

- Identification of Impacts and Benefit Augmentation/Mitigation Measures
- Environmental Management Plan
- Conclusions and recommendations

v. **Salient Features of the Project**

vi. **Introduction:** This section should describe the project in simple terms and concisely, without missing relevant points or unnecessary details. The project description should provide following information:

1. Background
2. Relevancy of the proposal
 - Objectives
 - Methodology adopted
3. Name and Address of the Proponent
4. Description of the Sub-project
5. Construction Approach
6. Proposed Schedule for Implementation of Sub-project

vii. **Public Consultation and Information Disclosure**

viii. **Review of Relevant Acts, Regulations and Guidelines:** During the study relevant policies, legislations and guidelines should be reviewed and their salient features should be mentioned in this section. Similarly related institutions should be consulted.

ix. **Existing Environmental condition:** Baseline information on the existing physical, biological as well as socio-economic and cultural resources of the proposed sub-projects is described here. Environmental features such as sensitive areas, population and settlements, forests should be shown in a map.

x. **Project Alternatives:** This section summarizes the alternatives by environmental comparison. This may include the following sub-headings.

- a. Project alternative
- b. Alternative routes
- c. Alternative design and construction approach
- d. Alternative schedule and process
- e. Alternate resources
- f. Any other alternatives

xi. **Identification of Impacts and Benefit Augmentation/Mitigation Measures:** This section contains the process, findings and conclusions of analysis and interpretations. The impacts are predicted in terms of their magnitude (minor, moderate and high), extent (site specific, local and regional) and duration (short, medium and long term) and appropriate benefit enhancement and mitigation measures are suggested as following:

- a) **Physical Impacts:** such as land, air, water, noise, infrastructure impacts and other factors

Chief District Engineer

b) **Biological Impacts:** such as flora, and fauna, population, and natural habitats and ecosystems

c) **Socio-economic-cultural impacts:** such as socio-cultural land, human health, social, cultural and religious values, implications of physical and biological impacts and other relevant socio-cultural-economic impacts

This section also summarizes the recommended identification measures including basis for selection and cost if possible.

xii. **Environmental Management Plan:** This section summarizes the recommended implementation of IEE, monitoring parameters/indicators, activities, methods and responsibilities.

xiii. **Conclusion and Recommendations:** This section should clearly indicate whether IEE report is sufficient or further assessment is needed. Likewise, it should also be recommended that what aspects should be covered if further environmental assessment is needed.

xiv. **Miscellaneous:** Reference materials should be mentioned here if used during IEE report preparation in standard format.

Chief District Engineer

v. Annex

- ToR of IEE
- Rapid Environmental Assessment (REA) Checklist
- Abstract of cost
- RRRSDP environmental checklist
- Public notice
- Deed of enquiry (*muchilka*)
- Name of the organizations
- List of person contacted
- Meeting minutes of community consultation
- Recommendation letters from municipality and VDC's
- Existing condition
 - a. Distribution of household by major occupation
 - b. Summary of public services and infrastructures according to settlement
 - c. Land holding pattern of settlements within Zol
 - d. Number of households belonging to different food security category
- List of trees
- Maximization of slope cutting and preservation of vegetation cover
- Photographs



✓

ToR for IEE of Bhardava- Lela-Chandanpur road sub-project in Lalitpur District

Chief District Engineer

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Annex II: Rapid Environmental Assessment (REA) Checklist

Rapid Environmental Assessment (REA) Checklist

Instructions:

- This checklist is to be prepared to support the environmental classification of a project. It is to be attached to the environmental categorization form that is to be prepared and submitted to the Chief Compliance Officer of the Regional and Sustainable Development Department.
- This checklist is to be completed with the assistance of an Environment Specialist in a Regional Department.
- This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB checklists and handbooks on (i) involuntary resettlement, (ii) indigenous peoples planning, (iii) poverty reduction, (iv) participation, and (v) gender and development.
- Answer the questions assuming the “without mitigation” case. The purpose is to identify potential impacts. Use the “remarks” section to discuss any anticipated mitigation measures.

Country/Project Title:

Nepal / RRRSDP

Name of the sub Project:

Lele-Bhardeu-Chandanpur

SCREENING QUESTIONS	Yes	No	REMARKS
A. Project Sitting			
Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site		✓	
▪ Protected Area		✓	
▪ Wetland		✓	
▪ Mangrove		✓	
▪ Estuarine		✓	
▪ Buffer zone of protected area		✓	
▪ Special area for protecting biodiversity		✓	
B. Potential Environmental Impacts			
Will the Project cause...			
▪ Encroachment on historical/cultural areas; disfiguration of landscape by road embankments, cuts, fills, and quarries?		✓	
▪ Encroachment on precious ecology (e.g. sensitive or protected areas)?		✓	

SCREENING QUESTIONS	Yes	No	REMARKS
<ul style="list-style-type: none"> ▪ Alteration of surface water hydrology of waterways crossed by roads, resulting in increased sediment in streams affected by increased soil erosion at construction site? 		✓	
<ul style="list-style-type: none"> ▪ Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction? 		✓	
<ul style="list-style-type: none"> ▪ Increased local air pollution due to rock crushing, cutting and filling works, and chemicals from asphalt processing? 		✓	
<ul style="list-style-type: none"> ▪ Noise and vibration due to blasting and other civil works? ▪ dislocation or involuntary resettlement of people 		✓	
<ul style="list-style-type: none"> ▪ Other social concerns relating to inconveniences in living conditions in the project areas that may trigger cases of upper respiratory problems and stress? 		✓	
<ul style="list-style-type: none"> ▪ Hazardous driving conditions where construction interferes with pre-existing roads? 		✓	
<ul style="list-style-type: none"> ▪ Poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases from workers to local populations? 		✓	
<ul style="list-style-type: none"> ▪ Creation of temporary breeding habitats for mosquito vectors of disease? 		✓	
<ul style="list-style-type: none"> ▪ Dislocation and compulsory resettlement of people living in right-of-way? 		✓	
<ul style="list-style-type: none"> ▪ Accident risks associated with increased vehicular traffic, leading to accidental spills of toxic materials and loss of life? 		✓	
<ul style="list-style-type: none"> ▪ Increased noise and air pollution resulting from traffic volume? 		✓	
<ul style="list-style-type: none"> ▪ Increased risk of water pollution from oil, grease and fuel spills, and other materials from vehicles using the road? 		✓	

Source:Field survey, July, 2009

Annex III: Abstract of Cost

Office of District Development Committee
District Technical Office/District Project office
Lalitpur

Rural Reconstruction and Rehabilitation Sector Development Program (RRRSDP)

Road: Lele-Bhardeu-Chandanpur

Chainage: 0+000 to 24+850

Item No.	Description of Works	Unit	Quantity	Rate (NRs.)	Amount (NRs.)	Remarks
A	General items					
1	Insurance of works, equipment, Contractor's workmen and employees and Third party Insurance against damage to other persons and property.	LS	1	1500000	1500000	
2	Provide and maintain traffic safety, control measures and temporary diversions during construction as instructed by the Engineer.	LS	1	100000	100000	
3	Carry out additional tests for material and works as required and instructed by the Engineer.	PS	1	300000	300000	
4	Relocation of services as required and instructed by the Engineer	PS	1	100000	100000	
5	Provision and maintenance of labor camps payable monthly in equal installments	LS	1	360000	360000	
B	Project Cost					
1	Site Clearance Work (Including cutting of trees up to 30cm dia. Greath	Sq.m	31150	11	342,650.00	
2	Excavation in Roadway, drain and foundation of structures in				0.00	
2.1	Ordinary soil		14,683.73	137.5	2,019,012.88	
2.2	Hard soil		76,470.87	165	12,617,693.55	
2.3	Soft Rock		3,829.33	550	2,106,131.50	
2.4	Medium Rock	m ³	9,505.87	1,100.00	10,456,457.00	
2.5	Hard Rock		4,198.28	4,675.00	19,626,959.00	
3	Backfilling and compaction	m ³	23,764.89	68.75	1,633,836.19	
4	Stone Masonry Work in (1: 4) Cement Mortar Including Transportation of all Material as per Specification				0.00	
4.1	For Drain work	m ³	7,240.45	4,834.84	35,006,417.28	
4.2	For other structure work	m ³	68.5	4,834.84	331,186.54	
5	P.C.C. Work in (1: 3: 6) Cement Mortar	m ³	9.83	5,626.10	55,304.56	
6	Laying, Fitting, and Fixing of Hume Pipe with Transportation at Site, with all complete Work				0.00	
6.1	60cm Dia	RM	90	5,123.24	461,091.60	
7	Assembling of gabion baskets and placing them in position including stretching, binding them together and tying down lids				0.00	
7.1	Box size 2*1*1	Nos.	1,540.00	24.75	38,115.00	
7.2	Box size 1.5*1*1	Nos.	1,280.00	18	23,040.00	
8	Stone Packing in Gabion Crates Including quarrying and transportation from:				0.00	
8.1	Box size 2*1*1	Nos.	1,540.00	3,488.21	5,371,843.40	

8.2	Box size 1.5*1*1	Nos.	1,280.00	2,616.16	3,348,684.80
9	Fabrication of gabion boxes including rolling, cutting, weaving and supply to the site (Hexagonal Mesh Size: 100mm*120mm, selvedge wire-7swg, mesh wire-10 swg & binding wire-12 swg, all heavy coated)				0.00
9.1	Box size 2*1*1	Nos.	1540	2260.25	3,480,785.00
9.2	Box size 1.5*1*1	Nos.	1280	1643.82	2,104,089.60
10	5cm thick bedding for stone pitching with screened Granular material on HP	m ²	37.8	91.44	3,456.43
11	20 cm thick stone pitching on the prepared bedding including supply of stone and river spills for sealing of voids	m ²	11,605.00	352.32	4,088,673.60
12	sub grade preparation with 10 cm earth filling	m ²	124,600.00	27.5	3,426,500.00
13	Gravel Sub-base 15 cm thick with compaction				0.00
13.1	Gravelling work(as sub base coarse) with naturally found deposit of sand gravell aggregates including collection and transportation from Quarry site	m ³	18637.5	1802.73	33598380.38
14	Ottaseal Work				0.00
14.1	Supply, Spread and Compaction of first layer aggregate 16-0 mm for Single Seal Otta seal	m ²	74550	39.75	2963362.5
14.3	Supply and spray MC 3000 cut-back bitumen for seal coat on single Otta seal including preparation of surface to remove dust or any other extraneous material.	m ²	74550	61.23	4564696.5
15	Stone masonry work for Dry wall	m ³	3316.44	2030.36	6733567.118
16	RCC Causeway (Cost as Per RM)	RM	50	30,000.00	1,500,000.00
21	Geo textile Fabrics inner sides gabion wall	m ²	2,783.00	74	205,942.00
C	Bio engineering works				
	Cost according to IEE	Job	1	4500000	4500000
	A. TOTAL				162,967,876.42
	Contractor's overhead (15% of A)				24,445,181.46
	B. TOTAL				187,413,057.88
	VAT (13% of B)				24,363,697.52
	C. GRAND TOTAL				211,776,755.41
Cost per KM (Including all items)					8,522,203.44

3.10	Bee-keeping											
3.11	Others											

A. _____ B. _____ C. _____
D. _____ E. _____ F. _____
G. _____ H. _____ I. _____

7. Migration for employment

(a) No. of HHs from where at least one person (may be HH head) is away from home for more than 6 months.

Settlement (No. of HH)									
A	B	C	D	E	F	G	H	I	J

(b) Seasonal migration in search of work.

Month	No. of Total HH	Destination	Purpose

8. Dominant off-farm occupation in the settlement in descending order

B. DEVELOPMENT POTENTIAL ACCORDING TO SETTLEMENT

B.1. Areas which have significant potential for development, for instance, high agricultural production, tourism development, local mines, etc. (indicate these areas in map/sketch).

S. N.	Name of Area	Description of Development Potential

B.2. Scope of the proposed linkage in view of promoting socio-economic development (communication, agricultural production, education and health).

S. No.	Sectors to get direct benefit	Describe how it will benefit

C. Historic and Cultural Resources Within The Settlement

Type of Resource	Name/specification	Affecting activities	Location from project



नेपाल सरकार
स्थानीय विकास मन्त्रालय
जिल्ला विकास समितिको कार्यालय
जिल्ला प्राविधिक कार्यालय
ग्रामीण पुननिर्माण तथा पुनस्थापना आयोजना
जिल्ला आयोजना कार्यालय, ललितपुर

नयाँ पत्रिका
२०६६/०२/११

प्रारम्भिक वातावरणीय परीक्षण (IEE) सम्बन्धी राय सुझावका लागि सार्वजनिक सूचना

(सूचना प्रकाशित मिति: २०६६/०२/११)

यस जिल्ला विकास समितिको कार्यालय/जिल्ला प्राविधिक कार्यालय, ग्रामीण पुननिर्माण तथा पुनस्थापना आयोजना, जिल्ला आयोजना कार्यालय ललितपुरद्वारा निर्माण गर्न प्रस्ताव गरिएको निम्न सडकहरूको प्रारम्भिक वातावरणीय परीक्षण (IEE) प्रतिवेदन कार्यान्वयन गर्ने सिलसिलामा वातावरणीय संरक्षण नियमावली २०५४(पहिलो संसोधन २०५४ समेत) को नियम ७२(२) अनुसार यो सार्वजनिक सूचना प्रकाशित गरिएको छ।

प्रस्तावकको नाम: जिल्ला विकास समितिको कार्यालय/ जिल्ला प्राविधिक कार्यालय ललितपुर

सि.नं.	आयोजनाको नाम:	आयोजनाले प्रभावित पर्ने गा.वि.स.हह
१.	बगुवा प्युटार आस्राङ्ग ठाटी भञ्ज्याङ्ग सडक	माल्टा, प्युटार, आस्राङ्ग, गिम्दी, ठुलादुलुङ्ग
२.	दलचोकी शंखु ईकुडोल सडक	दलचोकी, शंखु, ईकुडोल
३.	लेले चन्दनपुर सडक (भारदेव चन्दनपुर खण्ड)	भारदेव, चौघरे, मानिखेल, गोटीखेल, कालेश्वर, बुखेल, ठुलादुलुङ्ग, गिम्दी, श

उक्त प्रस्तावको कार्यान्वयनबाट वातावरणमा पर्ने सक्ने प्रभावका बारेमा सम्बन्धित गा.वि.स. विद्यालय, स्वास्थ्य चौक वन उपभोक्ता समिति तथा अन्य सरोकारवाला व्यक्ति वा संस्थाले यो सूचना प्रकाशित भएको मितिले १५(पन्ध्र) दिन भित्र निम्न ठेगानामा आफ्नो राय सुझाव पठाई सहयोग गरी दिनु हुन अनुरोध गरिन्छ।

राय सुझाव पठाउने ठेगाना

जिल्ला विकास समितिको कार्यालय
मानभवन, ललितपुर
फोन नं ५५२३४१० फ्याक्स ५५३३२१५

जिल्ला प्राविधिक कार्यालय, ललितपुर
फोन नं ५५५१६३७
ईमेल: dtolalitpur@rrr.gov.np

Annex VII: Name of the Organizations

Name of the Organizations (notice pasted and deed of inquiry obtained)

SN	Name or Organization	Address	Remarks
1	Office of Village Development Committee, Bhardeu	Bhardeu	
2	Office of Village Development Committee, Chaughare	Chaughare	
3	Office of Village Development Committee, Manikhel	Manikhel	
4.	Office of Village Development Committee, Gotikhel	Gotikhel	
5	Office of Village Development Committee, Chandanpur	Chandanpur	
6.	Kaleshwor Lower Secondary School, Chandanpur	Chandanpur	
7	Mahankal Higher secondary School, Gotikhel	Gotikhel	

Source: Field Survey, July, 2009

Annex VIII: List of Persons Consulted

List of persons consulted

S.N.	Name	Address	Occupation	Contact No.
1	Madhav Pd. Adhikari	Lalitpur	D.E	
2		DFO, Lalitpur		
3		DWSSC, Lalitpur		
4		DADO, Lalitpur		
Bhardeu VDC				
1	Hem Narayan Shrestha	Bhardeu-2	Social worker	
2	Som Bahadur Gole	Bhardeu-2	Business	
3	Bal ram Sunuwar	Bhardeu-4	Farmer	
Chaughare VDC				
1	Nima Lama	Chaughare-2	Business	9741057786
2	Chitra Lama	Chaughare-4	Social Worker	9741027976
Manikhel VDC				
1	Dev Raj Lama	Manikhel-7	Teacher	01-6226374
2	Bhai Raj Lama	Manikhel-7	Social Worker	9741113213
3	Dal Pd. Timalisina	Manikhel-8	Ex. VDC Chairman	9741041467
Gotikhel VDC				
1	Tej Bdr. Satyal	Gotikhel-2	Office Assistant, VDC Gotikhel	9741029002
2	Indra Bdr. Ghalan	Gotikhel-3	Ex. VDC Chairman	9741041176
3	Hem Pd. Sapkota	Gotikhel-3	Business	9741047434
Chandanpur VDC				
1	Hem Narayan Banjara	Chandanpur-2	Business	9751000757
2	Tank Pd. Timalisina	Chandanpur-2	Teacher	9741028377

Source: Field Survey, July, 2009

Annex XI

Annex XI a: Distribution of households by major occupation

Annex XI b: Summary of public services & infrastructures

Annex XI c: Land holding pattern of settlements within Zol

Annex XI d: Number of households belonging to different food security category

Annex XIa: Distribution of Households by Major Occupation

SN	VDC	Settlement/ Code	Number of HH and Percentage of Population engaged in					Others
			Agriculture & Livestock	Labour & Porter	Business/ Commerce	Cottage Industry	GO/ NGO Employee s	
1	Bhardeu	Losetole	188/49%	112/29%	33/9%	28/7%	22/6%	
2	Chaughare	Siganebhanjyang	43/40%	34/32%	19/18%	5/5%	5/5%	
		Gumdol	78/32%	101/42%	39/16%	17/7%	8/3%	
3	Manikhel	Lakshebas	29/41%	24/36%	11/15%	3/4%	3/4%	
		Thotanekhola	43/44%	33/34%	11/12%	6/6%	4/4%	
		Katun bhanjyang	33/39%	34/41%	7/8%	5/6%	5/6%	
		Komrang	19/46%	10/24%	8/18%	3/7%	2/5%	
		Shyakitithaldada	26/43%	19/32%	10/17%	2/3%	1/2%	
4	Gotikhel	Darpakha	47/40%	41/35%	17/14%	6/5%	7/6%	
		Gotikhel Bazaar	53/35%	46/31%	21/14%	15/10%	15/10%	
		Kimtole	17/36%	15/33%	8/17%	3/7%	3/7%	
		Gotikhel	19/38%	17/32%	8/15%	4/8%	3/6%	
5	Chandanpur	Gairagaun	36/37%	33/33%	16/16%	6/6%	7/7%	
		Chandanpur Bazaar	48/39%	37/31%	16/13%	10/8%	11/9%	
	Average		40	33	15	6	6	

Source: Field survey, July, 2009

S N	Service/Infrastructure Category	Settlement Code														Others
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	
	(specify)															
9	INDUSTRY															
9.1	Weaving Industry (no.)	1	1	-	1	1	2	-	-	1	3	1	-	1	1	
9.2	Rice & flour Mills (no.)	1	-	1	1	-	2	1	2	-	1	-	1	-	2	
9.3	Other Industries (specify)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	FINANCIAL INSTITUTIONS															
10.1	Bank (no.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10.2	Cooperative	-	1	1	2	1	1	1	1	-	2	-	-	-	2	
11	COMMUNITY USE															
11.1	Ghat (no.)	-	-	-	-	-	1	-	-	-	-	-	-	-	1	
11.2	Hatia/Bazaar (no.)	-	1	-	1	-	2	-	1	2	1	-	1	1	3	
11.3	Playground (no.)	1	1	1	1	1	2	1	1	2	2	1	1	1	3	
11.4	Community Centre (no.)	1	1	1	2	1	1	1	1	2	2	1	1	1	2	
11.5	Others (specify)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Source: Field survey, July, 2009

A. Losetole B. Siganebhanjyang C. Gumdol D. Lakshebas
E. Thotanekhola F. Katun bhanjyang G. Komrang H. Shyakitithaldada
I. Darpakha J. Gotikhel Bazaar K. Kimtole L. Gotikhel
M. Gairagaun N. Chandanpur Bazaar

Annex XI c: Land Holding Pattern of Settlements Within Zol

Land holding Pattern	Settlement Code (HH No.)														Remarks	
	A (383)	B (106)	C (243)	D (70)	E (97)	F (84)	G (42)	H (58)	I (118)	J (150)	K (46)	L (51)	M (98)	N (122)		
Landless																
less than 1 ropani)	197	8	87	11	13	8	4	3	12	12	4	6	6	8	379	
1 to 5 ropani	169	82	138	52	56	63	31	49	78	93	24	33	78	93	1039	
5 to 10 ropani	14	9	10	4	16	9	4	4	23	30	12	9	8	11	163	
10 to 20 ropani	3	7	8	3	12	4	3	2	5	15	6	3	6	10	87	
20-50 ropani																
> 50 ropani																

A. Losetole B. Siganebhanjyang C. Gumdol D. Lakshebas
E. Thotanekhola F. Katun bhanjyang G. Komrang H. Shyakitithaldada
I. Darpakha J. Gotikhel Bazaar K. Kimtole L. Gotikhel
M. Gairagaun N. Chandanpur Bazaar

Annex XI d: Number of Households Belonging to Different Food Security Category

Settlement Name	Surplus	Sufficient for whole year	Sufficient for 3-9 months	Sufficient for three months	Less than three months	Total
Losetole	57/15 %	161/42 %	81/21 %	42/11 %	42/11 %	383
Siganebhanjyang	12/11%	48/46%	18/17%	12/11%	16/15%	106
Gumdol	24/10%	113/47%	42/17%	27/11%	37/15%	243
Lakshebas	9/13%	29/42%	16/22%	9/13%	7/10%	70
Thotanekhola	16/17%	47/49%	20/20%	8/8%	6/6%	97
atun bhanjyang	12/14%	27/32%	37/44%	4/5%	4/5%	84
Komrang	5/11%	15/37%	16/39%	3/6%	3/7%	42
Shykatithaldada	9/16%	13/23%	25/42%	6/10%	5/9%	58
Darpakha	19/16%	54/46%	27/23%	11/9%	7/6%	118
Gotikhel Bazaar	26/17%	60/40%	32/22%	17/11%	15/10%	150
Kimtole	6/14%	16/34%	19/41%	3/6%	2/5%	46
Gotikhel	9/17%	17/34%	21/42%	2/4%	2/3%	51
Gairagaun	14/14%	42/42%	24/24%	10/10%	10/10%	98
Chandanpur Bazaar	21/17%	48/39%	27/22%	13/11%	13/11%	122
Total						
Percentage	14.4	39.5	28.3	9	8.8	

Source: Field survey, 2009

Annex XII :
List of Trees to be Removed

S.N	Name of the owner	Total no. of trees	Local Name	Scientific Name	Location	Chainage	Remarks
1	Upendra Lama	7	Lapsi	<i>Choerospondias axillaries</i>	Losetole	0+000 - 1+800	
2	Nima lama	5	Lapsi	<i>Choerospondias axillaries</i>	Losetole		
3	Shyam Bholan	6	Uttis	<i>Alnus nepalensis</i>	Losetole		
4	Makar Tamang	2	Katus	<i>Castanopsis indica</i>	Losetole		
5	L.P. Tamang	9	Uttis/ Katus	<i>Alnus nepalensis/ Castanopsis indica</i>	Losetole		
6	Basant Poudel	6	Chilaune	<i>Schima wallichii</i>	Losetole	1+900-2+150	
7	Tanka Tamang	10	Uttis	<i>Alnus nepalensis</i>	Losetole	2+300-2+800	
8	Ram Sharan Magar	2	Chilaune	<i>Schima wallichii</i>	Losetole		
9	Hikmat Magar	12	Chilaune	<i>Schima wallichii</i>	Singane bhanjyang		
10	Shushila Magar	7	Katus	<i>Castanopsis indica</i>	Singane bhanjyang	2+800-3+350	
11	Kanchhi Maya Tamang	1	Laliguran s	<i>Rhododendron arboretum</i>	Singane bhanjyang		
12	Prabin Tamang	5	Amliso/ Aaru	<i>Thysolaena maxima/pashia sp</i>	Singane bhanjyang		
13	Government Forest	1482			Singane bhanjyang/ Gumdol/ Lakshebas/ Thotanekhola/ Katun bhanjyang/ Komrang/ Shyakatithaldada / Darpakha	3+350-18+200	
14	Dal Bd Thing	4	Uttis	<i>Alnus nepalensis</i>	Darpakha	18+200-19+150	
15	Rahar Singh Ghising	11	Uttis/ Chilaune	<i>Alnus nepalensis/ Schima wallichii</i>	Gotikhel Bazaar		
16	Bal Bd. Ghising	10	Katus	<i>Castanopsis indica</i>	Gotikhel Bazaar		
17	Laxman Gole	14	Katus/ Uttis	<i>Castanopsis indica/ Alnus nepalensis</i>	Gotikhel Bazaar		
18	Kenam Shing	16	Uttis/ Chilaune	<i>Alnus nepalensis/ Schima wallichii</i>	Kimtole		
19	Janak Bal Mai	1	Katus	<i>Castanopsis indica</i>	Kimtole	19+150-22+400	
20	Man Bd Thing	5	Uttis	<i>Alnus nepalensis</i>	Kimtole		
21	Byan singh lama	3	Laliguran s	<i>Rhododendron arboretum</i>	Kimtole		
22	Harihar Pd Sapkota	15	Katus/ Uttis	<i>Castanopsis indica/ Alnus nepalensis</i>	Kimtole		
23	Ratna Bdr Timalsina	14	Amliso/ Aaru	<i>Thysolaena maxima/pashia sp</i>	Kimtole		
24	Bed Bdr phuyal	18	Uttis/ Chilaune	<i>Alnus nepalensis/ Schima wallichii</i>	Gotikhel		

S.N	Name of the owner	Total no. of trees	Local Name	Scientific Name	Location	Chainage	Remarks
25	Bahadur Syangtan	10	Katus	<i>Castanopsis indica</i>	Gotikhel	22+400-26+500	
26	Indra Prasad Banjara	7	Katus	<i>Castanopsis indica</i>	Gotikhel		
27	Ale bhulan	2	Laligurans	<i>Rhododendron arboretum</i>	Gotikhel		
28	Damarkumari Syangtan	4	Uttis	<i>Alnus nepalensis</i>	Gairagaun		
29	Krishna Hari Bamjan	8	Chilaune	<i>Schima wallichii</i>	Gairagaun		
30	Man bd. Tamang	3	Lapsi	<i>Choerospondias axillaries</i>	Chandanpur Bazaar		
31	Krishna Hari Timilsina	10	Uttis	<i>Alnus nepalensis</i>	Chandanpur Bazaar		
	Total	1709					

Source: field survey, July, 2009

➤ Detail about the loss of tree and their cost will be included in the resettlement plan.

Annex XIII: Photographs



Road alignment along landslide area.



Road alignment passing through settlement



Photograph showing project affected house



Road alignment passing through Jungle area.



Photograph showing project affected public structure



Photograph showing project affected Ghatta

Annex XIV: Summary of Cross Drainage Structures

SN	Chainage	Name of the river	Terrain	Type of Cross Drainage	Width of river(m)	Soil type	Remarks
1	1+200	Kholsi	Mountains	PC		OR	60 cm dia(Existing)
2	3+150	Kholsi	Mountains	DSC	15.00	OR	15*4.5 m(Existing)
3	5+120	Kholsi	Mountains	PC		OR	60cm dia(Existing)
4	5+440	Kholsi	Mountains	PC		OR	60cm dia(Existing)
5	5+920	Kholsi	Mountains	PC		OR	60cm dia(Existing)
6	6+650	Kholsi	Mountains	PC		OR	60cm dia(Existing)
7	8+620	Stream	Mountains	DSC	8.00	OR	8*5.5(Proposed)
8	8+700	Kholsi	Mountains	PC		OR	60cm dia(Existing)
9	10+800	Stream	Mountains	SC	5.00	OR	7*5(Existing)
10	12+960	River	Mountains	Bridge	5.00	OR	7*5(Existing)
11	16+320	Stream	Mountains	SC	5.00	OR	12*5(Proposed)
12	20+100	Kholsi	Mountains	PC		OR	60 cm dia(Existing)
13	21+420	Stream	Mountains	PCCS	10.00	OR	10*7(Existing)
14	22+190	Stream	Mountains	DSC	11.00	OR	11*5(Proposed)
15	23+410	Stream	Mountains	DSC	10.00	OR	10*5(Proposed)
16	24+100	River	Mountains	Bridge	13.00	OR	13*5(Proposed Bridge)

Source: Field survey, July, 2009

Annex XV: Affected Private Houses and Structures along the Road Alignment

S.N	Type of structures	Names of owner	Occupation	Chainage	Location	Dist.from CL of Road	Remarks
1	Tea shop + residential house	Bichar Singh Thing	Shopkeeper + Farmer	2+658 to 2+672	Chaughare	2m	Impact
2	Residential House	Sancha Tamang	Farmer	3+632 to 3+639	Chaughare	4m	Impact
3	Private Toilet	Ramesh Shyangtang	Shopkeeper + Farmer	3+700 to 3+710	Chaughare	4m	Impact
4	House (used for redcross)	Rabi Shyantang	Job + farmer	14+810 to 14+825	Manikhel	3m	Impact
5	Private Toilet + Wall	Bhim Bahadur Nyasur	Shopkeeper + Farmer	22+830 to 22+835	Gotikhel	3m	Impact
6	Residential House	Aadhi Maya Tamang	Farmer	23+200 to 23+210	Gotikhel	3m	Impact
7	Cattle shed + Biogas Plant	Tulasi Prasad Bajgai	Farmer	23+680 to 23+689	Chandanpur	3m	Impact
8	Cattle shed + Biogas Plant	Govinda Bajgai	Farmer	23+740 to 23+750	Chandanpur	2m	Impact
9	Ghatta (Water Mill along with canal)	Jit Bahadur Shreatha	Farmer	24+400 to 24+410	Chandanpur	2m	Impact

Source:Field survey, July, 2009

Detail about the loss of structures along the road alignment and their cost will be included in the resettlement plan.

Annex XVI: Structure for Slope Stabilization

SN	Chainages	Civil structures/Mitgation Measures	Bio-engineering Measures
1.	0+000-0+020	Breast wall at upper side	
2.	0+050-0+065	Breast wall at upper side	
3.	0+400	Retaining wall	
4.	0+500	Retaining wall	
5.	1+000	Retaining wall	
6.	1+500	Retaining wall	
7.	2+100-2+700	Breast wall	
8.	3+000	Retaining wall	
9.	4+000	Retaining wall	Grass plantation, Tree, Shrub plantation
10.	5+700	Breast wall	Grass plantation, Tree, Shrub plantation
11.	7+000	Retaining wall	Grass plantation, Tree, Shrub plantation
12.	7+900	Erosion control works required along with breast wall	
13.	7+200	Erosion control works required	Grass plantation, Tree, Shrub plantation, Brush layering
14.	8+800	Retaining wall required	Grass plantation, Tree, Shrub plantation, Brush layering
15.	9+100	Retaining wall	
16.	9+800	Breastwall	
17.	11+600	Breast wall	Grass plantation, Tree, Shrub plantation, Brush layering
18.	12+100	Retaining wall	Grass plantation, Tree, Shrub plantation, Brush layering
19.	14+500	Breast wall	Grass plantation, Tree, Shrub plantation, Brush layering
20.	16+500-16+600	Retaining wall	
21.	17+000	Breast wall	
22.	17+700-17+900	Retaining wall	
23.	18+700	Retaining wall	Grass plantation, Tree, Shrub plantation, Brush layering
24.	22+100-22+300	Retaining wall	

Source: Field Survey, July, 2009