



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
Water Sector Governance and Infrastructure Support Project
Project Implementation Unit
Sharada Municipality, Salyan

Detailed Project Report of Khairabang Community Water Supply Project

Sharada Municipality, Salyan

Draft Report

Volume I: Main Report

Volume II: Cost Estimate and Appendix

Volume III: Drawings

Volume IV: Bidding Document with Specification

Volume V: Environmental & Social Screening Report

Volume VI: Environmental and Social Management Plan

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**AARVEE-FBC-
PARAGON JV**

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LIST OF ACRONYMS & ABBREVIATIONS

AMSL	Above Mean Sea Level
CBS	Central Bureau of Statistics
DLP	Defects Liability Period
DMA	District Metering Area
DWSSM	Department of Water Supply and Sewerage Management
DR	Dosing Unit
DoR	Department of Road
E&S	Environmental and Social Screening
EPR	Environment Protection Rule
ERVt	Existing RVT
ESRI	Environmental Systems Research Institute, Inc.
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
GESI	Gender Equality & Social Inclusion
GH	Guard House
GI	Galvanized Iron
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
GoN	Government of Nepal
HDPE	High-Density Polyethylene Pipe
HH	Household
HP	Horse Power
HIV	Human Immunodeficiency Virus
ICIMOD	International Centre for Integrated Mountain Development
IDA	International Development Association
KWSP	Khairabang Water Supply Project
KM	Kilometre
Kph	Kilometre per Hour
kVA	kilo Volt Amperes
LMP	Labour Management Plan

MLD	Millions of Liters per Day
MoFE	Ministry of Forests and Environment
MoWS	Ministry of Water Supply
MST	Municipal Support Team
MWASH	Municipal Water, Sanitation and Hygiene
NOC	No Objection Certificate
NRs	Nepalese Rupees
NDWQS	National Drinking Water Quality Standard
ODF	Open Defecation Free
PAP	Project Affected Person
PCP	Pump Control Panel
PIC	Project Implementation Committee
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PR	Primary Reservoir
PRVT	Proposed RVT
PST	Project Support Team
PST	Pumping Station
PH	Pump House
RAP	Resettlement Action Plan
RVT	Reservoir Tank
STD	Sexually transmitted Diseases
STO	Store
TL	Transmission Line
TRVT	Transmission Reservoir Tank
USD	United States Dollar
VDC	Village Development Committee
Vs.	Versus
WaSGISP	Water Sector Governance and Infrastructure Support Project
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

WSP	Water Supply Plan
WSUC	Water Supply & Sanitation Users Committee
WTP	Water Treatment Plant

1. Introduction

1.1 Background

The Government of Nepal, with financial assistance of USD 80 million from the World Bank, is implementing the Water Sector Governance and Infrastructure Support Project (WaSGISP) to improve water supply and sanitation services and strengthen institutional capacity under the federal structure. The project, led by the Ministry of Water Supply (MoWS) and implemented by the Department of Water Supply and Sewerage Management (DWSSM) in coordination with six municipalities across Karnali and Sudurpashchim Provinces, is structured around four key components: institutional strengthening, expansion of climate-resilient services, integrated water resource and watershed management, and emergency response.

1.2 Project Description

Sharada Municipality is located in the Salyan District of Karnali Province of Nepal. The municipality was established in 2014 (2071 BS) as a local government of Nepal by merging Dandagaun, Hiwalcha, Kajeri, Khalanga, Marke, Saijuwal Takura, and Syanikhal Village Development Committees (VDCs) on May 18, 2014.

Geographically, Sharada Municipality is situated in the Siwalik range of the mid-western hilly region of Nepal, along the Sharada River. It lies between latitudes 28°18'51" N to 28°27'44" N and longitudes 82°02'40" E to 82°16'36" E, with an elevation ranging from 1,210 to 1,830 meters above mean sea level. The municipal headquarters is located in Khalanga, Salyan. As part of the Water Sector Governance and Infrastructure Support Project (WaSGISP), the Khairabang Community Water Supply System (KCWSP) has been duly prioritized as significant sub project which covers wards 1, 11 & 12 of the service area given in map below:

Table 1: Service area of the WS System

SN	W. No.	Name of the Covered Settlements of Khairabang WSP
1	1	Chaibang Jyula, Chaibang Gau, Dobri Chaibang, Shantinagar, Darimchaur, Bhagawotikhola, Chhappanda, Domati, Kafli
2	11	Kafli, Lekha, Khairabang, Danda Sim, Aswaamgau
3	12	Phaledajyula, Chisapani

There are several existing small water supply schemes which depend on local tiny sources which used to get deplete in dry season and insufficient in other season as well. Thus, the existing service is insufficient, unsafe and unreliable. To address these issues of water shortage, Khairabang CWSP is envisioned and it is a totally new project.

Chaibang Jyula, proposed boring station is situated at the right-hand side of Shaarada river and assumed most reliable source for the extraction of ground water for the proposed lift or pump.

Chaibang Jyula, proposed boring station is a most potential location/source with sufficient land area having (public place) and no any social dispute found located in Ward No.1 of the municipality (former Ward 1 of Khalanga VDC). The nearby public land is occupied by some small structures and houses. However as of now, the available barren space is enough for the project structure construction in this site. If project requires additional space that leads to use of structures or demolition of structures, the compensation of the structures shall be provided. The required design discharge for the Khairabang CWS system will be collected in the collection chamber transferred to WTP and RVT1 on the intake site of Chaibang Jyula. The service area of the KCWSP is confined in several settlements (15settlements) of 3 wards of the Sharada municipality. It covers major settlements of ward No 1 like Darimchaur, Bhagawoti khola, Chhapdanda, Chaibanggau, Shantinagar, Khairabang of ward No-1 including Khairabang devi temple and Phaleda jyula and Chisapani settlements of ward No-12. The KWSP is designed to provide water in bulk to the existing Khalanga Shitalpati WUA. The salient features of the Khariabang Community Water Supply Project (KCWSP) are given in table below.

Table 2: Salient features of the project

SN	Items	Description
1	Name of Project	Khairabang Community Water Supply Project (KCWSP)
2	Type	4 Stage Pumping (Lifting)
3	Study Level	Detailed
4	Location Area	
	Province	Karnali Pradesh
	District	Salyan
	Municipality	Sharada
	Ward	Ward No. 1, 11, and 12
5	Available Facilities	
	Road	Link by Rapti Highway and Chinchu-Jararkot-Dunae HW
	Water Supply System	12 Schemes (DWSSM/WUSC and Other)
	Electricity	Available
	Communication	Available
	Health Services	Available
	Banking Facilities	Available
6	Social Status	
	Present HHs Numbers (2025)	1,199
	Present Population (2025)	5,397
	Base Year Population (2028)	6,008
	Design Year Population	12,788

SN	Items	Description		
	(2048)			
	Weighted Growth Rate % (WGR)	Based on Growth Rate at Each Ward		
	Projected HHs in Design Year (based on WGR)	~2,842		
7	Water Demand			
	Present Year (2025)	0.540697 MLD (6.26 LPS)		
	Base Year (2028)	0.600415 MLD (6.95 LPS)		
	Design Year (2048)	1.312374 MLD (15.19 LPS)		
8	Source Characteristics			
	Source Name and Location	Two Deep Boring Wells near Sharada River within service area		
	Source Type	Sub-surface		
	Safe Yield	Two deep bore wells, each with a yield exceeding 8 LPS.		
9	Type of Structures			
9.1	Intake Arrangement	Two Deep Bore Wells		
9.2	Treatment Plant	Two Vertical Pressure Filters		
9.3	Pumps Location and Capacity on LHS of Proposed Service Area	Pumping Station	No and HP	
9.4	Electricity line	PST-1 to PST-2	2-42	
		PST-2 to PST-3	2-42	
		PST-3 to PST-4	2-5.5	
		PST-4 to PST-5	2-5.5	
		Cumulative length of electricity line of about 2.9 Km.		
9.5	Transformer	100 KVA in PST1 and PST2, 25kVA in PST3 and PST4		
9.6	Reservoir Details (all Proposed RVT are of Circular RVT	Total RVTs		8 Nos
		Incorporated Existing RVT		0 Nos
		Proposed New		8 Nos
		RVTs for Solely Distribution (Khairabang, Chisapani, Chhapdanda, Darimchaur)		4 Nos
9.7	Proposed RVT Location, Capacity and Function	TRVT/RVT	Function of RVT	Size (m³)

SN	Items	Description		
		TRVT-1 (Chaiwang Jyula)	Balancing (Bal)	400
		TRVT-2 (Lower Dobrichaiwang)	Bal+Dist	400
		TRVT-3 (Dobrichaiwang)	Bal+Dist	400
		TRVT-4 (Upper Dobrichaiwang)	Bal	30
		TRVT-5 (Khairabang)	Dist	50
		PRVT-1 (Chisapani)	Dist	30
		PRVT-2 (Chhapdanda)	Dist	100
		PRVT-3 (Darimchaur)	Dist	200
10	Number of BPTs/ICs (Nos)	11 (CJ:1, DCS:2, CD:2, DC:2, KD: 4)		
11	Office			
	Khairabang WSP Office	2-Storey RCC Frame Structure		
	Khalanga Sittalpati WSP Office	2-Storey RCC Frame Structure		
12	Small Guard House	2- Nos (at Intake and TRVT3) of RRM Type		
13	Dosing Unit	2 (At TRVT1 and TRVT3)		
14	Pump Control House	4 (At Each Pump Station)		
15	Household Connection			
	New HH Connection	849 Nos.		
	Existing HH Connection	350 Nos.		
	Fire Hydrant	6		
16	Total Length of Transmission Mains Pipe:	4039 m		
17	Total Length of Bulk Distribution Mains Pipe:	2979 m		
18	Total Length of Service Distribution Pipe:	40,432 m		
19	Electricity Cost per Household			
	In Base Year (2028)	NRs. 130		
	In Design Year (2048)	NRs. 147		
20	Water Tariff per Household			

SN	Items	Description
	In Base Year (2028)	NRs. 336
	In Design Year (2048)	NRs. 314
21	Capital Cost of the Project	NRs. 314
	Base Cost only	NRs. 187,410,288.14
	Total Cost incl. VAT and Contingencies	NRs. 253,003,888.99
22	Per Capita Cost at Present Year (2025)	NRs. 46,878.62
	Per Capita Cost at Base Year (2028)	NRs. 42,111.17
	Per Capita Cost at Design Year (2048)	NRs. 19,784.48

Details of Reservoir name, Type, Size in volume, Water holding capacity, DMA (District Meter Area), RVT function have been tabulated below:

Table 3: Details of Reservoirs in Khairabang CWSP

SN	Tank Name	Tank Type	Size (Litres)	Size (m3)	DMA ID
1	TRVT-1	Bal	400000	400	
2	TRVT-2	Bal+Dis	400000	400	DMA-1
3	TRVT-3	Bal+Dis	400000	400	DMA-2
4	TRVT-4	Bal	30000	30	
5	TRVT-5	Dis	50000	50	DMA-3
5	PRVT-1	Dis	30000	30	DMA-4
6	PRVT-2	Dis	100000	100	DMA-5
7	PRVT-3	Dis	200000	200	DMA-6

1.3 Sub-Project Components

1.3.1 Deep Tube Well

Two deep tube wells, each with a depth of 100 m, are proposed to supply 10 L/s from each well. The extracted water will be conveyed to the water treatment plant, where it will undergo filtration and chlorination to ensure safe and potable water for the service area.

1.3.2 Transmission Main

The transmission main consists of pumping mains to fetch water to upper reservoirs. Four-stage pumping is done to fetch water to top reservoir located at Khairabang.

PUMP TRANSMISSION MAINS (INPUT DETAILS OF KC WSP)								
Structure ID	Elevation (m)	Elev. Diff.	From_To	Actual Link Length	Design Link Length	Pipe Type	Pump Station ID	Remarks
DeepTubeWell	865.17	-						Deep Tubewell
CC	965.17	-100	DeepTubeWell_CC	20				Coll Chamber
Pressure Filter	965.17	0	CC_Pressure Filter	20	22.00	PE		Treatment Plant
CJ_RVT	965.17	0	Pressure Filter_CJ_RVT	20	22.00	PE	PST_1	TRVT1
LDC_RVT	1153.55	-188.4	CJ_RVT_LDC_RVT	685	753.50	Seamless	PST_2	TRVT2
DCS_RVT	1359.97	-206.4	LDC_RVT_DCS_RVT	1290	1419.00	Seamless	PST_3	TRVT3
Upper_Dobrichaiwang_RVT	1513.14	-153.2	DCS_RVT_Upper_Dobrichaiwang_RVT	696	765.60	Seamless	PST_4	TRVT4
KB_RVT	1677.1	-164	Upper_Dobrichaiwang_RVT_KB_RVT	1368	1504.80	Seamless		TRVT5
EL. DIFF =	711.93		Total Pumping Length=	4039.0	4443.0			
Design Link Length (m) consists of 10% extra length								
Dynamic Viscosity of Water at 20 degree C =					0.0010016	N s/m2		
Absolute Roughness of Seamless Pipe =					0.20	mm		
Absolute Roughness of GI Pipe =					0.20	mm		
Head loss Coefficient in Bell Mouth, K =					0.5			
Head loss Coefficient in Bend, K =					0.4			
Head loss Coefficient in NRV, K =					2			
Head loss Coeff. in Discharge Valve (Globe), K =					5			

1.3.3 Pumping System

Design criteria :				Fittings Loss	No	K-Value	
Depth of Casing (m):	7			Head loss in Bell Mouth	1	0.5	
Residual Head (m):	5			Head losses in Bend	15	0.4	
Number of Pumps (m):	2			Head loss in NRV	1	2	
Lea's Constant:	1.095	(0.97 to 1.22)		Head losses in Discharge Valve	1	5	
HW Roughness Coeff, C	100	(90-140) for seamless pipes					
Other Losses (m):	25%	of Fric and Fitt losses					
Density of water:	1000	kg/m ³					
Pump Efficiency:	80%						
Motor Efficiency:	80%						
Water Density, ρ =	1000	Kg/m ³	Density of Water				
Elasticity Modulus of Water	2.09E+09	Pa	Compression Elasticity modulus (Young's Modulus) for water ($P_a = N/m^2$).				
E_{pipe} =	1.80E+11	Pa	Tension Elasticity Modulus (Young's Modulus) for pipe material .($P_a = N/m^2$)				
Pump Station ID	PST_1	PST_2	PST_3	PST_4	BH1	BH2	
RL Diff (m):	188.38	206.42	153.17	163.96	35.00	35.00	
Depth of Casing (m):	7.00	7.00	7.00	7.00	7.00	7.00	
Residual Head required	5.00	5.00	5.00	5.00	5.00	5.00	
Total Static Head (m):	200.38	218.42	165.17	175.96	47.00	47.00	
Design Pipe Length (m):	754	1419	766	1505	57	57	
Number of Pumps:	2.00	2.00	2.00	2.00	1.00	1.00	
Flow/Pump (lps):	8.50	8.50	1.00	1.00	10.00	10.00	
Combined Flow (lps):	17.00	17.00	2.00	2.00	10.00	10.00	
Using Lea's Formula, Economic Size of Pipe (mm)	142.77	142.77	48.97	48.97	109.50	109.50	
Adopt, Nominal Pipe Diameter (mm):	150.00	150.00	80.00	80.00	125.00	125.00	
Pipe Outer Diameter (mm)	168.30	168.30	88.90	88.90	132.00	132.00	
Pipe Thickness (mm)	7.11	7.11	5.49	5.49	5.49	5.49	
Pipe Internal Diameter (mm)	154.08	154.08	77.92	77.92	125.00	125.00	
Velocity (m/s):	0.9117	0.9117	0.4194	0.4194	0.8149	0.8149	
Velocity Head:	0.0424	0.0424	0.0090	0.0090	0.0338	0.0338	
Headloss: Frictional-HW (m)	7.5628	14.2424	4.0291	7.9193	0.5924	0.5924	
Headloss: Fittings (m)	0.572	0.572	0.121	0.121	0.4569	0.4569	
Headloss: Others (% of F&F) (m)	2.0337	3.7036	1.0375	2.0101	0.2623	0.2623	
Total Dynamic Head (m)	10.17	18.52	5.19	10.05	1.31	1.31	
Total Design Head (m)	210.55	236.94	170.36	186.01	48.31	48.31	
Ideal Hydraulic Power (KW)	17.56	19.76	1.67	1.82	4.74	4.74	
Required Hydraulic Power (KW)	27.43	30.87	2.61	2.85	7.41	7.41	
Required Pump Capacity (HP)	36.79	41.40	3.50	3.82	9.93	9.93	
Adopt, Pump Capacity (HP)	42.00	42.00	5.50	5.50	10.00	10.00	
Adopt, Pump Capacity (KW)	31.32	31.32	4.10	4.10	7.46	7.46	
Water Hammer Calculation							
Wave Velocity, a (m/s):	1292.22	1292.22	1339.52	1339.52	1285.69	1285.69	
Period of Vibration, T (sec):	1.166	2.196	1.143	2.247	0.089	0.089	
Pressure due to Water Hammer (m):	120.10	120.10	57.27	57.27	106.80	106.80	
Hmax = Hstatic + Hfloss+ Hhammer	330.65	357.04	227.63	243.28	155.11	155.11	

1.3.4 Saddle Posts

Both RCC and PCC saddle supports are incorporated to provide structural stability to the transmission mains. RCC saddle supports are installed along the pumping mains at intervals of 5.75 m, while PCC saddle supports are utilized for the bulk transmission mains to ensure proper load distribution and alignment.

1.3.5 River and Stream Crossing

Three stream crossings are incorporated in the bulk transmission mains to convey water across natural waterways. A 45 m crossing is provided along the transmission main from Lower Chaiwang to the Chisapani area, spanning the Sharada River. The other two crossings serve the transmission main from Dobrichaiwang to Darimchaur: an 18 m crossing from Dobrichaiwang to

Chhapdanda, and a 16 m crossing from Chhapdanda to Darimchaur. These crossings ensure uninterrupted water delivery across streams while maintaining hydraulic and structural integrity of the transmission mains.

1.3.6 Water Treatment Plant

A pressure filter is proposed as the primary treatment unit for raw water abstracted from the two deep tube wells, with one filter assigned to each well. The treatment process includes filtration followed by chlorination to ensure water quality meets potable standards. Baseline water quality parameter is taken from test report sampled from deep boring in nearby/similar location constructed by Khalanga Sheetalpati WSP which shows the presence of faecal coliform. The test report is annexed in this report. Treated water is subsequently collected in the service Reservoir Valve Tank (RVT) located at Chaiwang Jyula.

1.3.7 Service Reservoir

A total of eight RCC reservoirs are proposed at strategic locations within the service area. Their locations have been optimized to provide the shortest conveyance routes while maintaining the required pressure and flow to all users, thereby improving the efficiency and reliability of the distribution network. Each reservoir is designed to store more than 30% of the total demand of its respective service area. The reservoir at Khairabang has been deliberately oversized due to its remote location at the highest point of the project area and its critical role in ensuring uninterrupted water supply.

1.3.8 Bulk Distribution Mains

Two bulk distribution mains are proposed to convey water between the service reservoirs. The first main runs from Lower Dobrichaiwang to Chisapani, while the second extends from Dobrichaiwang to Darimchaur via Chhapdanda, ensuring efficient and reliable water transfer across the network.

1.3.9 Distribution Main

The distribution system is organized into five separate District Metered Areas (DMAs), each served by an independent network to optimize monitoring and control. Pipe diameters for each DMA have been designed to accommodate peak demand while maintaining the required flow velocity and residual pressure at all service points. This approach ensures efficient water delivery, minimizes hydraulic losses, and allows for effective management of the distribution network.

1.3.10 House Connection

A total of 849 new household connections are proposed within the service area to utilize water from this project. In addition, 300 existing connections from a previous water supply scheme will be fully supplied by this project, ensuring that both new and existing users receive a reliable water supply from the upgraded system.

1.3.11 Chambers

The distribution network incorporates six RRM chambers and five RCC valve chambers to facilitate operation, maintenance, and flow control. Additionally, eleven RCC Break Pressure Tanks (BPTs) of four different sizes are proposed at strategic locations within the network to maintain pressure at the desired level.

1.3.12 Office, Guard Quarter, Guard Room, Dosing House and Boundary Wall

Two office buildings are proposed: one for the Khairabang WSP and another for the Khalanga Sitalpati WSP. Two guardhouses are provided to secure the premises, located at Chaiwang Jyula and Dobrichaiwang RVTs. Additionally, dosing houses are included at both Chaiwang Jyula and Dobrichaiwang RVTs to facilitate water treatment operations. All RVTs and the Khairabang office building are enclosed with boundary walls and chain-link fencing for security. Small access gates are integrated at all RVTs, while Chaiwang Jyula and Dobrichaiwang RVTs are equipped with both main and auxiliary gates to allow controlled entry and operational access.

1.4 Proposed Structures, Location and Land Ownership Status

As per the design data received from design team, in total 2366 square meter of land might require to install all identified structures. Based on field verification conducted by the Amin (land surveyor), the survey team and the Divisional forest Office team of Sharda Municipality Salyan; the actual forest land required for the sub-project has been determined to be 1939.5 square meters. Based on the field verification conducted by the Amin (land surveyor), the survey team, and the Divisional Forest Office team of Sharda Municipality, the actual forest land required for the sub-project has been determined to be 1,939.5 square meters. Project doesn't require any tree clearance and consent from the respective community forests have been taken to use the forest land and annexed in this report. As this Water Supply Project (WSP) utilizes two deep bore wells, a water treatment plant comprising two vertical pressure filters and two dosing units has been proposed—unlike the slow sand filters proposed for the Khairabang Community Water Supply Project (KCWSP).

Vertical pressure filters provide granular media filtration in an enclosed pressure vessel. Multiple vessels can be used to allow operating flexibility and backwashing from in-service filters. Under 0.75 MGD (2.8 MLD), they are typically more economical than horizontal pressure filters.

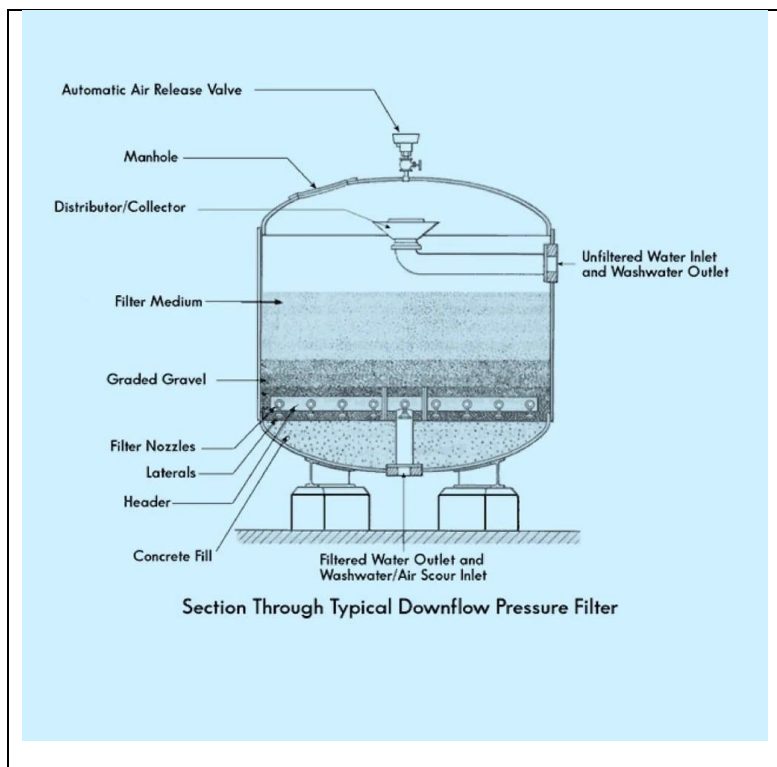


Figure 1: Model of Pressure Filter

The details of Proposed Structures, Location and Land Ownership Status is given in Table-4 below:

Table 4: Proposed Structures, Location and Land Ownership Status

S N	Location	Proposed Structure	Size Cubi c Mete r	Requi red Land Sq. m.	Land Ownersh ip Status	Existing Site Conditio n	Likely E & S Impact	Remark s
1	Sharada Municipalit y-1 Chaibang Jyula	RVT, Pressure Filter, CC, Pump House, Boring station Guard House	200	426.5	Public Land	Clear no any disturban ces	No Any Advers e Impact	Verified by Amin of Napi Office
2	Sharada Municipalit y-1 Lower Chaibang Gau, Janaki Community	RVT-2, Pump House	200	508.8	Forest Area	Grass & bush only	No Any Advers e Impact	Verified by Amin of Napi Office

	Forest							
3	Sharada Municipality-1 Upper Chaibang Gau, Janaki Community Forest	RVT-3, Pump House Guard House	200	508.8	Forest Area	Grass & bush only	No Any Adverse Impact	Verified by Amin of Napi Office
4	Sharada Municipality-1 Upper Chaibang Gau (Top), Janaki Community Forest	RVT-4, Pump House	100	63.5	Forest Area	Grass & bush only	No Any Adverse Impact	Verified by Amin of Napi Office
5	Sharada Municipality-11 Khairabang –Helipad, Bhuwaneshwory Community Forest	RVT-5	100	127.2	Forest Area	Open flat area no any plant	No Any Adverse Impact	Verified by Amin of Napi Office
6	Sharada Municipality-1 Darimchaur, Madhuwan Community Forest	RVT-6	100	254.3	Bushy Area / Public Land	Open flat area no any plant	No Any Adverse Impact	Verified by Amin of Napi Office
7	Sharada Municipality-1 Chhapdanda, Bhuwanesh	RVT-7	50	1.59	Forest Area, Public Land	Open flat area no any plant	No Any Adverse Impact	Verified by Amin of Napi Office

	wory Community Forest							
8	Sharada Municipalit y-12 Phaledajyul a, Community Forest	RVT-8	30	63.5	Forest Area, Public Land	Grass & bush only	No Any Advers e Impact	Verified by Amin of Napi Office
9	Sharada Municipalit y-11	Proposed Office Building for Khairabang WSP		254.4	Forest Area, Public Land	Open Space	No Any Advers e Impact	Verified by Amin of Napi Office
10	Sharada Municipalit y-1	Proposed Office Building for Khalanga Shitalpati WSP		190.8	Inside territory of Khalanga Sheetalpa ti WSP	Open Space	No Any Advers e Impact	Verified by Amin of Napi Office

Source: Field Survey 2025, Land Verification Report is being produced by NAPI & MALPOT office and Divisional Forest Office, Sharda, Salyan

Note: ~~The linear structures like electeical transmission line, pipeline and BPTs will be constructed along the public barren land, roads and foot trails. If not possible, they will be constructed from oneside of the privateland. The construction activities will be scheduled and aligned to aviod the impact on the crops and structures either informally or formally occupied, if not possible each and every loss shall be compensated.~~ Linear structures, such as electrical transmission lines, pipelines, and Break Pressure Tanks (BPTs), will be constructed along public barren land, roads, and foot trails wherever feasible. Where this is not possible, these structures will be aligned along one side of private land to minimize impacts. Construction activities will be carefully planned and scheduled to avoid or minimize adverse impacts on crops and on structures or assets that are formally or informally occupied. In cases where impacts cannot be avoided, all affected assets and losses will be identified, assessed, and compensated in accordance with the applicable compensation and resettlement provisions.

There is no use of any existing RVT and its components as they are not of ideal condition with leakage but Khalanga Sitalpati WSP will be integrated so its existing pipeline will be used for

distribution purpose to meet the water demand as per agreement. The Bulk Distribution System comprises PE Pipes and seamless pipes of the different diameter and length.

Table 5: Pipeline Alignment of Transmission line

SN	Pumping Mains	Total Head (m)	Des. Length of TL (m)	Diameter (mm)	Velocity (m/Sec)	Pipe Type
1	PST_1	197.38	685	150.00	0.91	Seamless Steel
2	PST_2	206.42	1290	150.00	0.91	Seamless Steel
3	PST_3	359.59	696	80.00	0.42	Seamless Steel
4	PST_4	163.96	1368	80.00	0.42	Seamless Steel

Table 6: Pipeline Alignment of Distribution line

S N	Distribution Mains	Des. Length of DL (m)	Diameter (mm)	Type of transmission	Pipe Type
1	Dobrichaiwang-Chapdanda-Darimchaur	2659	80,100,125 & 160	Gravity	6,10,16 Kg PE & Seamless Steel
2	Lower Dobrichaiwang-Chisapani	1336	63 & 65	Gravity	10 Kg PE,16 KG PE & Seamless Steel
3	Service Area Whole	40,432	50,63,75,90,110 , 125,140,160,180 & 200	Gravity	6, 10 & 16 Kg PE

The transmission main pipeline from TRVT-1 to TRVT-2 and the distribution pipeline from TRVT-2 (Lower Chaibang) to PRVT-1 (Phaledajyula/Chisapani) will cross the Tulsipur–Rukum Road using the existing road corridor where the pipes will be installed underground. This will reduce surface disturbance, avoid land acquisition and protect surrounding forest areas. The remaining section of the transmission line will pass through forest hill slopes, with Reservoir Tanks (RVTs) to be built on open areas of forest and public land which doesn't require any tree clearance. The pipeline will be aligned along hill slopes within forest areas, making use of existing foot trails or utility paths wherever possible.

1.5 Sustainability of the Source

Adjacent to the proposed service area lies the Khalanga–Sittalpati Water Supply Project, which currently operates deep tube wells yielding approximately 7 LPS. Given the proximity of our proposed borehole to this existing scheme, it is anticipated that both wells abstract groundwater from the same or a hydraulically connected aquifer system.

The planned groundwater abstraction rate for the project is 5 LPS from a single well (10 LPS from two wells), which remains lower than the present extraction by the adjacent system. In terms of groundwater sustainability, the proposed well site is located approximately 40 m from the Sharada River, a perennial watercourse. This proximity ensures continuous aquifer recharge through river–aquifer interaction, supporting the long-term reliability of the proposed groundwater source.

1.6 Pipe Alignments and Mitigation Measures of Soil Erosion

Pipe alignments both transmission and distribution will be aligned through forest area, public land, ROW of rural roads, foot trails and precaution have been laid to avoid from private land. However, in certain sections, it will traverse private and forest land. To minimize disruptions, the pipeline will be buried at a depth of 90 cm, allowing landowners to continue using the surface for regular activities. Wherever possible, Pipes will be placed along property edges to avoid restricting land use or construction and possible avoiding options will be taken during the joint survey. The design has been carefully planned to avoid residential structures and other significant buildings, ensuring minimal interference with existing infrastructure. To further reduce impacts, the pipeline will be installed along **one side of the road**, optimizing space and minimizing risks related to **vehicular movement, soil erosion, and surface runoff** but in case of unavoidable situation for household connection sections pipe will be laid from border line of land owners and it will be made by due consultations with respective land owners in presence of ward members.

The alignment of a water supply pipeline through steep forested areas requires careful planning to minimize environmental damage, ensure construction safety, and maintain long-term stability of the infrastructure. In such terrains, the key challenges may include soil erosion, landslide risks, disturbance to forest vegetation and wildlife habitats, and difficulty in access for construction and maintenance. To address these, the alignment will be selected to avoid unstable slopes, landslide prone areas, and ecologically sensitive zones, while following natural contours to reduce excavation impacts. Construction activities will be scheduled outside the monsoon season to lower erosion risks, and manual or light machinery will be used to limit ground disturbance. Trenches will be backfilled and compacted immediately after pipe laying, with slope stabilization techniques like bio-engineering and structural supports (retaining walls, gabions) applied where necessary. In very steep or rocky areas where digging is hard, the pipeline needs extra support and, in such case, RCC anchor support will be provided if necessary.

Accordingly, there are few chances of traversing pipe lines through steep and forested slopes in certain sections of transmission and distribution line. Considering the facts or site-based problems suitable mitigation as well as and protection measures will be implemented. Tables presentenced below illustrates the pipe alignments and several mitigation measures to minimize soil erosion risk and environmental problems.

Table 7: Alignment of Transmission Line, Soil Erosion risk and Mitigation Measures

SN	Section of TL		Elevation Difference	Link Distance (M)	Alignment details /Road etc.	Mitigation Measures to minimize soil loss and Environmental degradation
	From	To				
1	TRVT-1	RVT-2	188.4	685	Forest Area/ Public Land, No need of private land throughout the pipe line	Both RCC and PCC saddle supports are incorporated to provide structural stability to the transmission mains. Work manually and Provide protection walls including soil protection related bioengineering structures if necessary.
2	TRVT-2	RVT-3	206.4	1290	Forest area, Road width of Chaibang Khairabang Rural Road	Both RCC and PCC saddle supports are incorporated to provide structural stability to the transmission mains. Work manually and Provide protection walls including soil protection related bioengineering structures if necessary.
3	TRVT-3	RVT-4	153.2	696	Forest area/Public Land	Both RCC and PCC saddle supports are incorporated to provide structural stability to the transmission mains. Work manually and Provide protection walls including soil protection related bioengineering structures if needed
4	TRVT-4	RVT-5	164	1368	Forest area/Public Land	Both RCC and PCC saddle supports are incorporated to provide structural stability to the transmission mains. Work manually and Provide protection walls including soil protection related bioengineering structures if

						needed
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Table 8: Alignment of Distribution Line, Soil Erosion risk and Mitigation Measures

SN	Section of DL		Service Area/Settlements	Alignment Details /Road etc.	Mitigation Measures to minimize soil loss
	From	To			
1	TRVT-2	Chaibang Jyula & PRVT-1	Chaibang Jyula, Phaleda Jyula & Chisapani	Janaki CF area, Chaibang Jyula to Phaleda Jyula Rural Road & public Land	Pipe will be buried properly, BPT, CC & Pipe crossing structure might require but it will be installed in flat area to minimize soil erosion and land slide & Bio engineering will be applied as per need
2	TRVT-2	Chaibabang Jyula & PRVT-1	Chaibang Jyula, Phaleda Jyula & Chisapani	Janaki CF area, Bageswori CF, Chaibang Jyula to Phaleda Jyula Rural Road, Foot trail & public Land	Pipe will be buried properly, BPT, CC & Pipe crossing structure might require but it will be installed in flat area to minimize soil erosion and land slide & Bio engineering will be applied as per need
3	TRVT-3	PRVT-2 & 3 (Chhapdanda & Darimchaur)	Shantinagar, Chhapdanda, Darimchaur & Dobrichaibang Gau	Janaki CF, Bhuwaneswori CF- Chhapdanda, public place, existing width of Chaibang Khairabang road, ROW of Shreenagar to Khairabang Road, ROW of Chaapdanda Bhagawoti Khola-Darim Chair Rural Road and Madhuban CF area	Work Manually and Provide protection walls including soil protection related bioengineering structures if necessary. Both RCC and PCC saddle supports are incorporated to provide structural stability to the transmission mains.
4	TRVT-5	TRVT-5 is also a Distribution Tank	Danda Sim, Khairabang, Lekha and Kafli etc	Bhubaneswori CF, Khairabang-Hiwulcha Road, Khairabang –	Work Manually and Provide protection walls including soil protection related bioengineering structures if

				Dandasim Road, Namuna CF and Public places	necessary. Both RCC and PCC saddle supports are incorporated to provide structural stability to the transmission mains.
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Table 9: Details of Pipe Line of Khairabang CWSP

Rating & Size		Actual Pipe Length											
PIPE RATING	Pipe Diameter	LENGTH PER DIA PER PIPE RATING	PUMP TRANSMISSION	BULK DISTRIBUTION	GT1	GT2	SERVICE DISTRIBUTION	DMA1	DMA 2	DMA3	DMA4	DMA5	DMA 6
					Dobrichaiwa ng to Chhapdanda to	Lower_Dobrichaiwa to Chisapani		Chaiwang_Jy ula	Chisapani	Dobrichaiwa ng_Shantina gar	Chhapdanda	Darimchaur	Khairabang
6 KG PE	40	-		-	-	-	-	-	-	-	-	-	-
	63	4,228		-	-	-	4,228	-	1,429	236	-	575	1,989
	50	4,318		-	-	-	4,318	1,388	923	285	-	927	795
	75	2,652		-	-	-	2,652	318	273	-	978	-	1,084
	90	163		-	-	-	163	145	18	-	-	-	-
	110	267		-	-	-	267	-	-	-	-	-	267
	125	155		-	-	-	155	-	-	-	155	-	-
	140	784		-	-	-	784	-	-	-	-	784	-
	160	932		104	104	-	828	-	-	-	253	575	-
	180	592		-	-	-	592	-	-	592	-	-	-
	200	354		-	-	-	354	-	-	354	-	-	-

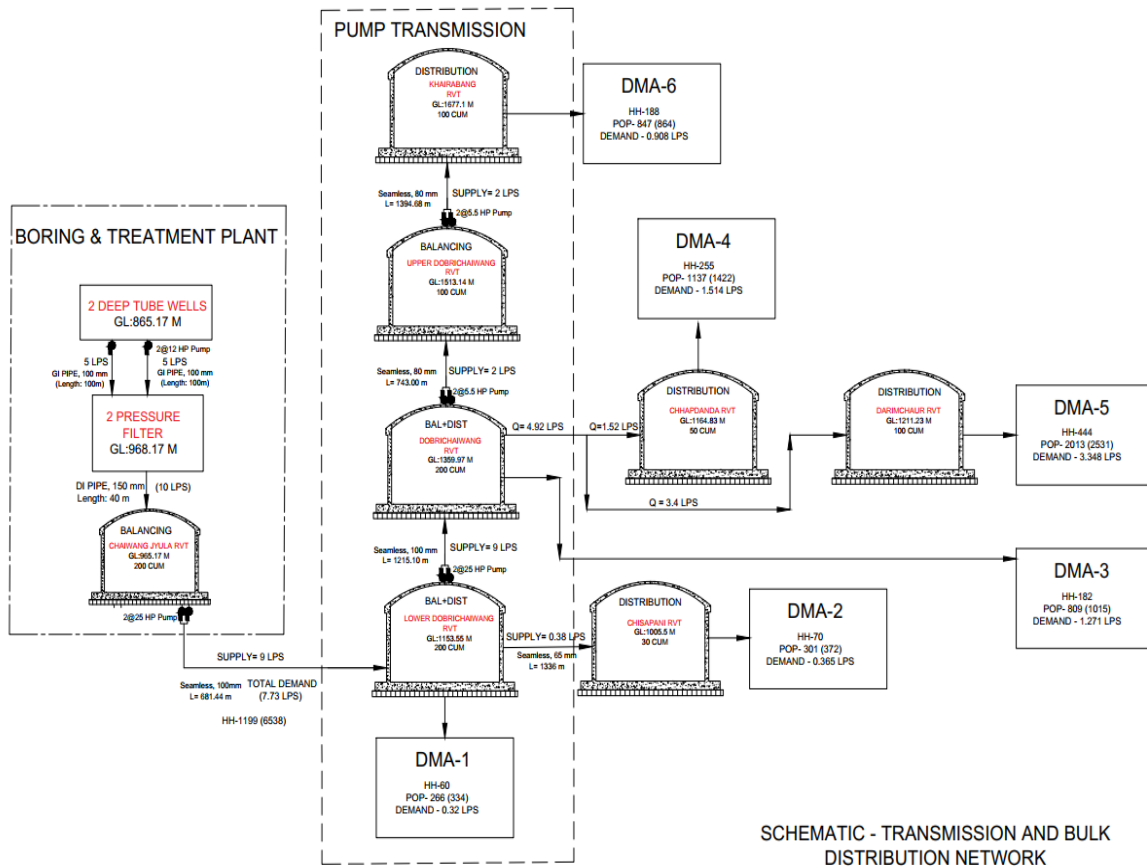
10 KG PE	225	-	-	-	-	-	-	-	-	-	-	-	-
	250	-	-	-	-	-	-	-	-	-	-	-	-
	280	-	-	-	-	-	-	-	-	-	-	-	-
	315	-	-	-	-	-	-	-	-	-	-	-	-
	Sub-Total	14,446	-	104	104	-	14,342	1,850	2,643	1,468	1,386	2,861	4,134
	32	-	-	-	-	-	-	-	-	-	-	-	-
	40	-	-	-	-	-	-	-	-	-	-	-	-
	50	2,796	-	-	-	2,796	-	-	400	209	265	1,922	-
	63	3,639	106	-	106	3,533	-	-	142	647	1,811	933	-
	75	1,425	-	-	-	1,425	-	-	29	344	-	1,051	-
	90	1,553	-	-	-	1,553	108	-	334	522	589	-	-
	110	2,292	-	-	-	2,292	-	-	-	144	549	1,600	-
	125	296	-	-	-	296	-	-	-	296	-	-	-
	140	1,412	-	-	-	1,412	-	-	-	-	1,412	-	-
	160	1,126	94	94	-	1,032	-	-	79	-	953	-	-
	180				-	876							

		876		-	-			-	-	876	-	-	-
	200	-		-	-	-	-	-	-	-	-	-	-
	225	-		-	-	-	-	-	-	-	-	-	-
	250	-		-	-	-	-	-	-	-	-	-	-
	280	-		-	-	-	-	-	-	-	-	-	-
	315	-		-	-	-	-	-	-	-	-	-	-
	Sub-Total	15,415	-	199	94	106	15,216	108	-	1,860	2,162	5,580	5,506
16 KG PE	20	-		-	-	-	-	-	-	-	-	-	-
	25	-		-	-	-	-	-	-	-	-	-	-
	32	-		-	-	-	-	-	-	-	-	-	-
	40	-		-	-	-	-	-	-	-	-	-	-
	50	4,153		-	-	-	4,153	65	-	667	368	514	2,539
	63	3,156		155	-	155	3,001	-	-	384	1,116	188	1,313
	75	738		-	-	-	738	-	-	138	165	-	435
	90	925		-	-	-	925	271	-	-	654	-	-
	110	700		-	-	-	700	-	-	505	195	-	-
	125					-	276						

		506		230	230			-	-	276	-	-	-
	140	572		-	-	-	572	-	-	171	-	400	-
	160	614		342	342	-	272	-	-	-	-	272	-
	180	238		-	-	-	238	-	-	238	-	-	-
	200	-		-	-	-	-	-	-	-	-	-	-
	225	-		-	-	-	-	-	-	-	-	-	-
	250	-		-	-	-	-	-	-	-	-	-	-
	280	-		-	-	-	-	-	-	-	-	-	-
	315	-		-	-	-	-	-	-	-	-	-	-
	Sub-Total	11,602	-	727	572	155	10,874	336	-	2,379	2,498	1,375	4,287
SEAMLESS	65	1,075		1,075	-	1,075	-	-	-	-	-	-	-
	80	2,013	1975	38	38	-	-	-	-	-	-	-	-
	100	978		978	978	-	-	-	-	-	-	-	-
	125	873		873	873	-	-	-	-	-	-	-	-
	150	2,064	2064	-	-	-	-	-	-	-	-	-	-
	200	-		-	-	-	-	-	-	-	-	-	-
	250					-	-						

		-		-	-			-	-	-	-	-	-
	300	-		-	-	-	-	-	-	-	-	-	-
	Sub- Total	7,003	4,03 9	2,964	1,889	1,075	-	-	-	-	-	-	-
	TOTAL	48,46 5	4,03 9	3,995	2,659	1,336	40,432	2,294	2,643	5,707	6,045	9,816	13,926

Figure 2: Schematic Diagram of Khairabang CWSP



1.7 Rationale of Environmental and Social Management Plan (ESMP)

Rule 3 (1) of Environment Protection Act (EPA), 2019 describes completing Environmental Studies as per Schedule 1 or 2 or 3 under Environment Protection Regulation 2020 (First Amendment in 2021/05/24 on Nepal Gazette). For the subproject, section 3, subsections 1 & 2 clause (a) & (c) and section 10 of the legal provisions of EPA are compliant to Schedule 1 (a) (8) of EPA 2020. Hence, a Brief Environmental Study (BES) and ESMP, is sufficient as the area taken by the structures of the project is less than 1 hectare of forest area.

The screening report revealed that the proposed WSP lie in community forests, but there are minimal environmental/or social impacts and no physical displacement caused by the sub-project. Consequently, in accordance with the Environmental and Social Risk Management Procedures outlined in Chapter 6 of ESMF, this sub-project is categorized as having a 'moderate risk of impact' (Category III), necessitating the preparation of Environmental and Social Management Plan (ESMP) to comply with World Bank Environmental and Social Standards (ESS) requirements. The ESMP includes several matrices identifying key risks and setting out E&S mitigation measures. It also includes key elements relevant to delivery of the E&S management measures, such as institutional/ implementation arrangements, plans for capacity building and training and budget. The issues and risks identified in the matrix are based on current detailed design information of the site. The ESMP will form part of the bid document and to be reviewed and updated during implementation as per requirements. The ESMP will be included in the contractual clauses and will be made binding on the contracting firm.

1.8 Scope and Objective of Environmental and Social Management plan (ESMP)

The ESMF which was developed for the overall project provides the guiding framework for the site specific environmental and social monitoring plan study in conformance with World Bank policy and accordingly the project level standards. This ESMP is prepared in line with the requirements of the National Environmental Law and Regulations of Nepal and World Bank considering the anticipated impacts associated with the proposed sub-project, such as: air pollution, noise pollution among other effects. The ESMP study for Water Supply sub-projects will guide the sub-project implementation and ensure that adequate measures are taken to protect and minimize any potential adverse environmental and social impacts associated with the proposed construction works. This ESMP provides the actions required to be taken for managing and keeping the negative impacts and risk of the proposed water supply scheme to a minimum, while enhancing the significant positive and beneficial impacts.

The major objective of this Environment and Social Management Plan (ESMP) is to identify and mitigate any social and environment impacts in development interventions. The specific objectives are:

- To identify the existing site-specific environmental and social condition of the project area
- To identify the environmental and social risks and impacts of the proposed development intervention
- To explore alternatives and suggest practical mitigation measures with sufficient budget to mitigate the adverse environmental and social impacts

- To prepare an environmental and social monitoring plan
- To specify institutional arrangement, and roles and responsibilities for environmental and social risk management, and monitoring of the sub-project.

1.9 Legal and Policy Framework

Under the legal and policy framework, a brief of legal acts, policies, regulations and guidelines of the GoN and the World Banks Environmental and Social Standards have been discussed that are relevant and applicable to the Khairabang CWSP.

The ESMF reviewed country's legal and institutional framework, identified gaps from a comparison of national and World Bank ESF requirements, and suggested corresponding measures to meet the requirements. The following World Bank Environmental and Social Standards (ESSs) are relevant to this project, namely ESS1 on Environmental Assessments, ESS2 on Labour and Working Conditions, ESS3 on Resource Efficiency and Pollution Prevention and Management, ESS4 on Community Health and Safety, ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources, and ESS10 on Stakeholder Engagement and Information Disclosure.

2. DESCRIPTION OF STUDY AREA

2.1 Location and Accessibility

The Khairabang CWS Project is located in Sharada Municipality which covers ward no. 1, 11 & 12 of Salyan district of Karnali province of Nepal. Geographically the project area lies in between 28°18' 51" N to 28°27'44" N latitude to 82°02'40" E to 82°16'36" E longitude in the Siwalik region of mid-west hill region near the bank of the Sharada River. The altitude ranges from 940 to 1730 meters from the sea level.

The municipality is accessible from Kathmandu by approximately 494 km long road and about 97 km road from Birendranagar, Surkhet. It is connected to the East-West Highway at Lamahi via the 47 km long Lamahi-Tulsipur Road, which extends up to Tulsipur, and by the 64 km Rapti Highway from Tulsipur. Additionally, the municipality is accessible via the Rapti Highway, which begins at Ameliya Chowk on the East-West Highway. The nearest airport to the municipality is Birendranagar Airport, although the nearest airport is at Dang, which is not operational.

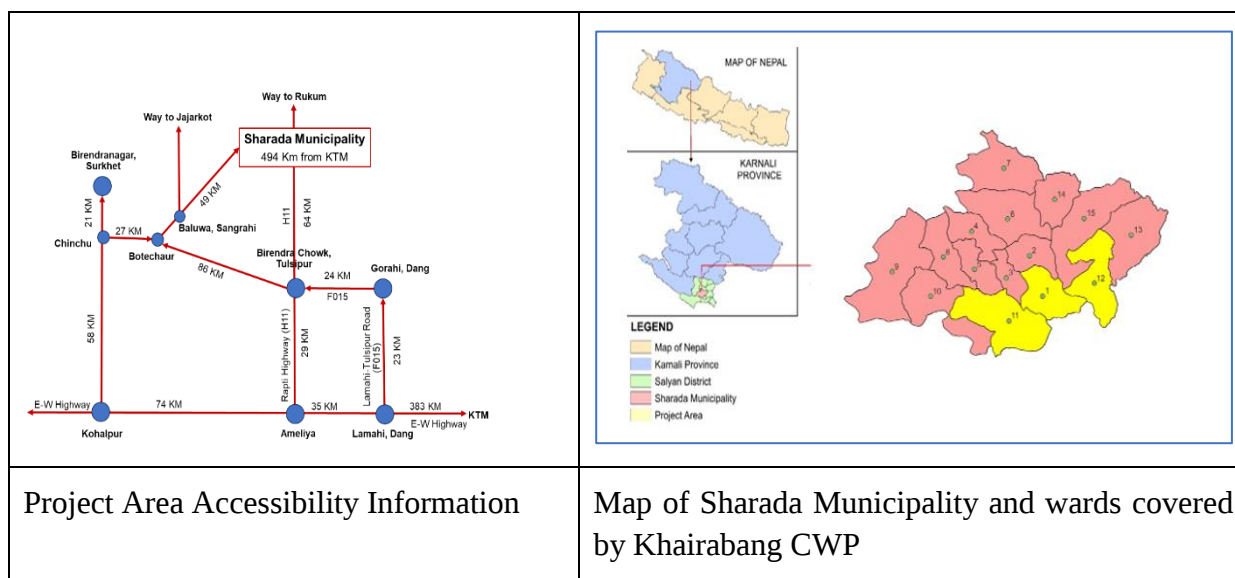


Figure 3: Accessibility Map and Coverage Wards of KCWP

*ESMP Report of Khairabang Community
Water Supply Project*

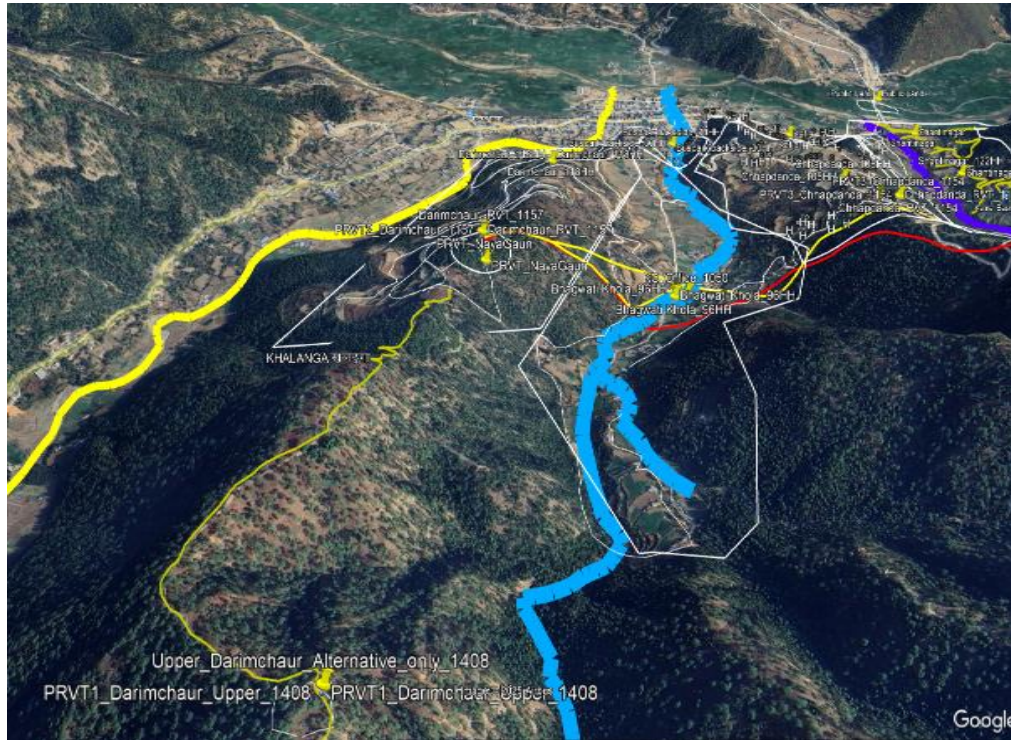
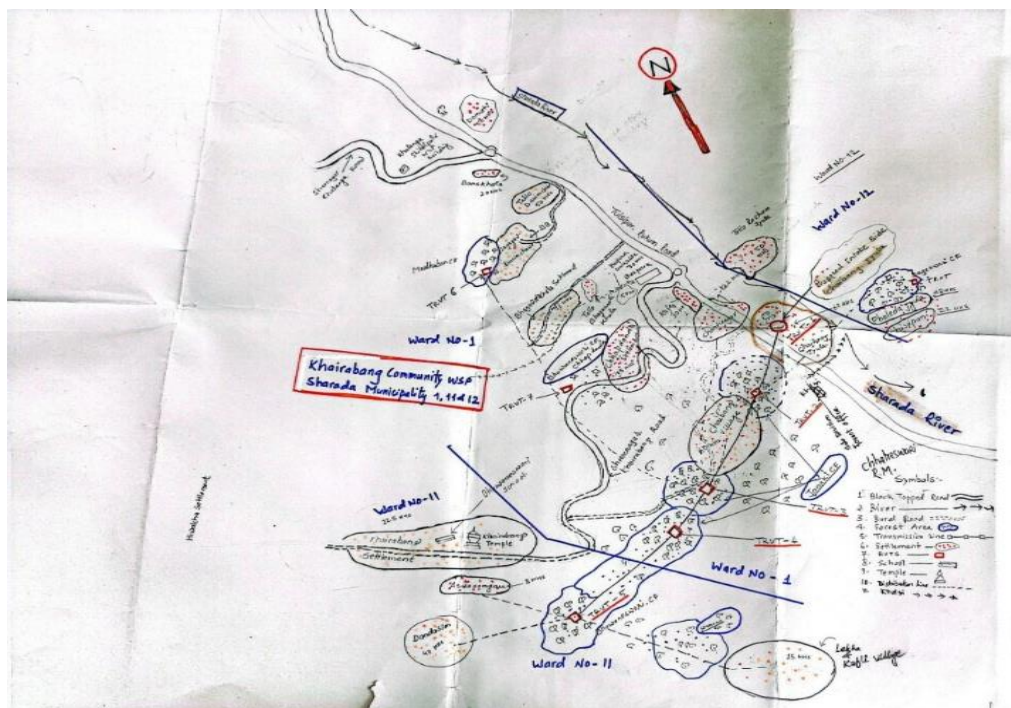


Figure 4: Location of KCWP in Google Map



**Figure 5: Location of KCWP in Google Map Social Map of Khairabang
CWP Service Area**

2.2 Physical Features

2.2.1 Topography and Land Use

The Sharada Municipality is situated in the Siwalik Region of Nepal in the mid-west hilly area. Topographically the municipality lies between 28°18'51" N to 28°27'44" N latitude and 82°02'40" E to 82°16'36" E longitude. It is at an altitude of 1210-1830 meters from the mean sea level. Sharda Municipality is situated in the hilly area of Sharada River. Sharada River is considered important not only for the Sharada Municipality but also the main river of Salyan district. This river is considered to be economically and touristy important as it is irrigating the agricultural fields on the banks of Sharada and providing river bed materials for construction.

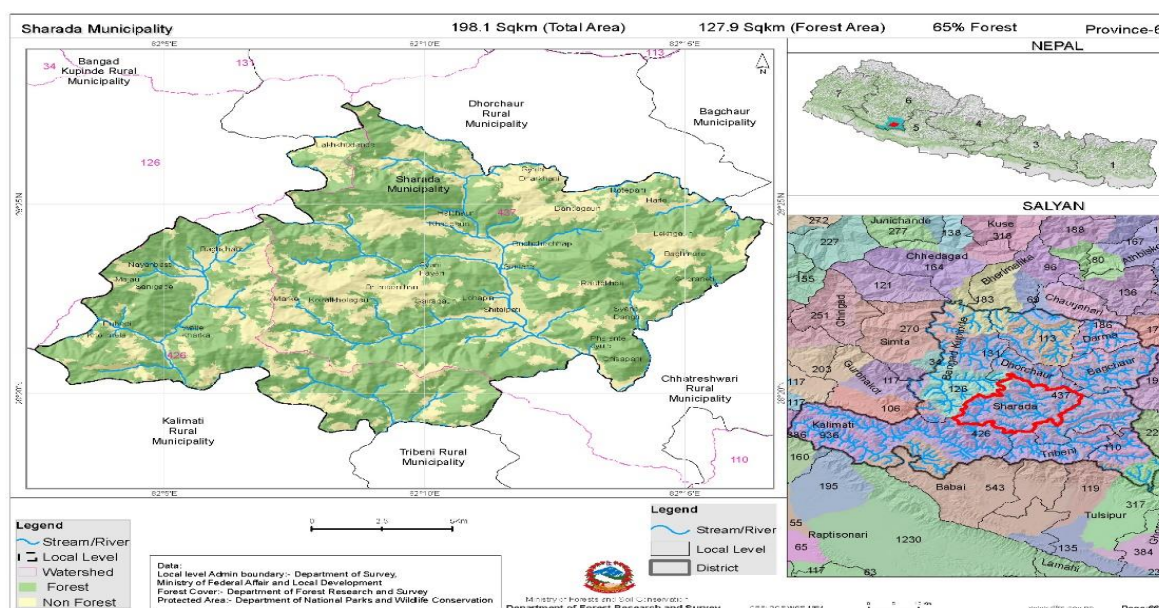


Figure 6: Land use and land cover map of Sharada Municipality

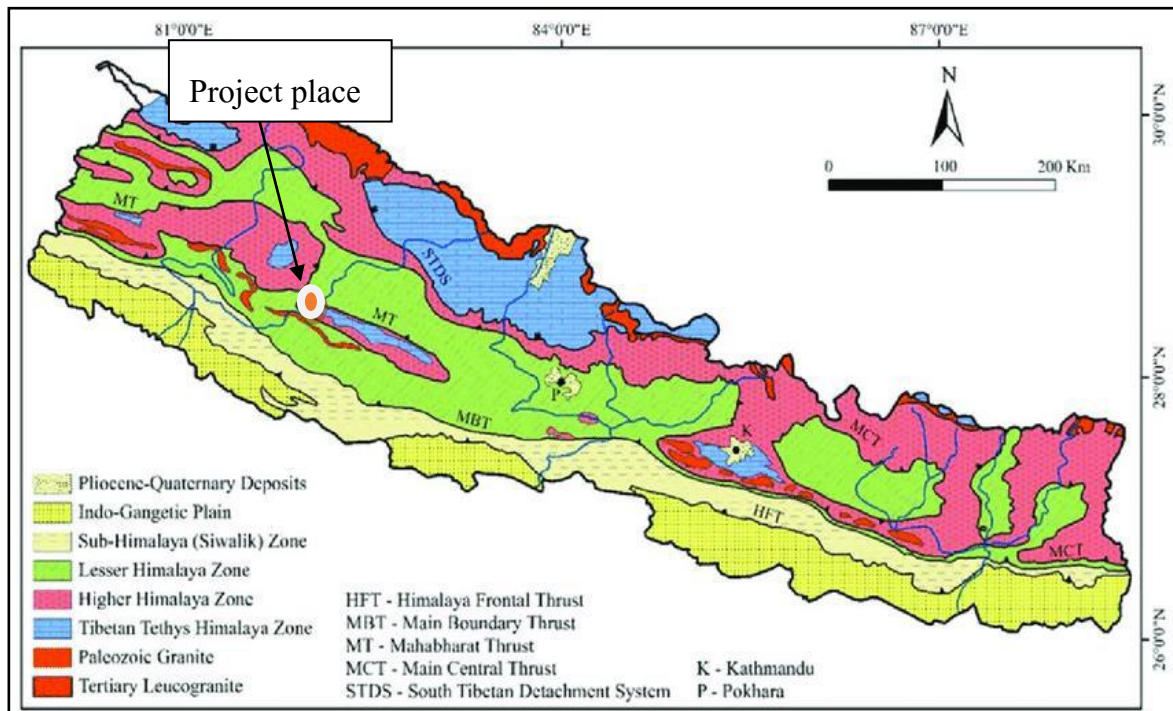
Table 10: Land Use and Land Cover Details of Sharada Municipality

SN	Land Use and Land Cover	Area (Sq. km)	Percentage
1	Water	0.64	0.32
2	Forest	115.32	58.14
3	Cropland	55.03	27.75
4	Settlement	19.93	10.04
5	Bare Ground	0.15	0.08
6	Grass Land	7.27	3.7
Total		198.34	100

(Source: ESRI, 2023)

2.2.2 Geology

Salyan is mostly dominated by clay soil along with boulders. Based on field observations during the field visit study, the project area has flat alluvial land consisting of 1-1.5 m thick topsoil underlain by gravel, cobble, and boulders of about 25.0 to 30.0 m thick in the center and slightly thinning outward to the foothills around the Srinagar valley and followed by bedrock. Highly fractured sufficient joints and faults show highly permeable rocks around the areas.



(Source: Department of Mines & Geology, 1994)

Figure 7: Geological Map of Nepal

2.2.3 Climate

Temperature: A mixed type of climate from a Humid subtropical to dry winter climate is found in Salyan. Areas located along the Sharada River, have warm and temperate climate. The hot season lasts for 2.5 months, from April 13 to June 30, with an average daily high temperature above 30°C. The hottest month of the year in Salyan is June, with an average high of 31.6°C and low of 20.55°C. The district's yearly average temperature is 23.54°C and it is 1.53% higher than Nepal's average.

The cool season lasts for 2.8 months, from November 24 to February 18, with an average daily high temperature below 20.55°C. The coldest month of the year in Salyan is January, with an average low of 5.55°C and high of 17.77°C.

Rainfall: The annual rainfall occurs during monsoon between June and September. Average annual rainfall is around 1600 mm and has 149.94 rainy days (41.98% of the time) annually.

Table 11: Climatic Parameters (2010 to 2020 AD) of Salyan District

Annual high temperature	28.49°C
Annual low temperature	14.87°C
Average annual precipitation	1600 mm
Warmest month	May (35.78°C)
Coldest Month	January (5.34°C)
Wettest Month	July (704.14mm)
Driest Month	November (2.05mm)
Number of days with rainfall (≥ 1.0 mm)	149.94 days (41.08%)
Days with no rain	215.06 days (58.92%)
Humidity	55.72%

Source: Weather and Climate - The Global Historical Weather and Climate Data
[https:// weatherandclimate.com/nepal/rapti/sallyan](https://weatherandclimate.com/nepal/rapti/sallyan)

2.2.4 Climate Change and Disaster Vulnerability

According to Climate Change Vulnerability Mapping for Nepal (MoE, 2010) based on indices, Salyan district has moderate overall vulnerability, high landslide vulnerability, very low flood vulnerability and low adaptation capability to the impacts of climate change.

2.2.5 Drainage Facilities

There is no proper drainage system for storm water as well as for the domestic sewage in the Project area. As the service area is predominantly rural and the terrain is mostly steep, people are less concerned about storm water drains.

2.2.6 Air and Water Quality and Noise Level

Point sources of air and water pollution were not visible in and around the project area. The water quality testing report of nearby intake side (boring) of Khalangashitalpati WSP has been taken as reference to cross check with the NDWQS and annexed in this report.

The noise level at intake (deep boring) site is measured as 68 dB. The higher noise level was due to the noise from nearby road.

Human activities and vehicular movement plying along the Khairabang and Chaibang road are the major sources of pollution around the construction premises, where significant

construction work will take place. Additionally, dust generated by vehicular movement on the unpaved internal roads along the distribution pipeline areas; such as (specify the road name) is the main source of air pollution. Similarly, noise pollution in the project area primarily arises from vehicular movement, wind activity, and frequent visitors. The air quality monitoring test and noise level monitoring has been conducted to establish the baseline and the monitoring report data is given in table below.

Table 12: Air Quality Measurement Report

Date	Location	Description		
3/12/2025	Shreenagar - Khairabang road section	PM 2.5 Microgram/Cubic meter	PM 10 Microgram/Cubic meter	Air Temperature Degree Celsius
		65	57	32
National Standards of Air Quality, 2069		40 Microgram/Cubic meter	120 Microgram/Cubic meter	

2.2.7 Soil Type and Quality

The soil types typically include sandy loam, clay loam, and silty soil. These soils are influenced by the surrounding Himalayan terrain. Soil quality varies, with some areas suitable for agriculture due to fertile soils, while others may experience degradation and erosion. Regarding the quality of soil, for the remoteness of the project area, the soil is free from pollution of urban origin (like garbage, sewage and industrial discharge).

2.3 Biological Feature

2.3.1 Flora and fauna

Khairabang CWP covers Sharada Municipality Ward No. 1,11 and 12. In this project area, different species of flora, fauna and birds are found, which are

Flora:

Rhododendron (*Rhododendron arboreum*), Banjh (*Quercus leucotrichophora*), Khasru (*Quercus semicarpifolia*), Angeri (*Lyonia ovalifolia*), Kafal (*Myrica esculenta*), Sallo (*Pinus roxburghii*), Tuni (*Toona sinensis*), Uttis (*Alnus nepalensis*), Katus (*Castanopsis indica*), Sal (*Shorea robusta*), Kyamuno (*Cleistocalyx operculatus*) and Amala (*Phyllanthus emblica*).

Fauna:

Rabbit (*Lepus timidus*), Deer (*Muntiacus muntjak*), Jackal (*Canis aureus*), Marteen (*Martes flavigula*), Nyaurimusa-Mongoose (*Herpestes edwardsii*), Porcupine (*Hystrix indica*), Bear (*Ursus thibetanus*), Monkey (*Macaca mulatta*), Jungle Cat (*Felis bengalensis*), Ghoral (*Nemorhaedus goral*) and Chituwa /common leopard (*Panthera pardus*).

Birds:

Koili/Asian Koel (*Eudynamys scolopaceus*), Fisto/Dusky Leaf warbler (*Phylloscopus fuscatus*), Kaag/House crow (*Corvus splendens*), Bhanger/house sparrow (*Passier domesticus*), Kanthe Dhukur/Eurasian Collared Dove (*Streptopelia decaocto*) and

Bakulla/cattle egret (*Bulbulcus ibis*). Fish species include Asala (*Schizothorax richardsonii*), Raj Bam (*Angullia bengalensis*), Buduna (*Garra gotyla*), Cabre (*Pseudecheneis sulcatus*), Faketa (*Barilius bendelisis*), Lohari (*Garra annandalei*), Gardi (*Labeo dyrocheli*), Kalacha (*Labeo pangusia*), Katle (*Neolissochilus hexagonolepis*), Sidre (*Puntius ticto*), Sahar (*Tor tor*), etc.

Fish:

Asala (*Schizothorax richardsonii*), Raj Bam (*Angullia bengalensis*), Buduna (*Garra gotyla*), Cabre (*Pseudecheneis sulcatus*), Faketa (*Barilius bendelisis*), Lohari (*Garra annandalei*), Gardi (*Labeo dyrocheli*), Kalacha (*Labeo pangusia*), Katle (*Neolissochilus hexagonolepis*), Sidre (*Puntius ticto*), Sahar (*Tor tor*), etc.

2.4 Socio-economic and Cultural Features

2.4.1 Demographic Characteristics

As the service area lies in the newly formed municipality by merging seven VDCs, the long-term population analysis of the municipality has been carried out with the help of the 2001, 2011, and 2021 censuses. This analysis has been used for population assessment of the concerned ward of the municipality to analyse the trend of the population growth in the proposed service area. The population growth rate of concern wards (WN 1, 11, & 12) for the last two decades is fairly encouraging.

The population of the concern wards was 6489 during 2001 AD which slightly increased to 7807 during 2011 AD by 1.87% annually. The trend of population growth rate is a little bit increased to that of the previous censal period, the population of the service area has been increased around 2.14 % during 2011-2021 AD. Whereas the term population growth (2001-2021) of the municipality was only 0.75%.

Table 13: Total Population of Proposed Area

Survey Data Overview: Household and Population Survey of Khairabang Chaiwang WSP (KC WSP)							
Beneficiary Households and Population by Settlement and Ward							
Settlement_Name	Ward No.	Internal Household	Internal Population	External Household	External Population	Adopted Household	Adopted Total Beneficiaries
Chaiwang Jiule	1	60	270		0	60	270
Shantinagar/Naya Basti	1	122	549		0	122	549
Dobri Chaiwang	1	60	270		0	60	270
Chhapdanda/Kafila	1	105	473	150	675	255	1148
Bhagwati Khola	1	96	432		0	96	432
Darimchaur Naya Gaun	1	118	531	200	900	318	1431
Buspark backside	1	30	135		0	30	135
Lekh and Kafli	11	15	68		0	15	68
Dadasim	11	40	180		0	40	180
Aswaamgam	11	8	36		0	8	36
Khairabang	11	125	563		0	125	563
Phaleda Jyula	12	48	216		0	48	216
Chisapani	12	22	99		0	22	99
TOTAL		849	3822	350	1575	1199	5397
HH Size	4.50						

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Wardwise Annual Population Growth Rate (Using Census Population Data)													
Ward No.	Census Population (AD)			Population Growth Rate (PGR %)			Adopted PGR (%)	Wardwise Pop. Projection (As per Adopted PGR)					
	2001 AD	2011 AD	2021 AD	2001-2011	2011-2021	2001-2021		2025 AD	2028 AD	2033 AD	2038 AD	2043 AD	2048 AD
1	2,374	3,776	5,930	4.75%	4.62%	4.68%	4.68%	7,122	8,170	10,271	12,912	16,233	20,408
11	2,241	2,001	1,787	-1.13%	-1.12%	-1.13%	0.00%	1,787	1,787	1,787	1,787	1,787	1,787
12	1,874	2,030	2,199	0.80%	0.80%	0.80%	0.80%	2,271	2,326	2,421	2,520	2,622	2,729
Total	6,489	7,807	9,916	1.87%	2.42%	2.14%		11,180	12,283	14,479	17,219	20,642	24,924

Ward 1 Land Cover Area (Using ICIMOD Land Cover Map)							
Year	Ward 1 Area & Pop Den		Built-up & Pop Den		Cropland	Habitable & Pop Den	
	(Ha)	(P/Ha)	(Ha)	(P/Ha)	(Ha)	(Ha)	(P/Ha)
2001 AD	1063.20	2.23	15.5	152.96	463.8	479.4	4.95
2011 AD	1063.20	3.55	19.15	197.18	477.1	496.2	7.61
2021 AD	1063.20	5.58	24.62	240.86	396.9	421.5	14.07

Ward 1 Projected Land Cover Area and Pop Density						
Year	Ward 1 Area & Pop Den		Built-up (Ha)	Cropland(Ha)	Habitable & Pop Den	
	(Ha)	(P/Ha)	(Ha)	(Ha)	(Ha)	(P/Ha)
2025 AD	1063.20	7	22.98	399.08	422.1	16.87
2028 AD	1063.20	8	24.12	389.03	413.1	19.77
2033 AD	1063.20	10	26.02	372.29	398.3	25.79
2038 AD	1063.20	12	27.93	355.54	383.5	33.67
2043 AD	1063.20	15	29.83	338.80	368.6	44.04
2048 AD	1063.20	19	31.74	322.05	353.8	57.68

Projection of Ward 1 Built-up area

Projection of Ward 1 Cropland Area

It has been envisaged that this trend of population growth will be change slightly in a decade or two. However, the population growth rate is expected to increase to a certain extent with the availability of water after the implementation of this project. Based on this, it has been assumed that the population of these wards will increase into satisfactory level. Thus, the annual population growth rate for the next two decades for the project area has been taken as around 2 %.

Population Density

The population density of Sharada Municipality is 174.8 individuals per sq. km.

Literacy Rate

According to the National Population and Housing Census 2021, the population with skills in both reading and writing is 72.6 %. Accordingly, 0.4 % of people can only read, whereas the remaining population have no skills in reading and writing.

Caste and Ethnicity

The population in the Sharada Municipality is dominated by Chhetri, followed by Sanyasi, Brahmin, Thakuri, Janjati, and Dalit people, who have also inhabited the area for a long period of time. The major ethnic group is made up of 63% Brahmin/Chhetri and 23.65% Others. The percentages of the ethnic groups, Dalit and Janajati are lower, with 10.35% and 3%, respectively. Details of information are presented in the table below.

Table 14: Distribution of Households by Ethnic Composition in Sharada Municipality

Ethnicity	Population	Percentage
Chhettri	21007	60.6
Brahmin	831	2.4
Janajati	1040	3
Dalit	3587	10.35
Others	8198	23.65
Total	34663	100

Source: Socio-economic Survey 2024

Language

Language spoken mainly depends on the caste/ethnicity. For the dominance of people of Chhettri, Sanyasi, Brahmin, Dalit; Nepali is the most common language spoken in Sharada municipality.

2.4.2 Occupation, Source of Livelihood and Food Sufficiency

Agriculture and livestock rearing are the main occupations in the project area and 63.5 % of the total population depends on agriculture for livelihood. Likewise, 12 % depend on trade/business, 8% are depending on service of different types. The percentage of migrant worker to other country has counted 11.5 % whereas the people who depend on labor work in the same area is around 5%.

Subsistence type of agriculture is commonly found and major crops grown in the project area are cereal crops like paddy, maize and wheat, pulse seeds like gram, red gram, black gram, red lentil and pea, oilseeds like mustards, flaxseed and sesame, vegetables like potato, onion, cauliflower, lady's finger, garlic and major cash are Timur, turmeric, ginger and orange, etc. Goat farming is common and major source of livelihood in this area. Accordingly, cow/oxen, buffalo, and piggery are also found in some extent. Poultry is also common in this municipality. As per the Municipal Profile, only 15% people have food sufficiency for 12 months from agriculture, 25 % have food sufficiency for 9 months, 35% have for 6 months and 25 % people have only for 3 months.

Besides agriculture, people are involved in other occupations like Business, Service, Labor and Foreign Employment. As understood from discussion with local people, they have adopted more than one occupation. The business ventures besides commercial agriculture includes labour, business and job sectors. However, international employment stands out indicating significant migration in search of employment possibilities overseas. This emphasizes how different the employment environment is and how crucial it is to comprehend sectorial dynamics to formulate effective policies and build strategies for economic development.

2.4.3 Source of Drinking Water

There are several small scattered and isolated schemes spread over the proposed service area of the Khairabang CWP. Out of these only four are in operation for all season but water is just

sufficient for drinking and cooking purpose. The rest of the schemes are in operation only in the season when the water is available in spring/s.

Table 15: List of Water Supply Schemes in the KCWP area

S N	Name of WSP	WN	Dependent HHs	Dependent Peoples	Monthly Tariff	Month of Operation
1	Shantinagar WSP	1	25	113	85	10
2	Chaiwang WSP	1	55	248	75	10
3	Chhapdanda 1 WSP	1	52	234	100	12
3	Darimchaur WSP	1	118	531	110	12
4	Dobrichaibang WSP	1	65	293	55	8
5	Bhagawotikhola WSP	1	95	428	85	12
6	Bhuwaneswori WSP Kalakhola	11	125	563	280	12
7	Dandasim WSP	11	40	150	50	9
8	Kafli, Lekha	11	15	68		
9	Aswa Amgua	11	8	36		
10	Chisapani Phaleda Jyula	12	70	343	150	10

The source of drinking water for majority of families is unsafe schemes connected by tap/piped water and the scarcity of drinking water for dry season is crucial and average water consumption ratio is 125-250 Liter per day/HH and around 99% of households have toilet facilities (Socio-Economic Survey 2080) and municipality was declared ODF before a decade.

2.4.4 Places of Religious and Cultural Importance

The religious and cultural importance places are Khairabang Temple, Radhakrishna temple and Janaki Temple. Accordingly, Siddhapark is tourist place near to the project area with scenic beauty and covered with deciduous forest. Dashin, Tihar, Gaijatra, Fagupurnima, Shivaratri and Chaite Dashain are the major festivals in the project area.

2.4.5 Gender Based Violence (GBV), Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH):

As the data of the Demographic Health Survey (DHS) 2022 shows, 23% of women in Nepal aged 15–49 have experienced physical violence since age 15, and 8% have ever experienced sexual violence. Six percent of women who have ever been pregnant have experienced violence during pregnancy.

In the case of the service area, GBV cases like beating by husband after alcohol drinking, abuse by husband and mother-in-law are prevalent and found cases registered in the help desk for Women, Children, and Dalits under the District Police Office (DPO) Kharanaga. As per the help desk, 20 cases were registered, and disputes were settled with the help desk in fiscal year 2081/2082. According to the DPO, Issue Handling Section (Mudda Phant), in total 14

cases of rape has filed in Salyan district and among them two cases were from Sharada municipality and only one from the project site, accordingly, three cases of polygamy and two cases attempt to rape have been filed in District Police Office in this FY in Salyan district.

As per the report available from the Judicial Committee of the Municipality, there were 27 cases registered among them; almost all were civil cases regarding the partition of land, seeking legal services, and requesting the presence of a husband, wife, or other family members. And a few of them were settled by this committee (FY 2080/2081). Likewise, 18 such cases were registered in FY 2081/2082; among them, only three have been settled by mediation.

As per the information from the District Administration Office, the District Police Office, and the municipality office, Dalit Development Society (DDS) is working on this theme, but its working area is outside the Sharada Municipality. During the preparation of the document, focus group discussions were held with women, Dalits, and local people to collect the issues regarding the GBV/SEA/SH in the project area, and some issues regarding the GBV were found, as mentioned above.

- Discrimination based on Caste, Ethnicity and Gender are very nominal in government and non-governmental organizations, urban areas, and markets, but it is still prevalent in rural areas and at the household level.
- Almost in all cases, family disputes after drinking alcohol, quarrels with wives for money to drink, beatings of sons, daughters, and wives, and buying a goat and a hen without family consent for such activity.
- Awareness activities on GBV/SEA/SH, caste discrimination, and gender discrimination are necessary in this area
- Most of the cases of GBV/SEA/SH have not been reported to the concerned authority
- Most of the survivors have no idea about the legal procedure for it
- The nearest complaint institution/authority is the ward office and is used to settle complaints in the presence of female ward members (cases like abuse, Alcoholism, family disputes, etc).
- No NGO/INGOs have reported working on the GBV/SEA/SH theme.

The subproject activities can further trigger the occurrence of such GBV issues in communities, as workers will be mobilized during construction at the subproject sites. Therefore, potential risks of SEA/SH will be assessed, orientation will be provided, and a code of conduct will be adopted to mitigate the subproject's SEA/SH impacts. Mrs. Bimala Oli Dangi, working as a social mobilizer for the WASH Unit in Sharada Municipality, has been appointed as the focal person for GBV/SEA/SH by the PIU.

3. STUDY METHODS

The methods adopted to achieve the objective consists mainly of map reading to understand the frame of reference and field investigation of the identified Khairabang CWP including collection of field-based information and mapping. The methods included:

3.1 Literature Review and Secondary Data Collection

The assignment commenced with a review literature and the collection of secondary data. Relevant information was sourced from project documents, including feasibility studies and detailed engineering design reports, district and municipal profile of the project area, topographical maps, geological maps, Google Earth imagery, published and unpublished project- related reports, and climatological records from the Department of Hydrology and Meteorology (DHM).

3.2 Field Survey, Mapping and Verification of Secondary Data

The study was based on an actual walkthrough of the Khairabang CWP area, mainly focusing on the proposed location and Focused Group Discussions (FGDs), formal consultation meetings, and Key Informant Interviews (KII) with the local stakeholders, including the local government, chamber of commerce and local people. Separate consultations with women, Dalits, and other disadvantaged groups living in the service area were organized to discuss potential E&S issues related to the proposed water supply sub-project, and feedback and suggestions were collected.

The environmental and social screening checklist was prepared after a desk study, review of sub-project related documents, filing of different parameters and matters outlined in the environmental and social screening checklist present in the project ESMF, and consultation with stakeholders and municipal personnel. Environmental and social scoping included collection of relevant information on existing physical, biological and socio-economic and cultural environmental setting through field walkthrough, survey, measurement, discussion, consultation and interactions and identification of possible issues to be addressed in ESMP.

3.3 Desk Work

Major part of the study was executed through desk work that included engineering design, drawing/mapping, analysis, quantification, planning (including ESMP) and estimation of costs based on the field level information acquired from field study and literature review.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

4.1 Impacts and Mitigation

Nepal is considered highly vulnerable to climate change due to its rugged mountainous topography, extreme climatic conditions, and frequent climatic hazards. This climate change, such as rising temperatures, melting glaciers, changing precipitation patterns, floods, and droughts, has challenged the water security in Nepal. Over the past few decades, Nepal has observed declining surface water sources, groundwater, and spring flow. The water sources in the hilly and inner Terai region of Nepal are drying up gradually which makes the life of the people difficult day by day. The scarcity of drinking water expedites the migration process of people from their native places. Similarly, the demographic shift from rural to urban has brought about heightened challenges in managing water stress and sanitation issues due to increased population density and urban expansion exacerbating the challenges, impeding progress towards ensuring safe water and sanitation services. Climate Resilient WASH infrastructures with adaptation strategies are crucial to cope with climate change impacts on water security.

Like every other development intervention, KCW Project also has various environmental implications. Although this proposal has been initiated to bring several benefits to different environmental domains of the project area, it brings some adverse impacts too. The impacts have been identified and listed in the following table with the corresponding mitigation measures. The impacts are identified and predicted by giving due consideration to all the activities related to construction and operation of the proposed project and decommissioning of the support facilities as well.

This chapter deals with the environmental and social risks, potential impacts and mitigation measures. Anticipated key potential impacts in the project are due to the physical construction works. The major components of KCWP consist of intake, water treatment plants, pumping mains, intermediate reservoirs, storage reservoir/s, disinfection units, distribution mains, and other allied structures and appurtenances such as Guard house, pump house and store.

While developing these structures, key construction activities involve: site clearance & preparation, excavation works; cut and fill of soil; quarry and borrow pits for construction materials; use of heavy equipment; workers camp site, facilities and supplies management, etc. The major environmental and social concerns due to the project include dust and noise at construction sites, vibration during construction; exposure of workers to occupational hazards and incidents; and pollution from construction and other wastes generated by the project. The operation of water treatment facilities may also pose additional risks and impacts in the form of odour and noise from operations of equipment, as well as occupational health and safety hazards including chemical handling. Operation of this project will provide easy access of safe drinking water to local people of Sharada Municipality. A total of 1199 households will be directly benefited from the project. Based on the demographic information of WASH Plan-2081 of the Sharada Municipality, the percentage of indigenous people is around 3 % of the total population of the municipality. In case of service area of the proposed Khairabang CWP,

there are only 25 households of Indigenous people scattered in around the service area of ward No 1.11 & 12. During planning phase series of consultation was conducted with the people of this area to get their views on project in common platform. There is no any resettlement impact in service area and indigenous people.

Trade and commodity business is the main source of livelihood for the people of market area where as agriculture, livestock and seasonal migration including labor work is the main source of livelihood in rural area of the project wards. The trend of foreign employment is also in increasing trend. During Socio Economic survey, Focus Group Discussion (FGD) and field assessment project team noticed that the dependency on forest for livelihood is being in decreasing trend due to availability of LPG gas for cooking purpose and attraction of youth to foreign employment, business and other service sector rather than agriculture and livestock occupation.

4.2 Impact on Land

The proposed Khairabang CWP, is a demand based second priority project of the Sharada Municipality which is going to be implemented under WaSGISP. KWP is proposed to serve large service area, which consist of scattered settlements with poor water supply. Given the lack of availability of sustainable water sources in service area. There are 8 RVTs including in total and 7 RVTs are proposed in community forest area and one RVT including processing plant, CC and source is proposed in public land of Chaibang jyula of ward No-1. Due to KCWP, there will not remain economic and other adverse impacts on source of livelihood to the local people of service area. Accordingly, there will not negative impacts on irrigation or other water depended occupation in downstream basin of the propose boring site due to water extraction for KWCP.

Due to the large coverage area, remoteness and terrain geology of the proposed area, it took a little bit more time to verify land ownership status by respective technical persons/land surveyor. Initially it was verified by land surveyor of the municipality office, secondly it was verified by joint team of PIU, WASH Unit, Design Team and land surveyor of the municipality and finally verification was finalized by the land surveyor of Land Survey Office and ownership status report was received by Land Revenue Office (Attached in Annex).

According to the record of Napi and Malpot office-Salyan, in total 5 plots/parcels of public land/forest land might be impacted for the installation of water supply structures in 8 identified locations and as per the design data received from design team, in total 2556.8 square meter of land might require to install all identified structures. Based on field verification conducted by the Amin and survey teams there is no need of private land for the installation of major project structures. Linear structures such as pipeline may require passage through private land in certain location. In such cases where avoidance is not feasible the pipeline will be laid underground along the edge of private land to minimize impacts on land use and property.

The table 4 above illustrates the impact level, method/process of obtaining land and likely impact due to land use.

4.3 Impact of the Project on Community Forests and Mitigation Measures

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There are altogether 8 RVTs in KCWP and the land required for the construction of RVT -1 and intake site is located in public land and rest of all RVTs are proposed inside the community forests (Janaki CF, Bhuwaneswori CF-11, Bhuwaneswori CF-1, Madhuban CF-1, and Bageswori CF-12). And around 1939.5 square meter of land under mentioned community forests. Additional 190.81 square meter of office building at Khalanga Sheetalpati is located at territory of Khalanga Sheetalpati WSP. The land requirement with ownership is presented in table 4.

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Table 16: Environmental and Social Management Plan Matrix

Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
1. Prior to Construction Activities						
Consents, permits, Site clearance for construction works, workers camp, materials and equipment yards etc. no objection certificate (NOC), etc.	Failure to obtain necessary consents, permits, no Objections (NOs), etc. for use of land and other property can result to design revisions and /or stoppage of works.	• Obtain all of the necessary consents, permits, clearance, No Objections, etc., including the consent letter for the use of the public land given by the ward offices, decisions of the consultation meeting etc., prior to the start of civil works. • Develop necessary alternatives designs/programs for avoiding the impact on resources. • Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOs, etc. • Ensure that workers camp sites with all basic needs (lights, water, sanitation, proper ventilation) at designated area.	PIU/MST	Incorporated in final design and communicated to the Contractors.		Prior to award of the contract
Existing utilities	Disruption of services	• Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during	PST/MST/PIU	List of affected utilities and operators;		During detailed design phase

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		construction. Since the TRVT-2 & PRVT-1 site is not accessed by road facility, the transportation of construction materials by the workers through the foot trail may disturb the local community using it. However, this impact is temporary. Proper orientation to workers, scheduling of the transportation activities will be fixed in consultation with the community and proper monitoring will be done.				
Drinking Water Supply	Extraction of unsatisfactory raw water quality	The reports of water quality test of Khalangasitalpati WSP (boring location Shreenagar at the bank of Sharada river) is attached in Annex.	PST, PMU/PIU	Incorporated in final design and communicated to contractors		Prior to award of contract
Stockpile areas, Storage areas, Disposal areas, and workers camp (if needed)	Disruption to traffic flow, stock piling and muck disposal	Determine locations prior to award of contracts. The probable site for labor camp and storage area is near TRVT1, and TRVT5 construction areas at Chaibang Jyula and Khairabang which are public land.	Sharada Municipality/PIU/Ward Office/Contractor	List of selected sites for stockpile areas, storage areas, disposal	200,000.00 (BoQ PS, Item no.3)	During detailed design phase

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		• The details will be included in C-ESMP (Contractor's Environment and Social Management Plan) of Sub-Project. The Contractor needs to submit the C-ESMP within 60 days after mobilization. • Choose stockpile locations away from water bodies, drainage channels, and sensitive environmental areas to reduce the risk of contamination and erosion. • Develop plans for rehabilitating areas that have been used for stockpiling, ensuring that they are restored to their original condition or better. • Cover stockpiles with tarps, plastic sheeting, or other materials to prevent dust from escaping, particularly for fine or powdery materials. • Erect proper signage and barriers around stockpiles to prevent unauthorized access, reduce the risk of accidents, and ensure worker safety.		areas and workers camp (if needed)		
Waste Generation	Generation of solid waste, wastewater and	• Mechanisms of safe disposal will be developed in the project site before the	PIU/MST/Municipality/Ward	Contractor's records,		During construction

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
	other construction waste may cause pollution from work sites and workers camp (if any is established)	actual commencement of work, including the provision of waste bins. • Prohibition of unwanted littering and discharge of waste. • Proper management of solid waste will be done using lined pits for waste disposal. • The Contractor will develop and implement a Waste Management Plan (WMP) as part of the C-ESMP, consistent with the requirements of the project ESMP, ESCP, and applicable national environmental regulations. The plan shall identify all types of wastes expected to be generated during construction activities, including excavated materials, surplus soil, construction debris, packaging waste, hazardous materials (such as used oils, lubricants, paints, and batteries), and domestic waste from labor camps and offices. • The Contractor will ensure that all personnel are trained on waste management procedures and that appropriate signage, containers, and protective equipment are provided at all	Office/contractor	visual inspection		on phase

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		work and camp sites. Regular inspections will be conducted by the Environmental and Social (E&S) focal person and the Supervision Consultant to verify compliance with the approved Waste Management Plan and overall C-ESMP requirements.				
	2. During Construction Activities					
	A. Physical Characteristics					
Community facilities	Damage to existing facilities like foot trails and pavements. Pressure on existing water facilities	• Prior permission will be obtained from the respective local authority for the use of water for construction. Use of water for construction works will not disturb local water users. • If construction work is expected to disrupt, e.g. Transportation of materials in RVT sites and sometimes, use of water for construction activities, users of community shall be informed 7 days in advance and again 1 day prior to start of construction. • The timing of the use of foot trail for	Sharada Municipality/ Ward Office/PIU/Contractor	List of any public or private infrastructure disturbed by the project works Minutes of meetings with the locals or affected persons.		As per need, or field-inspection if any such case is foreseen

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		carrying materials should be scheduled such that it is of less use at locals at that time. eg. Early morning or it may be afternoon. Contractor should manage water and other necessities from outside area required for construction activities. • Ensure any damage to properties and utilities will be restored or compensated to pre-work conditions. • If construction work is expected to disrupt, users of community shall be informed 7 days in advance and again 1 day prior to start of construction. • Avoid natural drainage pathways for pipe-laying works. • Stockpile the excavated material at safe but nearby place to construction site under the satisfaction of Construction Supervision Engineer.				
Ambient air	Conducting works at dry season and moving large quantity of	• Confining earthworks according to an Excavation Segmentation Plan as part of the C-ESMP. • Water sprinkling at dry exposed surfaces	Contractor /MST/PIU	Location of stockpiles. Number of complaints	200,000 (BoQ Provisional)	Daily monitoring (when there are ongoing

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
	materials may create dusts and increase in concentration of vehicle-related pollutants (such as carbon monoxide, Sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons) which will affect people who live and work near the sites mainly Chaibang Jyula and Khairabang and to some extent nearby settlements	and stockpiles of aggregates at least twice daily, or as necessary. • Require trucks/trippers delivering aggregates and cement to have tarpaulin cover and maintain a minimum of 2" free board • Limit speed of construction vehicles in access roads to maximum of 20kph. • Ensure use of equipment and fuel complying with applicable emission standards. • Do not allow construction equipment/vehicles that generate significant air pollution (above the applicable limit) and those that are poorly maintained on-site. • Conducting once a year Air Quality Test for dust nuisance (PM 10 and PM 2.5) at key locations such as settlements in ward no. 1, 11 & 12 of Sharada Municipality during the dry working season (January-June). The tests will be carried out by contractor and monitored by PIU/MST and test report will be made available to the local people. The determined		from sensitive receptors. Heavy equipment and machinery with air pollution control devices. Certification that vehicles are compliant with air quality standards.	Sum, Item No-3) for water sprinkling near the construction sites	works) by MST/Contractor. Monthly visual inspection by PIU. Air quality monitoring, if practical and reasonable.

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		pollutants will be compared with the National Ambient Air Quality Standards (NAAQS) of 2012.				
Acoustic environment	Temporary increase in noise level and vibrations may be caused by excavation equipment, and the transportation of equipment materials, and people in the communities namely, Chaibang Jyula, Khairabang and Phaledajyula	• Plan activities in consultation with local administration so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance. • Providing ear muffers to workers operating high dB construction equipment. • Implementing regular inspection & maintenance of construction/transportation vehicles to ensure compliance with National Noise Standard Guidelines (NVMES, 2069 B.S., 2012). • Horns should not be used unless it is necessary or unavoidable • If it is not practicable to reduce noise levels to or below noise exposure limits, the Contractor must post warning signs in the noise hazard areas. Identify any	Contractor /MST/PIU	Results of monitoring noise levels (Maintain maximum sound levels not exceeding 70 decibels when measured at a distance of 10m or more from the construction sites) Number of complaints from sensitive		Daily monitoring (when there are ongoing works) by the Contractor /MST. Monthly inspection by PIU. Noise level measurement, on as needed basis and/or if practical

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		building at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity. • Conduct noise level test once a year during the peak construction stage at specified locations near schools and hospital/health centres at the concerned wards of the project.		receptors		and reasonable .
Waste disposal	Pollution of water and land resources, and cases of vector borne diseases due to haphazard waste disposal. Generation of solid waste and waste water from construction sites and labor	• Waste minimization and waste segregation (organic and inorganic) at source will be carried out • Organic waste generated from the camps will be composted or properly managed in compost pit within the camp area by following the waste management guidelines. If feasible, compost will be distributed to be used in the nearby agricultural fields. • Hazardous wastes will be segregated from non-hazardous wastes. • Contractors responsible for handling, treating, and disposing of hazardous waste will be reputable, licensed by	Contractor	On-site situation in campsites (if any), work sites and their vicinities	100,000.00 (BoQ PS, Item No-3)	Monthly monitoring by PIU.

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
	camp Impact on existing road and its users during pipe laying	relevant national regulatory agencies, and follow good international industry practices for the type of waste handled. • Hazardous waste will be stored in sealed containers, kept away from sunlight, wind, and rain. Storage will prevent the commingling or contact between incompatible wastes and allow for inspections to monitor for leaks or spills. • Disposal of hazardous waste will comply with all applicable local and international regulations. It will be included in CESMP in detail. • Awareness raising event will be carried out. • Decommissioning waste will be re-used, sold to local scrap dealers • Construction debris will be disposed at designated spoils site only where Municipality is also using for the same purpose (as recommended in the C-ESMP) and the efforts will be made to minimize such waste through reuse, reduction, and recycling concepts. While hauling and storing spoil temporarily,				

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		spoil will be covered with plastic/tarpaulin cover. • Backfilling will commence immediately.				
Land and Soil stability	Soil erosion in steep slope area	- Construction activities will be scheduled outside the monsoon season to lower erosion risks, and manual or light machinery will be used to limit ground disturbance. - Trenches will be backfilled and compacted immediately after pipe laying, with slope stabilization techniques like bio-engineering and structural supports (retaining walls, gabions) applied where necessary. - In very steep or rocky areas where digging is hard, the pipeline needs extra support and, in such case, RCC anchor support will be provided if necessary	Contractor	On-site situation in campsites (if any), work sites and their vicinities	200,000.00 (BoQ PS, Item No-3)	Monthly monitoring by PIU.
Material storage yards	Impacts due to stockpiling of construction	Stockpiling sites will be properly fenced. Side drains will be managed. Mixing of chemicals to the water body and soil will	Contractor	Site allocation, lease	Include in civil	Regular throughout the

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
	materials	be prohibited. • The leased land used for stockpiling will be restored into original shape to the extent possible • As far as possible, the stockpiling of construction material will be carried out in barren or treeless area if possible. • Chemical materials like cement should be stored in shade. • The finer construction materials should be well covered to avoid the dust pollution. • After the completion of the project, the land will be evacuated and restored to the previous condition to the exact possible and will be returned.		agreement, well fenced sites	works	project construction period
	Use of fuel, lubricants, oil, and other chemical and their storage	• Vehicles and appliances which use chemical substances like petrol, diesel, grease, lubricating oil etc., will be regularly monitored to detect any leakage; • All spent grease, mobile and unused or date expired chemicals will be collected separately in separate drum/barrel and stored in shaded area. • All empty containers of grease, mobile, and chemicals will be compressed and	Contractor	Safe handling and management		Regular throughout the project construction period

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		stored in a safe place under the shade. • The wastes of chemical substances like grease and used lubricating oil will not be disposed into environment. It will be either recycled or sold to license holding contractors who recycle these materials for further use; • Regular monitoring on the use, disposal, and collection of these chemical materials will be done with due consideration. and Strict rules will be implemented to control the haphazard disposal of these materials				
B. Biological Characteristics						
Impact on Flora and fauna	Loss of vegetation cover during construction works is unlikely. However, the subproject will address	• Greenery promotion around the construction sites where possible • Tree felling will be avoided (so far no tree felling is required). If required approval as per the legal provision will be taken. • Conduct Awareness program on environment conservation and protection at construction and labor camp site.	Contractor	Number of trees planted for greenery promotion	250,000 BoQ PS, Item no.3	Monthly monitoring by PIU.

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
	unexpected issues occurred during construction period if any. No direct impact on terrestrial and avian fauna is anticipated because the sub-project does not impact any forest area Increased pressure on the surrounding forest for its products like firewood, timber and non-timber forest products	• Providing alternative fuel to worker for cooking. • Scheduling work to avoid sensitive periods to reduce disturbance at night • Conduct the awareness on wildlife protection and in forcing monitoring and penalties for violations. • Restrict noise-generating construction activities to established working hours 8 hrs. (8 AM to 4 PM) as per the Labour Act 2017. For any work outside these hours, obtain a special permit in advance. • Establish and enforce a speed limit of 20 km/hr for construction vehicles. • Establish, implement, and enforce a Worker Code of Conduct that expressly prohibits illegal logging, clearing, hunting, poaching, and collection of animal and plant species in general, including fines and dismissal for repeat offences. • Implement a worker environmental awareness program as part of worker induction to inform personnel about the prohibition of hunting and poaching and				

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		the penalties associated therewith. Collection of NTFP will be restricted during the construction of different infrastructure in the community forest area.				
C. Socio-economic Characteristics						
Community activities	The construction-related activities that impede access will disturb the local residents	- To minimize disturbances, construction work will be conducted at the earliest hour possible. - The local residents will be consulted and informed about the work schedule and possible disturbances preferably a week before the construction starts and one day before the construction starts. - The pipe trench will have a depth of 90 cm and a width of 60 cm. During the excavation period, caution boards will be installed, and the area will be barricaded with caution tape to ensure pedestrian safety and prevent any impact on pedestrian movement. To minimize the impact, the pipeline installation will be	Contractor	Time schedule of construction work; Information related to construction activity to local residents Number of temporary diversions sign, signboards		Daily (or whenever there are construction activities) by contractor Monthly visual inspection by PIU

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		carried out in short sections of 500 meters at a time, with testing and backfilling completed promptly, within a week. • Temporary diversions and signboards will be provided to inform and make the pedestrian aware. • Ramps, where necessary, will be provided to ensure access to houses, and other service areas. Ramps provided will be of sturdy material and of sufficient width. • Traffic management plan, if necessary, will be prepared and implemented by the Contractor as part of the C-ESMP and approved by local authority. Necessary signage's will be used and placed where construction is being undertaken.		etc.		
Labor Camp Management and Labor issues	Nearly 80% of the total workers will be hired directly from the project area. It mainly constitutes of	• Provide adequate health care facilities within construction sites and provide first aid facility round the clock • Camp shall not be in the vicinity of landslide and flood plains.	Contractor	Daily entry-sheet of the workforce in the campsites Number of local people versus	200000 (BoQ PS, Item no.3)	

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
	unskilled and semi-skilled manpower. Around 40 workers will work in one day, among them around 10 workers will be migrants works. Poor sanitation practices by workforce may cause pollution of surrounding environment	• The camp is constructed as per the technical specification considering the size, number and location of the camps. • Provide and maintain proper drinking water, sewerage and waste disposal facilities at the camps. • Ensure no wood is burnt by any worker on or off site. Camps shall be provided free of cost, with electricity and regulator & adequate fuel supplies of LPG or Kerosene • Proper ventilation will be provided in the labor camp • Raised bed is the minimum standard of bedding in labor camp. • Separate rooms for men and women workers will be managed • Standard ratio of room size of the camp and number of labors to be accommodated will be maintained • Separate toilets will be established in every campsite for male and female • Worker's Grievance Redress mechanism will be established for labor issues, and every labor will be informed of the		outside workers in the subproject area will be regularly monitored		

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		GRM. • Install the Grievance box in contractor and labor camp • Minimize contact with people outside the construction area/site or prohibit them from bringing outsiders especially minors to the camp during their contract • Adopt policy of zero tolerance for child labor and forced labor • Implement procedures to confirm workers age before they start work, verify their age through formal identification card. Maintain the register of workers, including their age, sex, caste/ethnicity and name of the contact persons with phone numbers in the case of emergency. • Camp shall not be in vicinity of landslides and flood plain. • Prohibit child labor and forced labor in all construction sites.				
Social harmony	Changes in social structure,	• Workforce will be informed about the culture and living style of the project	PIU/MST/ Contractor	Daily entry-sheet of the workforce in		Monthly inspection at

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
	cultural and traditional practices of the rural people due to exposition to the outside workforce - Conflict between Local and Outside Workers and erosion of law-and-order situation of the project area -Changes in social structure, cultural and traditional practices of the rural people due to exposition to the outside	area. They will be instructed to respect the locally accepted culture and living style. • Special instruction will be given to all workers to act in responsible manner during and after the working hours, respecting the rights, properties and practices of local people. • The use of local workers will be maximized in order to mitigate the impact. The use of locals will not only help in minimizing the adverse impact associated with the change in lifestyle but also a milestone to enhance the local economy through employment and cash flow. • Preference will be given to the local people in project related jobs and subsidiary opportunities • Construction workers from outside the project area will be well-informed about the general norms and values of society before deployment. The construction workforce will be instructed to respect local people, especially the female		the camp sites (Public land of TRVT-1 site and TRVT-5 site) Number of local people versus outside workers in the project area will be regularly monitored		campsites (if any) by PIU and Consultants.

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
	workforce	members and the local culture and tradition. • The project doesn't impact the cultural heritage directly. If any unforeseen impact arises during the project implementation, those impacts will be avoided and mitigated with best possible measures. • A code of conduct will be prepared for the construction workforce and the project staff on how to behave with the local people of the project area, which besides others will include a) Respect to the local people their culture, traditions and women; b) Not indulge in any conflict with the local people; c) Not to gamble with the local community people; d) Not to drink alcohol outside the construction camps and roam local markets after consuming alcohol. These CoC will have to be signed by the labor and also make sure the labors understand what the CoC governs.				

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
Occupational Health & Safety	During the construction work, the labours involved in the construction activities may be exposed to different level of health risks and are prone to accidents	• Prepare and implement OHS plan as part of the C-ESMP • Mandatory use of safety measures (PPEs) such as mask, helmet, hand gloves and rubber boots, etc. • The laborers will be insured for their health and safety. • Provide safe drinking water for labors • Prohibit child labor and forced labour in all construction activities. • Provide comprehensive training to all workers on occupational health and safety practices. This should include proper use of personal protective equipment (PPE), safe work procedures, emergency protocols, and awareness of specific hazards related to the construction site. • Contractor will arrange the First Aid Kit Box and standby medicine for workforce during working period and emergency situations. Adequate and easily accessible first-aid outfit should be available on the site. Some of the work	Contractor	Availability of personal protective equipment, First-aid facilities, medical insurance coverage for workers, Housekeeping and condition of sleeping and sanitation facilities at campsite (if any), Roster of workers	200,000.00 (BoQ PS, Item No-3)	Daily (or when there is a construction activity) monitoring by contractor. Monthly visual and document inspection by PIU

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		force should be trained to use the outfit. The contractor should also make provisions for an ambulance to take injured for ill person to the nearest hospital, if needed • Provide OHS orientation training to all new employees to ensure they are apprised of the basic site rules of work at / on the site and of personal protection and preventing injury to fellow employees. • Training should consist of basic hazard awareness, sites specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. Any site-specific hazard or colour coding in use should be thoroughly reviewed as part of orientation training. • Adopt systematic labor registration procedures keeping up-to-date information of all workers including contact details of the person to be contacted in case of emergency. • The contractor's supervisors will be				

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		instructed to conduct ‘prework instructions’ to the workers everyday - explaining them about the nature of works, condition of the site, and associated risks as well as safety measures. • Agreement with nearby health institution will be in place by the contractor. • Contractor will be responsible to maintain the records of each and every accident and incidence.				
Community Health & Safety	Overall, communities will be exposed to cross-cutting threats from construction’s impacts on air and water quality, ambient noise level; Chances of accidents, Communicable	• Contractor’s will maintain adequate space and adequate lighting, temporary fence, barriers and signage at worksites; • Children and community members will be prohibited from active construction sites • Proper fencing of stockpile areas • Awareness programs on communicable diseases and hygiene practices will be carried out • Disseminate the GRM to communities and affected stakeholders during	Contractor	Number of permanent signs, barricades and flagmen on worksites Number of complaints from sensitive receptors;	200,000.00 (BoQ PS, Item No-3)	Daily monitoring by contractor. Monthly visual inspection by PIU

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
	and transmittable diseases like COVID may potentially be brought into the community by construction workers	consultations, community meeting, disseminate through local media and newspaper. • Sensitive localities in terms of risk of this environmental, social and health related impact in Sharada Municipality. • Inform and regularly update and organize awareness campaigns targeting the affected communities, including vulnerable groups, about potential project hazards and changes to project activities that may have environmental, health, or safety impacts, as well as the proposed prevention, mitigation, and emergency response measures. • Active sites will be well demarcated and bounded. Excavated sites will be well bounded with hard barricades. • -Unauthorized entry to active construction sites and stockpile sites will be strictly regulated. • -Movement of vehicles for construction activities will be strictly regulated under safety guidelines. • Code of conducts will be implied for the				

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		workforce so that they have no conflict with the local communities. • Provision of ramps will be made where trenching works are being carried out to provide access to houses and businesses.				
GRM, Social Disturbance / Risk of GBV, SEA/SH, Human trafficking, and , HIV AIDS and Communicable diseases & Staking Sign Board	chances of unequal wages between male and female workers for same nature of works Chances of sexual exploitation and abuse and sexual harassment to female workers in the labour camp and construction sites from the contractor's crew and other male workers.	(i) Regarding SEA/SH, GBV • Locals will be given due priority for any employment opportunity • An SEA/SH focal person will be nominated at the PIU and project workers will be made aware about the SEA/SH grievances and procedure. • Follow Code of Conduct which applies to staff, laborers and others employees at works site, personnel of subcontractors, any other personal assisting in the execution of the subproject works. • CoC will be signed, workers oriented on the CoC to ensure it is understood by those signing, and strictly adhered to and monitored for all workers. Signed copies of code of conduct will be maintained. • Separate toilets will be provided for male	PIU/MST	Regular monitoring and supervision of construction site/ camp Information related to SEA/SH, Human trafficking, GBV, HIV AIDS and Communicable diseases	200,000.00 (BoQ PS, Item No-4)	Daily (or when there is a construction activity) by contractor. MST/ PIU Municipality

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		and female workers • SEA/SH, GBV awareness raising activities, orientation/training and stakeholder engagements such as community-based- awareness program, school-based awareness program. The SEA/SH GRM nominated focal person of Sharada Municipality will be part of trainings, awareness programs regarding SEA/SH. • Awareness program for women and against the gender-based violence will be conducted for the workers as well as the local community including school children regarding these concerns • 4 orientations/trainings with at least 25 participants in each training; to be conducted during Pre-construction and during Construction period. (ii) HIV AIDS & Communicable diseases • Awareness creation and sensitization to workers and other persons post- project to reduce or eliminate chances of infections of HIV-AIDS and other				

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		sexually transmitted diseases • Distribute HIV & AIDS awareness materials in collaboration with local health related agencies • Ensure protective measures for communicable diseases is followed, prepare and follow SOPs by all workers and staff (hand washing, using sanitizer, masks etc.) including the community health and safety awareness and management • Health screening of the workers will be carried out before joining them into workforce • Emergency Response Plan will be implemented during any critical circumstances (e.g. COVID spread)				
Child labour, forced labour and wage discrimination	During the construction work, the labourers involved in the construction activities may	• Grievance Redress Mechanism will be established for labor issues, focal person handling worker related GRM will be assigned and every laborer will be informed of the GRM. • Grievances box will be installed in	Municipality/Contractor	Copies of citizenship card or other valid personal ID card will be seen if any doubt		Daily by contractor. MST Monthly visual inspection by PIU

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
	be a Children	contractor and labor camp. • Child labour & forced labour will be strictly prohibited • Copies of citizenship card or other valid personal ID card will be kept in record of the workers • Awareness among the workers and the local community (at least two) will be conducted • Equal wage for male and female workers will be ensured				
3. During Operation and Maintenance Phase						
Exposure to chemicals	Excessive exposure to chlorine, hypochlorous acid, and hypochlorite ion generally results in irritation of the oesophagus, a burning sensation in the	• Prepare OM manual that will include chemical and hazardous substances handling among other. • Disinfection chemical e.g. chlorine compound requires proper storage and handling practices • Provide safe storage for chemical for disinfection namely chlorine compound • Ensure that the person is hired, with knowledge of chlorine use for	Contractor /WSUC (Water supply user committee)	Laboratory test		Daily (or as needed) by the operator.

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
	mouth and throat	disinfection process during operation • Ensure use of PPE while using chemicals Use of chlorine guideline as per WHO • Training on the handling and on dosage of the chemicals will be given to the staff. Ensure there is storage area for chemicals in compliance with the Material Safety Data Sheet (MSDS) for each substance. This includes: • Storing chemicals in appropriate containers that are compatible with the substances. • Ensuring proper labeling and segregation of incompatible chemicals (e.g., acids and bases, oxidizers and flammables). • Maintaining temperature, ventilation, and humidity controls as specified in the SDS. • Implementing secondary containment measures to prevent spills or leaks. • Ensuring easy access to spill kits, eye-wash stations, and fire extinguishers in case of emergencies."				

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		Additional measures, as required, will be defined in the O&M manual of the water treatment facility and operation				
Drinking water supply system	Delivery of unsafe water due to source contamination, leakage in pipes	- Local people mostly from the vulnerable community will be given priority for employment during the operation stage. - The operations and maintenance plan and training for staff will cover; (i) competent/cautions handling and storage of calcium Hypochlorite and qualified persons to implement/oversee disinfection and treatment; (ii) providing safe storage for chemical in compliance with the Material Safety Data Sheet (MSDS) for each substance; (iii) ensure capacity of WUSC to implement quick response to hazardous substance/waste spills; (iv) monitor water quality. All norms and regulation including material safety data sheet will be followed during the handling and storing of chemicals. <u>Emergency Preparedness & Response</u> During the Operation and Maintenance	Contractor /WSUC	Visual inspection Water Quality reports WTP records in the logbook		Daily or as needed visual inspection by the operator. Quarterly or as needed water quality testing by the operator.

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		(O&M) phase of a Water Treatment Plant, emergencies may arise due to equipment failure, chemical spills, fire, electrical hazards, natural disasters, or contamination of treated water. To effectively manage such incidents a structured Emergency Preparedness and Response Plan (EPRP) shall be implemented to ensure a timely, coordinated, and effective response to any potential emergency situation. Roles & Responsibilities 1) O&M Engineer/Plant Manager • Acts as the Emergency Response Coordinator (ERC). • Takes charge during emergencies, ensures activation of the response plan, and makes key decisions regarding plant shutdown, evacuation, or coordination with external agencies. • Reports incidents to the Project Management Unit (PMU) and relevant authorities. 2) Safety Officer/Environment Health & Safety Officer • Ensures implementation of safety procedures and emergency equipment readiness.				

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		- Ensures all emergency equipment (fire extinguishers, spill kits, alarms) are in working order. - Coordinates training and emergency drills. - Prepares incident investigation and reporting documentation. 3) Operator & Maintenance Staff - Respond immediately to alarms and follow established evacuation or containment procedures. - Shut down process equipment safely when required. - Report abnormal events or hazards to the Plant Manager/EHS Officer. - Initiates alarms, shuts down affected plant units if necessary, and isolates affected areas. - Reports any abnormal operating conditions to the Plant Manager immediately. - Assists in communication and data logging during emergencies. 4) Security Personnel - Control access to the site during emergencies. - Assist in evacuation and prevent entry of unauthorized persons.				

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		- Communicate with external responders (fire brigade, police, and ambulance). - Guide emergency vehicles and maintain order during evacuation. 5) Chemical Handling Staff/Laboratory Technicians - Respond to chemical spills according to the Spill Response Procedure - Use PPE and containment materials appropriately. - Prevent contamination of nearby drains, soil, or water bodies. 6) All Staffs and Visitors - Must be aware of emergency signals, evacuation routes, and muster points. - Follow instructions of emergency wardens and supervisors. Muster Points - Designated muster points will be identified at safe locations, preferably upwind and outside potential hazard zones such as the chlorine room, chemical storage area, or sedimentation tanks. These muster points will be clearly marked, accessible, and large enough to accommodate all personnel.				

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		- During any emergency evacuation, all staff will stop work immediately, safely shut down processes, and proceed along marked exit routes to the muster points. - Supervisors will conduct a headcount to ensure that everyone is accounted for, and no personnel will re-enter the plant until official clearance is given by the Plant Manager or Operation Engineer Communication and Coordination - Internally, a clear communication chain shall be maintained through intercoms, handheld radios, alarms, and mobile phones. An emergency contact list including the Plant Manager, EHS Officer, fire brigade, local hospital, and police will be prominently displayed at key locations. - Standardized alarm systems will be established to differentiate between types of emergencies such as fires, chemical spills, or power failures. - Externally, the Plant Manager/O&M Engineer will promptly inform the relevant municipal office, Project Management Unit (PMU), and				

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
		emergency authorities ideally within one hour of any major incident to ensure coordinated external support and information flow.				
Impact on Water bodies -Pollution and nuisance due to sludge removal and its disposal	If the effluents from the WTP and waste water from the operator's labor camp is not well treated, then there will be risk of pollution of local water bodies (Sharada River) due to the discharge of effluent and liquid waste. However, likelihood of occurrence of this case is very low.	• The treatment plant will be cleaned on regular basis. • Quality of the effluent will be regularly monitored to ensure that the effluent meets the GoN tolerance limits of discharge of waste water from combined waste water treatment plant • The operation and maintenance of the WTP will be carried out on timely and regular basis as per O&M plan. • Standard Operation Procedure (SoP) will be adopted for the operation of WTP. • Sludge will be disposed to the sludge drying bed or other designated place under coordination and permission of the municipality	Contract or during DLP ; WSUC or Operator after DLP	Visual inspection Water Quality reports WTP records in the logbook		Daily or as needed visual inspection by the operator. Quarterly or as needed water quality testing by the operator.
Grievance Redress Mechanism	Unresolved grievances/com	• All grievances related to the Khairabang Community Water Supply	Sharda Municipality,	Grievance		Through out the operation

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Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Estimated Cost NRs.	Frequency of Monitoring
	plaints on drinking water supply	Project during the operation phase will be addressed through the Grievance Redress Mechanism of Sharda Municipality	Salyan	record logbook		

4.4 Capacity Development and Training

To enhance the capacity of officials for effective implementation of proposed mitigation measures and monitoring the resultant effect, as well as create awareness among workers and supervision staff, trainings and awareness programmes have been planned and is given in Table 10. The Project Management Unit (PMU), Project Support Team (PST), Project Implementation Unit (PIU), Municipal Support Team (MST) can be consulted for such trainings. Experts/Consultants can also be the resource persons to impart trainings. These experts shall be appointed based on specific need for the training.

Table 17: Details of Proposed Training Program

S. N	Title	Objective	Time of training	Duration/Days	Participants
1	Concept of Environmental & Social Management Framework (ESMF) by PMU/PST to MST/PIU.	• Brief of World Bank ESF and requirements • -Brief of latest environmental legislation • -Implementation, supervision and monitoring mechanism	Before awarding contract	1 Day	PMU/PST/PIU/MST/MWASH unit
2	Orientation workshop on ESMF Implementation by PMU/PST to MST/MWASH Unit/Contractor	• ESMF requirements • Roles & responsibilities of contractor & MWASH unit • Identification of environment and social issues • Addressing environment and social impacts • Preparing mitigation plans	Pre-construction stage (when contractors are substantially mobilized)	1 Day	PIU/MST/Contractor/MWASH unit
3	Focused orientation/training on specific issues	• Issues relating to wage disparity, child labour etc.	During construction or when needed	½ Day	PIU/MST/Contractor/MWASH unit
4	Training on STDs/ HIV AIDS issues	• To increase the level of awareness about prevention and control of STDs/HIV Aids among communities.	During construction	1 Day	PIU/MST/Contractor/MWASH unit

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5	Training / Orientation on occupational Health GBV, SEA/SH by PIU/MST to labours/Contractor	• To ensure the safety health and welfare of labours and others who may be affected	During construction	1 Day	PIU/MST/ Contractor/ MWASH unit
6	Training on O&M of the facilities (O&M Manual)	-To provide the knowledge on different components of system and their function uses, regular maintenance and operation after the system will establish -To train the O&M staff on the implementation of operation phase E&S measures)	After construction as per O and M guideline and manual.	3 Days	Municipality/MWASH
6	Training on WASH	• To raise awareness on WASH	During construction	1 Day	PIU/MST/ Contractor/ MWASH unit

4.5 Cost of Environmental Mitigation

A total of NRs. **1,550,000** has been allocated to implement mitigation measure for construction phase impacts. The tables with the total cost and tentative implementation itemized under different subjects are presented in Table 18. Note that, these costs do not include the mitigation actions that already fall under contractor's liability by practice. Most of the mitigation costs for physical environmental impacts are already included in the project cost and some will come in association with contract bids. Likewise, certain measures are non-cost bearing. Allocation of cost for implementation of mitigation measures has duly considered the financial capability of the proponent.

Cost for most of the mitigation measures during operation phase like rehabilitation of infrastructures, periodic maintenance of Khairabang CW Project during operation phase/Defect Liability Period are not included in this cost. The proponent will cover all the environmental management costs in addition to the legal liabilities of the contractors. Similarly, the proponent will cover the cost related to the legal role that the governmental institution will have to play.

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Table 18: Mitigation Budget and Implementation Schedule

SN	Cost Bearing Mitigation Activities	Cost (NRs)	Implementation Schedule	Remarks
1	Water Sprinkling near the construction site, settlement, stockpiled area and school area during construction period	250,000.00 (BoQ Provisional Sum, Item No-3)	During construction period (18 months)	Once in a day time and if necessary, twice a day near stockpile area.
2	Management of stockpiles/ construction waste disposal at all RVT sites	150,000.00 (BoQ PS, Item No-3)	During construction period (18 months)	Spoil disposal sites will be finalized from the consultation meeting with local peoples and representatives and the detail will be included in Contractor's ESMP (C-ESMP).
3	Provision of Waste Collection Bins in every construction site and labor camp	48,000.00 (BoQ PS, Item No-3)	During construction period	8 Bins in 8 RVT sites, office and Labour Camp at the rate of Rs. 6000 each.
4	Provision of PPEs to all workers and First Aid Box at construction site and camp	100,000.00 (BoQ PS, Item No-3)	During construction period	Throughout the project period
5	Monitoring of ambient air quality, water quality and noise level at project site	200,000.00 (BoQ PS, Item No-3)	Prior to construction and at the middle of the construction period	Laboratory cost (2 times during the project period)
6	Greenery promotion/ enhancement activities near/around the project sites for compensatory forest land area use/Installation of protective walls to stabilize soil for the	438,000.00 (BoQ PS, Item No-3)	During construction and Operation period	As part of greenery enhancement and to improve the aesthetics of the proposed RVT sites, various tree species will be planted around the area.

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	location of saddle posts, IC, BPT in case of steep slope			These plantations will be protected using fencing or tree guards and consultation will be carried out with the Community Forest Users Group (CFUG) & Division Forest Office during plantation.
7	Installation of Sign Board/ Information Board near schools and settlements indicating code of conduct and raising awareness.	64,000.00 (BoQ PS, Item No-3)	Prior to construction	At the rate of NRs 8,000 each for 8 different places in project area.
8	Information dissemination and stakeholder engagement including Orientation program on Occupational Safety and Health (OSH), Gender Based Violence (GBV) and Sexual Exploitation and Abuse/ Sexual Harassment (SEA/SH)	200,000.00 (BoQ PS, Item No-4)	Prior to or during construction or at the starting of the construction activities with the assist of MST/PIU	Participants will be mainly construction workers, contractor's crew, project manager, focal person from municipality and other staffs from MST
9	Labour Camp Management	100,000.00 (BoQ PS, Item No-3)	During Construction	Throughout the construction period.
	Total	1,550,000.00		

Note: The Environment mitigation cost of Rs. 1,550,000 is allocated as Provisional Sum (PS) in General works; Item No. 3. **Similarly, Rs. 200,000 is allocated in PS in General Works Item No. 4** for awareness programs and institutional strengthening activities as per the Engineer's approval. PIU/MST will conduct these activities listed in Item no. 4.

4.6 Environmental and Social Monitoring and Reporting

Environmental monitoring is an essential aspect of environmental management. It consists of collection of data to measure environmental changes associated with implementation of the proposal. The purpose of monitoring is to investigate and understand the quality of the environment prior to implementation of the proposal and keep records of the impact of implementation of the proposal on the environmental quality so as to provide reliable information and scientific basis for environmental management. Therefore, environmental

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monitoring is a mechanism which evaluates whether the mitigation actions were actually carried out or not and evaluates the effectiveness of the implemented measures to curb the perceived impacts or identify unforeseen impacts for further corrective actions to avoid or minimize the impacts before it is too late.

Existing Environment Protection Act, 2076 and Environment Protection Rule, 2077 obliges the proponent to comply with the matters mentioned in the environmental management plan and provides the responsibility to the concerned department or ministry; these are basically related with the projects requiring environmental studies pertaining to these laws. Rule 45 of Environment Protection Rule, 2077 indicates towards self-monitoring of environmental impacts of implementation of the proposal and submit the report to the concerned agency.

Basically, two types of environmental monitoring will be carried out for this project:

Impact Monitoring and Compliance Monitoring.

Impact monitoring will be carried out to assess the actual level of impact due to project construction. The impact monitoring includes:

- Monitoring of the impacts of the project on physical, biological and socioeconomic and cultural environment of the area;
- Monitoring of the accuracy of the predicted impacts;
- Identification of the emerging impacts due to project activities or natural process and development of remedial action; and
- Monitoring of the effectiveness of mitigation measures.

Compliance monitoring will be conducted by PIU/MST to monitor the compliance of the proposed mitigation measures and monitoring activities. The compliance monitoring will mainly focus on:

- Compliance of the mitigation measures and specification in accordance with the ESMP;
- Allocation of adequate budget for implementation of mitigation measures and monitoring;
- Compliance of existing act, regulation and guidelines and mandate relevant with the proposal; and
- Overall environmental and social performance of the project.

E&S Reporting:

The MST is responsible for the day-to-day monitoring and reporting of the Contractor's E&S compliance. The MST will prepare monthly E&S progress reports and submit them to the PIU. The PIU will compile these monthly reports and, in coordination with MST, prepare a quarterly monitoring report. This quarterly report will then be submitted to the PMU, which will share it with the World Bank. In addition to these regular reports, the PMU, in coordination with the PIU, PST, and MST, will prepare a semi-annual E&S monitoring report. This semi-annual report will also be shared with the WB.

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The monitoring plans have been presented in the form of matrix/table below. The plan includes the parameters to be monitored, the measurable indicators, the method, location and schedule. The schedule of monitoring will be daily, weekly, monthly, quarterly, half yearly or annually depending on the parameter and type of monitoring.

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Table 19: Compliance Monitoring Plan

Issues	Indicators	Method	Schedule	Location	Agencies to be consulted	Responsible Agency
Construction Phase						
Approval of operation plan of Sharada Municipality with proposed intervention	Approval letter	Review of approval letter	Prior initiation of work or Prior procurement	Sharada Municipality	Local authority	Municipality
Implementation of recommendations (mitigation and enhancement measures and monitoring requirements)	Inclusion of each of the environmental considerations from the tender documents in the contractor's or executor's work plan e.g. C-ESMP, Traffic management Plan, Quarry Site Management Plan, Earthwork Segmentation Plan, as applicable).	Review of proposed work plans, waste management plan, CSEMP, Labor Camp Management Plan submitted by contractor or executing authority	During contract negotiations	Sharada Municipality	Local authority	Contractor, PIU, MST
Mitigation	Budget allocation	Review of project	Regular	Sharada Municipality	Local	PIU, MST

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management (Compliance with ESMP)	for mitigation measures and monitoring	budget document			authority	
Implementation of construction phase monitoring	Monitoring report and budget allocation for corrective actions	Review of monitoring report and budget allocation for corrective actions	Annual	Sharada Municipality	Local authority	PIU, MST
Operation Phase						
Operation phase mitigation management	Budget allocation for mitigation measures for operation phase	Review of project budget document	Annual	Sharada Municipality/MWASH Unit	Local authority	Municipality
Implementation of operation phase monitoring	Monitoring report and budget allocation for corrective actions	Review of monitoring report and budget allocation for corrective actions	Annual	Sharada Municipality/MWASH Unit	Local authority	Municipality

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Table 20: Impact Monitoring Plan

Parameter	Indicators	Method	Location	Frequency & Schedule	Agencies to be consulted	Responsible Agency
Construction Phase						
Physical Environment						
Community Infrastructure	Any damage to properties and utilities	Field observation and consultation meeting with local stakeholder	Construction site	Quarterly	Local authority	Contractor, Municipality
Air quality	Dust and smoke	Field observation	Construction site	Quarterly	Local authority	PIU, MST, Contractor
Noise pollution	Noise level	Field observation and discussion	Construction site	Quarterly	Local authority	PIU, MST, Contractor
Land pollution	Open defecation and garbage disposal places	Direct observation	Disposal site	Quarterly	Local authority	PIU, MST, Contractor
Biological Environment						
Vegetation	No tree clearance is required. In case required due to unforeseen cause, all the legal approval will be taken.	Site observation and record checking	Construction site	Once during tree felling if applicable only	DFO/ CF	PIU, MST
Socio-economic and Cultural Environment						
Construction activities	Noise quality, ambient air quality	Site observation and discussion with local people	Construction site	Quarterly	Local authority and local people	PIU, MST
Existing	Damages of road and	Observation and	Access road	Weekly		Contractor

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Parameter	Indicators	Method	Location	Frequency & Schedule	Agencies to be consulted	Responsible Agency
infrastructures	culvert, access to houses	discussion with local people		during construction		
Law and Order	Incidents of different types of crimes in the project area; complaints in the local police	Discussions with the local people and the local police	Project area and surrounding	Monthly during construction	Local Police Office	Municipality, PIU, MST
Occupational health and safety / Traffic and road safety	Cases of accidents and injury	Observation and record checking	Active construction sites	Monthly	Health institutions	PIU, MST, Contractor
Gender, children and vulnerable group	Number of such people employed	Review of attendance and discussion	Construction site	Weekly	Workers	PIU, MST, Contractor
Labor Camp Management	Maintaining the labor camp with minimum standards like size by number ratio, ventilation, lighting facility, cooking facility, water supply facility, separate toilets and room for males and females, sleeping arrangement, insect and rodent control, and waste management	Visual inspection/monitoring report/photographs, review of workers' grievances register/ GRM committee formed in municipality and sub-committee already formed in ward level to address grievances arisen during implementation of	Construction site	Regular	Contractor/ Municipality	PIU/MST/Contractor

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Parameter	Indicators	Method	Location	Frequency & Schedule	Agencies to be consulted	Responsible Agency
	Number and type of grievances related to workers, number of grievances resolved, labor records	the JWSP				
Community Health and Safety	Establishment of warning signs, barricades, and guards to control the trace pass of unauthorized persons from construction sites, awareness campaign for the community and school children, supervision of children during pick up and drop from school, Sequenced and adjusted construction schedule to shorter community exposure to accidents, dissemination of construction work schedule through effective means of communication	Visual inspection/monitoring report/photographs, review of grievance register	Construction site	Regular	Contractor/ Municipality	PIU/MST/Contractor
Awareness/Orientation/Training Program	Training on road safety, GBV/ SEA/SH, HIV/HIDs, Human Trafficking, STIs,	Site visits, visual inspections, training completion	Construction site	Monthly	Workers, students and community	

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Parameter	Indicators	Method	Location	Frequency & Schedule	Agencies to be consulted	Responsible Agency
	Local culture and tradition to labor, school children, community people, adolescent girl and as deemed necessary	reports/records and photographs			people	
Information disclosure, stakeholder engagements, GRM	Number, type and topic of engagement activities Number, type and status of grievances Number and type of engagement activities with vulnerable groups	Site visits, consultations, records and photographs review of grievance register, meeting minutes, information boards Observation, discussion with the locals, GRM register and other reports/documents	Project area and surrounding	Regular	Ward level & Municipality	
Traffic and road safety	Status of road for use; road accidents	Observation and record checking	Observation and record checking	Daily	Traffic police/ Municipal Police	Municipality
Operation Phase						
Occupational health and safety	Health status of workers	Field observation and consultation with workers	Project site	Monthly	Workers	Municipality
Water pollution	Water quality of boring site	Direct observation and water quality testing	Chaibang Jyula boring site	Quarterly	Municipality	Municipality

4.7 Monitoring Cost

Monitoring is an on-going process crucial for enhancing project effectiveness. It ensures timely achievement of objectives and allows for corrective actions to be taken promptly. Given that the project is led by a community-based organization, monitoring indicators have been selected to be easily measurable by low-skilled group members without the need for advanced technology. Therefore, internal monitoring primarily covers reimbursement for monitoring personnel and stationery costs, which are already part of Sharada Municipality's regular management expenses. As a result, no additional funds have been allocated for monitoring in this Environmental and Social Management Plan (ESMP).

4.8 Project Environmental Management Framework and the Key Stakeholders

Overall project environmental management framework is the responsibility of the project proponent, Municipality. The Sharada Municipality under its leadership will form a project implementation committee (PIC) including all other local level stakeholders. The PIC will procure construction contractor and oversee the overall construction activities. It will also monitor the performance of environmental and social safeguard measures.

The key stakeholders including the Sharada Municipality, to be involved in the project management are discussed below and illustrated in Figure-7:

- a) World Bank:** Implementation of World Bank's Environmental and Social Framework (ESF), work plans, directives and guidelines as required, review monitoring report.
- b) Project Management Unit (PMU):** The PMU will supervise the Municipality Support Team (MST) to aid in infrastructure development, construction oversight, and reporting. It will spearhead federal and provincial efforts to enhance sector governance, institutional capacity, and resilience of water supply and sanitation infrastructure through integrated watershed management, in collaboration with the municipalities.
- c) Project Support Team (PST):** The PST at federal level provides the support to PMU and MST. The PST supports the Municipal Support Team (MST) by offering guidance on local project execution, capacity building, and community engagement, as well as aiding the Project Management Unit (PMU) by providing essential data, reports, and on-the-ground insights to inform decision-making and ensure alignment with project objectives.
- d) Municipal WASH (M-WASH) Unit:** It include developing WASH governance, policy, and institutional arrangements, programming and regulation of municipality-wide water and sanitation services, as well as planning, managing, and monitoring the implementation of local water supply and sanitation services as provided for by the Constitutional provision and Local Governance Operations Act, 2017.
- e) Project Implementation Unit (PIU):** The PIU will supervise the Municipality Support Team (MST) to aid in infrastructure development, construction oversight, and reporting. It will spearhead federal and provincial efforts to enhance sector governance, institutional capacity, and resilience of water supply and sanitation infrastructure through integrated watershed management, in collaboration with the municipalities.

- f) Municipal Support Team (MST):** MST offers specialized technical aid to the PIU, focusing on governance, institutional support, planning, design and construction supervision of infrastructure project. It aims to strengthen the M-WASH Uni's capacity in planning and managing water and sanitation services effectively.
- g) Contractor:** The Contractor is responsible to plan, execute, supervise, inspect and direct a construction project from start to finish regardless of the scope of the project. The contractor ensures that the project complies with the ESMP and all the specifications as outlined in the contract documents.
- h) Sub-Contractor:** Subcontractor/Supplier is an institution, awarded a portion of an existing contract by a principal or general contractor. Subcontractor/Supplier performs work under a contract with a general contractor. Essentially, a Subcontractor/Supplier will perform and abide by all the obligations of the principal or general contractor's contract, including compliance to ESMP and all specifications in the contract documents.
- i) E&S Specialist/E&S Consultant:** The E&S Specialist are there in PMU, PST and MST who carry out the required E&S assessments and prepare reports. They provide guidance to PMU and PIU for effective implementation of ESMP recommendations. The MST E&S Specialists support the PIU to carryout day to day compliance monitoring of the contractor's responsibilities. The Contractor will hire its own E&S Specialists to implement its E&S responsibilities as per the contract. In the guidance of PST/PMU E&S specialist, E&S specialist of MST prepare the site-specific environmental and social management plan (ESMP) report. E&S specialist support and provide guidance to PIU to ensure that the relevant E&S instruments/ESMP/ESSR/ESCoP etc. and also effective implementation of these reports for the sub-projects.
- j) Affected Wards, Municipality and District Coordination Committee (DCC):** Provide recommendations to the proponent with comments and suggestions and assist proponent in the project implementation.

Organogram of E& S activities

At Federal Level

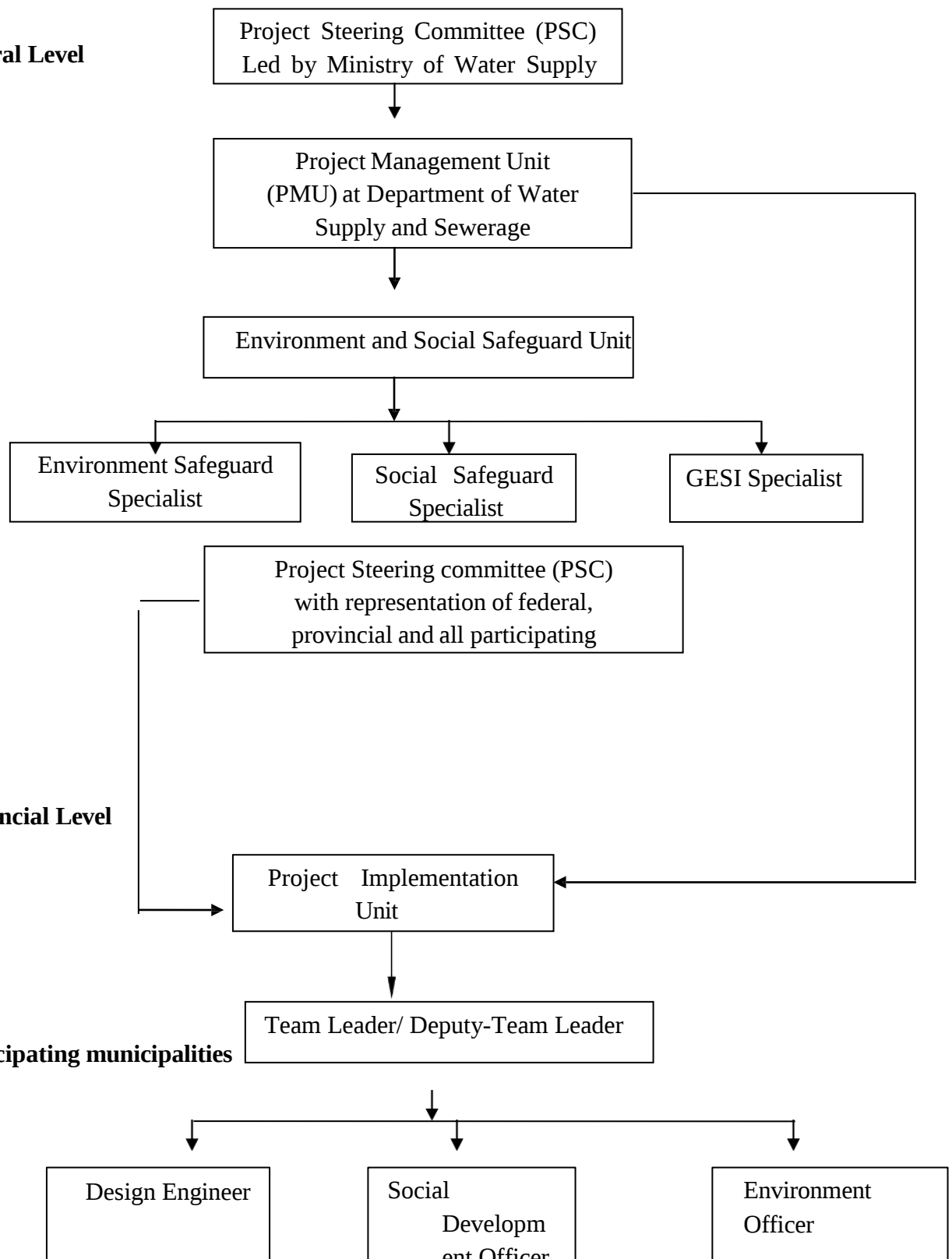


Figure 8: Organogram of E & S activities related to the project

4.9 Social Accountability and Grievance Redress Mechanism (Project Level GRM and Central GRM)

The social accountability mechanisms will be established for the project. The key approaches that would be adopted for ensuring social accountability would be any or a combination of participatory processes guiding social audit, citizen scorecard, and report card to acquire feedback on the performance of the projects and record stakeholders' recommendations for improvement. The social accountability mandate will be further strengthened through a strong grievance redress mechanism.

To address the incoming grievances two-level grievance redresses committee will be formed; one at the project level (Municipality Level) and next at the Central Level in line with the SEP.

All grievances relating to the project including engagement with PAPs when WS Project will be carried out, social issues, nuisance due to project activities, and so on (but not limited to) will be referred to the Project Level Grievance Redress Mechanism (GRM). The projects Level GRM consists of a Project Level Grievance Redress Committee (GRC). The project level GRC will record all the grievances at the project site screen and analyse the grievances. The project level GRC will initiate hearing process to resolve the incoming grievance at the site level and inform the decision accordingly to the complainers. If the grievance fails to settle at project level GRC then the project Level GRM forward the grievance to central level GRM with a recommendation for further action to Central Level Grievances Redress Committee (GRC). This committee will be three membered headed by PMU chief, supported by the Social Development Specialist at PMU and another person assigned by the PMU Chief. The three membered committee can seek support from other experts or institutions in course of investigating and resolving resolutions. If the GRC at project level (Municipality level) is unable to make any resolution within the stipulated time, the grievances will be scaled up to the Central level GRC.

The central level GRC will take a decision and inform the complaining party regarding the decision it has made through an appropriate channel. If the complaining party is not satisfied with the decision of GRCs, they can appeal to the courts for the final determination of the case. If the court process is initiated, works shall not proceed on the point of impacts until the case is finally determined.

The functions of the GRC will include:

- (i) to provide redress to aggrieved project affected persons (PAPs) in all respects;
- (ii) oversee the implementation of mitigation measures where complainants are deemed to receive cash or mitigation measures in lieu of complaints;

The GRC will only deal/hear the issues related to WS Project and individual grievances. The committee will give its decision/verdict within 15 days after hearing the aggrieved PAPs. The final verdict of the GRC will be given by the Chairman/Head of GRC in consultation with other members of the GRC and will be binding to all other members.

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Municipality level GRM has been established and the Grievance Redress Committee (GRC) has been formed on 2081 / 2 / 23. The composition of the GRC is given below.

Table 21 : Composition of GRC at Municipality level

S. N.		Name	Organization/Position
1	Coordinator	Susmita Sapkota	Deputy Mayor / Chairperson
2	Member	Respective ward chairperson	Ward Chair-Member
3	Member	Kailash Chanara	WASH Focal Person-Member
4	Member	Nabin Kumar Shahi	MST/SDS-Member
5	Member-secretary	Deepak Maharjan	Project Manager/PIU

Ward level Grievance Redress sub-committees have also been formed in project wards as given in table below.

Table 22: Details of Ward level GR Sub-Committee Members in Khairabang CWP Service Area

S.N.	Ward No. 11	Name	Designation
	Coordinator	Rajesh Kumar Sharma	Ward Chairperson
	Member	Radhika BK	Ward Member
	Member	Ramsingh Budhathoki	Bhuwaneswori WSP
	Member	Bimala Oli Dangi	SM/ Municipality
S.N.	Ward No.12	Name	Designation
	Coordinator	Surendra Budha	Ward Chairperson
	Member	Yamkala BK	Ward member
	Member	Gita Acharya	SM/ MST
SN	Ward No.1	Name	Designation
1	Coordinator	Pradip Kumar Pandey	Ward Chairperson
2	Member	Parbati BK	Ward member
3	Member	Gita Acharya	SM/ MST
4	Member	Juddha B Basnet	Bhagawoti Khola WSP
5	Member	Gangadhar Budhathoki	Darim Chaur WSP
6	Member	Ramesh BK	Chhapdanda WSP
7	Member	Shankar Basnet	Sahntinagar WSP

The existing GRM put in place for the project will also be utilized to address GBV and SEA/SH issues, and the PMU at the DoWSSM will oversee GBV-related complaints. The project will place its highest priority on handling and managing GBV-related grievances by maintaining the complete confidentiality of the survivor. The PMU will establish necessary mechanisms for confidential reporting, ensuring the safe and ethical documentation of GBV issues at both central and local levels. The first responders for grievances related to GBV will be the E&S staff of the participating municipalities, who will be trained in managing and

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handling such grievances. For this purpose, Mrs. Bimala Oli Dangi, working as a social mobilizer for the WASH Unit in Sharada Municipality, has been appointed as the focal person for GBV/SEA/SH by the PIU. GBV referral pathway will be established and communicated to both PMU at the DoWSSM and local level. Furthermore, the GRM will also establish a system to promptly notify both the PMU and the World Bank of any complaints of GBV.

5. Stakeholder Engagement and Information Disclosure

5.1 Public Consultations

The public consultation focused primarily on the project-impacted people. For instance, the group of directly impacted people is those living near the WS project area. The aim was to identify possible environmental and social impacts that might arise from the proposed project activities. According to the site survey during the ESMP, within the directly impacted area of Sharada Municipality wards no. 1, 11 & 12, people expressed their concerns about various kinds of environmental impacts caused by the project. From the consultation meeting, it was found that most of the people are positive towards the project. It was found that there are no significant negative impacts on the physical, biological, and socio-economic environment. Consultation meetings were conducted on 2082/02/03 in WN 12 (Chisapani WSUC), 2082/02/19 in WN 1 (Chaibang WSUC), 2080/09/11 in WN 1 (Darimchaur WSP), 2082/02/15 in WN1 (Bhagowati WSUC), 2082/02/03 in WN 1 (Shantinagar WSUC), 2080/09/13 in WN 1 (Chhapdanda & Dobri Chaibang WSUC), 2082/03/03 in WN 1 (FGD with Women Users' Group of Chhapdanda WSUC) & 2082/02/05 in WN 11 (FGD with Dalit people) of Khairabang about issues related with insufficient water supply from existing WSPs, their perpetuality due to climate change and their affirmation to merge with proposed Khairabang Lift WSP for 'One house and One Tap' concept. Experts of MST made clear on necessary documents required for the Detailed Project Report (DPR) of Khairabang WSP, with managerial support from local-level representatives and water users, and its sustainability, feasible operation and maintenance cost. The summary of the issues they raised during consultations is as follows.

Separate consultation meetings were conducted with the people of the Women Group including IP community of the Chaibang Gau, Chaibang Jyula and a Focus Group Discussion with Women Groups and the Dalit people of Khairabang was conducted to collect their views on the proposed Khairabang CWP. The summary of the issues they raised during consultations is as follows.

- The communities of Chaibang Gau, Chaibang Jyula and khairabang have long struggled with severe water shortages, particularly during the dry season. Residents often have to walk 15-20 minutes one way to collect water, and in some cases, round trips take up to 30 minutes. This has greatly affected their daily lives, especially for women and marginalized groups such as the Dalit community. The implementation of the proposed Khairabang Community Water Supply project (KCWSP) reliefs by ensuring easier access to safe drinking water. Seasonal migration, which has traditionally been necessary due to the lack of sufficient water for both people and livestock, would likely no longer be required.
- The proposed WSP is also expected to generate employment opportunities during the construction phase, and local residents have expressed willingness to work under the contractor. They believe that improved water access will significantly enhance their livelihoods.
- Moreover, the community including women's groups and Dalit representatives have expressed strong support for the project. They have indicated their readiness to

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contribute to its successful implementation and ready to pay water tariff for proposed Khairabang Community WSP. The residents have collectively requested the urgent implementation of the KCWSP and committed to active participation for its effective and sustainable execution.

5.2 Stakeholder Consultation Plan for Implementation Phase

Consultations during the implementation phase will involve direct interactions with the people who have been affected by the project. PIU, MST, and the contractor will conduct regular consultations with PAPs, as well as local user committees, local electricity office units, and other stakeholders. All consultations on social and environmental issues conducted during the implementation of subprojects will be inclusive, involving vulnerable social groups and women. Public consultation will be taken as a continuous process during the construction phase as well.

The stakeholder engagement plan will be as per Table 23 below:

Table 23 : Stakeholder Engagement Plan

During Construction				
Topic	Stakeholders	Engagement Method	Frequency	Responsibility
▪ Disclosure of ESMP (and updated ESMP), including C-ESMP ▪ ESMP, Project SEP, and LMP ▪ Delineate Labour Influx Management Procedures ▪ Activities planned for SEA/SH and GBV ▪ Awareness of HIV and other communicable diseases ▪ GRM for SEA/SH ▪ Project GRM	▪ Sharda Municipality and concerned officials of the Municipality and MWASH Units ▪ Project-affected Ward chairs ▪ Tole Committees ▪ Local Community of the project area ▪ Community Leaders ▪ Local CBOs and NGOs working on WASH and GBV	▪ FGDs and targeted outreach activities with women, Ips, IPs organisations, and other vulnerable groups, such as Dalits (Application of audio/visual communication techniques and other accessible formats) ▪ Community radio and local media ▪ Notice Boards ▪ Periodic information disclosure	Periodically throughout project implementation For planned construction activities, the community will be informed a week in advance of the construction work and a day before the commencement of construction in the designated areas.	PIU/MST Contractors

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▪ Planned construction activities		activities		
▪ Beneficiary satisfaction survey	▪ Target beneficiaries of the project	▪ Beneficiary satisfaction survey	The first survey will be conducted two years after implementation, and the final survey during the final year of operation.	PMU/PST/MST

5.3 Information Dissemination

For the effective implementation of the project, all information about the proposed activities and their expected outcomes will be publicly shared with the local community and interested stakeholders. In collaboration with relevant local authorities and other community groups, the project will disclose all relevant information at various stages of the project cycle. Relevant organizations working on environmental and social issues will also be informed about ongoing and planned activities, enabling them to identify appropriate protective or corrective measures in collaboration. The following approaches will be adopted to make information accessible to all the concerned stakeholders throughout the project cycle;

- Mass Media: Utilize local media, such as newspapers, radio, and TV.
- Meeting/Workshops
- Distribution of project documents: Certain project documents will be disclosed in Nepali
(or other relevant local languages). Project-related information materials will be sent to other relevant offices, such as the municipality, ward, and Tole Committee.

The municipality office will serve as the project-level information sharing point during implementation and will disseminate all the documents related to the project activities. Based on the public information disclosure policy, the municipality will unveil the information through its website.

6. CONCLUSION AND RECOMMENDATION

The Khairabang Water Supply Project, facilitated by WaSGISP in Sharada Municipality's Wards 1, 11 & 12 utilizes a lift pumping system extracting water from the proposed boring site of Chaibang Jyula at the bank of Sharada River. By electrical- powered pumps, it optimizes clean energy usage with no harmful carbon footprints. The project prioritizes environmental and social considerations, conducting public consultations to address community concerns. With pumping stations equipped for reliability in all weather conditions, it aims to provide safe drinking water access to 1199 households, promoting community well-being and sustainable development.

The Khairabang Water Supply Project in Sharada Municipality aims to enhance water supply infrastructure while minimizing environmental and social impacts. Its Environmental and Social Management Plan (ESMP) outlines measures to obtain necessary consents, manage waste, and mitigate disruptions during construction. Social harmony is prioritized through local employment and cultural sensitivity. Occupational health and safety measures include personal protective equipment and first aid provisions. During operation, water quality and infrastructure maintenance will be monitored for long-term sustainability. Overall, the project exemplifies responsible development practices, ensuring community well-being and environmental protection. A total of NRs **1,550,000** is allocated for mitigating construction and operation phase impacts. These costs are meticulously considered, ensuring financial feasibility and comprehensive coverage of environmental management responsibilities and legal liabilities.

In conclusion, the Environmental Monitoring Plan demonstrates the project's dedication to responsible environmental stewardship. Through compliance with environmental legislation and regulations, such as the Environment Protection Act and Environment Protection Rule, the project ensures accountability. The plan includes impact and compliance monitoring across various environmental aspects, reflecting a holistic approach. Additionally, the ESMP outlines the roles of stakeholders and emphasizes social accountability via a Grievance Redress Mechanism (GRM) at project and central levels. This comprehensive framework underscores the project's commitment to sustainable development and minimizing adverse environmental and social impacts.

Recommendations may include:

1. Implement erosion control measures and restoring any areas affected by construction activities.
2. Provide training and employment opportunities for local residents to promote community involvement and capacity-building.
3. Establish and activate a grievance mechanism to address any concerns or complaints raised by community members during the enhancement works.
4. Monitoring and evaluating the project's social and environmental performance regularly to ensure compliance with relevant regulations and standards.

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Annex- I: Environmental and Social Screening Checklist

I- Sub-project Background

1.	Name of the Sub Project	Khairabang Water Supply Project
2.	Location	Municipality/ Rural Municipality: Sharada Municipality Ward No: 1,11 & 12 District: Salyan Province: Karnali Altitude: (3708.6 – 6030) Ft.
3.	Co-ordinate (GPS) of Spring Source	Latitude: 28°2'1.8"N Longitude: 82° 1' 57.9"E
	Project's boundaries in four directions and the area of influence	East: Ward No. Chhatreswori Rural Municipality West: Ward No 2 & 10 of Sharada Municipality North: Ward No. 12 of Sharada Municipality South: Kalimati Rural Municipality
4.	Type of Sub-project	Water Supply & Sanitation
5.	Proponent	Sharada Municipality, Salyan

II- Environmental and Social Screening

SN	Screening checklist	Yes	No	Comments Provide information/justification either for “Yes” or “No” if applicable
	Project's site information			
1.	Is the sub-project site adjacent to or within any of the following sensitive receptors?	Yes		
	i. Natural habitats and /or legally protected areas (national park, wetlands, forests, estuary, buffer zones, nature reserves)	Yes		The sub-project requires the use of land from six community forests (Namuna, Bhuwaneswori, Bageswori, Madhuban, Bhuwaneswori-Chhapdanda CF & Janaki Community Forests) for the construction of various project components.

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ii. Cultural heritage site (e.g. temples and sacred sites)	Yes		Khairabang Devi Temple, ward No. 11
iii. Recreation or public gathering site	No		
iv. Aesthetically important sites	No		
v. Located near the main settlement and market places. If “Yes” provide name of the settlement and marketplace, and brief description with estimated number of HHs	Yes		Chaibang Jyula, Khairabang, Bhagawoti Khola, Darim Chaur Phaleda Jyula, Chisapani, Chhapdanda, Kafla, Shantinagar Domati etc.
vi. Is there any history of flood/river cutting / landslides at the site or surrounding areas?		No	
vii. Is there any public infrastructure (school, hospital, health post) in the surrounding area of the project site? If yes, provide brief descriptions.	Yes		There are 4 schools (Bhagwati Primary school, Sharda School, Mitra Paradise school and Bhubaneswori school, 2 ward office (ward no. 1 & 11), 1 bus park (Shreenagar Bus Park) & 1 health post (WN 1) in the surrounding settlements.
viii. Are canals and irrigation systems present in proximity to sub-project site?		No	
ix. Are there any existing water sources near or within the site that may be impacted by the project?	Yes		There is Sharada River near the proposed boring site/ intake site/Chaibang Jyula. There are several spring sources with very small yield but the proposed project doesn't create any negative impact
x. Briefly describe the existing use of land in the surroundings area of the proposed site, nature (slope and facing)	Land has been used for agricultural activities and some portion found barren/open on the bank of Sharada River.		

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	xi. Is the sub-project site accessible by road through the year? Description of condition of road/track (blacktop, fair weather, etc.) or needs to construct a new road, total length, nearest road head, etc.	Yes		Almost road facilities are fair weather category except Rapti Highway in this area
	xii. Is the proposed site is being used by locals to access to other places or public resources such as forests, rivers, water sources, cultural and religious heritages/temples?	Yes		There are other existing water supply source and schemes in function with very minimum yield and 6 community forests in the proposed site.
	xiii. Will the construction activities cause any damage to the existing local roads?		No	

SN.	Screening checklist	Yes	No	Comments-Provide information/justification either for “Yes” or “No” if applicable
General				
1.	Does the Subproject contravene Nepal’s obligations under its international agreements?		No	It might not contravene Nepal’s obligations under its international agreements
2.	Impacts on natural resources that constitute livelihoods of the community (e.g., water resources, drinking water supply system, forest resources, fishing, grazing, or hunting grounds)?		No	The forest resources will have minimum adverse impacts and will positively impact existing drinking water supply system by merging with the new Khairabang Community WSP.
3.	Are any of the following activities planned within the Project area? • Earthworks, • Excavations/topsoil	Yes		The proposed project likely includes earthworks and quantity and extent of work could be scaled based on design report.

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	removal, • Borrow areas, • Stockpiles, • Storage facilities (e.g. tanks, silos).			
4.	Will natural resources (e.g. timber; water, sand, quarries) within the sub-project area be used for construction activities in a significant quantity?		No	
5.	Is there potential for landslide and soil erosion impacts during construction or operation of the project?	Yes		There is no any possibility of land slide due to project activities but it may result soil erosion in very nominal scale.
	If yes, please provide the following information: History of natural calamities in or surrounding areas of the proposed site (Dates, level of impacts in terms of loss of lives and property and mitigation measures applied so far and their impacts)	Dipesh KC, Salyan in-charge of the Soil Conservation Office in Surkhet, said that landslides occurred in 90 places in Salyan last year due to soil erosion caused by haphazard construction of roads, and deforestation. As per the data available at the District Administration Office in Salyan, a person died, 96 houses were destroyed, 133 other houses were partially damaged while 604 people were displaced in the district last year. The Dang-Salyan-Surkhet and the Kapurkot-Phalawang roads under the Madan Bhandari Highway have been blocked frequently due to landslides triggered by continuous rainfall. (Source: https://kathmandupost.com/karnali-province/2024/08/22/landslides-block-dang-salyan-surkhet-and-kapurkot-phalawang-roads https://kathmandupost.com/karnali-province/2024/07/06/126-settlements-in-salyan-district-at-risk-of-landslides)		
6.	Changes in drainage patterns and resulting effects due to construction of project components and access roads?		No	

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7.	Loss or destruction of unique or aesthetically valuable land or natural resources		No	It won't damage unique or aesthetically valuable land.
Labor and working conditions				
1.	How many workers are likely to be hired for the proposed works? How many workers are estimated to be women?	To be managed by contractor. The total of 6,000 man-days will be expected to be required for the proposed WSP. Out of it, approximately 3,300 md will be of women if women are interested to work as women can involve in pipeline laying work and all of them are expected to be local.		
2.	Will the project draw on migrant workers?	Yes		The skilled manpower for pipe fittings, construction of RVTs, WTP will be hired from outside.
3.	How many workers are estimated to be hired directly from the project area?	Nearly 80% of the total workers will be hired locally. It mainly constitutes of unskilled and semi-skilled manpower. The total of 6,000 Md works will be done by the local workers.		
4.	Of the total workers, how many are estimated to be	Based on the total man days of work, it is estimated that approximately 20 workers (skilled, semi-skilled and unskilled) will be employed per day Skilled: 5 Semiskilled: 3 Unskilled: 12 Engineers: 3 Technician/overseer: 5 Security guards: 1 Others: 2		
5.	In terms of the categorization of the sub- project workers as the World Bank's ESF, how many of them will be	Direct workers: 80% Contracted workers: 20%, Primary suppliers' workers: 0, Community workers: 80%		
6.	Will there be a labor camp? Or any form of accommodation for workers	Yes, there will be labor camp to be managed/ constructed for the accommodation of workers.		

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7.	If the sub-project is planning to manage/construct a labor camp, provide the information on	Probable location (s) of labor camp: Shreenagar & Khairabang. But the finalization of the labor camp site will be done after consultation with the local representatives and community people. Status of basic facilities (power, water etc.): available		
8.	Does the sub-project have policies and provisions in the project for all types of project workers?	Yes		The project will manage the labor camp for its workers with all the facilities like drinking water, toilets complying the standard of Nepal Government's Labor Act and ESMF of the project.
9.	Does the sub-project plan to maintain and regularly update a labor registry throughout the project lifecycle?	Yes		The sub-project will maintain and regularly update a labor registry throughout the project lifecycle. The record of the workers like name, address, age, education level etc. will be maintained clearly.
10.	Is there a policy that ensures nondiscrimination in wages and other facilities?	Yes		Yes, there is a strict policy that ensures equal wages among the workers irrespective of gender, caste etc. for similar nature of work.
11.	Does the Project ensure that all persons working for the project are above minimum age as per national laws?	Yes		Child labor and forced labor is strictly prohibited in all construction activities.
12.	Does the Project ensure it will abide by the national standards working hour rules and overtime?	Yes		The project will strictly ensure it will abide by the national standards working hour rules and overtime rules.
13.	Does the sub-project have plans to provide orientation to migrant workers about national labor laws, local tradition, culture, costumes, norms, and values?	Yes		All the migrant workers in the labor camp will be oriented on national labor laws, local tradition, culture, customs, norms and values at the beginning of the construction work and in the middle of the project.
14.	Will heavy machinery (e.g. excavators,	Yes		The use of heavy machinery like excavator and loaders will be little used for excavation of RVTs and

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	cranes, trucks, jack-hammers) be used for construction activities?			boring site. Since the construction sites are away from the main settlements, impacts due to its use are expected minimal. The minimum use of such heavy machinery will be ensured and will be limited to day time.
15.	Will the Project activities involve the handling of hazardous materials/contaminants?		No	
16.	Will the Project activities involve the handling of risky electrical equipment?	Yes		There can be use of electrical drill machines and iron cutters which must be handled with safety and precaution.
17.	Is there any safety concern to women once the migrant workers arrive in sub- project site?	Yes		Adequate orientation to female workers will be conducted. Similarly separate living space for female workers and female toilets in the labor camp will be ensured. Regarding the safety concern of community women from the migrant workers, the frequent to and from movement of the workers from the labor camp will be controlled.
18.	Does the sub-project plan to provide orientation to workers about the national laws and project policies on GBV & SEA/SH?	Yes		The sub-project will ensure such orientation programs to workers to be organized by PIU/MST and such activities will be included in mitigation matrix of ESMP.
19.	Does the sub-project plan to provide orientation to workers about the risks of communicable diseases such as STDs?	Yes		The subproject has planned for such orientation programs to workers. Such orientation programs will be organized at the beginning and middle of the project period.
20.	Does the sub-project plan to provide orientation to workers about COVID-19 related national and WHO protocols?	Yes		The sub-project has planned to provide orientation to workers about COVID-19 related national and WHO protocols

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21.	Is there any history of conflict between the migrant workers and the local in any infrastructure projects in the local area?		No	Local people are very courteous and cooperative nature.
22.	Is there any possibility of conflicts between migrant workers and the local community?	Yes		Conflicts between local and migrated might be happened but it will not create problems because proper orientation to workers regarding social harmony and has planned for strict monitoring mechanism.
Resource Efficiency and Pollution Prevention and Management				
1.	Will construction activities result in production of waste that needs special treatment or disposal measures? If “Yes”, describe types and expected amount of waste, if known at the time of screening?		No	
2.	Will the sub-project generate substantial amount of wastewater (liquid waste) during construction and operation?		No	
3.	Will it create dust pollution around the sites?	Yes		The excavation works at deep boring and RVT sites may create dust pollution during dry season due to wind blow. Similarly, the vehicles carrying construction materials if not covered properly can cause dust pollution to the nearby settlements.
4.	Will be the subproject generate substantial amount of air emission during construction and operation?	Yes		The heavy equipment, vehicles and generator used for pipe fittings and other purposes can cause emissions of air pollutants near the construction sites. These impacts will be localized, reversible and less significant
5.	Will the sub-project create noise/vibration beyond the level permitted by the law?		No	Restrict noisy activities to daytime. Minimize drop heights when loading and unloading coarse aggregates.

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				Horns should not be used unless it is necessary or unavoidable Utilize modern vehicles and machinery with the requisite adaptations to limit noise and exhaust emissions, and ensure that these are maintained to manufacture's specifications at all times.
6.	If the sub-project plans to transport, storage, and use and/or disposal of materials that may create physical, chemical, and biological hazards? If "Yes", please mention		No	
7.	Will it temporarily stop or impact/pollute the water supply and sanitation system in and around the site?		No	
8.	Will there be any solid waste generated by sub-project that needs to be transported off-site for reuse, recycle or disposal of?	Yes		Waste minimization and waste segregation will be prioritized, Practices of composting will be promoted; 3R will be practiced. The waste labor camp which will be segregated at source in separate bins. The segregated waste will be transferred to the waste collection system of Municipality.
9.	Will any liquid waste, or an item containing liquids (including oils), needs to be transported off-site for reuse, recycle or disposal of?	Yes		Oil spillage of vehicles will be managed by collecting on oil drums and disposing to safe site by Contractor.
10.	Will any explosive and hazardous chemicals be used within the project?		No	No such use of explosive and hazardous chemicals will be used within the project.
11.	Will building materials containing asbestos be		No	Not applicable.

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	removed/disposed of?			
12.	Will any building materials be removed/disposed of that are coated with lead-based paint?		No	Paints are not lead based nowadays.
13.	Will mercury-containing devices (switches, gauges, thermostats) be removed/disposed?		No	Will use electronic digital devices rather than mercury (paro) devices.
14.	Will any building materials be removed/disposed of that contain lead, silver or chrome?		No	
15.	Will the sub-project use batteries (lead- acid or nickel-cadmium) as its components?		No	The sub-project uses direct electricity from transformers of 11KV line and use of dry cells with minimum environmental hazards.
16.	If “Yes”, please briefly explain how the Project plans safe transportation, storage and use and disposal of hazardous materials.	Any hazardous materials will be disposed to safe place and stored by proper treatment using ESMP and World Bank Guidelines.		
17.	Will sub-project activities involve GHG emissions?		No	Due to plenty of trees the GHG emissions will be carbon sequestered and ensure use of equipment and fuel complying with applicable emission standards and air pollution control devices. Afforestation and tree plantation will be encouraged.
18.	If “Yes”, please provide description of the activities that will contribute to the GHG emission.			
Potential Community and Occupational Health and Safety Impacts				
1.	Are there any community health and safety risks due to the use of equipment, machinery, or the activities at the sub- project?		No	

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2.	Will the construction works disturb the normal functioning of other commercial/community/residential activities? If “Yes”, please mention the activities and period of disturbance.		No	
3.	Are there any potential impacts to public health and safety due to changes in the landscape for sub-project?		No	
4.	Are there any risks to community safety due to accidental and natural hazards during sub-project construction and operation?		No	Sub-project construction and operation will not affect the community but workers’ health & safety will be safeguarded on the work activities. Also ward level grievance sub-committee and monitoring committee will look after any unwanted accidents and natural hazards in co-ordination with the Municipality.
5.	Is there any possibility of traffic congestion or rise in road accident in the project area due to project activities?		No	Since the construction activities will go in rural setting so minimum traffic movement observed and any accidents will be taken care by traffic police.
6.	Is there any provision to control possible trespassing of non-project staff on the project site during construction and operation?	Yes		Use of time card system for visitors and provision of supervisors and security guard for surveillance. The construction site will be separated by the Chain linked fencing which will control the possible trespassing of non-project staff on the project site
7.	Does the sub-project plan to provide orientation to surrounding communities about the risks of communicable diseases and COVID-19?	Yes		The project plans to provide orientation on the risk of communicable diseases and COVID-19 to its construction workers and surrounding communities.

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Land Acquisition and involuntary resettlement				
1.	Will there be permanent land acquisition for the sub-project?	Yes		
2.	If “Yes”, please provide information about the types of land that will be acquired. Private land Forest land Government/Public land	Six community forest land and public land will be used.		
3.	If the sub-project is planning to acquire private land, please provide information about the process of acquisition Voluntary donation Involuntary acquisition Negotiation	The sub-project will not require the acquisition of private land, as its major infrastructure components are planned to be constructed on public land. For linear structures such as pipelines and electrical transmission lines, alignment through private land will be avoided wherever feasible. In cases where avoidance is not possible, these structures will be aligned along the edges of private land to minimize impacts on private property and land use.		
4.	Will there be a temporary land acquisition for the sub-project?		No	
5.	If “Yes”, please provide information about the types of land that will be temporarily acquired.			Not required.
6.	Will there be a loss of productive land?		No	Most of the land used will be of community forests and public (Ailani) land and pipe transmission will not cause loss of productive land.
7.	Will there be any physical/economic displacement and impact on livelihoods?		No	The proposed site belongs to six community forests and there is no any claim of IPs on this land. Thus, there will be no any physical displacement of IPs. And there is no any informal occupancies in the proposed sites.
8.	Is there any household that needs relocation?		No	

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9.	If there is any physical/economic displacement, please provide information on How many people/families will be displaced? What will be the scale of economic displacement? What will be the scale of impact on livelihoods of impacted people/families? How the project does plans to help the impacted people/families restore their livelihoods?	No physical and economic displacement.		
10.	Is there any impact on house or structures built on the land to be used for the project?		No	
11.	If yes, please provide details of such structures (floor area, height, materials used in floor, wall and roof).			
12.	Is there any possibility of complaints/lawsuits claiming that land acquisition didn't happen as per law of the country?		No	For the proposed sub project; no any private land acquisition is required.
13.	Apart from compensation, does the sub- project plans to provide additional supports to impacted person/family?		No	If any compensation issue arises, Municipality and ward will handle the problem by the commitment from the Mayor and GRM Unit. If any private land take, or private assets will be impacted due procedure prescribed in the RPF will need to be followed and necessary mitigation measures implemented.

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14.	Will there be any adverse impact on non- titleholders including loss of shelter and livelihood?		No	
15.	Will land acquisition result in loss of income loss of access to common property resources?		No	
Biodiversity Conservation and Sustainable Management of Living Natural Resources				
1.	Is the Subproject going to encroach into national parks of protected area, including their buffer zone?		No	
2.	Is the Subproject going to convert or degrade critical natural habitats?		No	It will have less adverse impacts on natural flora and fauna.
3.	Will there be forest loss in terms of area (if yes, type of forest: National Forest, Community Forest, and Private Forest etc.?) Will it lead to loss of forest species (provide details of the loss of listed species according to national and international – specifically IUCN- classifications), if known at the time of screening?	No		The site passes through six community forests (Namuna, Bhuwaneswori, Bageswori, Madhuban, Bhuwaneswori-Chhapdanda CF & Janaki Community Forests). Open flat land, no any vegetation loss. However, minor bush clearance may be required in certain forest sections.
4.	Will there be a need to remove trees to clear project sites? If “Yes”, please provide brief information, including species and numbers to the extent possible at the time of screening.	Yes		The sub-project requires the use of land from six community forests for the construction of various project components. The proposed areas consist mainly of open, flat land, and with no anticipated loss of vegetation. However, minor bush clearance may be necessary in some forest sections.
5.	Is the loss of Non-Timber Forest Products (NTFP) possible? If so, provide the details if known at the time of screening.		No	

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6.	Is there presence of wildlife around the sub project area?	Yes		Mentioned below.
7.	If yes, provide information of the type of wildlife, if known at the time of screening? (Provide details of listed wild life and avi-faunal species according to national and international – specifically IUCN classifications, if known at the time of screening).	Yes		Presence of variety of birds such as doves, crow, Koili, Maina, sparrow, parrot, <i>Hodgson's Redstart</i> , etc. Rabbit (<i>Oryctolagus cuniculus</i>), Jackal (<i>Canis aureus</i>), Jungle Cat (<i>Felis bengalensis</i>), Bandar/Monkey (<i>Macaca mulata</i>), Nyauri/ Mongoose (<i>Herpestes fuscus</i>), etc.
8.	Will there be any barrier to migratory birds or land animals by the construction of this project?		No	Transmission pipe will run through the ground with minimum impact on birds and land animals' habitat.
9.	Will the sub-project affect the aquatic fauna of river system and/or springs?		No	The water intake will use water from water table by deep boring.
10.	If yes, provide the details of the river/spring and existing fauna, if known at the time of screening?		No	Fish species includes Asala (<i>Schizothorax richardsonii</i>), Raj Bam (<i>Angullia bengalensis</i>), Buduna (<i>Garra gotyla</i>), Cabre (<i>Pseudecheneis sulcatus</i>), Faketa (<i>Barilius bendelisis</i>), Lohari (<i>Garra annandalei</i>), Gardi (<i>Labeo dyrocheli</i>), Kalacha (<i>Labeo pangusia</i>), Katle (<i>Neolissochilus hexagonolepis</i>), Sidre (<i>Puntius ticto</i>), Sahar (<i>Tor tor</i>) etc. in Sharada River.
11.	Will the subproject involve draining or conversion of any wetland?		No	No impact on nearby agricultural land as the land is public.

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12.	Other potential biodiversity impacts (specify)?		No	Biodiversity will be preserved through tree greenery and plantation activities.
Indigenous and vulnerable People				
1.	Are there any indigenous people among the identified project-affected people?		No	The project doesn't impact on tangible and intangible cultural heritages also.
2.	If "Yes", please mention the type of project-related impact to the indigenous people.	As mentioned above project is going to provide water accessibility to the indigenous and poor people with employment opportunities and transfer of technology.		
3.	Are indigenous people losing their land? If "Yes", please mention how many households.		No	
4.	Are indigenous people being displaced? If "Yes", please mention how many households.		No	
5.	Are any cultural heritages belonging to the indigenous communities being impacted by the project? If "Yes", please provide brief information about such impacts.		No	
6.	Is there a need of a FPIC (Free, prior and informed consent)?		No	
7.	Are there any vulnerable people, such as Dalits, religious minorities, landless, people with disabilities/chronic disease, women-headed households and elderly households among project-affected people? If "Yes", please mention how many such households are among the project- affected people.		No	There is a small population of Dalit community members residing in Shyala of Ward No. 11.

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8.	Are any vulnerable people losing their land?		No	
9.	Are any vulnerable people being physically displacement?		No	
Cultural Heritage				
1.	Does the proposed site or surrounding area host any cultural and religious heritages/temples/structures?	Yes		The proposed site contains famous Khairabang temple in ward no 11.
2.	Will the sub-project cause encroachment on historical/cultural/religious areas?		No	The sub-project will not cause encroachment on historical/cultural/religious areas as all the necessary requirement for land survey will be seen by cadastral to make proposed structures on right of way.
3.	Will there be any adverse impacts on cultural heritage due to sub-project activities?		No	Project site will not have structures to impact any cultural heritage.
4.	If “Yes”, please explain briefly			
5.	Does the proposed site or surrounding area host any cultural or religious event/ gathering?		No	The proposed site or surrounding area will not affect any cultural or religious event or gathering.
6.	If “Yes”, please provide a brief description of the event	NA		
7.	Does the proposed site provide access to any cultural/ religious heritages or temples or sites?	Yes		The proposed site doesn’t impact in accessibility to cultural/ religious heritages sites.
Stakeholder engagement				
8.	Have the stakeholders of the sub-project been identified?	Yes		Local residents, ward employees, HCF and farmers.
9.	If “Yes”, please name them along with their level of influence and interest in the sub-project	The level of influence of ward chairperson and ward members have been found to be positive and progressive towards the project beneficiaries and stakeholders.		

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10.	Have the stakeholders been categorized in terms of gender, age, and ethnicity?	Yes, detail social survey of each ward settlements have been taken.		
11.	Major issues raised by the stakeholders during the initial consultation?	Local residents have some queries about the high operation and maintenance cost and if they can go into integrated water user board model for its future sustainability with the help from the municipality.		
12.	What are the main sources of information for the stakeholders? [Hint: radio, TV, newspapers]	Mobile and internet, radio, television and others.		
13.	Is there social institution/practice for community consultation on common issues in the area?	Yes		There is practice for community consultation on common issues in the area through ward level meeting by formation of Grievance and Monitoring Unit.
14.	Is there any social/religious/cultural institution or practices for local dispute settlements?		No	
15.	Are there any youth clubs, women groups or NGOs active in the project area and in the district? If “Yes” please provide top five such clubs/groups/			
Contextual risk				
SN	Screening checklist	Yes	No	Comments Provide information/justification either for “Yes” or “No” if applicable
1.	Is there any history of community conflict in the sub-project area?		No	
2.	Is there any history of protests against infrastructure projects in the area?		No	

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Water Supply Project*

3.	Provide a brief description about nature of crimes, if any, observed in the project area in last two years. [Hint: Source of information local police station]	Most of the crimes committed are of drug smuggling and sexual molestation according to Municipality source.		
4.	Which political parties won the last local election? [Municipal and the ward of the project site]			Nepali Congress Party won the last local election. Ward has mix chairperson from NC, United Socialist, Nepal Maoist Party and UML.
5.	Which political parties won the last parliamentary election from the constituency of the project site?			United Socialist Party.
6.	What are the major economic activities in the municipality? [Hint: Occupation, local exports, etc.]	Yes		Agriculture (Paddy, Wheat, Maize, ginger, Orange, livestock, vegetables), Salyani Khukuri, Business, Service, labor & Foreign Employment.
7.	Please name the major industries/institutions located in the municipality.	Khukuri Manufacturing Industry, Cottage Industry, Municipality Office, District Hospital, Schools & colleges, DAO, Survey Office, Nepal Telecom, Forest and Agriculture Office, Nepal Red Cross and other NGOs.		
8.	Which are the major market centers in the sub-project area and how far are they?	Yes		Khalanga Bazar in WN 2 and Shreenagar Bazaar in WN 1 are the major market centers in and around the sub-project area.
9.	Is there a board community support for the sub-project? [Hint: Community perception based on stakeholder consultation]		No	Municipality and 12 existing water users' association and committee are prevalent. Board community model to be formed to support the sub-project.
10.	Is there support from the local municipality for the project?	Yes		Municipality will provide 1 crore NRs. for WaSGISP including other sub-projects.

Checklist for ESS7 and particularly to FPIC, Sharada Municipality

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ESS7: Indigenous Peoples	Yes	No	No Impact	Positive Impact	Negative Impact	Remarks
Does the project footprints lie in areas where indigenous people are present including (area of influence)	Yes		No Impact			The project footprints lie in areas of IPs presence but it doesn't impact on their culture, resources and properties.
Will the project lead to full or partial physical displacement of IPs (regardless of whether the IPs are recognized as IPs by the country's law)?		No	No Impact			There is no case of such displacement of the indigenous people by the project or any other groups since the project structures and footprints lie in the community forests and public land.
Will the project lead to full or partial economic (loss of assets/access to resources due to land acquisition and also access restriction—whether or not these affected are physically displaced or not) displacement of IPs?		No	No Impact			The project will not cause any full or partial economic displacement of Ips since the pipe-laying works will not affect community people's access to the forest. Proposed interventions will not result in loss of assets or access restriction to communal resources nor any full or partial economic loss.
Will the project impact land/restriction access to land subject to traditional use or under customary use or occupation (regardless of whether IPs possess legal titles to such areas,		No	No Impact			The project will not have any impact on land/restriction access to land subject to traditional use or under customary use or occupation.

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whether the project is located within or outside of the land and territories inhabited by IPs, or whether the IPs are recognized as IPs by the country's law)?						
Will the project impact natural resources (timber and non-timber forest products, other forest product, medicinal plants /grazing or pasture lands/forest/cropping areas)/loss of access to such assets and resources subject to traditional use or under customary use or occupation (regardless of whether IPs possess legal titles to such areas, whether the project is located within or outside of the land and territories inhabited by IPs, or whether the IPs are recognized as IPs by the country's law)?		No	No Impact			The project does not affect natural resources: timber and non-timber forest products, other forest products, medicinal plants, grazing or pasture lands/forest/cropped areas.
Will the project lead to the utilization or commercial development of natural resources on lands and territories claimed by IPs?		No	No Impact			This is a community water supply project directly benefiting the community. Thus, the sub-project will not lead to the utilization or commercial development of natural resources on lands.
Will the project have significant impact on tangible cultural heritage that is material		No	No Impact			The project will have no impact on cultural heritage or burial sites/religious places/stupas/pilgrimages/p

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Water Supply Project*

to the identity and/or cultural, ceremonial, or spiritual aspects of the affected community? <i>(Tangible heritage may include movable or immovable objects, sites, structures, group of structures, and natural features and landscape that have cultural significance like burial grounds/ritual spaces/stupas/shrines/places of worship)</i>						laces of worship as verified in community consultation and site observations.
Will the project have significant impact on intangible cultural heritage that is material to the identity and/or cultural, ceremonial, or spiritual aspects of the affected community? <i>(Intangible cultural heritage may include practices, representations, expressions, knowledge, and skills, as well as associated instruments, objects, artifacts, cultural spaces that IP communities recognize as part of their heritage like traditional handicrafts such as Bamboo weaving, oral traditions, performing</i>		N o	No Impac t			The project has no impact on intangible cultural heritage and traditional handicrafts, they recognize such as bamboo weaving, oral traditions, performing arts as discussed in the community consultations and site observations.

*ESMP Report of Khairabang Community
Water Supply Project*

<i>arts and so on)</i>						
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Annex II: Summary of Consultation Meetings/Recommendation Letters

SN	Type of the Meeting	Numbers	Number of the participants	Discussion subjects
1	Meeting of Municipal Council	1	25	Prioritization Project, Planning, Progress Review, problems analysis, finding of way out and other regulatory decisions(
2	Joint Meeting among PMU, PIU, WB, WASH Unit and MST official in Khalanga, Salyan	1	11	Discussion on Quick win Projects, WASH Plan updating, mobilization of MST full team, Detail Survey of the identified WSPs.
3	Recommendation and Consensus Letter from the wards	3		E & S recommendation, consensus to expedite DPR of KCWSP
4	Inception meeting (included only one)	1	15	Discussion on existing WASH facility, problem faced by the respective communities, WASH data gap for the preparation of WASH plan
5	Ward Level WASH data validation Workshop	3	64	Presentation of existing WSPs, Ongoing WSP and identification of unreached communities, households and population, school sanitation scenarios, WASH facilities in health institutions in ward level, correction of data if any discrepancy occurred and validate it after meaningful discussion.
6	Environmental & Social Screening Meeting in ward level and	5	125	Make clarity over environmental and social compliances of the WaSGISP, identification of

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	community level			adversaries, Discussion on procedure ESSR, DPR, working modality of the project, ownership of the community people, impact on IP, Dalit, Marginalized people, Vulnerable people and sensitive areas like NP, PA, CA and on Bio diversity etc, produce minute documented the findings properly using defined templates.
7	Consultation Meetings with Community People, WSP committee members, ward representatives etc.	6	180	Increase awareness on WASH, its impact on health, provide information on indicators of managed water supply system, finding of WASH data gaps to collect the data and role of representatives during collection of data, provide information on WaSGISP, its stakeholders, working modality, ownership, Social & Environmental Compliances.
8	Focus Group Discussion	2	18	FGD with Dalit people of Khairabang and Women users of Chaibang Jyula and discussion on existing water supply facility, reliability, water sufficiency, water quality, month water tariffs, provision of maintenance workers etc. and provide information on proposed KCWSP and requested to the participants for attending the meeting, expressing views and opinion without any hesitation and to take advantage from the project.

*ESMP Report of Khairabang Community
Water Supply Project*

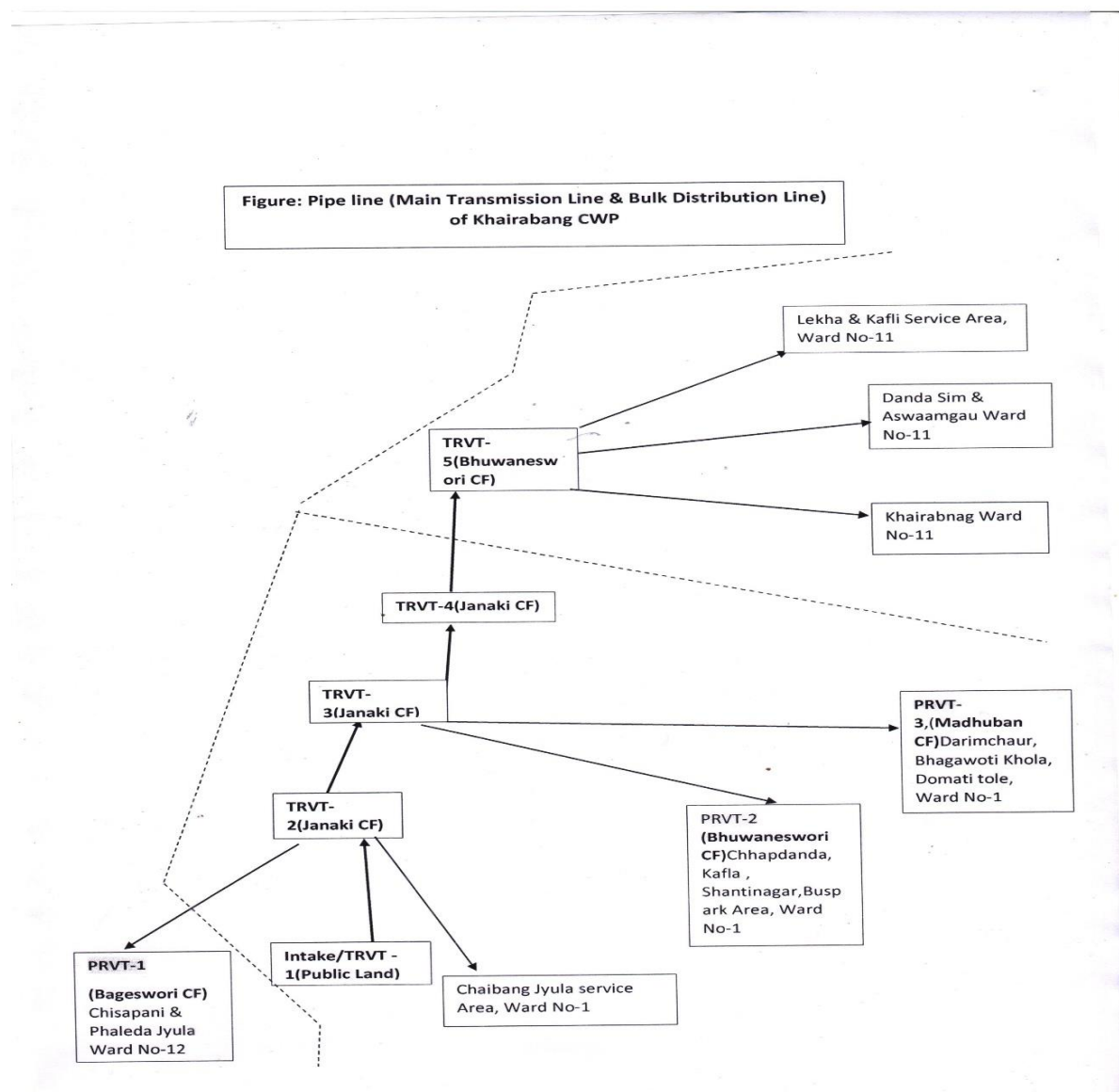
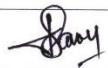
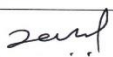


Figure 9: Pipe Line (Main Transmission Line and Bulk Distribution Line) of Khairabang CWSP

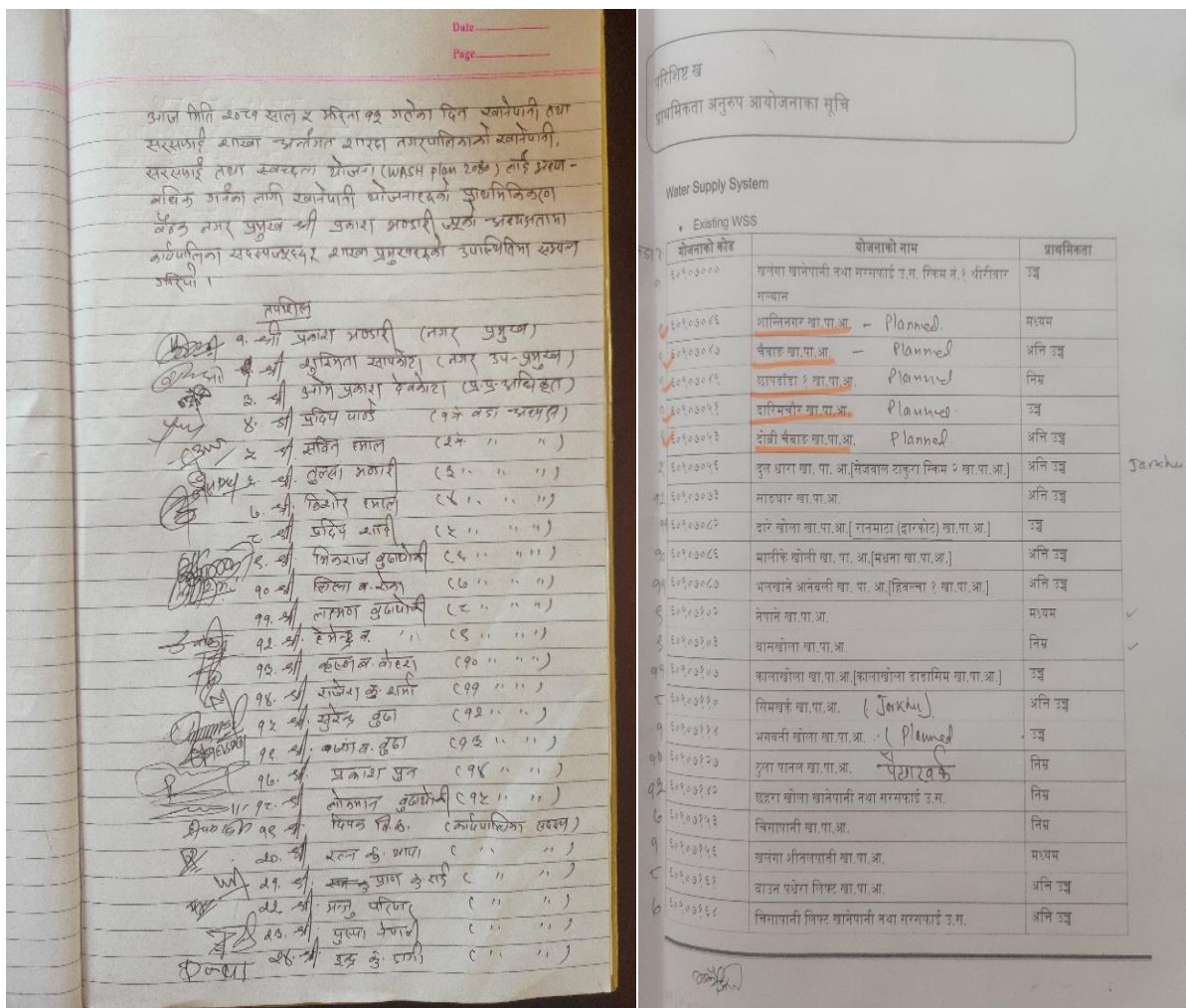
*ESMP Report of Khairabang Community
Water Supply Project*

Annex III: Screening Team of Khairabang CWP

Screening Team		Screening Date: April/May 2025		
SN	Designation	Name	Contact No	Signature
1	DTL	Jaya Shankar Jha	9841360343	
2	SDS	Mukunda Raj Aryal	9841444933	
3	EMS	Adit Gurung	9849432164	
4	CSE	Rajesh Yadav	984446203	

Annex IV: Meeting /Consultation Meeting

A. Municipal Council Meeting Minute



Priotization Workshop minute- WASH Plan

B. Joint Meeting PMU, PIU, WB, WASH Unit, MST in MST office Khalanaga

Joint Meeting PMU, PIU, WB, WASH
Unit, MST in MST office Khalanaga /pg-
1

Joint Meeting PMU, PIU, WB, WASH Unit,
MST in MST office Khalanaga /pg-2

ESMP Report of Khairabang Community Water Supply Project

Annex V: Recommendation & Consensus Letter from ward office

शारदा नगरपालिका
SHARADA MUNICIPALITY
१ नं. वडा कार्यालय
OFFICE OF 01 NO. Ward Executive
श्रीनगर, सल्यान
SHREE NAGAR, SALLYAN **कर्णाली प्रदेश, नेपाल**
KARNALI PROVINCE, NEPAL

प.सं. / Ref.No.: ०८१/०८१
स.सं. / Letter No.: १४४८

मिति: २०८१/०२/१९

श्री नगरपालिका स्तरीय आयोजना कार्यान्वयन इकाई
खानेपानी क्षेत्रगत सुशासन तथा पुर्वाधार सहयोग आयोजना, शारदा न.पा. खर्चमा, सल्यान ।
विषय: विचारितका साथ सहमति दिइएको सम्मेलनमा ।

प्रस्तुत विषयमा यस खानेपानी क्षेत्रगत सुशासन तथा पुर्वाधार सहयोग आयोजना अन्तर्गत प्रस्तावित खैराबाड खा.पा. आयोजनाको विस्तृत आयोजना प्रतिवेदन तयारी यस शारदा नगरपालिकाको वडा नं. १ को बैठाइजम्मा, शान्तिनगर, वैशाख माउँ, छापडाँडा, झण्डा, भगवतीखोला, धर्मपौर लगायतका वस्तीहरूका लगभग २९९ घरधुरीहरू तथा अन्य बडाका केहि वस्तीहरू समेटेर निर्माण गर्न आयोजनाको विस्तृत आयोजना प्रतिवेदन तयारीको सल्लाहमा रहेको विषय सम्बन्धित पक्षबाट जानकारी भएको छ । प्रस्तावित वस्तीहरूमा खानेपानी सेवालाई सुरक्षित, व्यापक र भरपदी बनाउने लक्ष्य रहेको यस आयोजनाको निर्माणका लागि चाहिने जग्गाको व्यवस्थापन, साइपलाइन निर्माण, पानी संकलन पोखरी तथा अन्य आवश्यक संरचना निर्माण आदिका लागि तबै क्रियाको सहयोग रहने तथा स्थानीय स्तरको विचारहरू समाधान गर्ने र मिडिड, छापडाँडा लगायतका कृषकहरूको जनसहभागिता गर्नउने प्रतिबद्धताका साथ प्रस्तावित खैराबाड खा.पा. योजना निर्माणको लागि विचारित साथ सहमति प्रदान गरिएको छ ।

प्रतिप बुम्हार पाण्डे
वडा अध्यक्ष
श्रीनगर, सल्यान

URL: www.sharadamun.gov.np Email ID: sharadamun.wardno1@gmail.com
"Green Sharada Clean Sharada"

Consensus Letter for DPR Ward No-1

शारदा नगरपालिका
SHARADA MUNICIPALITY
१ नं. वडा कार्यालय
OFFICE OF 01 NO. Ward Executive
श्रीनगर, सल्यान
SHREE NAGAR, SALLYAN **कर्णाली प्रदेश, नेपाल**
KARNALI PROVINCE, NEPAL

प.सं. / Ref.No.: ०८१/०८१
स.सं. / Letter No.: १४४८

मिति: २०८१/०२/१९

श्री नगरपालिका स्तरीय आयोजना कार्यान्वयन इकाई
खानेपानी क्षेत्रगत सुशासन तथा पुर्वाधार सहयोग आयोजना, शारदा न.पा. खर्चमा

विषय: सातावस्तीय तथा सामाजिक जाँच (स्क्रीनिंग) सम्मेलनमा ।

प्रस्तुत विषयमा यस खानेपानी क्षेत्रगत सुशासन तथा पुर्वाधार सहयोग आयोजना अन्तर्गत प्रस्तावित खैराबाड खा.पा. आयोजनाको विस्तृत आयोजना प्रतिवेदन तयारी यस शारदा नगरपालिकाको वडा नं. १ को बैठाइजम्मा, शान्तिनगर, वैशाख माउँ, छापडाँडा, झण्डा, भगवतीखोला, धर्मपौर लगायतका वस्तीहरूका लगभग २९९ घरधुरीहरू तथा अन्य बडाका केहि वस्तीहरू समेटेर निर्माण गर्न आयोजनाको विस्तृत आयोजना प्रतिवेदन तयारीको सल्लाहमा रहेको विषय सम्बन्धित पक्षबाट जानकारी भएको छ । प्रस्तावित वस्तीहरूमा खानेपानी सेवालाई सुरक्षित, व्यापक र भरपदी बनाउने लक्ष्य रहेको यस आयोजनाको निर्माणका लागि चाहिने जग्गाको व्यवस्थापन, साइपलाइन निर्माण, पानी संकलन पोखरी तथा अन्य आवश्यक संरचना निर्माण आदिका लागि तबै क्रियाको सहयोग रहने तथा स्थानीय स्तरको विचारहरू समाधान गर्ने र मिडिड, छापडाँडा लगायतका कृषकहरूको जनसहभागिता गर्नउने प्रतिबद्धताका साथ प्रस्तावित खैराबाड खा.पा. योजना निर्माणको लागि विचारित साथ सहमति प्रदान गरिएको छ ।

प्रतिप बुम्हार पाण्डे
वडा अध्यक्ष
श्रीनगर, सल्यान

E & S Screening Recommendation Ward No-

118

N	Ward No. 11	Name of the WSP	Served HHs	Population	M.Yield/LP S	Construction	No of RVT	No of Taps	Source	S.Rd Status.	Extra note
	ID NO.										
1	6090782	Dare Khola	32 470	199	0.19	2049	2	6	Dwar Kot	Yes	
2	6090783	Hivalecha	31	170	0.16	2039	1	31	Simpkaha	Yes NO	
4	6090784	Bhalkhane Anewali	91 91	559	0.19	2039	1	91 99	Bhalkhane Mul	Yes	khairiy
5	6090785	Bhuwaneswor (Lalit)	106 178	518	0.5	2063	1	117	Dabdate Mullan	Yes	
6	6090789	Mathillo Syalgaun	13	63	0.1	2067	1	2	Dabdate Mul	Handels Not update	
7	6091107	Kalakhola	48	359	0.16	2073	2	6	Pakha Marot Mul	Yes Handels update	Handels update Kalkhola Bhuwaneswor Pakha
8	6090713	Nyulidhara	20	120	0.1	2070	1	1	Dabdate Pakha Mul	Not Source	
9	6090791	Tallo Syala Gaun	37	214	0.24	2067	1	1	Kalche Kholi	Not "	
10	6090788	Tallo Syala Gaun	8	54	0.1	2056	1	1	Kalche Kholi	Not "	

[illegible]

Annex VII: Environmental & Social Screening Meeting Minutes

वातावरणीय तथा समाजिक स्थिति तथा परामर्श बैठक

थान तिनि २०२१/०९/१५ का दिन यस शहरमा तारमण्डलका बडा नं १
अध्यक्ष श्री प्रदिपकुमार पाख्रे ज्यू को अध्यक्षतामा सावधानी अन्तर्गत संगठन-सभा गरियो।
 सहयोगी आयोजना थो GISP शहरमा अन्त्येष्ट निम्नांकको लागि घर-पाँचका क्षेत्रबाट सामुदायी सभा या भौतिकता विकास।
 परिपालना परिवारेन उपरीक्षा कसमा वातावरणीय तथा समाजिक स्थिति जाच सम्बन्धमा बैठक वढी निर्माण गरी
 जारी भएकाले तप उपस्थित सम्बन्धिनु सबै पक्षको महत्वाभावतामा उपरिगत समोजकमा नियमित गरेयो ।

बैठकमा सहभागि हुने हरूको उपस्थिति तथा हस्ताक्षर यस प्रकार छः

क्र.सं.	नाम तथा सम्था	पद	फोन नं.	हस्ताक्षर
१	श्री प्रदिपकुमार पाख्रे	(अध्यक्ष)	८७६८४१९८५	[Signature]
२	दानप्रसाद खत्री	कार्यकारी सदस्य		[Signature]
३	गुरुजी कुमार खत्री	उपस्थिति		[Signature]
४	रेती तुम्ही बुढाथोकी	संगठन कार्य		[Signature]
५	हृषि. खड्का	सहायक		[Signature]
६	पुष्पा बुढाथोकी	संगठन कार्य		[Signature]
७	गोपाल थापा	संगठन कार्य		[Signature]
८	पूर्ण. थापा	"		[Signature]
९	स्वता बुढाथोकी	संगठन कार्य		[Signature]
१०	नगरती वस्नेत	"		[Signature]
११	रिता वि. क.	सहितपाडी		[Signature]
१२	पवित्रा बली	प्रमुख		[Signature]
१३	जय शङ्कर झा	MST, DTL		[Signature]
१४	अदित बुढाथोकी	MST, EMS		[Signature]
१५	मुकुन्द (ज) कार्जन	SDS/MSS		[Signature]

१७	
१८	
१९	
२०	
२१	
२२	

छात्रपंजीक विवरण

१ प्रस्तावित खैराबाद साधुगरी छात्रेपनी योजनाको निर्माणबाट हुन सके वातावरणीय प्रभाव मध्यस्थमा

२ प्रस्तावित खैराबाद साधुगरी छात्रेपनी योजनाको निर्माणबाट हुन सके सामाजिक तथा सामुहिक प्रभाव मध्यस्थमा ।

३ प्रस्तावित खैराबाद साधुगरी छात्रेपनी योजनाको निर्माणबाट हुन सके वातावरणीय प्रभाव मध्यस्थमा ।

- यस छात्रेपनी योजनाको निर्माण गर्दा कुनै प्रकारको शक्ति प्रतिकार, संर्गता शेष, बर्जितता आदिमा जडता खट्दैननिमित्त श्रेष्ठमा प्रवेश गर्नु पर्ने देखिन्छ ।
- यस छात्रेपनी योजनाको निर्माण तथा बन्धानको कारणले कुनैपनि विविधको चम्कटाम्, चर्चवृद्धी तथा अन्यत्र आदिमा सामन्तव्यमा प्रतिस्तर अक्षर वर्णने देखिन्छ ।
- प्रस्तावित खैराबाद साधुगरीका छात्रेपनी योजनाको निर्माण तथा बन्धानको कारणले कुनै पनि विविधको वायु प्रदुषण, शब्दी प्रदुषण, जल प्रदुषण तथा हावाचक्रण र विपत्ती तथा विकोटक प्रभाव आदिमा प्रयोग नहुने देखिन्छ ।
- प्रस्तावित खैराबाद साधुगरी छात्रेपनी योजनाको लागि निर्माण गर्ने प्रतिकार मध्यस्थमा बाधकोत्तर तथा क्षति जगामा प्रस्ताव गर्नेको छ ।
- खैराबाद साधुगरी छात्रेपनी योजनाको निर्माणको क्रममा सामान्य मुख्य तथा केही म साना मध्य विद्यालय स्टाजनु पर्ने महाविद्यालयहरूमा प्रभावको निर्माणको प्रतिफल तर्ही वातावरणीय तथा सामाजिक व्यवस्थापन योजना तथा अन्य वातावरण योजना बनाइ कार्यन्वयन गर्न सम्बन्धित गर्ने प्रभावलाई बुझ्नुपर्ने गर्ने ।

Ward Level E& S Screening Meeting -1/pg-
01

Ward Level E& S Screening Meeting -1/pg-
02

[illegible]

बातावरणीय तथा सामाजिक स्वीकृति सम्बन्धी बैठक

आज २०८३/०३/०२ का दिन यस गारवा नगरपालिका वडा नं १ का मासिक सम्मेलनको माध्यमबाट २०८३/०३/०२ को उद्देश्यका लागि प्रस्तावित गर्ने कार्यको लागि बातावरणीय तथा सामाजिक स्वीकृति सम्बन्धी बैठकको माध्यमबाट बातावरणीय तथा सामाजिक स्वीकृति (जाच) सम्बन्धमा बैठक गरी छलफल गर्नु जस्तो भएकोले तल उपरिभन्दा सम्बन्धित सबै पक्षको सहभागितामा तलपनि बमोजिमका निर्णयहरू गरियो ।

बैठकमा सहभागि हुने हल्को उपस्थिति तथा हस्ताक्षर यस प्रकार छ ।

क्र.सं.	नाम तथा संस्था	पद	फोन नं	हस्ताक्षर
१	डा. रत्नकुमार		९८४७९३०३३९	रत्न
२	डा. रत्नकुमार			रत्न
३	सिमाना खड्का			९१२१९१
४	सिमाना खड्का	९२९८०२५०९२८		सिमाना
५	प्रेम ख. खड्का			प्रेम
६	कमला खड्का			कमला
७	रत्न खड्का			रत्न
८	पवित्रा खड्का	९८४०९०९४९९		पवित्रा
९	सुखी खड्का			सुखी
१०	सुखी खड्का			सुखी
११	सुखी खड्का			सुखी
१२	सुखी खड्का			सुखी
१३	सुखी खड्का			सुखी
१४	सुखी खड्का			सुखी
१५	सुखी खड्का			सुखी
१६	सुखी खड्का			सुखी
१७	सुखी खड्का			सुखी
१८	सुखी खड्का			सुखी
१९	सुखी खड्का			सुखी
२०	सुखी खड्का			सुखी
२१	सुखी खड्का			सुखी
२२	सुखी खड्का			सुखी

Ward Level E& S Screening Meeting -1/pg-
03

E& S Screening Meeting Shantinagar -1/pg -
1

प्रस्तावना

१. प्रस्तावित वेबसाईट खातेपानी योजनाको निर्माणबाट हुन सक्ने बातावरणीय प्रभाव सम्बन्धमा

२. प्रस्तावित वेबसाईट खातेपानी योजनाको निर्माणबाट हुन सक्ने सामाजिक तथा सांस्कृतिक प्रभाव सम्बन्धमा

३. खातेपानी क्षेत्रगत भूभागमा तथा चुम्बाद्वार माथीसम्म आयोजना (WASGISIP) को वातावरणीय तथा सामाजिक पैराल विष्ट गर्ने सम्बन्धमा

निर्णयहरू

१. प्रस्तावित वेबसाईट खातेपानी योजनाको निर्माणबाट हुन सक्ने बातावरणीय प्रभाव तथा सम्भावित

१. प्रस्तावित वेबसाईट खातेपानी योजनाको निर्माण गर्ने कुनै प्रकारको ग्राउण्ड रिक्वायर, सरकारी क्षेत्र, चम्क्रेनुल आदिमा जस्ता संवेदनशील क्षेत्रमा प्रवेश गर्न नपर्ने देखिन्छ।

२. प्रस्तावित वेबसाईट खातेपानी योजनाको निर्माण तथा संचालनको कारणले कुनै पनि किसिमको वायुमल्लोत्पन्न, धाराचुली तथा जलपर आधारिक वास्तव्यायन परिचित अत्रत त्रस्तर पर्ने देखिन्छ।

३. प्रस्तावित वेबसाईट खातेपानी योजनाको निर्माण तथा संचालनको कारणले कुनै पनि किसिमको बागु पडुवन, ढुङ्गा डुपान, जल प्रदुषण तथा हाजिरकार किम्वदी तथा निष्फोटक रचनां आदिको प्रयोग गरिने देखिन्छ।

४. प्रस्तावित वेबसाईट खातेपानी योजनाको लागि निर्माण गर्दा आवश्यक लाग्ने जमीनी तथा खनिज स्रोतलाई जस्ता खनिज प्रत्यक्ष गोपिका छ। योजनको निर्माणका लागि निर्माण गरिने बागु भाँडा तथा पाती गोपिकाबाट झरी स्थायी भुलाय तथा झडी न मार्या यस निस्का इशारे हुन सक्ने सम्भाना भएकोले यस प्रकारको प्रभावको लाक्षणिकको चीनजात गरि वातावरणीय तथा सामाजिक अवस्थापर योजना तथा अन्य जातीयक योजना बनाइ कार्यालय गर्न सम्भवति सबै परामर्श अनुरोध गर्ने।

२. प्रस्तावित वेबसाईट खातेपानी आयोजनाको निर्माणबाट हुन सक्ने सामाजिक तथा सांस्कृतिक प्रभाव सम्बन्धमा

• यस खा पा योजनाको निर्माण गराव आवश्यक पर्ने राहपर लाग्न निजि ज्यागीबाट वल्य तथा पुर्व तथा संचालनका क्रमान कुनैपनि किसिमको विवाद गरिने छैन। उठेछा पिशाचत पति पिशाचत बरतरेछ। समाधान गरिने छ।

• यस योजनाको निर्माण तथा संचालनका क्रमान कुनैपनि जानजीको दाह संस्कार गर्ने स्थान, मह भित्र, गुम्बा, मानिन्द तथा पूर्व आदिमा प्रतिकूल कार्य पर्थिन र पछोति निर्माण तथा संचालनका लागि कोही कसै नाथिए तथा संचालन गरिने जग्गा परिवर्तन गर्न नहुने, असीमित तथा सीमितक पूर्णरूपको संपत्तया प्राप्त गर्ने देखिन्छ।

• यस आयोजनाको लागि क्षेत्रमा काम गर्ने मानुष तथा अधिकृतको रोवारिनी समग्रत रुपे र यस क्षेत्रको अधिवासाको सेवा क्षेत्रमा अल्पसंख्यक आधिवासी जनजाती, योगाभुख जनजाती आदिको बायोसायको दृष्टिदेखि ।

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[illegible][illegible]

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1/pg -1

Annex VIII: Consultation Meeting with community People

[illegible]

Consultation Meeting with community
people –Phaleda Jyula, ward-12/pg-1

[illegible]

Consultation Meeting with community
people –Phaleda Jyula, ward-12/pg-2

[illegible]

Consultation Meeting with Chaibang

[illegible]

Consultation Meeting with Darimchaur

WSP- Ward No-1

[illegible]

Consultation with Bhagawoti WSUC Ward
-1/Page-2

PAGE NO. _____
DATE _____

प्रश्न १६६

1. ख. वा. सं. प्रमाणित तथा प्रमाणित होना अनिवार्य प्रमाणित होना का एक प्रमाण।
2. ख. वा. सं. प्रमाणित तथा प्रमाणित होना अनिवार्य प्रमाणित होना का एक प्रमाण।
3. प्रमाणित होना का एक प्रमाण।
4. प्रमाणित होना का एक प्रमाण।

निर्णय

1. ख. वा. सं. प्रमाणित होना अनिवार्य प्रमाणित होना का एक प्रमाण।
2. प्रमाणित होना का एक प्रमाण।
3. प्रमाणित होना का एक प्रमाण।
4. प्रमाणित होना का एक प्रमाण।

Consultation with Bhagawoti WSUC Ward
-1/Page-4

*ESMP Report of Khairabang Community
Water Supply Project*

[illegible][illegible]

Consultation Meeting with Shantinagar
WSP- Ward No-1

Consultation with Chhapdanda WSP-ward
No-1/pg-01

[illegible][illegible]

Consultation with Chhapdanda WSP-ward
No-1/pg-02

FGD with Women Users –Chaibang Jyula

ESMP Report of Khairabang Community Water Supply Project

[illegible]

FGD with Dalit People Khairabang –WN

11

Annex IX: Consensus Letter of Community Forest Users' Committee


"सब रापी बन जागाओ"
श्री जानकी सम्मन्वित वन उपयोगता समुह
 शाखा नमोपानिधि चौबड़ा, संन्याय
 पु.नं.
 व.नं.
 १०८४/०३/०६

दिनांक - सहप्रती प्रदान गरिएको सम्बन्धमा
 श्री जोससद्वं सम्बन्ध राखेद ।
 उपरोक्त विषय, त्यस आयोगा अर्को
 प्रस्तावित खेरावाङ्ग सामुदायिक वन उपयोगता समुह
 पारुष लाइन तथा पानी संकलन पोखरी (२५१) प
 श्री जानकी सामुदायिक वन क्षेत्रमा निर्माण गर्ने
 सम्बन्धमा तोकिएको नक्सापनिहरु तथा आयोगा प
 दाताहरुबाट जानकारी गराइएको साथै यो साङ्के
 वन् पछ्याउनुपर्ने उद्देश्य उपरोक्ताहरु विषय निर्माण चरण
 अर्को चरण तथा अर्को प्रस्तावित इलाकाको विषय तब
 जानकारीको लागि अनुरोध छ । उक्त खेरावाङ्ग सा
 खानेपानी योजना अर्न्तगत निर्माण गरीने पारुष लाइन
 पानी संकलन पोखरी (२५१) निर्माण साथै पृष्ठ प्र
 गरी यो सामुदायिक वन क्षेत्रमा हुन सकिनेवाला व
 हर तथा चराचुरुडी आदीलाई हानी नपुग्नेगरी यो
 गर्ने सहप्रती प्रदान गरिएको छ । आयोगा निर्माणको क्रम
 गरी सम्ने तक्रारपत्र अलग छर्ने गर्ने उपाय इन्तकाल
 तथा वातावरणको तथा सामाजिक उपवस्थापन योजना
 बन्नुपर्ने कर्णवन्धन गर्ने सुझाव पेश गर्दछौ । साथै आफ्नो
 कार्यवन्धनको चलावा आचरण सहयोग गर्ने प्रतिवद्धता
 व्यक्त गर्दछौ ।

१. पिपलाल के.सी. (वस्ती) अरहपूत पिपलाल
 २. गंगाधर कुटुम्बाजी सन्धिप नौगाबा
 ३. रत्न रावल खेरावाङ्ग चैत
 ४. प्रबल ख. थापा उपाध्यक्ष मेडीवा
 ५. दिपलाल रावल उप सचिव दिश
 ६.

श्री मधुवन सामुदायिक वन उपभोक्ता समूह

खालंगा-२, दारीमचौर

संस्थापन

दिनांक 20.08.2018

वन संस्थापन - 05/9/08

संस्थापन नं. - 08

विषय :- सहमति प्रदान गरीएडो सम्बन्धमा ।

श्री:- खानेपानी क्षेत्रगत सुलासन तथा पुर्वाधार सहयोग आयोगमा

कारका प्र.पा. सम्मेलन ।

उपरोक्त विषयमा त्यस खानेपानी क्षेत्रगत सुलासन तथा पुर्वाधार सहयोग आयोगमा अन्यगत प्रस्तावित खेरावाड-सामुदायिक खानेपानी उप-आयोगका संरचनाहरू (RPT Pipe Line क्षमती) निर्मोलेका लागि प्रस्ताव गरीएको विषय जानकारी भयो। उक्त आयोगका संरचनाहरू निर्माण गर्दा यस वन क्षेत्रमा बाटविट्ठा, पलाचुट्टी तथा बन्धनजु आदि लाग्ने नकारात्मक असर पर्ने गरी कुयाडमाथारु निर्माणमा सहमति प्रदान गरीएको हो भन्ने गरी वन क्षेत्रमा पर्ने नकारात्मक प्रभाव हटाउन लाग्नेछु तथा वातावरणीय योजना अन्तर्गत काम गर्नबाट उनी अनुरोध गरीन्छु ।

श्री चन्द्र खड्गुर डाँगी अध्यक्ष

श्री रजनी खड्गुर डाँगी लेखापाल

श्री सुनन्दु नेपाली सचिव

अ.मु.समूह

भुवनेश्वरी सामुदायिक वन उपभोक्ता समिति शारदा नगरपालिका, छापडाडा, सल्यान

पत्र संख्या : ०८९/८२
पसंती नम्बर : १४

तिथि : २०८२/०१/०५

विषय : सहमती प्रदान गरिएको सम्बन्धमा ।

धी नी जलवन सम्बन्ध राख्छु ।

उपर्युक्त विषय, स्वयं आयोजना अन्तर्गत प्रस्तावित छापडाडा सामुदायिक खानेपानी योजनाको गन्नाह नया पानी सञ्चलन योजना (KYT) यस भुवनेश्वरी सामुदायिक वन क्षेत्रमा निर्माण सम्पन्नमा नगरपालिका कम्प्याउन्ट नया आयोजनाका परामर्शदाताहरूबाट जानकारी गराएको भए माग्रायित्व बल भूमिगत पानीकोकरीहरू, उपभोक्ताहरू विच निर्माण चरणमा औपचारिक अनुमतिपत्र प्राप्त हुनको लागि विषय सहको जानकारीको लागि अनुरोध छ । उनले क्षेत्र सामुदायिक खानेपानी योजना अन्तर्गत निर्माण गर्ने पानी सञ्चलन योजना (KYT) निर्माण माथै पढ्न साथै यहाँ वरी यस सामुदायिक वन क्षेत्र बिचका रूख विच्छा नबन्नुका नया चरणपछि आविर्ताहानी गोपनीय भन्नुलाई काम गर्ने सहमती प्रदान गरेको । आयोजना निर्माणको क्रममा हुन सक्ने नकारात्मक प्रभाव कम गर्ने उपाय अवलम्बन गर्ने योजनायित्व तथा स्थानीय व्यवस्थापन योजना (RSMF) सहको कार्यवाहन गर्ने सुनिश्च गर्नुछ । यहाँ आयोजना कार्यवाहनको चरणमा आवश्यक नया गर्ने अनिवार्यता जकात गर्नुछ ।

१. वनकर सम्मति (अग्रपत्र)
२. वनन कल योनी -उपचारित
३. मीनाह (कोषागार)
४. निर्माण अग्रदानी (सर्वपत्र)
५. सहिता रोका मत-सर्वपत्र
६. कृषी वि.क (सर्वपत्र)
७. सिंग गरा (सर्वपत्र)
८. सहिताग वि.क (सर्वपत्र)
९. विषक योनी (सर्वपत्र)

भुवनेश्वरी गा. प. उ.स.,
गा. प. १, छापडाडा, सल्यान

Scanned with CamScanner

[illegible]

ESMP Report of Khairabang Community
Water Supply Project

Annex X: Field Verification Report by Napi & Malpot

मिति: २०८२।०३।३०



नेपाल सरकार
संस्कृति तथा पर्यटन
मन्त्रालय
न्यायिक प्रशासन
विभाग

श्रीमान् कार्यालय प्रमुख ज्यू,
नापी कार्यालय सल्यान ।

विषय-फिल्ड भेरिफिकेशन गरि प्रतिवेदन पेश गरेको सम्बन्धमा ।

उपरोक्त सम्बन्धमा श्री शारदा नगरपालिकाको च.न.३३४४ मिति २०८२।०३।१९ गतेको प्राप्त पत्रानुसार शा.न.पा. ११ खैराबाङ्ग सामुदायिक खानेपानी आयोजना अन्तर्गत प्रस्तावित RVT र अन्य संरचना निर्माण गर्न आवश्यक परेका विभिन्न स्थानमा संरचना बनाउनको लागि तपशिल बमोजिमका स्थानमा रहेका जग्गाहरुको फिल्ड भेरिफिकेशन गरि श्रीमान् कार्यालय प्रमुख ज्यू समक्ष यो फिल्ड प्रतिवेदन पेश गर्दछु ।

क्र.स.	साविक गाविस वडा नं.	सिट नं.	कि.न मध्येबाट	अनुमानित क्षेत्रफल रोपनी	कैफियत
१	लेख १	०३६-०३७६	५३७	०-२-०-०	फलेदा ज्यूला ।
२	खलगा १	०३६-०४१६	१८२०	१-२-०-०	चैवाङ्ग ज्यूला ।
३	खलगा १	०३६-०३७३	२५०	०-५-०-०	वृद्धमूर्ति नजिक ।
४	खलगा १	०३६-०३७४	४७८	०-५-०-०	छापडाडा रिसोर्ट नजिक ।
५	खलगा १	०३६-०४१६	४७८	१-०-०-०	चैवाङ्ग गाउँ तलतिर विच जंगल ।
६	हिवल्वा ३	०३६-०४१३	४७८	०-५-०-०	खैराबाङ्ग गाडी पार्किङ नजिक ।
७	हिवल्वा ३	०३६-०४१३	४७८	०-४-०-०	हेलिप्याड ।
८	खलगा १	०३६-०४१५	४७८	१-०-०-०	चैवाङ्ग गाउँ माथितिर चौतरा नजिक ।
९	खलगा १	०३६-०४१५	४७८	०-२-०-०	चैवाङ्ग गाउँ माथितिर विच जंगल ।
१०	खलगा २	०३६-०३३३	नक्सामा जंगल देखिएको कि.नं. नखुलेको	०-६-०-०	खलगा सितलपाटी कार्यालय भवन ।

प्रतिवेदक
अभिमान श्री सुरेस खड्का
नापी कार्यालय सल्यान ।

नापी अभियान, नयाँचन
मिति नं. ३३६
मिति मिति २०८२।३।३०

ESMP Report of Khairabang Community
Water Supply Project



भूमि व्यवस्था, सहकारी तथा गरिबी निवारण मन्त्रालय
सहकारी विभाग

नापी कार्यालय, सल्यान

सम्पर्क नं. ०८८-५२००१०
ईमेल: salyan@dos.gov.np

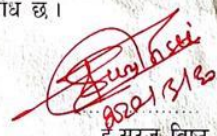
पत्र संख्या: ०८१/०८२
चलानी नं.: १०१

मिति २०८२/०३/३०

श्री शारदा नगरपालिका
नगर कार्यपालिकाको कार्यालय
खलगा, सल्यान ।

विषय - फिल्ड भेरिफिकेशन गरि पठाएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा श्री शारदा नगरपालिका च.नं.३३४४ मिति २०८२/०३/११ गतेको प्राप्त पत्रानुसार शा.न.पा. ११ खैराबाङ्ग सामुदायिक खानेपानी आयोजना, शा.न.पा. ९ ठुलापातल निपाने खानेपानी आयोजना र शा.न.पा.७ कजेरी खानेपानी आयोजना र अन्य अन्तर्गत प्रस्तावित RVT र अन्य संरचना निर्माण गर्न आवश्यक परेका विभिन्न स्थानहरूमा जग्गाहरूको फिल्ड भेरिफिकेशनको लागी मिति २०८२/०३/१२ गते देखि स्थलगत निरिक्षण गरि प्राविधिक फिल्ड प्रतिवेदन पेश हुन आएकोमा उक्त प्रतिवेदन यसै पत्र साथ संलग्न राखी पठाएको व्यहोरा अनुरोध छ ।


३०८२/३/३०

ई.सुरज विष्ट
(नापी अधिकृत)

ई.सुरज विष्ट
नापी अधिकृत

"व्यवसायिक र सृजनशिल प्रशासन:
विकास, सम्वृद्धि र सुशासन"

ESMP Report of Khairabang Community
Water Supply Project

शारदा नगरपालिका
SHARADA MUNICIPALITY
नगर कार्यपालिकाको कार्यालय
OFFICE OF THE MUNICIPAL EXECUTIVE

खलंगा सल्यान
KHALANGA, SALYAN

कर्णाली प्रदेश नेपाल
KARNALI PROVINCE, NEPAL

पत्र संख्या /Ref. No.: - ०८१/०८२
च. नं./Dispatch No.: - ३६५८

मिति: २०८२/०३/३१

श्री मालपोत कार्यालय
खलंगा, सल्यान।

बिषय: जग्गाको लगत उतार गरि पठाईदिनुहुन।

उपरोक्त सम्बन्धमा यस नगरपालिकामा संचालित खानेपानी क्षेत्रगत सुशासन तथा पूर्वाधार सहयोग आयोजना, शारदा आयोजना कार्यान्वयन इकाई अन्तर्गत प्रस्तावित खैराबाङ्ग खानेपानी आयोजना, ठुलापात्ल खानेपानी आयोजना र कजेरी खानेपानी आयोजनामा बन्ने विभिन्न संरचनाहरु निर्माणका लागि आयोजना बाट तोकिएका विभिन्न स्थानहरुको नापी कार्यालय सल्यानबाट अमिन खटिई फिल्ड भेरीफिकेशन गरी श्री नापी कार्यालय सल्यानको मिति २०८२/०३/३० गते च.नं. ३०३ को पत्र साथ संलग्न गरी प्रतिवेदन प्राप्त भएकोमा सोहि प्रतिवेदन अनुसार उल्लेखित कित्ता जग्गाहरुको स्वामित्वको रेकर्ड हेरी स्वामित्व खुलाई उक्त जग्गाहरुको विवरण उपलब्ध गराईदिनुहुन हार्दिक अनुरोध छ।

o/c
[Signature]

[Signature]
लिलाधर बबाल
नि.प्रमुख प्रशासकीय अधिकृत
नि.प्रमुख प्रशासकीय अधिकृत

Phone No: 088-520438 URL: www.shaaradamun.gov.np info@shaaradamun.gov.np
"Green Sharada Clean Sharada" ito@shaaradamun.gov.np

QR Code

ESMP Report of Khairabang Community
Water Supply Project



नेपाल सरकार
भूमि व्यवस्था, सहकारी तथा गरिबी निवारण मन्त्रालय
भूमि व्यवस्थापन तथा अभिलेख विभाग

फोन नं. ०८८-५२०००२
ईमेल : salyan@dolma.gov.np



पत्र संख्या:-०८२/०८३

च.न. ११२

श्री शारदा नगरपालिका

शारदा नगर कार्यपालिकाको कार्यालय

खलंगा सल्यान।

मिति: २०८२/०४/१२

विषय: विवरण पठाइएको सम्बन्धमा।

प्रस्तुत विषयमा त्यहाँ कार्यालयको च.न.३६५८ मिति:२०८२/०३/३१ को पत्र बमोजिमको विवरण तपसिल बमोजिम रहेको व्यहोरा अनुरोध छ।

तपसिल

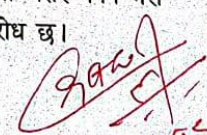
क्र स	साविक गा.वि.स/वडा	कित्ता नं.	धग्गाधनी	क्षेत्रफल	विरह/किसिम	कैफियत
२	लेख १	५३७	सरकारी/सार्वजनिक	५३७-१५-०२	जंगल	
३	खलंगा १	१८२०	सरकारी/सार्वजनिक	१४५-३-२	गौचर	
४	खलंगा १	२५०	सरकारी/सार्वजनिक	२३३१-५-१-२	बुट्यान	
५	खलंगा १	४७८	सरकारी/सार्वजनिक	३८६१-९-२-१	जंगल	
६	कंजेरी २	३८०	सरकारी/सार्वजनिक	१७५-८-०-३	बुट्यान	
७	कंजेरी ३	३२०	सरकारी/सार्वजनिक	३६७७-४-२-०	जंगल	
८	कंजेरी १	१३५	सरकारी/सार्वजनिक	११३७९-१-२-३	जंगल	
९	कंजेरी २	२२	सरकारी/सार्वजनिक	१५०४-१२-३२	जंगल	
१०	मार्के ९	२५९	सरकारी/सार्वजनिक	२१७७-८-२-१	जंगल	
११	मार्के ६	५६	सरकारी/सार्वजनिक	१८१४४-१५-३-१	जंगल	
१२	हिउल्चा ३	७९६	सरकारी/सार्वजनिक	१६६७३-२-२-०	जंगल	

१०८२/०४/१२

१०८२/०४/१२
श्यामकृष्ण आचार्य
मालपोत अधिकृत

शारदा नगरपालिका कार्यालय
च.न. ११२
मिति: १०८२/०४/१२
श्री शारदा नगरपालिका / श्री अर्जुन खड्का श्री
अधिकृत

Forest Land Verification by Divisional Forest Office, Khalanga Salyan

	कर्णाली प्रदेश सरकार उद्योग, पर्यटन, वन तथा वातावरण मन्त्रालय प्रदेशीय वन निदेशनालय डिभिजन वन कार्यालय खलङ्गा, सल्यान	
प.स.नं.: २०८२/०८३ (योजना तथा व्यवस्थापन) च.न.: १११८		मिति:- २०८३/०३/१६
✓ श्री खानेपानी क्षेत्रगत सुशासन तथा पूर्वाधार सहयोग आयोजना, शारदा आयोजना कार्यान्वयन इकाई, शारदा नगरपालिका, सल्यान।		
<u>विषय: वनको क्षेत्रफल र रुख संख्या प्रमाणित सम्बन्धमा।</u>		
प्रस्तुत विषयमा तहाँ कार्यालयको पत्र संख्या ०८२/८३, चलानी नं. १३२, मिति २०८३/०२/०५ को प्राप्त पत्र तथा कर्णाली प्रदेश, सल्यान जिल्ला अन्तर्गत शारदा नगरपालिकाको वडा नं. १, ११ र १२ मा खानेपानी वितरण गर्ने उद्देश्यले निर्माण प्रस्ताव गरिएको खैराबांग सामुदायिक खानेपानी आयोजनाका संरचनाहरू निर्माण गर्ने सम्बन्धी पत्र प्राप्त भई आवश्यक कारवाही अगाडि बढाइएको छ। सो सम्बन्धमा यस कार्यालयको पत्रादेशानुसार शारदा सब डिभिजन वन कार्यालयबाट स्थलगत निरीक्षण तथा प्राविधिक जाँचबुझ भई प्राप्त प्रतिवेदन अनुसार उक्त आयोजनाका संरचनाहरू निर्माण गर्दा देहाय बमोजिमको अवस्था रहेको व्यहोरा प्रमाणित गरिन्छ: आवश्यक वनको क्षेत्रफल: १९३९.५ वर्गमिटर हटाउनुपर्ने रुख/पोलको संख्या: शून्य (कुनै पनि रुखहरूको क्षति नहुने) वन नियमावली, २०७९ को नियम ८७ को उपनियम ५ बमोजिम संक्षिप्त वातावरणीय अध्ययन प्रतिवेदन (BES) तयारीको प्रक्रियाका लागि यो विवरण प्रमाणित गरी पठाइएको छ। साथै, आयोजना निर्माण गर्दा वन क्षेत्र र वातावरणीय सन्तुलनमा अन्य कुनै प्रतिकूल असर नपर्ने गरी स्वीकृत कार्यविधि र प्रचलित कानूनको परिधिभित्र रही कार्य सञ्चालन गर्नुहुन अनुरोध छ।		
		 टेक बहादुर राई डिभिजनल वन अधिकृत

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तालिका १: खैराबांग सामुदायिक खानेपानी आयोजनाको संरचनाहरूको अवस्थागत विवरण

क्र.सं.	सामुदायिक वनको नाम	ठेगाना	प्रस्तावित संरचना	संरचनाको क्षेत्रफल (घन मिटर)	माग गरिएको क्षेत्रफल (घन मिटर)	रुख/लाया नोक्सानी हुने सम्भावना
१	श्री जानकी सामुदायिक वन	शारदा न.पा. वडा नं. १, तल्लो चैबाङ गाउँ	RVT-2, Pump House	२००.	५०८.८	छैन
२	श्री जानकी सामुदायिक वन	शारदा न.पा. वडा नं. १ माथिल्लो चैबाङ गाउँ	RVT-3, Pump House, Guard House	२००.	५०८.८	छैन
३	श्री जानकी सामुदायिक वन	शारदा न.पा. वडा नं. १ माथिल्लो चैबाङ गाउँ	RVT-4, Pump House	१००.	६३.५	छैन
४	श्री भुवनेश्वरी सामुदायिक वन	शारदा न.पा. वडा नं. ११, खैराबाङ हेलीप्याड	RVT-5	१००.	१२७.२	छैन
५	श्री मधुवन सामुदायिक वन	शारदा न.पा. वडा नं. १	RVT-6	१००.	२५४.३	छैन
६	श्री भुवनेश्वरी सामुदायिक वन	शारदा न.पा. वडा नं. १, छापडाडा	RVT-7	५०.	१५९	छैन
७	श्री बागेश्वरी सामुदायिक वन	शारदा न.पा. वडा नं. १२, फलेदाज्युला/चिसापानी	RVT-8	३०.	६३.५	छैन
८	श्री भुवनेश्वरी सामुदायिक वन	शारदा न.पा. वडा नं. ११	Proposed Office Building for Khairabang WSP		२५४.४	छैन
	जम्मा				१९३९.५	शून्य (०)

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Annex XI: Consensus Letter for use of public land for KCWP

शारदा नगरपालिका
SHARADA MUNICIPALITY

नगर कार्यपालिकाको कार्यालय
OFFICE OF THE MUNICIPAL EXECUTIVE

खलंगा, सल्यान
KHALANGA, SALLYAN

पत्र संख्या /Ref. No.: ०८१/०८२
च. नं./Dispatch No.: ३९१

कृष्णली प्रदेश नेपाल
KARNALI PROVINCE, NEPAL

मिति: २०८२/०२/१६

श्री शारदा आयोजना कार्यन्वयन इकाई
खानेपानी क्षेत्रगत शुसासन तथा पूर्वाधार सहयोग आयोजना
शारदा नगरपालिका, सल्यान ।

विषय : प्रस्तावित चौराडा सामुदायिक खानेपानी आयोजनाको लागि
आवश्यक पर्ने जग्गाको सहमति सम्बन्धमा ।

प्रस्तुत विषयमा यस खानेपानी क्षेत्रगत शुसासन तथा पूर्वाधार सहयोग आयोजना अन्तर्गत प्रस्तावित
चौराडा सामुदायिक खानेपानी आयोजनाको लागि प्रस्तावित इन्टेक, डिप वोरिङ स्टेशन, आर. पि. टी,
पाइप लाईन, पानी प्रशोधन संरचना तथा डा.पा.उ.स.को कार्यालय भवन लगायतका संरचना
निर्माणका लागि प्रस्तावित सरकारी/सार्वजनिक/जंगल किसिमका जग्गाहरूको नापी कार्यालय
सल्यानबाट स्थलागत भेरिफिकेशन भै सकेको तथा मातहत कार्यालय सल्यानबाट स्थापितको विवरण
समेत उपलब्ध भै सकेकोले उल्लेखित विवरण बमोजिमका जग्गाहरूको प्रयोगको लागि सहमति प्रदान
गरीएको छ ।

प्रस्तावित चौराडा सामुदायिक खानेपानी आयोजनाका लागि प्रस्तावित जग्गाको विवरण

क्र.सं.	सार्वजनिक सा.मि.सं.	सि.नं.	कि.नं. संकेतबाट	जग्गाधनी	आवश्यक पर्ने जग्गाको क्षेत्रफल (रौपची)	हालको प्र वर्तमान प्रयोग	प्रस्तावित खोरपना
१	खानेपानी	०२६- ४७६	४७६	सरकारी/ सार्वजनिक	०-२-०-०	१२ कनेडा जग्गा	पानी संकलन पोखरी
२	खानेपानी	०२६- ०४१६	१८२०	सरकारी/ सार्वजनिक	१-२-०-०	१ बैराडा जग्गा	इन्टेक, पानी संकलन पोखरी, पानी प्रशोधन संरचना, वोरिङ
३	खानेपानी	०२६- ०२७३	२२०	सरकारी/ सार्वजनिक	०-८-०-०	१ चारिपसौर भुज मुनि नजिक	पानी संकलन पोखरी
४	खानेपानी	०२६- ४७८	४७८	सरकारी/ सार्वजनिक	०-४-०-०	१ छापडाडा	पानी संकलन

ओम प्रकाश देवकोटा
प्रमुख प्रशासकीय अधिकृत

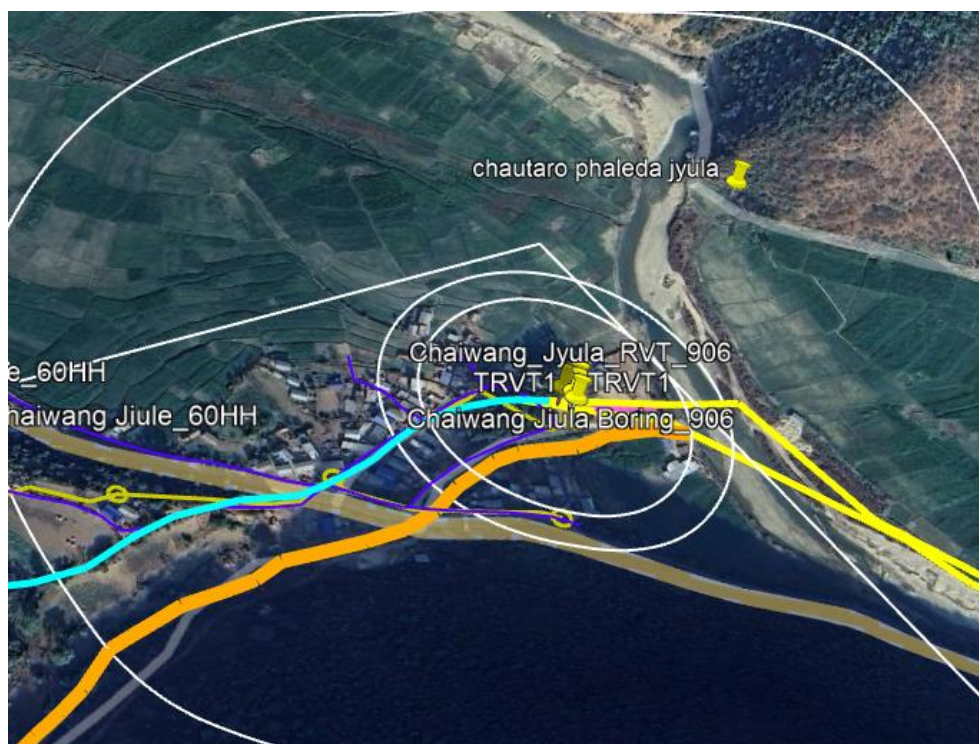
क्र.सं.	खानेपानी	सि.नं.	कि.नं. संकेतबाट	जग्गाधनी	हालको प्र वर्तमान प्रयोग	प्रस्तावित खोरपना
५	खानेपानी	०२६- ०४१६	४७६	सरकारी/ सार्वजनिक	१-०-०-०	१ बैराडा गाउँ तलतिर जंगल
६	खानेपानी	०२६- ०४१६	४७६	सरकारी/ सार्वजनिक	०-८-०-०	११ बैराडा गाउँ पारिङ नजिक
७	खानेपानी	०२६- ०४१६	४७६	सरकारी/ सार्वजनिक	०-४-०-०	१ बैराडा गाउँ नजिक
८	खानेपानी	०२६- ०४१६	४७८	सरकारी/ सार्वजनिक	१-०-०-०	१ बैराडा गाउँ माथितिर विच जंगल
९	खानेपानी	०२६- ०४१६	४७८	सरकारी/ सार्वजनिक	०-२-०-०	पानी संकलन पोखरी
१०	खानेपानी	०२६- ०३३३	कि.नं. नजिकको	सरकारी/ सार्वजनिक	०-६-०-०	१ कित्तपट्टी चौलारा नजिक

ओम प्रकाश देवकोटा
प्रमुख प्रशासकीय अधिकृत

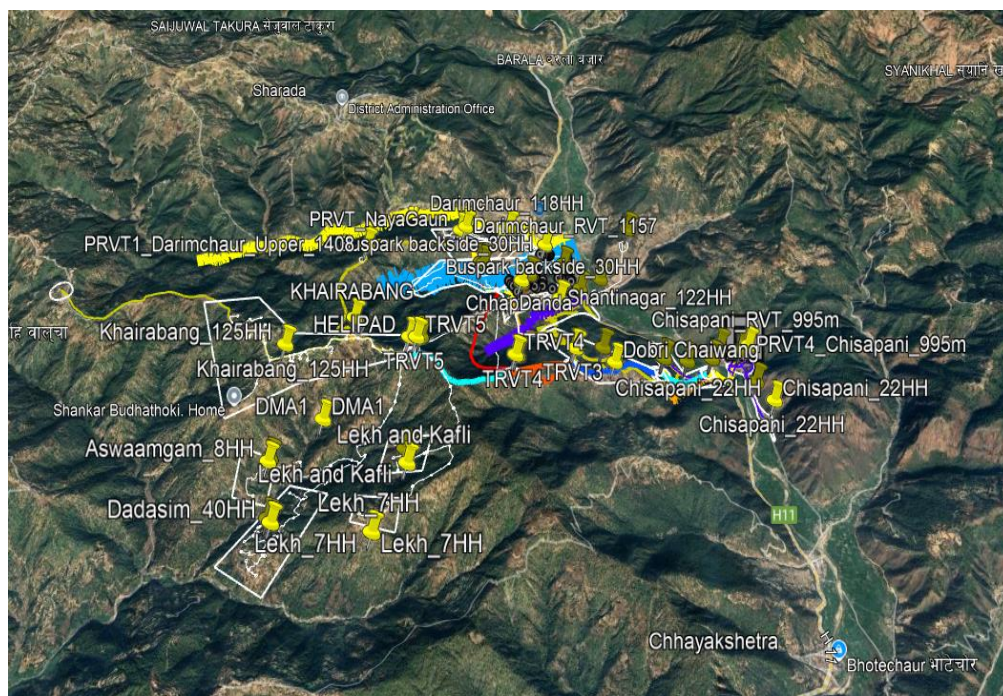
*ESMP Report of Khairabang Community
Water Supply Project*

*ESMP Report of Khairabang Community
Water Supply Project*

Annex XII: PHOTOGRAPHS

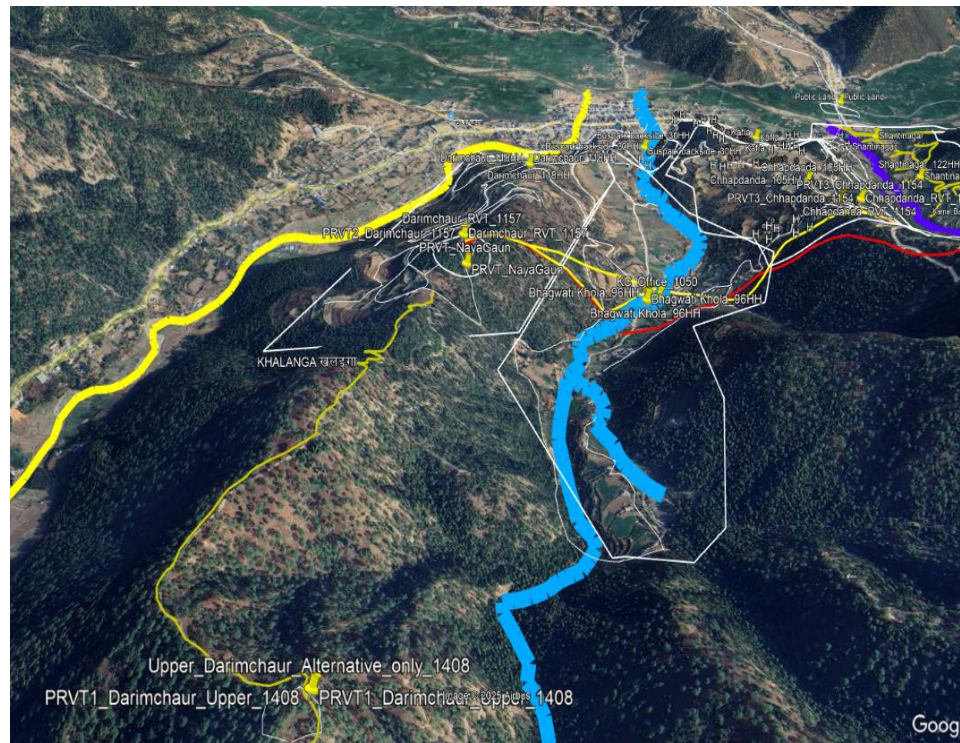


Proposed Intake Site –Chaibang Jyula, Sharada Municipality Ward No-1

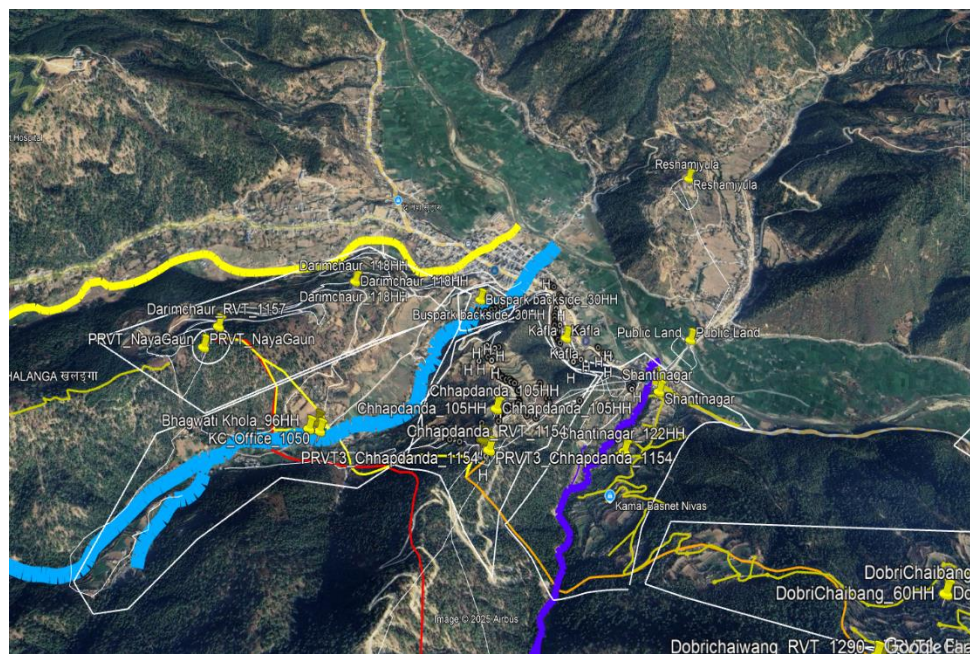


Service Area of the Proposed Khairabang CWSP

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Proposed RVTs Location and Pipelines of Khairabang WSP



Proposed RVTs and Pipeline of Khairabang WSP

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Consultation Meetings



MPIC Meeting –Sharada Municipality



Meeting with Chisapani WSUC



Screening Visit by PIU, WASH Unit & MST
team



Consultation Meeting with People of Upper
Chaibang Village

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Consultation meeting with Shantinagar
WSP-Ward No-1



Consultation meeting with users of
Bhuwaneswori WSP, Ward No. 11

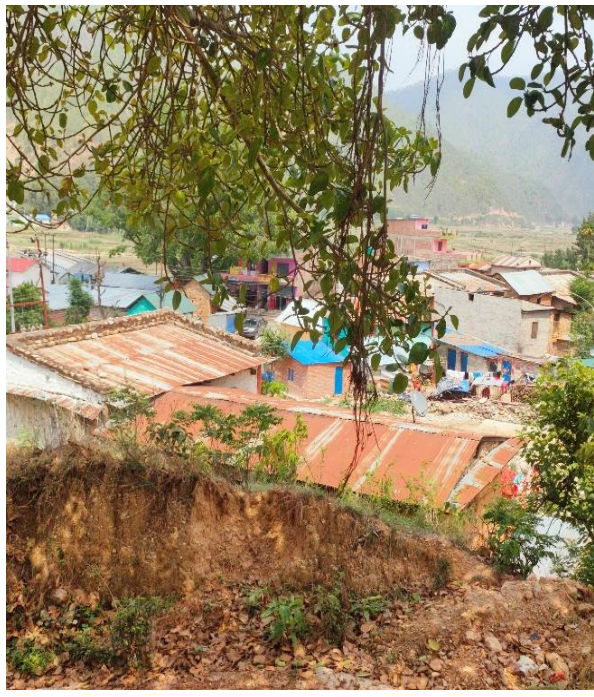


Consultation Meeting with Chaibang Jyula
WSUC, Chaibang Jyula



Land Verification by Amin, Proposed
Office Building Khairabang WSP

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Consultation with Chaibang WSP members ward No-1	Chaibang Jyula, Intake Site/Boring Site of proposed Khairabang WSP-Land Verification by Amin/Napi Office
	
Proposed Service Area-Kafla, Ward No-1	Proposed Service Area-Shantinagar, Ward No-1

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Khalanga WUA Office Building Proposed Location , Shitalpati , Shreenagar



Consultation Meeting with Local People of Phaledajyula



Land Measurement and Verification for proposed office building of Khairabang WSP



Proposed Office Building of Khairabang WSP, ward No-11, Khairabang

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Annex XIII: Monitoring Format

खैराबाङ सामुदायिक खानेपानी आयोजनाको

वातावरणीय प्रभाव अनुगमन फारम (निर्माण चरण)

अनुगमन गरेको मिति		समय	
अनुगमनको स्थान			
अनुगमन गर्ने व्यक्तिको नाम			
अनुगमन गर्ने व्यक्तिको पद			
तलको तालिकामा उल्लेख गरिएका सूचकहरूलाई दिइएको विधि प्रयोग गरी अनुगमन गर्ने परिणाममा छ छैन वा निश्चित संख्या (परिमाण) आउने भए सो उल्लेख गर्ने			
सूचक	विधि	परिणाम परिमाण	वा प्रतिकार्य वा सुधारात्मक कार्य (सल्लाह सुझाव निर्देशन केहि दिएको भए सो उल्लेख गर्ने)
धुवाँ धुलो उत्सर्जन	बाटो र कार्यस्थल अवलोकन गर्ने	छ	छैन
ध्वनी प्रदुषण	बाटो र कार्यस्थल अवलोकन गर्ने	छ	छैन
व्यक्तिगत सुरक्षा उपकरणहरु लगाईएको	कार्यस्थल अवलोकन गर्ने	छ	छैन
खुला रुपमा दिशा पिसाब गरेको	कार्यस्थल अवलोकन गर्ने	छ	छैन
फोहरमैला जथाभावी फालेको	कार्यस्थल अवलोकन गर्ने	छ	छैन
काटिएको रुखको संख्या	ठुटाको संख्या गन्ने र अभिलेख हेर्ने		
सडकमा नयाँ खाल्टो परेको र हिलो भएको	बाटो अवलोकन गर्ने	छ	छैन
कामदारका अभद्र व्यवहारका घटना	स्थानीयलाई सोध्ने	छ	छैन
कार्य क्षेत्रमा दुर्घटना र क्षतिको विवरण (संख्या र किसिम)	ठेकेदारलाई सोध्ने र अभिलेख हेर्ने		
निर्माणमा स्थानीय व्यक्तिको सभागिता (संख्या)	अवलोकन गर्ने, सोध्ने र हाजिरी हेर्ने		
निर्माणमा महिला सहभागिता (संख्या)	अवलोकन गर्ने, सोध्ने र हाजिरी हेर्ने		
निर्माणमा जनजातिको सहभागिता (संख्या)	अवलोकन गर्ने, सोध्ने र हाजिरी हेर्ने		

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निर्माणमा दलितको सहभागिता
(संख्या) अवलोकन गर्ने, सोध्ने र
हाजिरी हेर्ने

निर्माणमा बालबालिकाको (१४ र १६ वर्ष
मुनिको) सहभागिता अवलोकन गर्ने, सोध्ने र
(संख्या) हाजिरी हेर्ने

अनुगमनको गर्ने व्यक्तिको समग्र क्रियाकलापको बारेमा थप र
व्यक्तिगत टिप्पणी

अनुगमनकर्ताको सुझाव

जाँच/रुजु गर्ने अधिकारीको नाम र सही

खैराबाङ सामुदायिक खानेपानी आयोजनाको

वातावरणीय प्रभाव अनुगमन फारम (संचालन चरण)

यस किसिमको अनुगमनलाई नियमित क्रियाकलापमा समावेश गर्ने, अवस्था हेरी मासिक, अर्धवार्षिक वा वार्षिक रुपमा अनुगमन गरी अभिलेख
सुरक्षित राख्ने

अनुगमन गरेको मिति समय

अनुगमनको स्थान

अनुगमन गर्ने व्यक्तिको नाम

अनुगमन गर्ने व्यक्तिको पद

तलको तालिकामा उल्लेख गरिएका सूचकहरूलाई दिइएको विधि प्रयोग गरी अनुगमन गर्ने परिणाममा छ छैन वा निश्चित संख्या (परिमाण) आउने
भए सो उल्लेख गर्ने

सूचक	विधि	परिणाम परिमाण	वा सल्लाह सुझाव वा निर्देशन केहि भए सो उल्लेख गर्ने
धुवाँ धुलो उत्सर्जन	बाटो र सार्वजनिक शौचालय क्षेत्र अवलोकन गर्ने	छ छैन	
ध्वनी प्रदुषण	बाटो र सार्वजनिक शौचालय क्षेत्र अवलोकन गर्ने	छ छैन	
खुला रुपमा दिशा पिसाब गरेको	सार्वजनिक शौचालय क्षेत्र अवलोकन गर्ने	वरपर छ छैन	

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फोहरमैला जथाभावी फालेको	सार्वजनिक शौचालय क्षेत्र वरपर छ	छैन
	अवलोकन गर्ने	

नियमित सरसफाई गरिएको	छ	छैन
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वृक्षारोपण गरिएको बिरुवा जागेको हुर्केको	संख्या गन्ने र रोपेको संख्यासँग दाँजे
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सडकमा नयाँ खाल्टो परेको र हिलो भएको	बाटो अवलोकन गर्ने	छ	छैन
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स्थानीय व्यक्तिद्वारा संचालित व्यवसाय	अवलोकन गर्ने र सोध्ने
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स्थानीय महिलाद्वारा संचालित व्यवसाय	अवलोकन गर्ने र सोध्ने
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स्थानीय जनजातीद्वारा संचालित व्यवसाय	अवलोकन गर्ने र सोध्ने
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स्थानीय दलितद्वारा संचालित व्यवसाय	अवलोकन गर्ने र सोध्ने
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अनुगमनको गर्ने व्यक्तिको समग्र क्रियाकलापको बारेमा थप र व्यक्तिगत

*ESMP Report of Khairabang Community
Water Supply Project*

Annex XIV: Water Quality Test Report



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Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
Federal Water Supply and Sewerage Management Project
Water Quality Testing Laboratory
Birendranagar, Surkhet

WATER QUALITY TEST REPORT

Name of Client:	Shreenagar Khalanga Boring sample 1	Date of Collection:	10/10/2080
Sampled By:	Client	Date Of Analysis:	10/10/2080
Source of Sample:	Muhan water	Date of Completion:	11/10/2080
Sampling point:	Direct Muhan		
Location:			

S.N	Category	Parameters	Observed values	NDWQS, 2079 Bs	Method used
1	Physical	Turbidity (NTU)	<5	5	2130 B, APHA, 21st EDITION
2		Temp. °C	12.5	-	2550 B, APHA, 21st EDITION
3		pH	7.9	6.5-8.5*	4500-H+ B, APHA, 21st EDITION
4		Electrical Conductivity (µS/cm)	498	1500	2510 B, APHA, 21st EDITION
5	Chemical	Iron (mg/L)	<0.05	0.3(3)	COLORIMETRY
6		Total Dissolved Solids (mg/L)	167	1000	INSTRUMENTAL
7		Total Hardness (mg/L)	136	500	2340C, APHA, 21st EDITION
8		Arsenic (mg/L)	<0.05	0.05	INSTRUMENTAL
9		Ammonia (mg/L)	<0.04	1.5	COLORIMETRY
10		Residual Chlorine (mg/L)	-	0.1-0.2*	COLORIMETRY
11	Microbiological	Faecal coliform E.coli (CFU/100 ml)	3	0	9222 D, APHA, 21ST EDITION

APHA: American Public Health Association, Standard Methods for Examination of Water and Waste Water.

* These values show lower and upper limits.

(j) Values in parentheses refers the acceptable values only when alternative is not available.

Note: The entire test was conducted as per the National Drinking Water Quality Standard Guideline (NDWQS) 2079 B.S.

Analyzed By
Assistant Chemist