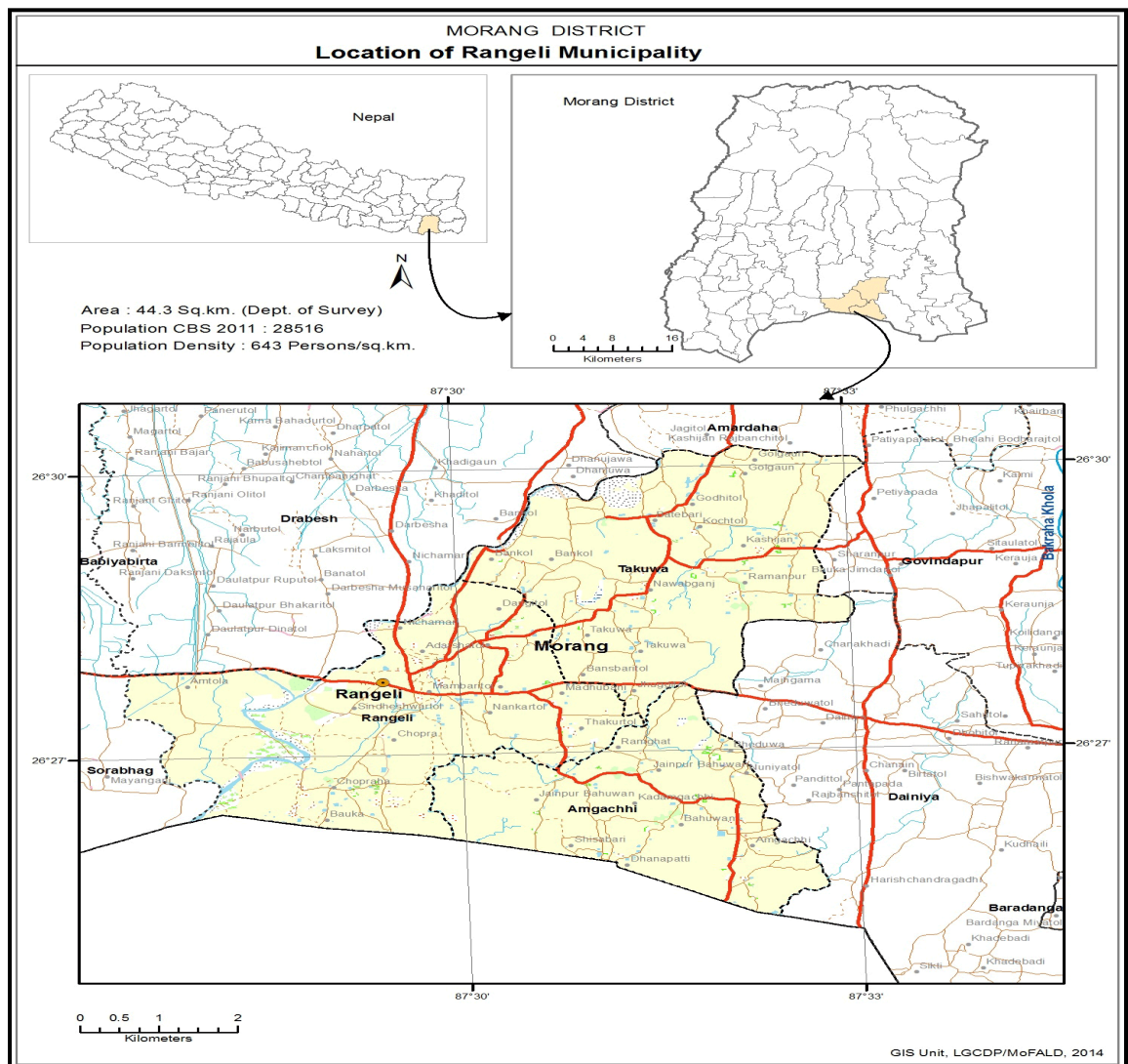


Figure 1: Administrative Map of Rangeli Municipality



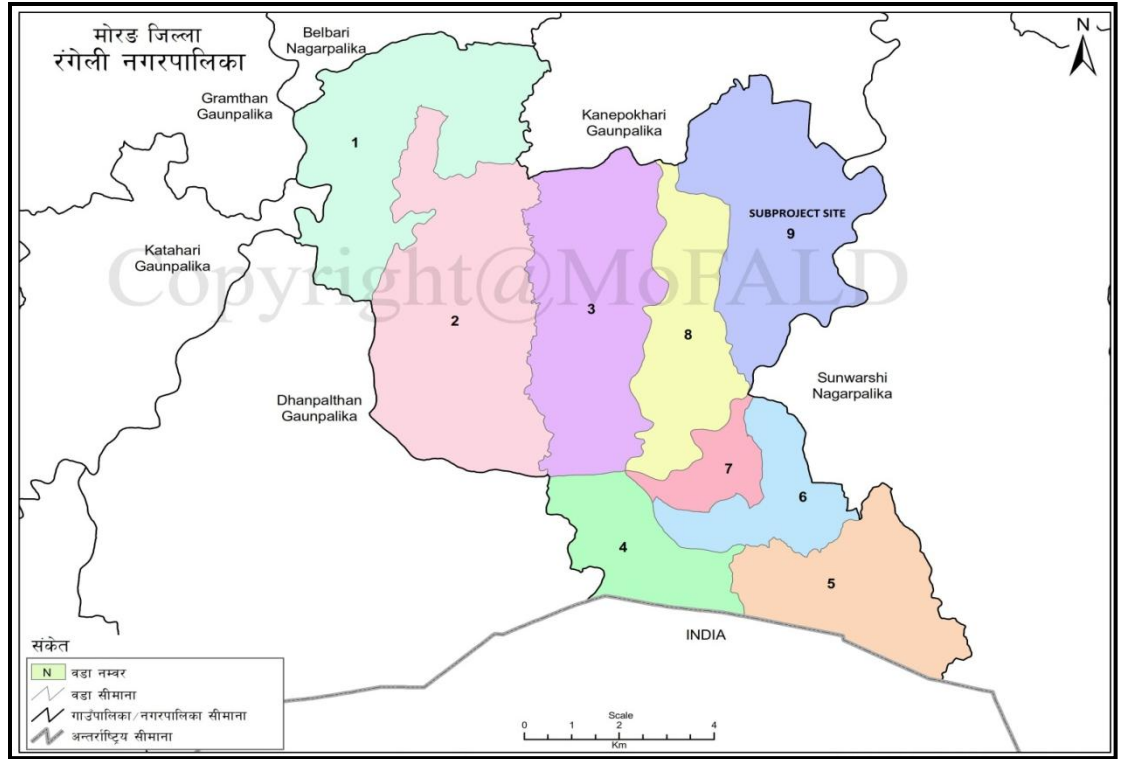


Figure 2: Ward Map of Subproject Site

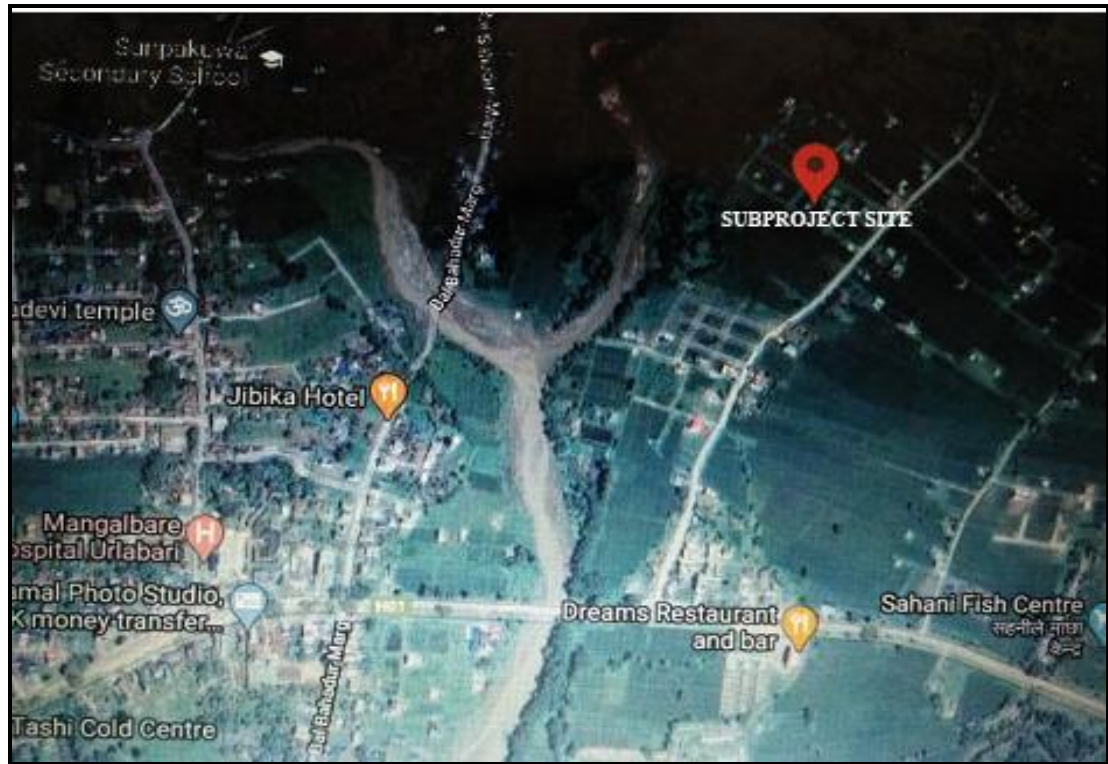


Figure 3: Google Map of Subproject Site

## 2.3 Salient Features

The salient feature of the proposed livestock market is given (Table 2-1).

**Table 2-1: Salient Feature of the Proposed Livestock Market**

<b>Features</b>	<b>Description</b>
Province	1
District	Morang
Municipality/Rural Municipality	Rangeli Municipality
Sub Project Ward	9
Name of the Sub Project	Livestock Market
Latitude	26 <sup>o</sup> 40'12.0"N
Longitude	87 <sup>o</sup> 36'36.0"E
Elevation	122m
Land Ownership	Municipality
<b>Physical Information</b>	
River Name and Type	No water body near by the subproject area
Terrain	Flat
Climate	Tropical
Land-use pattern	Cultivated land, Settlement Area
Soil	Silty clay and Loamy
<b>Social Information</b>	
Total Population and Household Number	Total Population is 52013 and 11249 is Household Number
Ethnic Composition	Adivasi/Janajati- 49.6% (Tharu, Limbu, Newar, Tamang etc.) Dalit-15.4% (Musahar, Dusad, Kami, Paswan etc.) Others- 35% (Brahmin, Chhetri, Thakur etc.)
<b>Total Land Area</b>	The total available land is 2.14ha where 0.69ha is a land brought into construction for all subproject components.
Subproject Components	Animal shed, Office building, Canteen, Holding area, Veterinary shed, Mini market, Guard post, Gate, Loading and Unloading platform, Toilet, Ramp and Deep tube well boring
<b>Total Subproject Cost</b>	<b>NRs. 44,514,436.04 (Inclusive of VAT)</b>
<b>ESMP Cost</b>	<b>NRs. 5,082,785.97</b>
<b>ESMP cost w.r.t Total Subproject Cost</b>	<b>11.4%</b>

## 2.4 Subproject Components/Activities

Two type of work are proposed in this sub-project. The first one is the renovation work and the second is construction work.

### a. Renovation Works

It includes the boundary walls and existing resting place (Chautara). Boundary wall will be renovated with addition of fencing above the wall and existing resting place (Chautara) as well.

## **b. Construction Works**

The construction includes demolition of toilet, construction of livestock shed, guard post with quarter, veterinary clinic, holding area, gate, canteen, toilets, septic tank with soak pit, underground water tank, compound fencing, water trough, filling and compaction with gravel base, few interlocking blocks and pavement works, deep tube well boring, manure collection pit, forage management stall, loading/unloading docks (two number) from entry gate, biological pit (internal diameter=3m, height below ground level=3m & height above ground level=1.2m) which are discussed briefly hereunder. The Master plan sketch is attached (Annex IV).

- **Animal Shed**

Animal shed is important structure of the market to protect from sun and rain as well as for night stay. Covered shed of 415m<sup>2</sup> will be constructed in market. Feeding trough and drinking water facilities with proper slopes and drains are provisioned within the animal shed. Water troughs are placed in the grazing areas where feasible.

- **Animal Health Unit**

Animal health unit (veterinary unit) of 14.32 m<sup>2</sup> will be constructed for the examination of animal health before sale and regular treatment of animal if necessary.

- **Guard Post**

Security is one of the most important requisite in the market. Duty guards shall be working 24 hours a day. Guard post with the guard quarter (2 storeys) will be constructed of size 10.81 m<sup>2</sup>. Management of personal necessities (fooding, lodging etc.) will be done in the upper floor with ticketing counter and office duty in the ground floor.

- **Compound Gate**

There will be separate entry and exit gates to limit congestion. Vehicles will be allowed from entry gate to unload or load animals and exit gate will be used for the intended purpose. Separate entry and exit gate of 12 m<sup>2</sup> will be constructed to manage the traffic.

- **Loading/Unloading Platform**

Loading/ unloading Platform with ramp is an ideal solution, providing fast, efficient loading and unloading facilities for trucks/trailers using forklifts. Additionally, yard ramps normally incorporate a ramp allowing them to be quickly and easily moved around on site by forklift and placed in a new location as required. This facility will be provided in proposed market.

- **Canteen**

Hygienic canteen with essential facilities is one of the basic requirements of the market. Canteen will serve hygienic and freshly cooked food items to the costumers. Farmers, traders, buyers and visitors

will be served in this canteen and who also can have rest when they visit the market. A canteen of 182.70m<sup>2</sup> will be constructed.

- **Sewerage and Drainage**

Sewerage and drainage system is an essential and basic infrastructure in the market. Drainage facility has been well-designed to improve the environmental sanitations. As per the topography, the existing ground level will be raised by 450 mm height by filling and compaction with gravel base for vehicular movement, where necessary. This infrastructure will be constructed as per the technical design. Sewerage wastewater will be connected to soak pit.

- **Water Supply**

There is no Municipal water supply line in the market area. Therefore, a deep tube-well boring will be installed in the market to ensure 24 hour water supply for drinking to human and livestock, for health and sanitation of traders, visitors and consumers and will be stored in underground water tank for supply.

- **Underground tank**

The underground water tank with the capacity of twenty thousand litres will be constructed to collect the treated water.

- **Toilet and Septic tank with soak pit**

Separate toilet/bathroom of 77.39 m<sup>2</sup> will be constructed for male, female and differently-abled people with water facility. Similarly, separate toilets will be constructed in the canteen and office building also. The waste from these toilets will be collected in the septic tank and then to the soak pit which will be constructed in the site. Though, toilet connected biogas plant is technically viable but seems to be less viable due to our socio-cultural and psychological aspects.

- **Collection of cow dung**

The cow dung will be collected and dumped in collection yard. It can be used as compost manure for the agriculture farming purpose. This management will be done by Market Management Committee.

- **Forage management**

The average live animal transaction in the market is estimated to be around 5000 animals in a two day market i.e. for Tuesday and Saturday. There is a need of forage management for the animals brought for trader by the farmers/traders themselves. Forage management stall will be constructed in the market and fire extinguisher will be provisioned to ensure fire safety.

- **Solid Waste Management**

Transactions of a large number of animals are expected to generate green waste, animal dung and urine where the biodegradable waste will be collected in the collection pit. Proper management of solid waste is very essential to maintain the healthy environment. There is a common practice by local people to collect and use the fresh animal dung in the area. It is very commonly used as cooking fuel in rural areas hence collected by local people. In such a condition, the available amount

of animal dung is not enough to establish a biogas plant. Regular cleaning of market area/waste collection yard, collection and transportation of waste from collection yard will be the responsibility of Market Management Committee.

The biodegradable waste collected from the canteen will be converted to organic manure and used in the agricultural field. The non-biodegradable wastes that can be reused and recycled will be done accordingly with consulting the Rural Municipality. The people do not have the problem taking rest during night. The two days market is on Tuesday and Saturday. So, people will go home and come again for respective market day.

## 2.5 Subproject Requirements

### A. Materials

Various types and quantity of construction materials are required for the construction and renovation of livestock market. About the quantity requirement and source of materials is deal in table below.

SN	Materials	Quantity	Source	Remarks
1.	Cement	212.0 (MT)	Market	
2.	Bricks	210,000 (Nos.)	Dealer	
3.	Gravel/chips	380 (m <sup>3</sup> )	Crusher	All the materials will be used which were brought from IEE approved site.
4.	Sand	330 (m <sup>3</sup> )	Crusher	
5.	Stone	186 (m <sup>3</sup> )	Crusher	
6.	Rebar	34.5 (MT)	Market	
7.	Steel/Metal	15.6 (MT)	Market	

### B. Land

A total of 0.69ha land will be brought into construction for all project components among the available (2.14ha) land (Annex III).

SN	Structure	Land Requirement (m <sup>2</sup> )	Ownership	Remarks
1.	Cowshed	415	Municipality	Document letter (Annex I) and land ownership document (Annex II) are attached.
2.	Canteen	182.70		
3.	Veterinary Shed	14.32		
4.	Holding area	4062		
5.	Mini market	17.64		
6.	Guard post	10.81		
7.	Gate	12		
8.	Toilet	77.39		
9.	Loading and unloading platform (2 no.)	150		

### C. Energy

The source of energy for this sub-project is diesel and electricity. Diesel will be used for operation of mixer and vehicular equipment. Electricity will be used for vibrator, pumping of water and lightning. Burning or using of firewood is strictly prohibited.

### D. Equipment

The various machinery equipments that are needed during construction and operation are listed (Table 2-2).

**Table 2-2: Required Equipments**

S.N.	Energy Source	Number of Equipments		Remarks
		Construction Phase	Operation Phase	
1.	Excavator	2	-	These listed equipments are required only in construction phase.
2.	Dump truck	2	-	
3.	Mixer	1	-	
4.	Vibrator	1	-	
5.	Auto level Machine	1	-	
6.	Earth Compactor machine	1	-	

### E. Human Resources

A various skilled and non-skilled human resources are needed during construction period. Their engagement period is listed (Table 2-3).

**Table 2-3: Types of Human Resources**

S.N.	Type of Human resources	Man days	Remarks
1.	Skilled	4200	Operators are estimated in this heading
2.	Non-skilled	7480	

### 2.6 Project Implementation Schedule

The project is schedule for implementation after the approval of all project documents (Design and drawing, Cost estimate and ESMP) in September 2020 and end in the end of 2021.

## CHAPTER III: EXISTING SETTING- ENVIRONMENTAL AND SOCIAL BASELINE

### 3.1 Physical Environment

**Topography and Geology:** The proposed subproject lies in flat topography (Terai) formed from alluvial deposits with an elevation of 122m having silty clay and loamy soil.

**Hydrology:** There is no water body near the subproject site but at a distance of 20m there lies a stream named Baas Bakra Khola. There is no history of flash flood as informed by the locals.

**Climate:** The subproject lies within tropical climatic zone with an annual average maximum temperature is 35<sup>0</sup>C and annual average minimum temperature is 10<sup>0</sup>C with an annual average precipitation of 1800mm.

**Land Use Pattern:** The main land use pattern of the subproject area is cultivated land and settlements.

**Ambient Air Quality:** Dust is seen especially when the material transporting vehicles pass by.

**Noise:** The proposed subproject area does not have major sources of noise nuisance besides material transporting vehicles.

**Water Quality:** Though, at a distance of 20m there lies a stream named Baas Bakra Khola the water quality does not seem to be affected.

### 3.2 Biological Environment

**Forest/Vegetation:** There is no any forest near the subproject area but tree species named Khair (*Acacia catechu*), Sisoo (*Dalbergia sisoo*), Kadam (*Anthocephalus cadamba*) occur at the range of subproject site. The trees that are standing at the campus of livestock market will not be felled down. Community forest is at a distance of 300m meter from the site.

**Wildlife, Fisheries and Avian Fauna:** The subproject area is not the natural habitat of wildlife. As informed by the locals mammals constitute fox, rabbit and wildcat. The avifauna found in the area is dove (*Streptopelia chinensis*), pigeon (*Columba livia*), crow (*Corvus splendous*), sparrow (*Passer domesticus*), parrot (*Psittacula krameri*), myna (*Acridotheres tristis*) and Buhari, Tyangra are the fisheries of this site.

### 3.3 Socio-economic and Cultural Environment

#### 3.3.1 Demography

Rangeli is a Municipality and rural market town in Morang District in the Koshi Zone of south-eastern Nepal. This municipality was formed merging existing four villages i.e. Amgachhi, Babiabirta, Darbesa and Rangeli itself since May 2014 having an area of 112 km<sup>2</sup>. There are total

nine wards in this Municipality and the total population is 52013 with 25081 is male and 26932 is female living in 11249 individual households (CBS 2011). The average family size is 4.6.

Among the total population, Adivasi/Janajati have the highest proportion (49.6%) followed by others with 35% and Dalit as 15.4% (Table 3-1).

**Table 3-1: Demography of Rangeli Municipality**

S.N.	Ethnicity	Total Population and Households			Major Castes
		Population	HHs	Percent	
1.	Adivasi/Janajati	25755	5570	49.6	Tharu, Limbu, Newar, Gurung, Sanyasi etc.
2.	Dalit	8022	1735	15.4	Musahar, Dusad, Paswan, Kami, Damai, Sarki, Harijan etc.
3.	Others	18236	3944	35.0	Brahmin, Chhetri, Thakuri, Muslim etc.
<b>Total</b>		<b>52013</b>	<b>11249</b>	<b>100</b>	

Source: CBS (2011)

The proposed subproject area is located at Ward-9 of Rangeli Municipality having as area of 16.28 km<sup>2</sup>. Rangeli Municipality Ward-9 shows (Table 3-1.1) the more number of female (51.8%) than male (48.2%).

**Table 3-1.1: Demography of Rangeli Municipality, Ward-9**

Ward No.	Male	Female	Total population	Household Number
9	6270 (48.2%)	6733 (51.8%)	13003	2813

Source: CBS (2011)

### 3.3.2 Population by Caste/Ethnicity

Adivasi/Janajati has the highest proportion i.e. 69.1% followed by Dalit is 22.7% and Others as 8.2% (Table 3-2).

**Table 3-2: Population by Caste/Ethnicity of Rangeli Municipality, Ward-9**

S.N.	Ethnicity	Total Population and Households			Major Castes
		Population	HHs	Percent	
1.	Adivasi/Janajati	5207	1037	69.1	Tharu, Limbu, Newar, Gurung, Sanyasi, Tamang etc.
2.	Dalit	1707	140	22.7	Musahar, Dusad, Paswan, Kami, Damai, Sarki, Harijan etc.
3.	Others	617	122	8.2	Brahmin, Chhetri, Thakuri, Muslim etc.
<b>Total</b>		<b>7531</b>	<b>1299</b>	<b>100</b>	

(Source: Field Survey 2020)



### 3.3.3 Language

The most spoken language is Others is 38.5% followed by Maithali is 30.02%, 26.7% is Nepali, Tamang is 2.9%, Rai is 1.2%, Bhojpuri (0.7%) and Tharu is 0.01% respectively (Table 3-3).

**Table 3-3: Population by Language of Rangeli Municipality, Ward-9**

S.N.	Language	Total Population and Households		
		Population	HHs	Percent
1.	Nepali	2011	400	26.7
2.	Maithali	2269	450	30.02
3.	Bhojpuri	49	10	0.7
4.	Tharu	1	1	0.01
5.	Tamang	219	44	2.9
6.	Rai	93	19	1.2
7.	Others	2897	595	38.5
	<b>Total</b>	<b>7531</b>	<b>1519</b>	<b>100</b>

(Source: Field Survey 2020)

### 3.3.4 Religion

Majority of the population is Hindu i.e. 93.36% followed by Buddhist (2.55%), 1.57% is Christian, Kirat is 1.54%, Muslim is 0.32% and Others is 0.66% (Table 3-4).

**Table 3-4: Population by Religion of Rangeli Municipality, Ward-9**

S.N.	Religion	Total Population and Households		
		Population	HHs	Percent
1.	Hindu	7031	1400	93.36
2.	Buddhist	192	38	2.55
3.	Muslim	24	4	0.32
4.	Christian	118	24	1.57
5.	Kirat	116	23	1.54
6.	Others	50	10	0.66
	<b>Total</b>	<b>7531</b>	<b>1499</b>	<b>100</b>

(Source: Field Survey 2020)

### 3.3.5 Major Crops

The total land good for cropping is 2442 Bigha (1654.09 ha) where monsoon rice (90.09%) is the major crop followed by maize is 28.66%, wheat accounting 16.38%, winter rice is 4.09%, 2.04% is other (jute), vegetables is 0.81% and other (eucalyptus) accounts 0.28% (Table 3-5).

**Table 3-5: Major Crops of Rangeli Municipality, Ward-9**

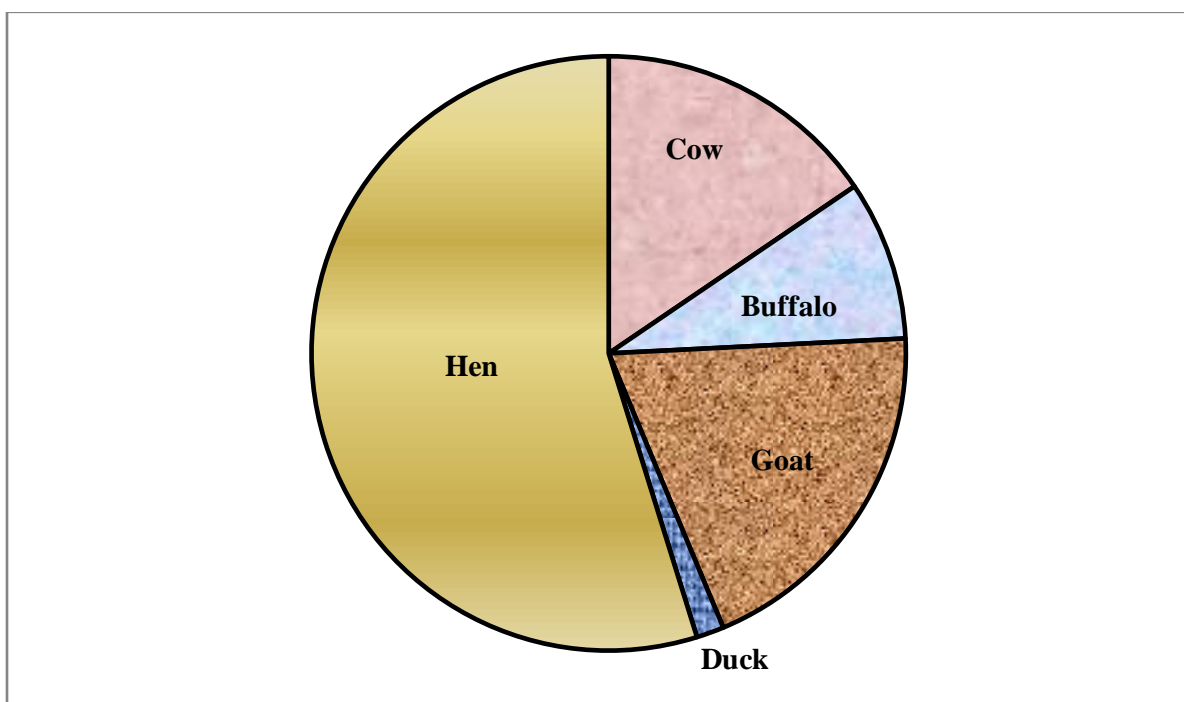
S.N.	Crops	Percentage	Production (kg)
1.	Winter Rice	4.09	160
2.	Monsoon Rice	90.09	150
3.	Wheat	16.38	80
4.	Maize	28.66	280
5.	Millet	0.08	30

6.	Vegetables	0.81	400
7.	Other (jute)	2.04	60
8.	Other (eucalyptus)	0.28	280

(Source: Field Survey 2020)

### 3.3.6 Livestock

Livestock is seen as one of the sources of income of the people where hen (54.8%) holds more value followed by goat is 19.5% , cow as 15.5% , buffalo is 8.7% and duck is 1.5% (Figure 4).

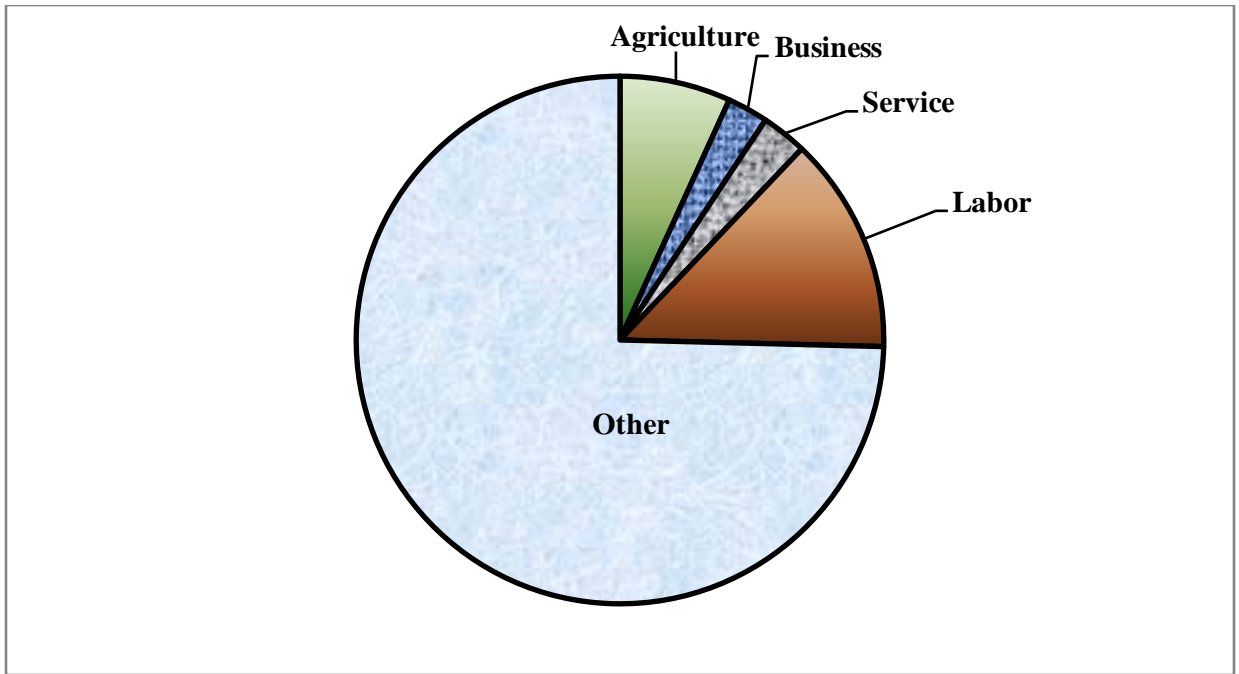


(Source: Field Survey 2020)

**Figure 4: Livestock of Rangeli Municipality, Ward-9**

### 3.3.7 Sources of Income

The major source of income is other (74.6%) followed by labor is 13.3%, agriculture accounts 6.8% , service is 2.8% and business is 2.5% (Figure 5).

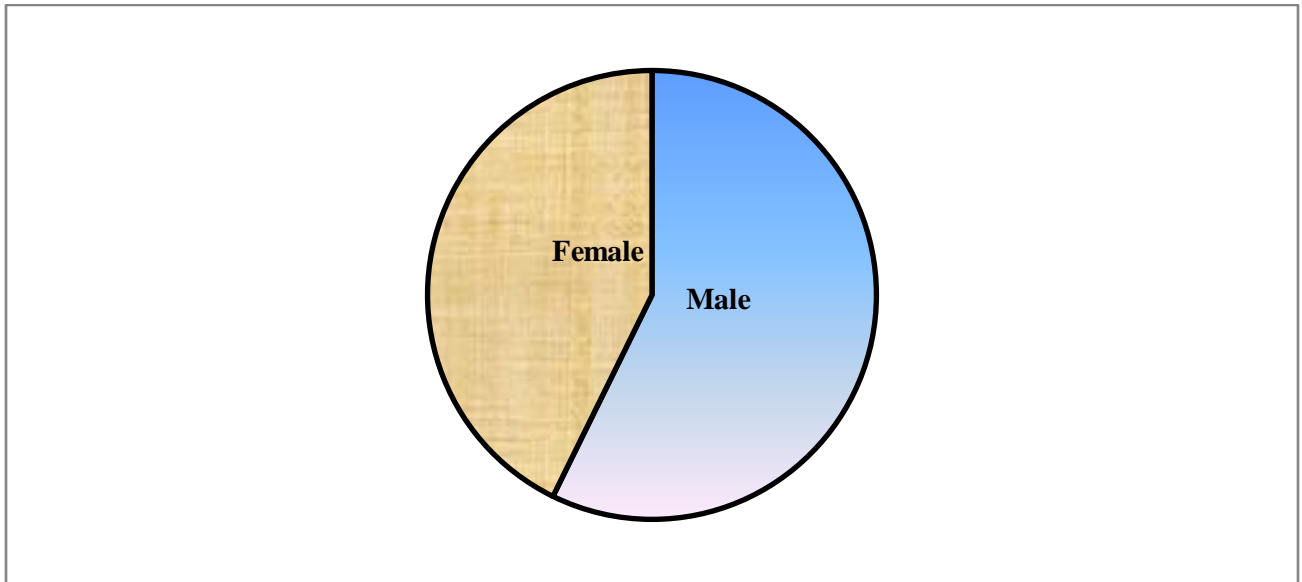


(Source: Field Survey 2020)

**Figure 5: Source of Income of Rangeli Municipality, Ward-9**

**3.3.8 Literacy Rate**

Male holds the highest literacy rate (72.35%) than female is 53.9% (Figure 6) in Rangeli Municipality.



Source: CBS (2011)

**Figure 6: Literacy Rate of Rangeli Municipality**

### 3.3.9 Drinking Water Source

The main source of the drinking water is tube well/hand pump accounting 93.7% followed by tap/piped is 4.34%, others is 1.23%, uncovered well/kuwa accounts 0.31%, not stated is 0.2%, covered well/kuwa is 0.17% , sprout water as 0.05% and river/stream is 0.02% (Table 3-9).

**Table 3-9: Drinking Water Source of Rangeli Municipality**

Drinking Water Source	Percentage
Covered Well/Kuwa	0.17
Not Stated	0.2
Others	1.23
River/Stream	0.02
Sprout Water	0.05
Tap/Piped	4.34
Tube Well/Hand Pump	93.7
Uncovered Well/Kuwa	0.31

Source: CBS (2011)

### 3.3.10 Source of Lighting

Electricity holds the more value as number of households by source of lightning i.e. 64% following kerosene is 34.7%, solar is 0.86%, 0.2% is not stated, biogas is 0.17% and others is 0.06% respectively (Table 3-10).

**Table 3-10: Source of Lighting of Rangeli Municipality**

Source of Lighting	Percentage
Biogas	0.17
Electricity	64
Kerosene	34.7
Not Stated	0.2
Others	0.06
Solar	0.86

Source: CBS (2011)

### 3.3.11 Usage of Cooking Fuel

Cow dung is the major fuel used for cooking i.e. 54.3% following wood/firewood is 26.2%, others is 19.9%, biogas is 6.76% , 5.86% is LP Gas, kerosene is 1.37% , not stated is 0.2% and electricity is 0.008% (Table 3-11).

**Table 3-11: Usage of Cooking Fuel of Rangeli Municipality**

S.N.	Usage of Cooking Fuel	Percentage
1.	Biogas	6.76
2.	Cow dung	54.3
3.	Electricity	0.008
4.	Kerosene	1.37
5.	LP Gas	5.86

6.	Not Stated	0.2
7.	Others	19.9
8.	Wood/Firewood	26.22

Source: CBS (2011)

## **Chapter- IV Impact Identification, Prediction and Mitigation**

### **4.1 Impact Identification and Mitigation measures**

Here the identification and prediction of anticipated social and environmental impacts raised by the sub-project construction are discussed. The issues are dealt with their mitigation measures. The measures are proposed in such a way to avoid the impacts, mitigate the impacts, minimize the impacts and or compensate the impact.

Under construction animal shed, veterinary shed, guard post, gate, loading and unloading platform, toilet and ramp will be built in livestock market. At early stage of the sub-project activity, site will be cleared and soil will be excavated for foundation works and later construction works will be done. As with the proposed activities, both beneficial and adverse impacts will simultaneously be observed.

#### **Land availability:**

The most and foremost issue for any construction work is the land issue. The delay of any project is mainly due to land acquisition problem.

The available land area of this market is about (2.14 ha) which is free from encroachers/squatters and used solely for use of livestock market. The ownership of the land belongs to Rangeli Municipality, Government of Nepal. There will be no further land acquisition for this subproject. The legal evidence of land owned by Rangeli Municipality is attached (Annex II).

Though it is the historical existing market, the construction will not affect or hamper the existing weekly market because the construction is carried out only about 0.69 ha out of 2.14ha of the available land. Also, the construction area will be fenced.

#### **Existing features at the site**

The boundary walls and toilet are weak and vulnerable. The boundary walls will be renovated and toilet will be demolished as well as existing resting place (Chautara) will be renovated. The standing trees will not be disturbed during construction. A due care will be given to save the standing trees.

**Table 4.1: Impact matrix with mitigation measure**

Phase	Aspects	Activities	Impacts	Enhancement/Mitigation Measures	Cost	Responsibility	Remarks
Construction	Beneficial	Construction of livestock market	<b>1. Employment Generation</b> During construction works, both skilled and unskilled construction workers are needed. Thus this creates some employment opportunity to local people through contractor.	- Priority will be given to locals especially socially excluded, marginalized, out caste groups and women for employment as possible	No cost	Contractor	
			<b>2. Skill Enhancement</b> This opportunity helps locals for skill enhancement.	- Non skilled labor working with skilled labor can enhance their skill by supporting them and by seeing their working procedure.	No cost	Contractor	
Construction	Adverse Impacts	Construction of livestock market	<b>1. Degradation of Resource quality (Air)</b> Site clearance, excavation and construction work may create air pollution. Dust will be generated due to construction activities and vehicular movement. Vehicular emission and operation of machine may deteriorate the air quality.	- Haphazard excavation will be prohibited. - Excavated earth material will be stored at designated place and reused for fillings. - Construction materials will be stored in safe place. - Water will be sprinkled to check the flying dust. - The materials transporting vehicles shall be covered during transporting of construction materials.	No cost except water sprinkling  BoQ Item No. 1.4 (Water sprinkling)	Contractor/NLSIP	
Construction	Adverse Impacts	Construction of livestock market	<b>2. Degradation of Resource quality (water)</b> Site clearance, excavation and construction work and unmanaged spoils may degrade the water quality.	- Haphazard excavation will be prohibited. - Excavated earth material will be stored/dumped at designated place (not in or near by water source) and reused for fillings.	No cost	Contractor/NLSIP	

Phase	Aspects	Activities	Impacts	Enhancement/Mitigation Measures	Cost	Responsibility	Remarks
				- Construction materials will be stored in safe place (far from inland water body).			
Construction	Adverse Impacts	Construction of livestock market	<b>3.Degradation of Resource quality (Soil/Land)</b> - Site clearance and excavation works, and construction works may create and unmanaged spoils may degrade soil quality. - The haphazard disposal of solid waste also pollute the soil - The top soil which will be disturbed during site clearance, construction and after construction.	- Haphazard excavation will be prohibited. - Excavated earth material will be stored at designated place and reused for fillings. - Construction materials will be stored in safe place. -Appropriate arrangements including shovels, plastic bags and absorbent materials will be done. - The top soil will be preserved safely and will be reused at the time of reclamation of the site after completion of construction activities.	No cost	Contractor/NLSIP	
Construction	Adverse Impacts	Construction of livestock market	<b>4.Noise Pollution</b> Operation of equipments/machines during site clearance and construction may generate high noise. The pressure horn of transporting vehicles may create unpleasant noise to the surrounding.	- The blowing of pressure horns of construction and material transporting equipments will be prohibited. - The maintenance of the equipments will be done regularly - Only high efficiency equipments will be used.	No cost	Contractor/NLSIP	
Construction	Adverse Impacts	Construction of livestock market	<b>5.Solid Waste</b> Solid waste like construction waste, kitchen waste will be generated in this phase which will have adverse impact during dumping	- All the construction waste will be reused in land fillings. - Biodegradable wastes along with kitchen waste will be kept separately and	BoQ No. 2.1.1.1.49 to 2.1.1.1.61	Contractor/NLSIP	



Phase	Aspects	Activities	Impacts	Enhancement/Mitigation Measures	Cost	Responsibility	Remarks
				composted. The non-biodegradable waste will be managed in coordination with rural municipality.			
Construction	Adverse Impacts	Construction of livestock market	<b>6. Caste/Ethnicity/Gender Discrimination in Work and Wages</b> Workers might be discriminated as per caste/ethnicity/gender in works and wages in working area.	- Priority will be given to local marginalized groups rather than caste and ethnicity. - Similarly, wages will be set as per the nature of works not on basis of gender, ethnicity and caste. Man and woman will be paid equal for similar nature of work.	No cost	Contractor/NLSIP	
Construction	Adverse Impacts	Construction of livestock market	<b>7. Health hazard</b> Unhygienic Sanitary Condition and Probability of Prevalence of Diseases will be of poor sanitary conditions in project area, insufficient water supply, absence of proper waste management and open defecation may increase the probability of occurrence of communicable diseases.	- Separate toilets for male and female will be provisioned - Solid and liquid waste management facilities will be there in subproject area. - Solid waste will be segregated and collected in separate bins, and liquid waste will be collected in soak pit. - There will be sufficient water facilities for construction workers either by tube well. - The supplied water will be of drinking quality.	BoQ Item no. 2.1.1.3.46 to 2.1.1.3.52, (Deep tube well)	Contractor/NLSIP	M/F toilets and Waste management (GCC 18.1(h))
Construction	Adverse Impacts	Construction of livestock market	<b>8. Social conflict</b> - Social conflict among locals and outside workers for	- Priority for employment will be given to locals during workers selection	No cost except information	Contractor/NLSIP	

Phase	Aspects	Activities	Impacts	Enhancement/Mitigation Measures	Cost	Responsibility	Remarks
			<p>employment opportunity during selection of workers</p> <ul style="list-style-type: none"> <li>- Other unsocial behaviors such as alcohol drinking, gambling etc., disturbance in peace and harmony of the settlement</li> <li>- Due to difference in culture and traditions of workers and local people.</li> </ul>	<p>time.</p> <ul style="list-style-type: none"> <li>- Unsocial activities such as alcohol drinking, gambling, breakage of peace in or near by the area will be prohibited in project site.</li> <li>- All the workers will be advised to respect the culture and tradition of other peoples.</li> <li>- Information board will be installed including information of GRM as well as radio jingles and television scroll news will be broadcasted with full contact details.</li> </ul>	<p>board</p> <p>BoQ Item no. 2.1.1.1.3, (Information Board)</p>		
Construction	Adverse Impacts	Construction of livestock market	<p><b>9. Pressure on Local Resources and Services</b></p> <p>There will be extra pressure on resources such as water, food etc. and services like health facility at local level.</p>	<ul style="list-style-type: none"> <li>- Locals people will be hired for construction activities.</li> <li>- Basic health facilities such as provision of first aid box will be provided at work place.</li> </ul>	GCC 18.1(h)	Contractor/NLSIP	
Construction	Adverse Impacts	Construction of livestock market	<p><b>10. Occupational Safety and Health</b></p> <ul style="list-style-type: none"> <li>- Workers involved in construction activities might get injured during works. They may suffer from pollution.</li> <li>- Local people who visit the construction sites may get accidents.</li> </ul>	<ul style="list-style-type: none"> <li>- PPEs such as gloves, helmets, boots, masks etc. will be provided to all the workers. A group Insurance will be made for health injury or loss.</li> <li>- Outsiders will be strictly prohibited to visit the construction site.</li> <li>- Injuries record should be kept in register</li> <li>- First aid box with</li> </ul>	<p>(PPE) BoQ No. 2.1.1.1.1</p> <p>(Insurance) BoQ No. 1.1</p>	Contractor/NLSIP	

Phase	Aspects	Activities	Impacts	Enhancement/Mitigation Measures	Cost	Responsibility	Remarks
				necessary materials should be kept in construction site including thermal gun and sanitizer as per COVID-19 SOP prescribed by GoN and WB.			
Construction	Adverse Impacts	Construction of livestock market	<b>11. Child labor, Forced labor and Under aged workers</b> Probability of engaging child labor, forced labor and under aged workers by the contractor	<ul style="list-style-type: none"> <li>- Child labor, Forced labor and Under aged workers are strictly prohibited.</li> <li>- Contractor as well as the workers will be made aware about child rights and child labor including legally punishable actions as per the law.</li> <li>-Also, the contractor will be made aware about the forced labor and underaged labor.</li> <li>-A clear description on prohibition of child labor, forced labor and under aged workers will be addressed in the contractors documents.</li> <li>- The data base of workers should be maintained by the contractor with the age proofing document (like copy of citizenship, birth registration or birth certification by ward office or school record).</li> </ul>	No Cost	Contractor/NLSIP	
Construction	Adverse Impacts	Construction of livestock market	<b>12. Injuries and Accidents to Local Community</b> Local people may come to visit or trespass the project	Unnecessary intrusions of local people in working areas will be prohibited and speed of vehicles used for	No cost except temporary fencing	Contractor/NLSIP	

Phase	Aspects	Activities	Impacts	Enhancement/Mitigation Measures	Cost	Responsibility	Remarks
			activities site. Similarly, vehicular movement (due to proposed work) around the project area may increase the accidents.	construction activities will be maintained not more than 20 Km/hr. -The contact number of the nearby hospital or health center and ambulance will be made available for receiving prompt service during emergency. -Temporary fencing will be made to avoid the thoroughfare of outsiders within a construction premises.	(Temporary fencing) BoQ Item no. 2.1.1.1.2		
Construction	Adverse Impacts	Construction of livestock market	<b>13. Labor camp and Labor management in COVID 19</b> Labour management in this pandemic COVID-19 might be a major issue.	-Acceptable labour camp will be established or the labour will be managed in rented house -Labour will be provided with the PPE and work with the social distancing - They are strictly restricted to gather and mix up with the local public - As far as the labour will be kept in the specified camp and isolating them from the general public - Daily temperature check-up of the workers - Isolation and quarantine in case of corona suspected and PCR test will be done.	(Labor camp, store/office, temporary toilet, waste bins, management of water source for drinking and construction purpose) BoQ Item no: 2.1.1.1.5  COVID 19 (PCRTTest) BoQ Item no: 1.3	Contractor/NLSIP	
Construction	Adverse Impacts	Construction of livestock market	<b>14. Gender Based Violence (GBV)</b> This issue might encounter in	- Ensure basic facilities such as separate labour camp and toilets for male and female.	No cost	Contractor/NLSIP	

Phase	Aspects	Activities	Impacts	Enhancement/Mitigation Measures	Cost	Responsibility	Remarks
			labor camp	- Notice and hoarding board about the GBV should be installed at various places. - Code of conduct should be prepared and placed based on COVID-19 SOP.			
Operation	Beneficial	Operation of livestock market	<b>1. Selection opportunity from wide varieties</b> Numbers of various livestock of various types will be in same place which give a good change to buyers for selection of likely livestock of their interest.	The management committee should work in such a way that the information of the market should reach to every village and maximum farmers should visit the market.	No cost	MCC	
Operation	Beneficial	Operation of livestock market	<b>2. Buying and selling opportunity of livestock from a single place</b> Numbers of type of livestock like cow, buffalo, goat, ox and so on etc can be bought from a single place. The buyers do not need to search the livestock of their interest by visiting different places/village.	The management committee should work in such a way that the information of the market should reach to every village/ every farmer and maximum farmers should visit the market.	No cost	MCC	
Operation	Beneficial	Operation of livestock market	<b>3. Time saving</b> Both the buyers with money and sellers with livestock will be in same place on the particular day so the time of visiting different village/places in search of likely animal of their interest will be save.	- Management committee will encourage the farmers to visit the market.	No cost	MCC	
Operation	Adverse	Operation of	<b>1. Waste generation</b>	-The biodegradable wastes	BoQ No.	NLSIP/MMC	

Phase	Aspects	Activities	Impacts	Enhancement/Mitigation Measures	Cost	Responsibility	Remarks
	Impacts	livestock market	Biodegradable waste like forage, dung, kitchen waste will be generated from the canteen and its improper disposal may impact on land/soil and water.	(excreta of animals) will be collected in collection pit and process for compost to produce manure. - The non bio-degradable waste will be kept separate and reuse the waste which can be used multiple times like plastic bags, plastic sacks. - The recycling waste will be sent to collection centre for recycle and reuse like plastic bottles, glass bottles. - The other waste will be managed with coordination with rural municipality. - Liquid waste generated from the operation of market will be managed in soak-pit. - The septic waste will be collected in septic tank	2.1.1.1.76 (Manure pit)  BoQ No. 2.1.1.3.38 (Septic Tank)  BoQ No. 2.1.1.3.40 & 2.1.1.3.41 (Soak Pit)		
Operation	Adverse Impacts	Operation of livestock market	<b>2.Dust Pollution</b> During the dry season, dust pollution will be generated due to trampling of livestock and their owner which will impair the health condition of buyers, sellers, market's staffs.	- Water will be sprayed in the area to arrest the fly dust in morning time on the market day. - Surface grass will be allowed to grow to minimize the flying of dust. -Speed of the vehicles should be lowered than 20km/hr.	No cost	MMC	The employee of the market will do this in every morning on market day
Operation	Adverse Impacts	Operation of livestock market	<b>3.Noise Pollution</b> Large number of traders as well as vehicular movement	- Blowing of horns by the vehicles should be prohibited at the project site.	No cost	MMC	

Phase	Aspects	Activities	Impacts	Enhancement/Mitigation Measures	Cost	Responsibility	Remarks
			will take place on a daily basis to deliver and transport away the animals being bought and sold. This could result in disturbance to nearby settlement particularly those living in proximity to the project site.	- Limit the speed of vehicles. - Postures for precaution should be provided in different places.			
Operation	Adverse Impacts	Operation of livestock market	<b>4. Health Hazard</b> Unhygienic sanitary conditions like absence of toilet and sanitation increase the risk of prevalence of diseases.	- Separate toilets for male, female and disabled person with septic tank and soak pit with the assurance of 24 hour water supply will be in operation.	BoQ No. 2.1.1.3.38 & 2.1.1.3.41 (Septic Tank-2 nos.)  BoQ No. 2.1.1.3.40 & 2.1.1.3.41 (Soak Pit)	NLSIP/MMC	
Operation	Adverse Impacts	Operation of livestock market	<b>5. Carcass Management</b> If livestock brought in market may encounter death, the management of dead body might be an issue. The odour from decomposing process create uncomfortable in the surrounding.	The dead body of animal/animal carcasses will be managed in the biological pit.	BoQ No. 2.1.1.1.46-56 (Biopit)	NLSIP	
Operation	Adverse Impacts	Operation of livestock market	<b>6. Surface Runoff, Water Logging and Drainage Management</b> The surface runoff will be the problem during rainy season.	Peripheral drain will be constructed around the apron of the structure and discharge to soak pit. The surface runoff from peripheral drainage will have an outfall location to soak pit. During wet season there might be spillage of	BoQ Item no. 2.1.1.1.38 to 2.1.1.1.43	NLSIP/MMC	

Phase	Aspects	Activities	Impacts	Enhancement/Mitigation Measures	Cost	Responsibility	Remarks
				soak pit. The barren land near the subproject site will aid natural infiltration that helps in spillage of soak pit during wet season. - Though Baas Bakra Khola is close to the site there is no history of flash flood as informed by the locals. So, there is no problem of inundation at the subproject site. However, the barren land near the subproject site will aid natural infiltration that avoids the chance of water logging at the subproject site.			
Operation	Adverse Impacts	Operation of livestock market	<b>7. Water scarcity</b> The livestock and visitors may feel thirsty	Provision of drinking water for all the visitors and the animals in the market will be done by deep tube well boring	BoQ Item no. 2.1.1.3.46 to 2.1.1.3.52, (Deep tube well)	NLSIP/MMC	Operation will be done by proponent
Operation	Adverse Impacts	Operation of livestock market	<b>8. Fire Hazard</b> There might be the risk of fire catching in the market	A fire extinguisher will be kept in the administrative building for small fire cases. In addition there is a provision of deep tube well which can be used for firefighting at the time. A flexible husk pipe will be kept in the tube well area.	BoQ Item no. 2.1.1.3.43	NLSIP/MMC	
Operation	Adverse Impacts	Operation of livestock market	<b>9. Conflict and fight</b> The visitors may consume alcohol in canteen and fight with each other	It is strictly prohibited the selling of alcoholic drinks in canteen.	No cost	MMC	



Phase	Aspects	Activities	Impacts	Enhancement/Mitigation Measures	Cost	Responsibility	Remarks
Operation	Adverse Impacts	Operation of livestock market	<b>10.Pressure on Forage and fodder</b> Impact on the nearby forest and private agricultural land for collection of forage to feed the livestock	- Farmers need to manage the forage for their livestock themselves. - Stall grazing will be allowed	No cost	MMC	
Operation	Adverse Impacts	Operation of livestock market	<b>11.Traffic Congestion / Parking</b> During the operation phase traffic congestion in and around the project site may have traffic congestion Movement of public/private vehicles along the road may be disturbed	- At the entrance, separate route of entry and exit for vehicles will be established. - No horn sign boards should be erected near to the project site.	BoQ no-2.1.1.1.74	NLSIP/MMC	
Operation	Adverse Impacts	Operation of livestock market	<b>12.Under aged workers</b> Probability of engaging under aged workers by the MMC	- Under aged workers are strictly prohibited for any kind of work.	No cost	MMC	
Operation	Adverse Impacts	Operation of livestock market	<b>13.Gender Based Violence (GBV)</b> This issue might be increase in the market	- Ensure basic facilities such as separate toilets for male and female. - Notice and hoarding board about the GBV should be installed at various places. - Code of conduct should be prepared and placed	No Cost	MMC	
Operation	Adverse Impacts	Operation of livestock market	<b>14.Incident and injuries</b>	-Permanent Fencing (GI wire mesh fencing) will be made to avoid unnecessary thoroughfare and isolate the area from the adjoining community to ensure community health and safety (zoonotic disease). -First aid box with necessary materials should be kept in	(GI wire mesh fencing) BoQ Item no. 2.1.1.1.59	NLSIP/MMC	

Phase	Aspects	Activities	Impacts	Enhancement/Mitigation Measures	Cost	Responsibility	Remarks
				office building for instant first aid treatment in case of injuries			

## 4.2 Labour Management Measures during COVID-19

The construction work has been completely stopped since 4<sup>th</sup> March 2020 after the declaration of lockdown by the Government. The work, however, will be resumed and carried out on staggered or working shift basis so that the number of workers involved in construction is minimum at a time. In view of the COVID-19, the project will put in all possible measures to prevent spread transmission of the disease among workers and communities. The project has summarized the guideline provided by WB and distributed to all concerned contractors on July 2020 for safe opening of the construction (Annex VI). The project will provide the following gear to protect the workers:

- use of PPEs
- hygiene and sanitation including use of sanitizers during work
- maintaining social distance while working and staying
- restriction in movements during construction period
- daily temperature check-up of the workers
- isolation and quarantine in case of corona suspected and PCR checking and treatment

The contractor will be made liable to comply with the above mentioned measures and create safe working environment for the workers. The project's team will keep constant monitoring of works through digital means such as photographs and mobile apps and provide feedback on a regular basis.

## 4.3 Grievance Redress Mechanism

The project has set up a three-tier functional GRM where all stakeholders can register their grievances or provide feedback. At the central level, GRC is formed which is chaired by the Joint Secretary and comprise of nine members. At cluster level, the grievance committee consists of five members and is led by the Regional Director of respective Provincial Level Livestock Service Directorate. Down at district level, GRC is led by the Chief of Veterinary Hospital and Livestock Service in respective districts comprising of following members.

Chief of Veterinary Hospital and Livestock Service Expert Center-	Chairman
Officer Representative of concerned District Coordination Committee Office-	Member
Representative of District Chamber of Commerce and Industries (One person) -	Member
One Representative Assigned by District Cooperative Union-	Member
Representative of Concerned Financial Institution (One Person) -	Member
Commercial Farmer Representative (One Person) -	Member
Nodal Officer of Concerned Office-	Member Secretary

The complainants may file their grievances at any channels of their convenience in writing, verbally or through other electronic media. In order to incorporate grievance, comments and suggestions received from public community or stakeholders in timely manner; an information board will be installed in subproject site including information on GRM and its focal person with contact details.

Also, radio jingles and television scroll news will be broadcasted at local levels with full contact details. Meanwhile, GRC will be responsible to review the grievances received, take decisions and provide feedback on the decisions taken to the complainants within fifteen days. All GRC have designated Nodal Officers who are liable to play key role in facilitating registration and redressing procedures. In case of unresolved grievances, they will be forwarded to higher level GRC within the fifteen days.

#### **4.4 Awareness Training**

Awareness training will be provided to contractor crew, work force and stakeholders. The contractor work force may woo the girls/women of nearby area for sexual relation and girls trafficking so the local stakeholders will be aware about the activities. The contractor's crew/workforce will be aware in-situ about OSH, their activities, role responsibilities, sanitation, do's and don'ts. Social mobilizers are deputed to every Palikas (Municipality/Rural Municipality) to create awareness and monitoring the activities. The social mobilizers will also be trained and oriented about the requirement of safeguard (environment and social) activities.

## Chapter-V Monitoring and Reporting

### 5.1 Institutional Arrangement

After a demand of construction of Livestock Market, NLSIP has offer a service opportunity to Apex-Inclusive JV for design, estimate and supervision of civil works. Thus, after the completion of the construction activities the NLSIP will hand over this to proponent (Rural Municipality). The overall management and operation of the livestock market will be undertaken by a market management committee formed locally by Rural Municipality. The Committee includes farmers, livestock traders and the local peoples as members.

Large number of different livestock are bought and sold in this place. Given the size of the market, various environmental and social issues are likely to occur in this market and its surrounding which warrant constant supervision of market for maintaining hygiene and sanitation. Any problems related to market should be resolved immediately with the consultation of concerned stakeholders. The Market Management Committee is the main responsible body for the implementation of ESMP.

### 5.2 Implementation Arrangement

The lead role in implementing the ESMP rests with the NLSIP/PMU. The PMU will be supported by cluster level DLSU (Biratnagar), local livestock offices, Rangeli and Market Management Committee (MMC) of Rangeli Livestock Market. Contractor/NLSIP-PMU and MMC will be responsible for overall management of the project including implementation of safeguard requirements (Figure 7).

The responsibility for environmental and social risk management is tabulated as;

<b>Implementation component</b>	<b>Involved Institutions</b>
Site verification and feasibility study	NLSIP-PMU
Screening/DPR preparation	NLSIP-PMU with the help of Consultancy for Design, Estimate and Supervision of Civil works
Preparation of ESMPs	NLSIP-PMU
Contract award	NLSIP-PMU
Construction (Implementation)	Contractor
Implementation supervision of ESMPs	NLSIP-PMU and (Consultancy for Design, Estimate and Supervision of Civil works)
Implementation supervision/Monitoring of ESMPs	NLSIP-DLSU
Monitoring of ESMPs	NLSIP-PMU, DLSU, World Bank and Proponent
Operation of Market	Proponent (Market Management Committee)

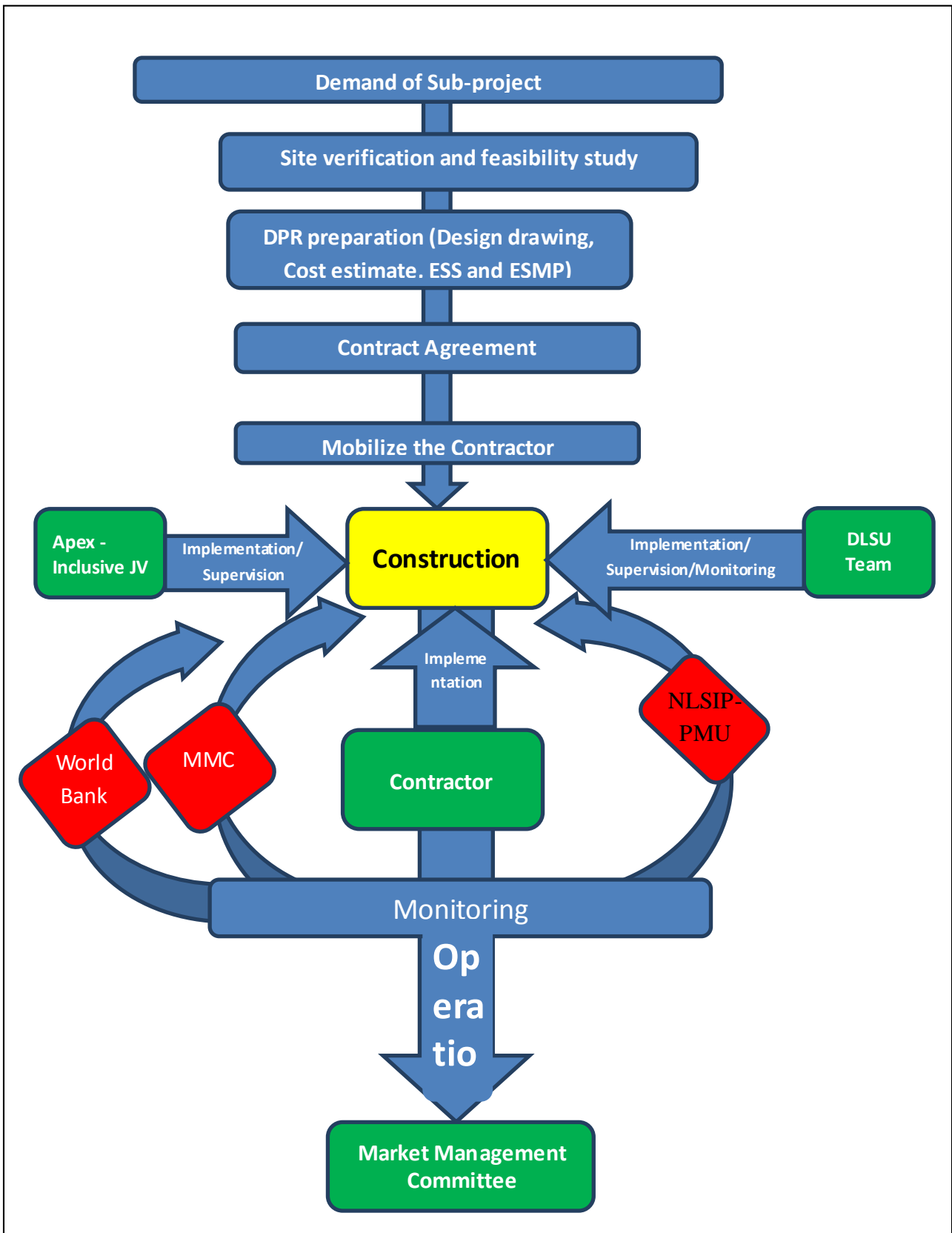


Figure 7: Implementation Arrangement

### **5.3 Monitoring**

NLSIP/PMU is responsible for regular monitoring and reporting of the implementation of the project. The experts from PMU along with DLSU will visit project site at periodic interval for the monitoring of the project and prepare the monitoring report. The detail of monitoring parameters, schedule, method and agencies to be consulted during construction and operation phases for physical, biological and social environment is given below.

### **5.4 Environmental and Social Monitoring Plan**

An effective monitoring of project works will be necessarily useful to track the project activities and their impacts. It also enables to assess the effectiveness of mitigation measures taken to manage adverse environmental and social impacts.

In case of a construction activity, monitoring is more important to complete the work on time, also ensuring the work quality. In case of NLSIP works, the project will undertake monitoring at different stages as follows.

#### **a) Pre-construction Monitoring**

Since there is no land dispute in this sub-project and the construction work will start immediately, preconstruction monitoring is not required for the proposed project.

#### **b) Compliance Monitoring**

The compliance monitoring will be conducted to monitor the compliance of the proposed mitigation measures and monitoring activities. The compliance monitoring will mainly focus on the followings:

- Compliance of the tender clauses;
- Compliance of the mitigation measures;
- Timely and adequately implementation of Environmental Management Plan; and
- Overall environmental and social performance of the project.

Effective monitoring at this stage is essential to avoid or minimize the potential adverse impacts and take corrective measures on time.

#### **c) Impact Monitoring**

Impact monitoring will be carried out to assess the post construction impacts of the livestock market and will include mainly the followings.

- Monitoring the impacts on physical, biological and social environment of the people including changes in market operations, employment, income and livelihood of people;
- Monitoring the degree of impacts i.e. high, medium and low;
- Monitoring of remedial measures undertaken; and

- Monitoring the effectiveness of mitigation measures implemented on the ground.



**Table 5.1: Environment and Social Compliance monitoring plan of the project cycle**

Phase	Type	Verifiable Indicators	Methods/Activity	Frequency	Cost	Monitoring Agency	Supporting Agency
Pre-Construction	Compliance	Public consultation and information disclosure	Checking records and consultation with people	One time	No cost	NLSIP (PMU), DLSU	MMC, Municipality
		Land availability, land & property acquisition and compensation	Public consultation; Checking cadastral records	One time	No cost		
Construction	Compliance	Compliance on protection of standing trees	Field observation and verification	Two times (Starting and completion time of construction )	No cost	NLSIP (PMU), DLSU	MMC, Municipality
Construction	Compliance	Compliance on Resource quality (Air and Water)	- Visual observation of excavation process, storage/dumping of excavated material/ construction materials at safe place not in or nearby inland water source as there lies a Bass Bakhra Khola at the distance of 20m from the subproject site. -Sprinkling of water to material heap -Use of tarpaulin to cover the material transporting vehicles	Daily	No cost	NLSIP (PMU)/DLS U/LSC	Social mobilizers in charge of that palika will be asked to monitor.
Construction	Compliance	Caste/Ethnicity/Gender Discrimination in Work and Wages	-Check the record on number, percentage of local people engaged in work, women in work, check payment detail for discrimination on wages on similar nature of work, interview with workers.	Daily	No cost	NLSIP (PMU)/DLS U/LSC	Social mobilizers in charge of that palika will be asked to monitor.
Construction	Compliance	Compliance on Health and sanitation	- Check the construction of separate toilets for male and female, solid and liquid waste	Daily	Contractor's cost	NLSIP (PMU)/DLS U/LSC	Social mobilizers in charge of that

			management facilities, segregation and collection of solid waste facility, construction and use of soak pit for management of liquid waste. - Check the water supply facilities for construction workers. -Discus with local people and health workers, records of health post				palika will be asked to monitor.
Construction	Compliance	Compliance on Social safety and security	Interview with local people, workers and contractor	Daily	No cost	LSC/ Municipality	Social mobilizers in charge of that palika will be asked to monitor.
Construction	Compliance	Compliance to occupational health and safety of workers and community	Spot checks at work sites on providing and use of PPEs, photos, accidents records, health records, interviews	Daily	No cost	NLSIP/DLSU /LSC/ Municipality	Social mobilizers in charge of that palika will be asked to monitor.
Construction	Compliance	Compliance on checking of Under aged workers and Gender Based Violence (GBV)	-Check the data base of workers with age proofing document (like copy of citizenship, birth registration or birth certification by ward office or school record). - Check the notice and hoarding board installed about the GBV and under age workers provision.	Daily	No cost	NLSIP/DLSU /LSC/ Municipality	Social mobilizers in charge of that palika will be asked to monitor.
Construction	Compliance	Precaution on COVID-19 pandemic	- Check the availability and functioning of thermal gun - Check the PPE provided and their use - Check the labor camp - Check the sanitation	Daily	No cost	NLSIP/DLSU /LSC/ Municipality	Social mobilizers in charge of that palika will be asked to monitor.

			condition of the working area and labor camp - Check the orientation record provided to the workers on safe working environment and coping with COVID 19 pandemic.				
Operation	Compliance	Compliance on Waste management	Check the operation of excreta collection and composting pit -Check the haphazard throwing of solid waste in and around -Check the operation of soak pit - Check the throwing and disposing of waste in nearby river	Daily	No cost	MMC/ Municipality	
Operation	Compliance	Compliance on reduction of Dust Pollution and control	- Check the spraying of water on market day - Check the installation of speed limit board near market area	Daily during dry season	No cost	MMC/ Municipality	
Operation	Compliance	Compliance on reduction of Noise Pollution	- Check the installation of speed limit and no hon sign board installed in the market area	Daily during a market day	No cost	MMC/ Municipality	
Operation	Compliance	Compliance on Health and sanitation	- Check the operation of separate toilets for male, female and differently-abled person with assurance of 24 hour water supply	Two times a year	No cost	MMC/ Municipality	
Operation	Compliance	Compliance on peace building (Conflict and fight) in the area.	Check the selling and availability of alcoholic drinks in the canteen	Weekly	No cost	MMC/ Municipality	
Operation	Compliance	Compliance on Grievance recording and handling	- Check the recorded grievances in grievance record book and their addressing mechanism	Monthly	No cost	MMC/ Municipality	

**Table 5.2: Environmental and Social Impact Monitoring Plan of the Project Cycle**

Phase	Type of Monitoring	Verifiable Indicators	Methods/Activity	Frequency	Cost	Responsible Agency	Supporting Agency
Operation	Impact	<b>Impact on livelihood</b> Livelihood opportunity of local people by establishing temporary shops	Observation, interviews, photos, municipality records	Once a year	No cost	MMC/ Municipality	
Operation	Impact	<b>Impact in socio-economic structure</b> Number and extent of new settlement /types and ethnic groups/No. and extent of new business, new service	Observations, interview, Municipal records	Once a year	No cost	MMC/ Municipality	
Operation	Impact	<b>Compliance and Impact of ODF</b> Urination and defecation practice at the open space and Agriculture land	Observation in and around the area and interview with residing people.	Four times a year	No cost	MMC/ Municipality	
Operation	Impact	Functioning of, soak pit, septic tank	Visual observation of the effluent discharge and testing of generic standard of inland water body.	Once in a year before rainy season	NRs. 15,000/ Yr	MMC/ Municipality	
Operation	Impact	Functioning of drainage system	Visual observation in blockage of drain	Once a month	No cost	MMC/ Municipality	
Operation	Impact	Solid Waste Management Green waste, cattle manure in particular can result in disease vectors such as flies, mosquitoes, rodents etc.	On-site audits on Segregation practice of waste, Composting practice,	Four times a year	No cost	MMC/ Municipality	
Operation	Impact	Grievance recording and handling	- Check the recorded grievances in grievance record book and their addressing mechanism	Three times a year	No cost	MMC/ Municipality	

## 5.5 Reporting

The site team will prepare and submit monthly reporting with photographs depicting the progress at site to the senior management within one week of the subsequent month. The senior management based on the monthly reports prepares and share the trimester report to the World Bank until the completion of the subproject.

## 5.6 Budget

Cost estimates for the proposed mitigation measures and for ensuring compliance, to be included in the budget of the project market.

**Table 5-3: Environmental and Social Management Cost**

SN	Activities	Cost	
		Construction	Operation
<b>A.</b>	<b>Mitigation Cost</b> (Included in BoQ)		
	Water sprinkling	25,000	-
	Solid waste management	7,10,046.57	-
	Deep tube well	3,68,653.01	-
	PPE	50,000	-
	Insurance	78,232.19	-
	PCR Test	1,32,000	-
	Information board	10,000	-
	Temporary fencing	1,44,434	-
	Labor camp	1,20,000	-
	Manure pit	88,261.12	-
	Biopit	7,22,611.25	-
	Septic tank	2,61,554.14	-
	Soak pit (2nos.)	636861.93	-
	Peripheral drain	1,35,943.02	-
	Fire hazard	18,193	-
	Entry and exit gate	5,791,03.20	-
	Permanent fencing (GI wire mesh fencing)	1,001,892.54	-
<b>B.</b>	<b>Monitoring Cost</b> (cost is per year cost)	-	-
	Functioning of soak pit, septic tank	-	15,000
	<b>Total (NRs.)</b>	<b>5,082,785.97</b>	<b>15,000</b>

The implementation cost of Environmental and Social Management Plan is 5,082,785.97 (In words: Five million Eighty Two Thousand Seven Hundred Eighty Five Rupees and Ninety Seven Paise only) which is 11.4% of total sub-project cost.

## **CHAPTER VI: CONCLUSION**

The proposed subproject is the existing historical livestock market place where lacks the proper infrastructure. The boundary walls and toilet are weak and vulnerable. The upgrading of existing market aids to held the weekly market in a better way. The subproject does not cause any major environmental and social impacts to the people and communities. The benefits as well as adverse impacts were outlined during the ESMP preparation. The identified adverse impacts are nominal and can be mitigated by adopting prescribed mitigation measures. The implementation of proposed subproject will provide several beneficial impacts in the subproject area and community. During the construction phase, the project will provide employment opportunities for the locals and enhances the economic condition. The proposed subproject does not incur environmental and social impacts. Thus, the proposed construction of Livestock Market provides benefits in the local ground.

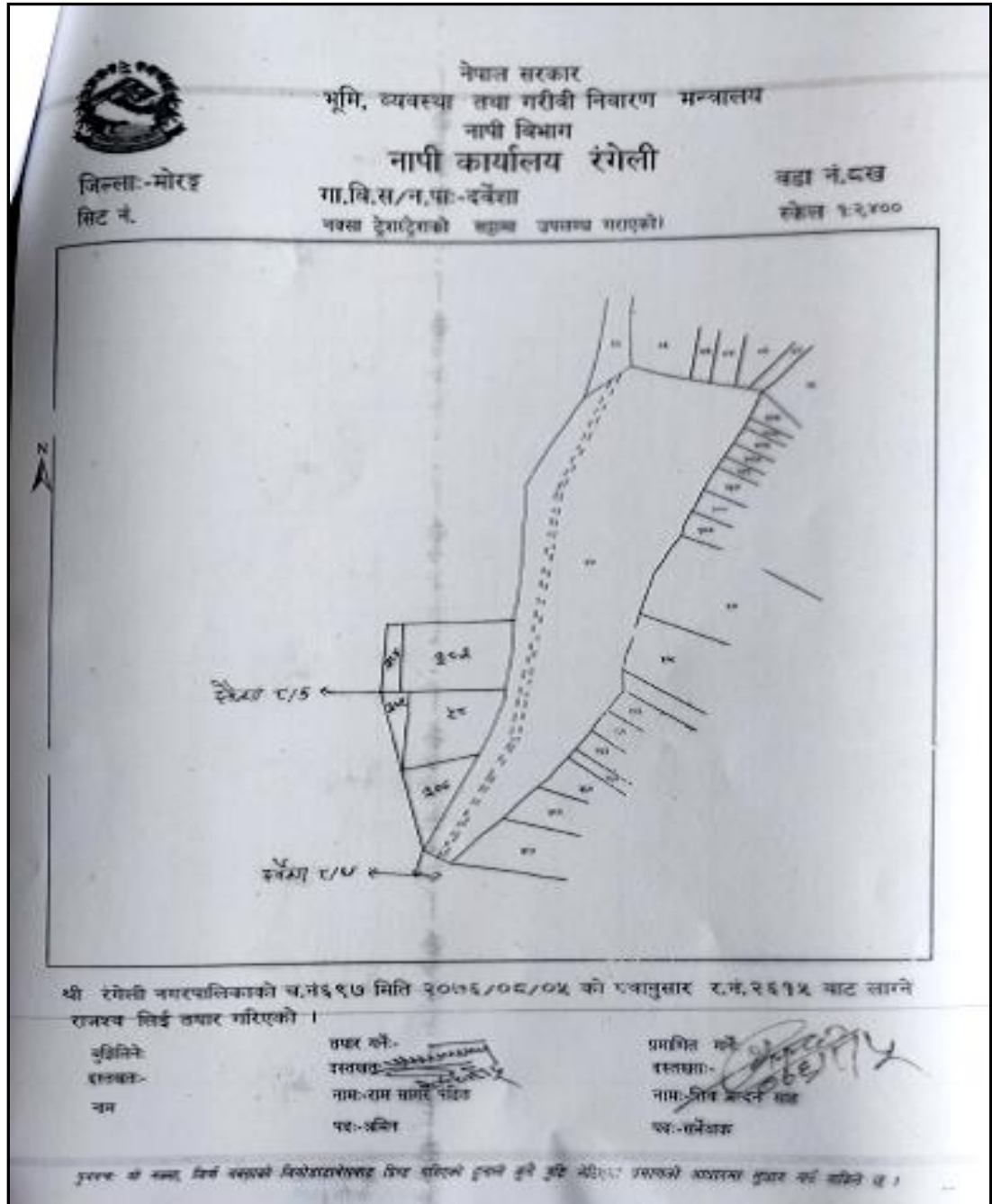


Annex II: Land Ownership

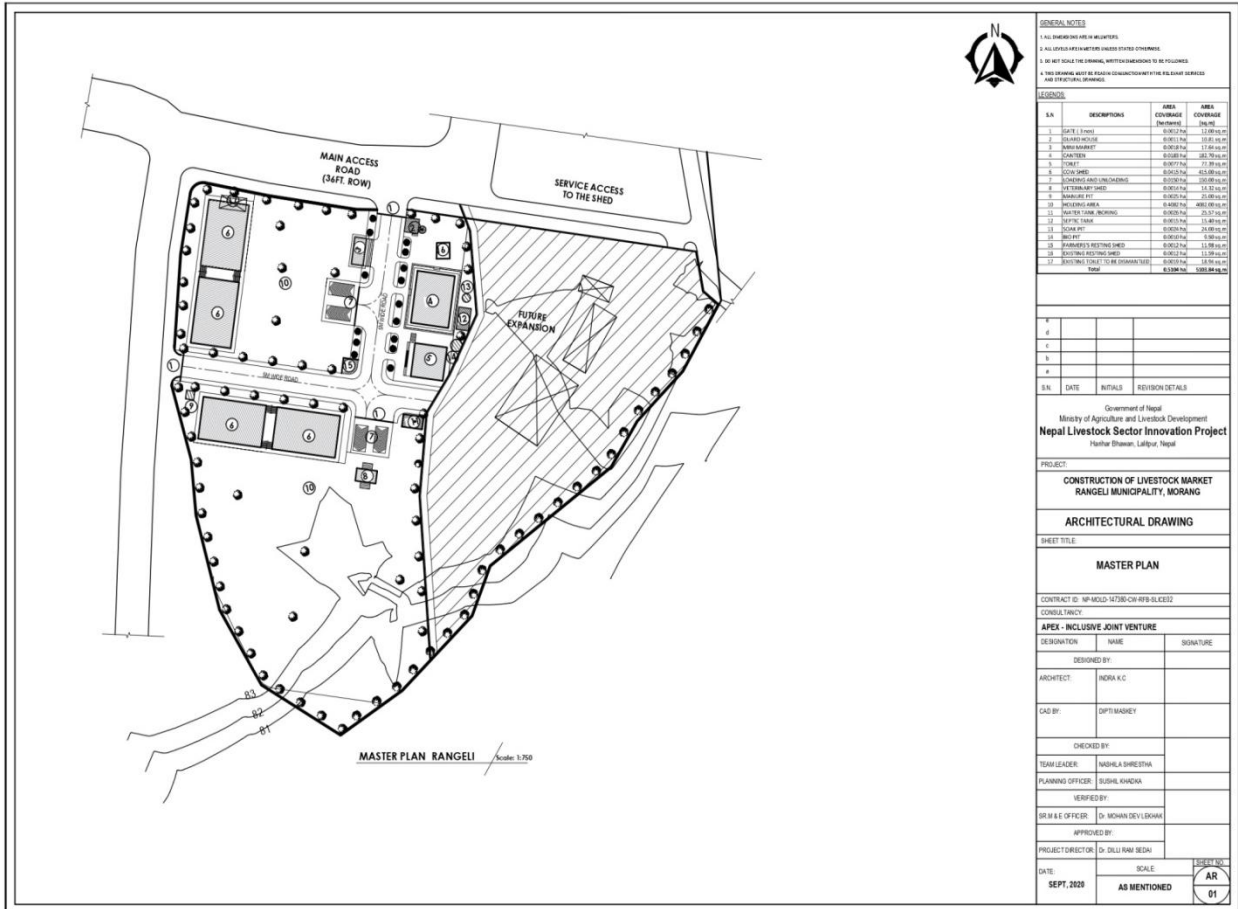
क्रमांक	संख्या	संस्था	प्रकार	क्षेत्र	मालिक	पता	दिनांक	विवरण	संख्या	मालिक	पता	दिनांक	विवरण	संख्या	मालिक	पता	दिनांक	विवरण	
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2	1/5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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5	1/5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	1/5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	1/5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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Annex III: Trace Map



# Annex IV: Site Plan



**GENERAL NOTES**

1. ALL DIMENSIONS ARE IN METERS.
2. ALL DIMENSIONS MUST BE CHECKED BEFORE CONSTRUCTION.
3. DO NOT SCALE THE DRAWING, WRITE DIMENSIONS TO BE FOLLOWED.
4. THE DRAWING MUST BE READ IN CONJUNCTION WITH RELATED SPECIFICATIONS AND TECHNICAL MEMORANDUMS.

**LEGEND**

S.N.	DESCRIPTIONS	AREA COVERAGE (SQUARE METERS)	AREA COVERAGE (SQUARE FEET)
1	OFFICE	60.00	648.00
2	SHED	100.00	1076.41
3	SHED	100.00	1076.41
4	SHED	100.00	1076.41
5	SHED	100.00	1076.41
6	SHED	100.00	1076.41
7	SHED	100.00	1076.41
8	SHED	100.00	1076.41
9	SHED	100.00	1076.41
10	SHED	100.00	1076.41
11	SHED	100.00	1076.41
12	SHED	100.00	1076.41
13	SHED	100.00	1076.41
14	SHED	100.00	1076.41
15	SHED	100.00	1076.41
16	SHED	100.00	1076.41
17	SHED	100.00	1076.41
<b>TOTAL</b>		<b>1300.00</b>	<b>14069.64</b>

REVISIONS:

NO.	DATE	INITIALS	REVISION DETAILS

Government of Nepal  
Ministry of Agriculture and Livestock Development  
**Nepal Livestock Sector Innovation Project**  
Hathar Bhanu, Lalpur, Nepal

PROJECT:  
**CONSTRUCTION OF LIVESTOCK MARKET  
RANGELI MUNICIPALITY, MORANG**

ARCHITECTURAL DRAWING

SHEET TITLE:  
**MASTER PLAN**

CONTRACT ID: NP/MSD/14782-CH/49-01/02/02

CONSULTANT:  
**APCA - INCLUSIVE JOINT VENTURE**

DESIGNATION	NAME	SIGNATURE
DESIGNED BY:	INDRA K.C.	
ARCHITECT:	INDRA K.C.	
CAD BY:	DIPTI WADNEY	
CHECKED BY:		
TEAM LEADER:	INDRA K.C.	
PLANNING OFFICER:	SUSHIL KHANDAKI	
VERIFIED BY:		
SR M & E OFFICER:	DR. MOHAN DEV DOWLA	
APPROVED BY:		
PROJECT DIRECTOR:	DR. DILLI RAM BISHA	

DATE: **SEPT, 2020** SCALE: **AS MENTIONED**

SHEET NO.  
**AR**  
**01**

Annex V: Consultation Minute

बाल मित्री २०७७ साल भाद्र महिना १७ गते रोज ४ का दिन प्रदेश नंबर १ अन्तर्गत बोल्डर क्लिफका रेल्वेला नगरपालिका ९ नं. बडा दोह्रमाना गाउँमा नेपाल लाहभर्तक सेक्टर सपोर्ट आयोजना अन्तर्गत निर्माण हुन लागेको दोह्रमाना पशुहाट उप आयोजना सम्बन्धमा प्रमुख अतिथी श्री विविप कुमार अग्रवाल (रेल्वेला नगर प्रमुख) खुबो कायमशतमा निम्न सरोकारवालाहरु, व्यक्तिहरु र आयोजनाका पदाधिकारीहरु बीच मिटिग यसी निम्न अनुसारको निर्णय भयो ।

उपस्थिती

क्र. सं.	उपस्थित व्यक्तिको नाम, घर	पद	ठेगाना	हस्ताक्षर	कैफियत
१	श्री विविप कुमार अग्रवाल	नगर प्रमुख	रेल्वेला न.पा.		
२	श्री केशव कुमारी घराल	नगर उप-प्रमुख	रेल्वेला न.पा.		
३	श्री डीम प्रसाद लवेदी	प्र.प्र.व.	रेल्वेला न.पा.		
४	श्री केदारचन्द राजवंशी	बडाध्वज	रेल्वेला ९		
५	श्री डक प्रसाद आर्चाय	बडाध्वज	रेल्वेला ८		
६	श्री नाम कुमार निराल	१५७ लुला	रेल्वेला ९		
७	श्री प्रहलद विष्णुलाल	" "	" ९		
८	श्री विमल ठकुर	स्थानीय	" ९		
९	श्री सुब्रह्मण्य सिंह	" "	" ९		
१०	श्री गौरी राजवंशी	" "	" ९		
११	श्री राजीव राजवंशी	" "	" ९		
१२	श्री सुरज सिंह	" "	" "		
१३	श्री बुद्ध गली वैद्य	" "	" "		
१४	श्री लपुन डोपडा				
१५	श्री भीम १० पौडेल				
१६	श्री विमानलाल साह				

१०	लक्ष्मी सिद्धेश					
१८	गौरी प्रसाद कुशवाह					
१९	भारिल पाणका					
२०	रुपा राम					
२१	विनाकुं लिम्बु					
२२	राध-गन्ध श्रद्धेश					
२३	दिपलाल राय					
२४	सिरीलक्ष्मी काम्ठी					
२५	विष्णुगन्ध माग्ठी					
२६	सन्तोष मण्डल					
२७	विनायक बुडाल					
२८	दीपक बुडाली					
२९	राज बुडाली					
३०	अदिप खात					
३१	मिना राय					
३२	गुला श्रद्धेश					
३३	नमा श्रद्धेश					
३४	काम्ठी श्रद्धेश					
३५	शक्तिगन्ध पित्तेश					
३६	कृष्णाक्ष पित्तेश					
३७	काग, लफन नागंधी					
३८						


### मिटिंगका एजेण्डाहरू

१. प्रस्तावित उप- आयोजनाको नानि जग्गाको उपलब्धताक (लाल पुर्जा, ट्रेस नक्सा, जग्गादाताको सहमति पत्र इत्यादि),
  २. प्रस्तावित उप- आयोजनाको निर्माणकार्यबाट जनसमुदायमा पर्ने सक्ने असरहरू र त्यसको निराकारणका उपायहरू,
  ३. जोखिममा परेको समुदाय, आदिवासी जनजाती, पिछडिएका समूह, एकल महिला आदिनाई पर्ने सक्ने असरहरू,
  ४. त्यस क्षेत्रमा रहेका मौजुदा संरचनाहरू ( भवन, सिँचाई कुलो, खानेपानी, मठमन्दिर बुम्बा, मस्जिद इत्यादि) मा पर्ने सक्ने असरहरू,
  ५. प्रस्तावित उप- आयोजनाको निर्माणकार्यबाट जनसमुदायमा पर्ने सक्ने वातावरण सम्बन्धि असरहरू र त्यसको निराकारणका उपायहरू र
  ६. यस प्रस्तावित निर्माणकार्य प्रति जनसमुदाय बाट कुनै गुनासाहरू भएमा उल्लेख गर्नु पर्नेछ।
७. विविध

### निर्णयहरू

प्रस्तावित उप-आयोजनाको नानि जग्गाको उपलब्धताका लागि लाल पुर्जा, ट्रेस नक्सा, जग्गादाताको सहमति पत्र इत्यादि प्राप्त भएको छ।  
जग्गादाताको सहमति पत्र प्राप्त भएको छ।  
जोखिममा परेको समुदाय, आदिवासी जनजाती, पिछडिएका समूह, एकल महिला आदिनाई पर्ने सक्ने असरहरू, त्यस क्षेत्रमा रहेका मौजुदा संरचनाहरू ( भवन, सिँचाई कुलो, खानेपानी, मठमन्दिर बुम्बा, मस्जिद इत्यादि) मा पर्ने सक्ने असरहरू, प्रस्तावित उप-आयोजनाको निर्माणकार्यबाट जनसमुदायमा पर्ने सक्ने वातावरण सम्बन्धि असरहरू र त्यसको निराकारणका उपायहरू र यस प्रस्तावित निर्माणकार्य प्रति जनसमुदाय बाट कुनै गुनासाहरू भएमा उल्लेख गर्नु पर्नेछ।

यसबाट निर्णय गरियो कि उप-आयोजनाको निर्माणकार्यबाट जनसमुदायमा पर्ने सक्ने वातावरण सम्बन्धि असरहरू र त्यसको निराकारणका उपायहरू र यस प्रस्तावित निर्माणकार्य प्रति जनसमुदाय बाट कुनै गुनासाहरू भएमा उल्लेख गर्नु पर्नेछ।





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## Annex VI: SOP on COVID-19

**Checklist covering OHS (Occupational Safety and Health), CHS (Core Humanitarian Standard), Hygiene & Sanitation, Diseases Safety to safeguard against COVID 19 during executing small Civil Works for NLSIP**

S.N	List of Activities	Yes	No	N/A	Remarks
<b>Effecient and comfort Working Environment</b>					
1	Appointment or designation of a contact person at the workplace to solve any concerns and set up ways of communication with workers to connect with them daily (ex. morning meetings, group SMS, etc.). Provide information to workers about the support available to them (ex. through group SMS, meetings, or morning meetings, etc.).				
2	Increase access to closed bins in your workplace.				
<b>Planning Ahead</b>					
3	Avoiding entry of new workmen from known hotspots of COVID 19.				
<b>Symptoms Monitoring</b>					
4	Put up signs about the symptoms of COVID-19 in the workplace.				
5	Instruct workers to stay home if they are sick, and if they are displaying symptoms of COVID-19. Treat personal information about the individual worker's health carefully and confidentially.				
<b>Physical Distancing at Workplace and Office</b>					
6	Put up posters around the workplace on keeping at least 1.5 meters distance between everyone at the workplace. Erect signs at the entrances to meeting rooms to ensure the maximum safe capacity is not exceeded.				
7	Move work stations, desks, and tables in staffrooms further apart to comply with social distancing.				
8	If possible, bring in shift arrangements so less staff are in the workplace at once.				
<b>Hand Washing and Hygiene</b>					
9	Ensure hand sanitizer stations at entry and exit points and around the workplace.				
10	Ensure bathrooms are well stocked with hand wash, cleaned frequently, and well ventilated with toilet paper (as applicable).				
11	Put up posters with instructions on how to hand wash/hand rub.				
12	Instruct workers on other ways to limit the spread of germs, including by not touching their face, sneezing into their elbow, and				

S.N	List of Activities	Yes	No	N/A	Remarks
	staying home if feeling sick and instruct workers to limit contact with others– no shaking hands or touching objects unless necessary.				
13	Put up signs to request workers only touch tools & equipment they require and use during execution of works.				
<b>Cleaning</b>					
14	Ensure any areas frequented by workers or others (e.g. visitors to the premises) are cleaned at least daily with detergent or disinfectant.				
15	Instruct workers to wear gloves when cleaning; wash their hands thoroughly with soap or use an alcohol-based hand sanitizer before and after wearing gloves.				
16	Clean frequently touched areas and surfaces with a detergent or disinfectant solution or wipe. This includes equipment, switches, levers, handrails, tables, countertops, doorknobs, sinks, and keyboards.				
17	Instruct workers to clean personal property that comes to work, such as sunglasses, mobile phones, laptops with disinfectants.				
<b>Workmen Camp</b>					
18	Daily thermal screening and symptom checking of cooks.				
19	Cleaning and disinfection daily once the cooking is over.				
20	Staggered Timings for dining to be adopted to limit the number of workmen using the hall or dining table to maintain social distance or Increase the Space of dining facility where possible.				
<b>Restriction of a worker from Camp</b>					
21	Worker exit access shall be restricted to avoid infection from outside the community.				
22	Any worker going out of the habitat shall get a gate pass from the camp supervisor or authority.				
<b>Consultation and Grievance Mechanisms</b>					
23	Ensure community representatives provided with easy means to voice their opinions and lodge complaints.				



**Annex VII: Photographs (Proposed Site)**

