

APPENDIX E

Chance Find Procedure

Purpose of the chance find procedure

The chance find procedure is a project-specific procedure that outlines actions required if previously unknown heritage resources, particularly archaeological resources, are encountered during project construction or operation. A Chance Find Procedure, as described in IFC Performance Standard 8 and EBRD Performance Requirement 8 and law on Cultural Heritage of Georgia, is a process that prevents chance finds from being disturbed until an assessment by a competent specialist is made and actions consistent with the requirements are implemented.

Scope of the chance find procedure

This procedure is applicable to all activities conducted by the personnel, including contractors, that have the potential to uncover a heritage item/site. The procedure details the actions to be taken when a previously unidentified and potential heritage item/site is found during construction activities. Procedure outlines the roles and responsibilities and the response times required from both project staff, and any relevant heritage authority.

Induction/Training

All personnel, especially those working on earth movements and excavations, are to be inducted on the identification of potential heritage items/sites and the relevant actions for them with regards to this procedure during the Project induction and regular toolbox talks.

Chance find procedure

If any person discovers a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction, the following steps shall be taken:

1. Stop all works in the vicinity of the find, until a solution is found for the preservation of these artefacts, or advice from the relevant authorities is obtained;
2. Immediately notify a foreman. The foreman will then notify the Construction Manager and the Environment Officer (EO)/Environmental Manager (EM);
3. Record details in Incident Report and take photos of the find;
4. Delineate the discovered site or area; secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities take over;
5. Preliminary evaluation of the findings by archaeologists. The archaeologist must make a rapid assessment of the site or find to determine its importance. Based on this assessment the appropriate strategy can be implemented. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage such as aesthetic, historic, scientific or research, social and economic values of the find;
6. Sites of minor significance (such as isolated or unclear features, and isolated finds) should be recorded immediately by the archaeologist, thus causing a minimum disruption to the work schedule of the Contractor. The results of all archaeological work must be reported to the Ministry/Agency, once completed.
7. In case of significant find the Agency/Ministry (Agency for Protection of National Heritage or Archaeological Research Centre, hereinafter referred to as Heritage

team) should be informed immediately and in writing within 7 days from the find (ref.law on heritage protection).

8. The onsite archaeologist provides the Heritage team with photos, other information as relevant for identification and assessment of the significance of heritage items.
9. The Ministry must investigate the fact within 2 weeks from the date of notification and provide response in writing.
10. Decisions on how to handle the finding shall be taken by the responsible authorities. This could include changes in the layout (such as when finding an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage;
11. Construction works could resume only after permission is granted from the responsible authorities.
12. In case no response received within the 2 weeks period mentioned above, this is considered as authorisation to proceed with suspended construction works.

One of the main requirements of the procedure is record keeping. All finds must be registered. Photolog, copies of communication with decision making authorities, conclusions and recommendations/guidance, implementation reports – kept.

Additional information

Management options for archaeological site

- **Site avoidance.** If the boundaries of the site have been delineated attempt must be made to redesign the proposed development to avoid the site. (The fastest and most cost-effective management option)
- **Mitigation.** If it is not feasible to avoid the site through redesign, it will be necessary to sample it using data collection program prior to its loss. This could include surface collection and/or excavation. (The most expensive and time-consuming management option.)
- **Site Protection.** It may be possible to protect the site through the installation of barriers during the time of the development and/or possibly for a longer term. This could include the erection of high visibility fencing around the site or covering the site area with a geotextile and then capping it with fill. The exact prescription would be site- specific.

Management of replicable and non-replicable heritage

Different approaches for the finds apply to replicable and non-replicable heritage.

Replicable heritage

Where tangible cultural heritage that is replicable²³ and not critical is encountered, mitigation measures will be applied.

The mitigation hierarchy is as follows:

- Avoidance;
- Minimization of adverse impacts and implementation of restoration measures, in situ;
- Restoration of the functionality of the cultural heritage, in a different location;

²³ Replicable cultural heritage is defined as tangible forms of cultural heritage that can themselves be moved to another location or that can be replaced by a similar structure or natural features to which the cultural values can be transferred by appropriate measures. Archaeological or historical sites may be considered replicable where the particular eras and cultural values they represent are well represented by other sites and/or structures.

- Permanent removal of historical and archaeological artefacts and structures ;
- Compensation of loss - where minimization of adverse impacts and restoration not feasible.

Non-replicable heritage

Most cultural heritage is best protected by in situ preservation, since removal is likely to result in irreparable damage or even destruction of the cultural heritage.

Nonreplicable cultural heritage²⁴ must not be removed unless all of the following conditions are met:

- There are no technically or financially feasible alternatives to removal;
- The overall benefits of the project conclusively outweigh the anticipated cultural heritage loss from removal; and

Any removal of cultural heritage must be conducted using the best available technique advised by relevant authority and supervised by archaeologist.

Human Remains Management Options

The handling of human remains believed to be archaeological in nature requires communication according to the same procedure described above.

There are two possible courses of action:

- **Avoid.** The development project is redesigned to completely avoid the found remains. An assessment should be made as to whether the remains may be affected by residual or accumulative impacts associated with the development, and properly addressed by a comprehensive management plan.
- **Exhume.** Exhumation of the remains in a manner considered appropriate by decision makers. This will involve the predetermination of a site suitable for the reburial of the remains. Certain ceremonies or procedures may need to be followed before development activities can recommence in the area of the discovery.

EMERGENCY CONTACTS

Ministry of Culture and Monument Protection

Address: 4 Sanapiro Street, 0105, Tbilisi, Georgia; Fax: 995 32 2999966, 2932235;
E-Mail: culturegovge@gmail.com

National Agency for Cultural Heritage of Georgia

27 Atoneli street, 0105 Tbilisi, Georgia: tel/fax: +(99532) 2932411
E mail: info@heritagesites.ge

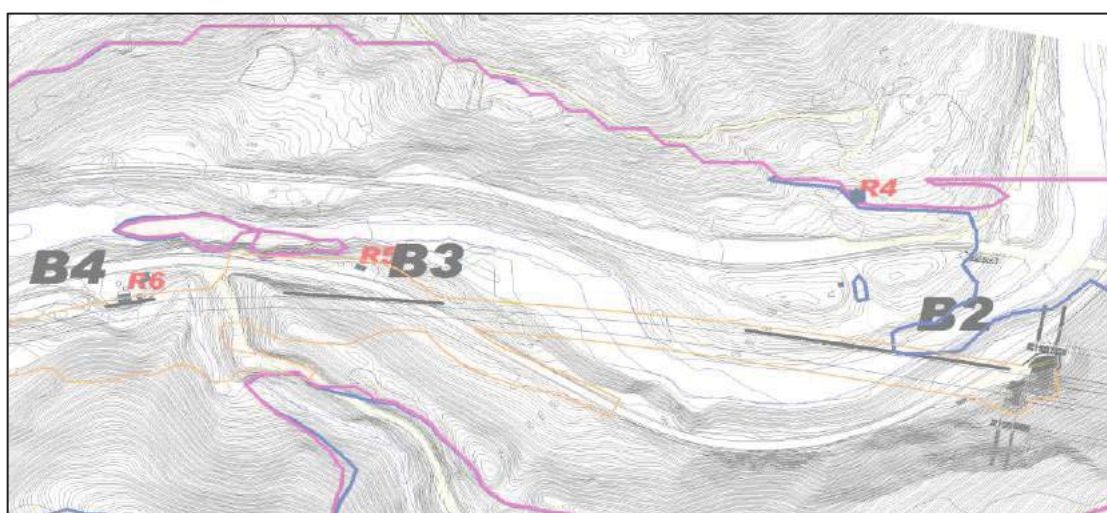
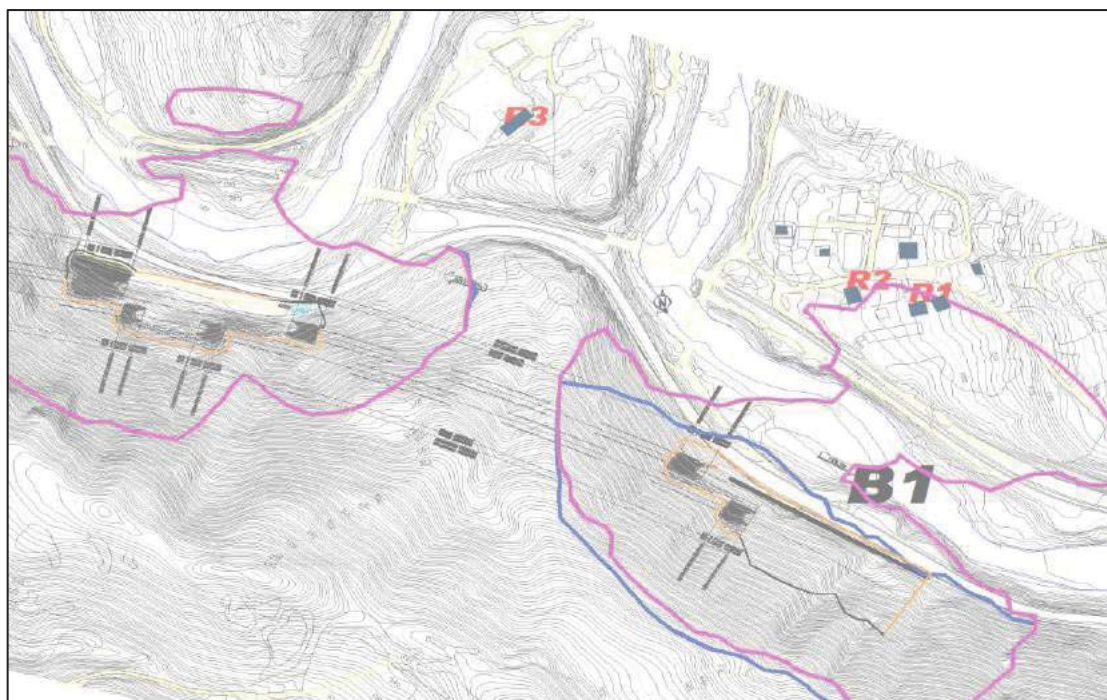
Archaeological Research Centre under the Georgian National Museum

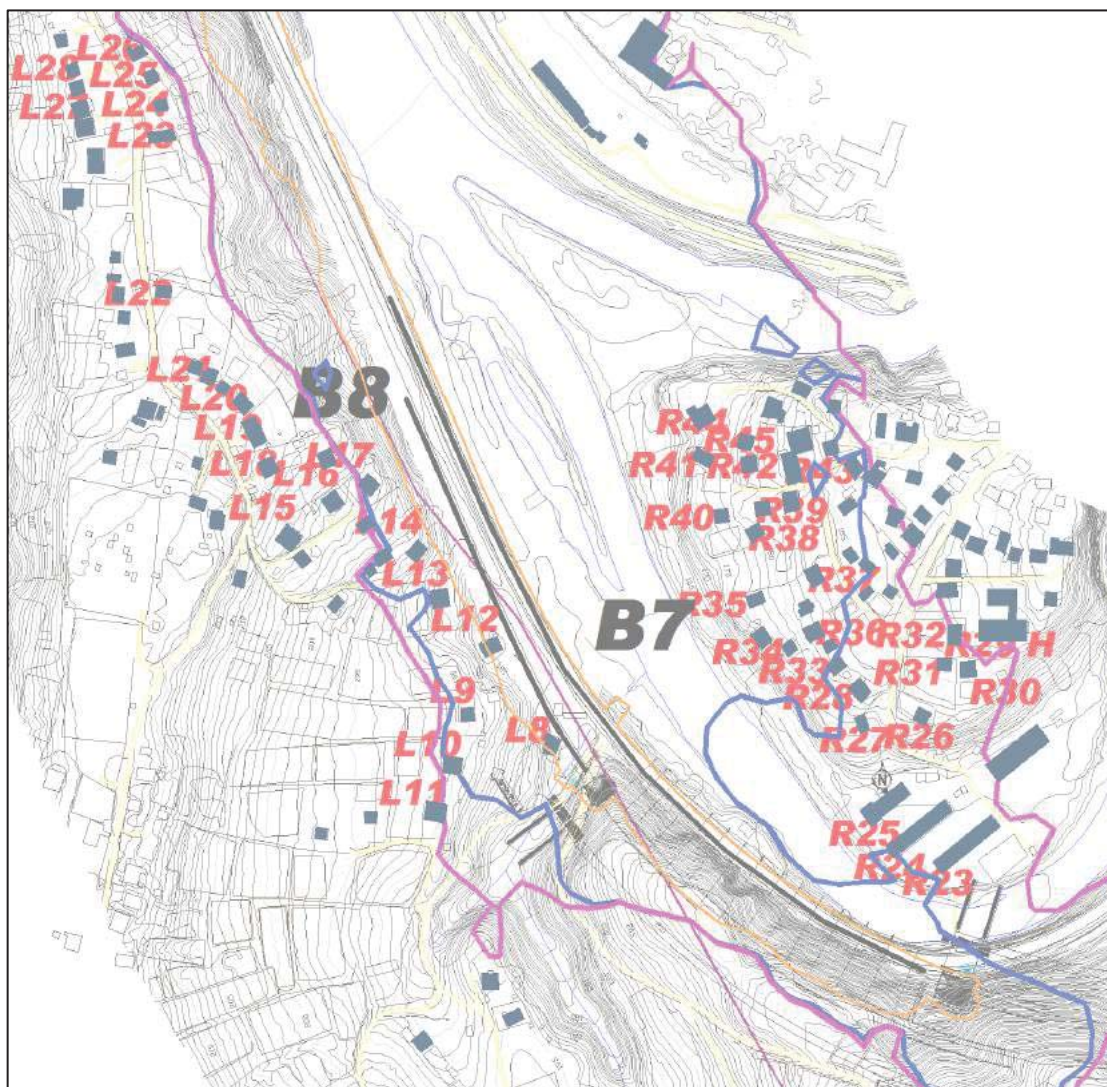
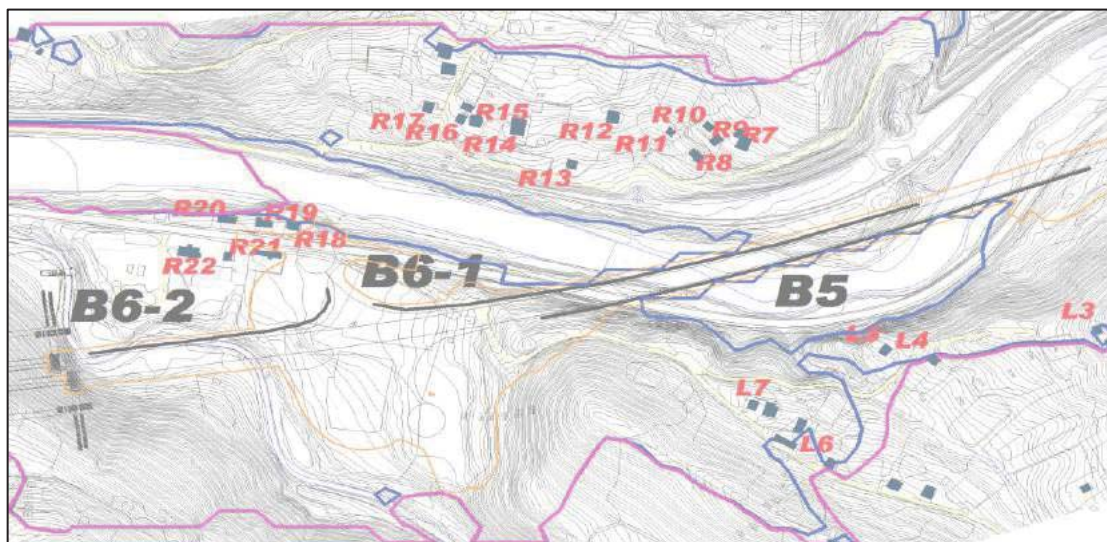
3, Rustaveli Avenue 0105 Tbilisi, Georgia
Tel: +(995 32) 2998022; Fax: +(995 32) 2982133
E-Mail: info@museum.ge

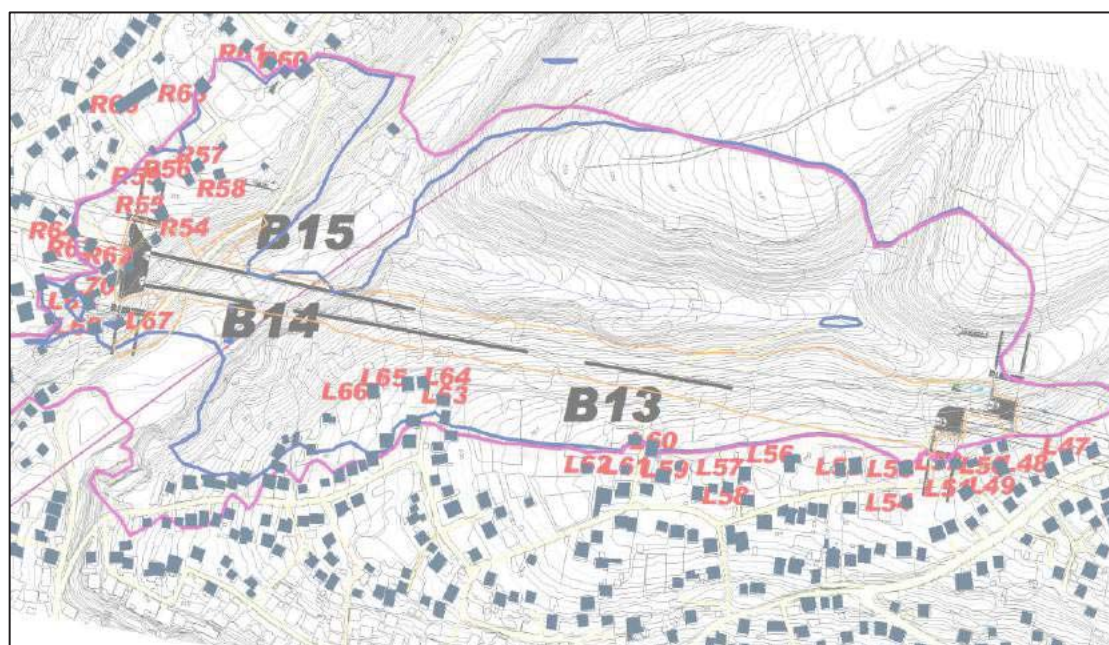
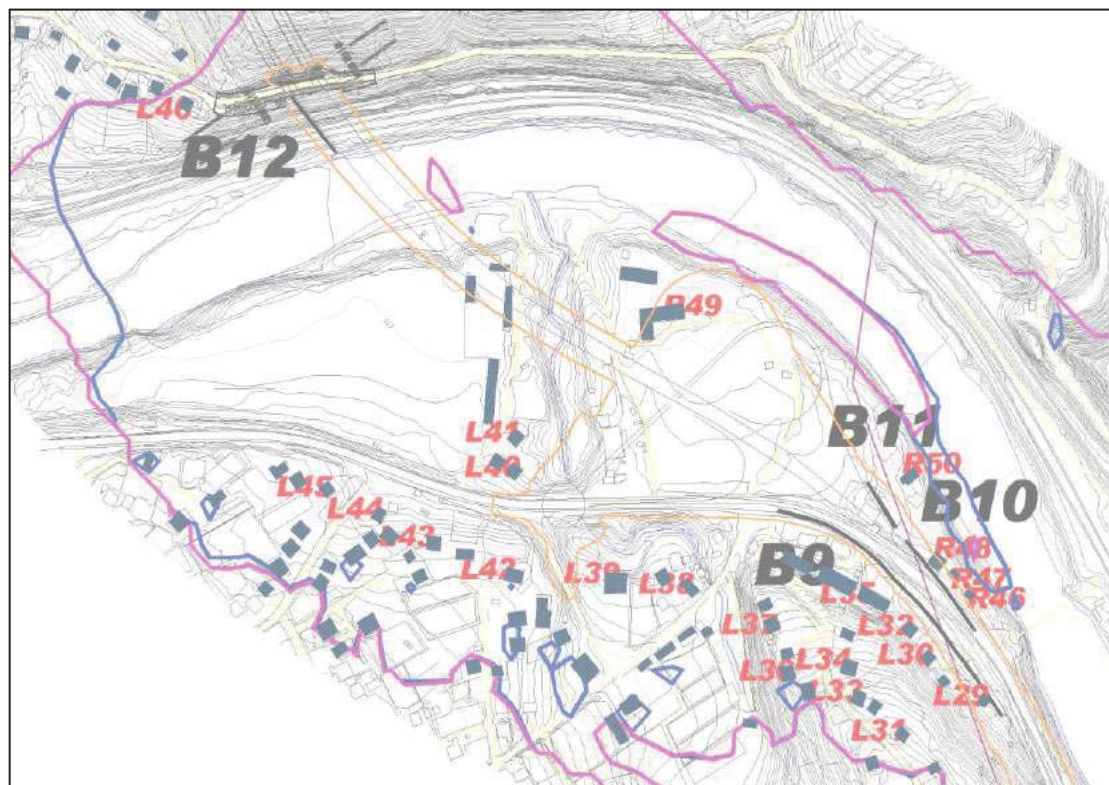
²⁴ Nonreplicable cultural heritage may relate to the social, economic, cultural, environmental, and climatic conditions of past peoples, their evolving ecologies, adaptive strategies, and early forms of environmental management, where the (i) cultural heritage is unique or relatively unique for the period it represents, or (ii) cultural heritage is unique or relatively unique in linking several periods in the same site. Examples of non-replicable cultural heritage may include an ancient city or temple, or a site unique in the period that it represents.

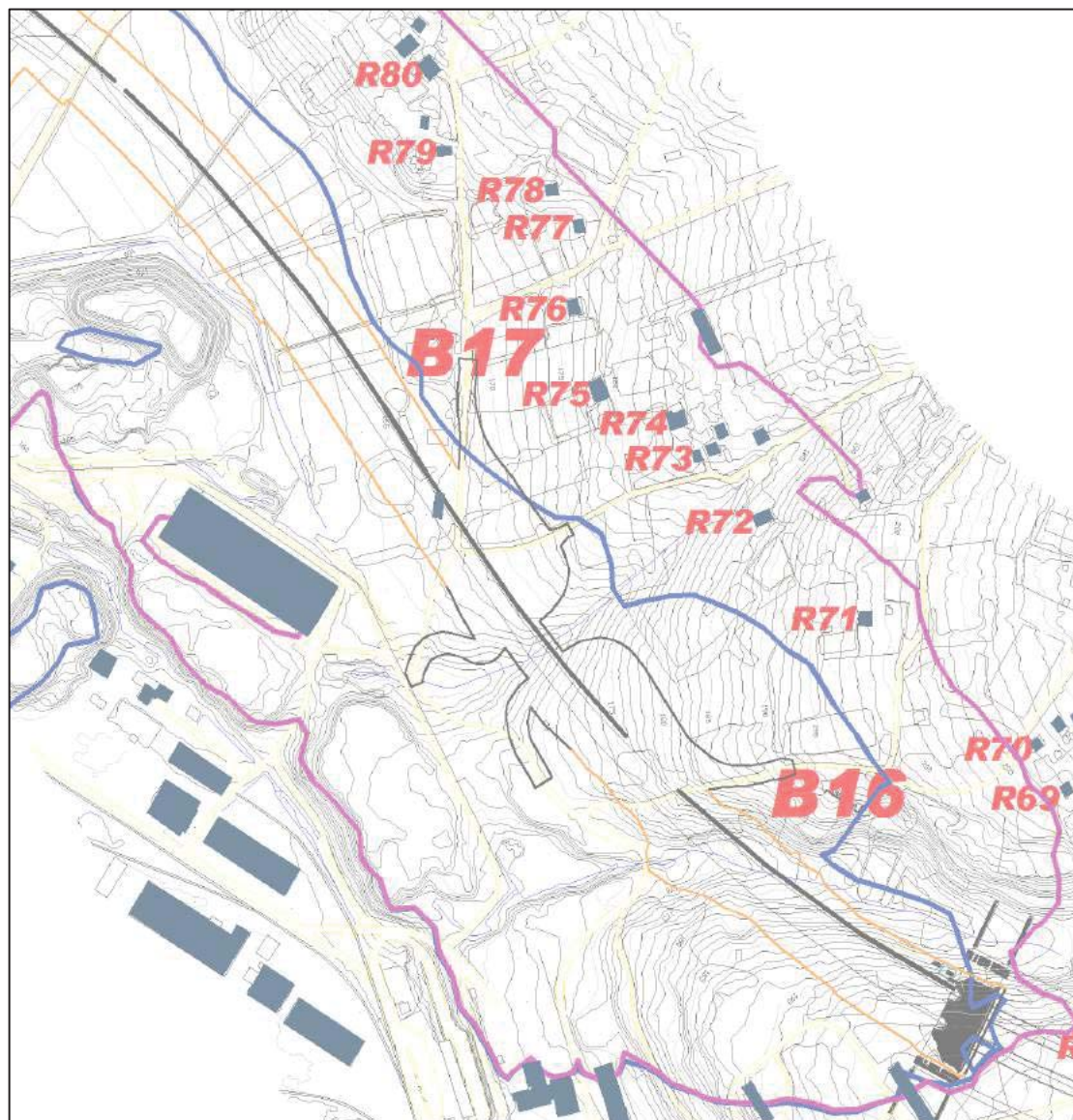
APPENDIX F

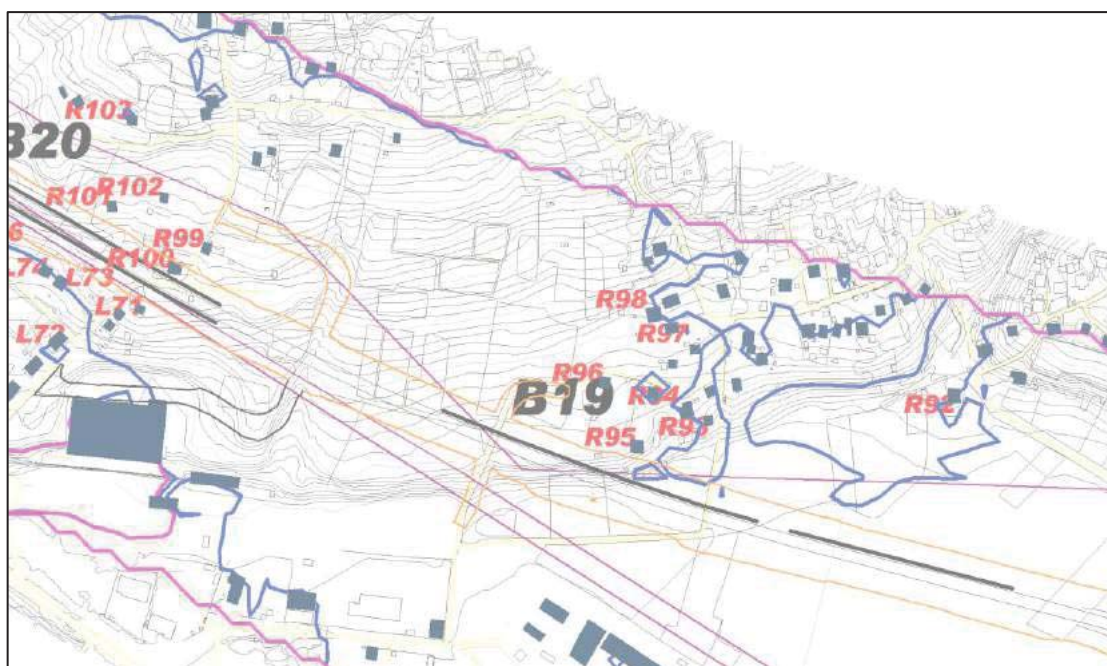
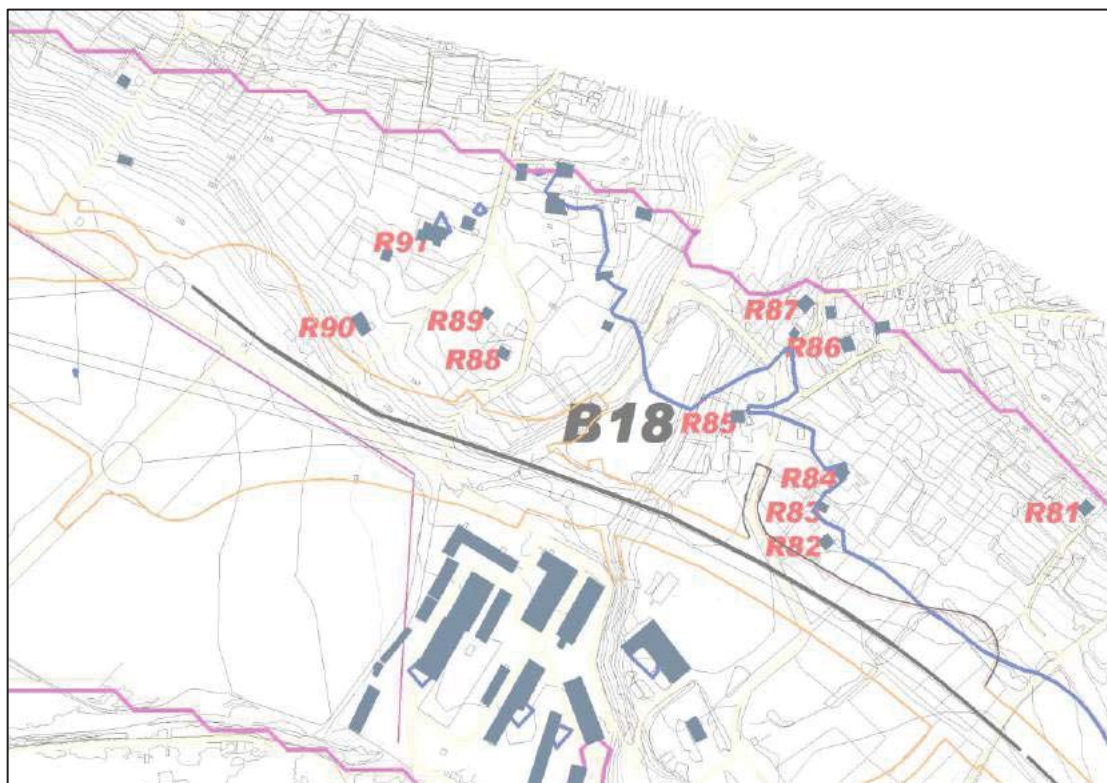
Noise Barrier Locations

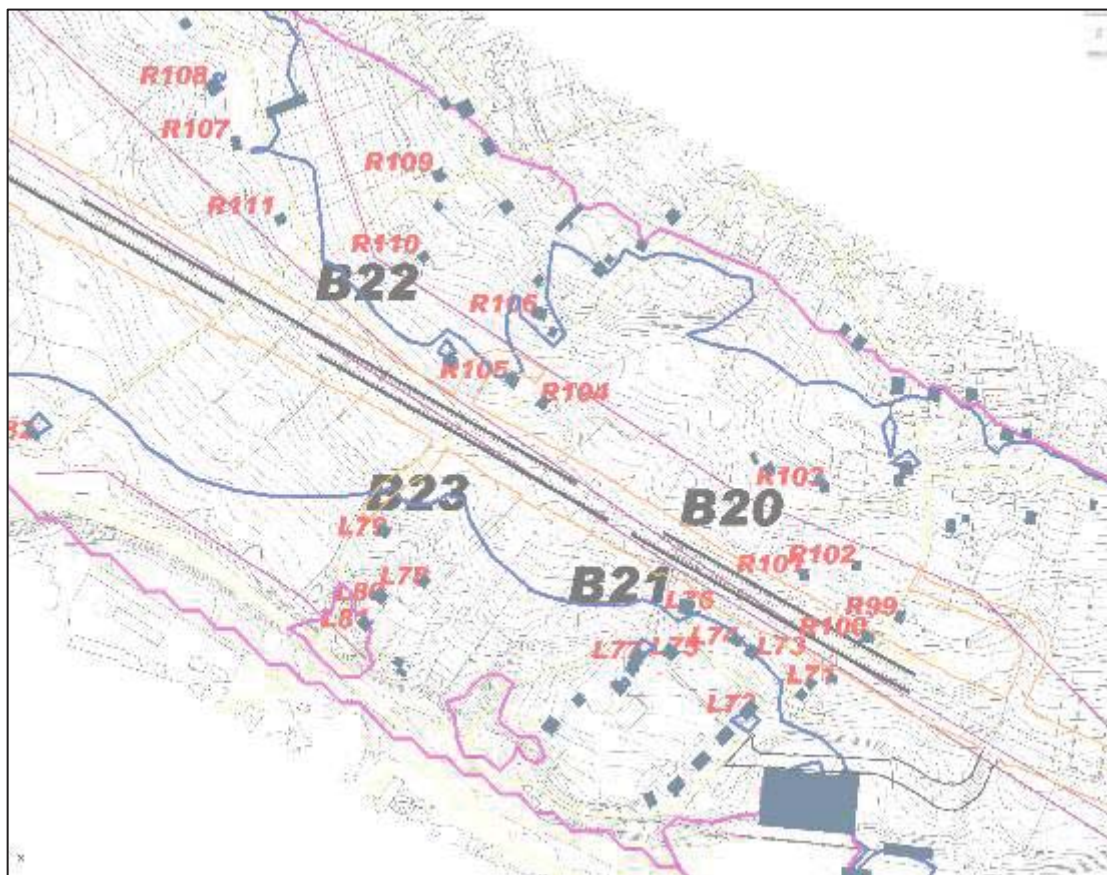












APPENDIX G

State Forest Fund

Wood Resource Listing

Forest Fund Territorial Authority with the right of management - LEPL Imereti Forestry Service of National Forestry Agency

Forest district - Zestaponi - Kharagauli , forest district- Satsable

Quarter_31, district - former Sak.forest; area _5086m2,

Slope inclination (degree)-15.

Quantity of the wood resources of 8 cm and more taxation diameter subject to recording (in pieces), volume (m3), according to the diameters and varieties of wood resources

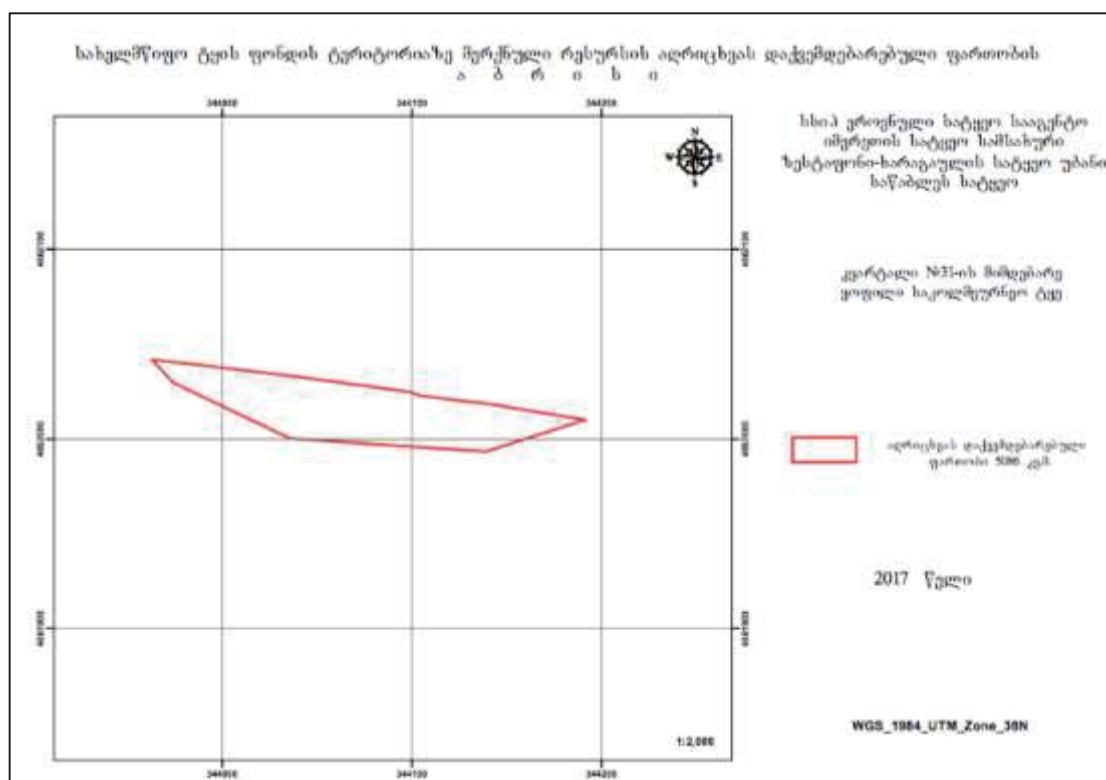
#	Species (variety)	species (Latin)	Diameter (D)	Number of trees	Volume (v)	Note
1	2	3	4	5	6	7
1	zelkova	Zelkova carpinifolia	8	9	0.135	VI-rank
			10	6	0.21	(Red list)
			12	14	0.714	
			14	13	0.975	
			16	12	1.188	
			18	2	0.27	
			20	5	0.85	
			24	3	0.78	
			32	1	0.5	
Total zelkova:				65	5.622	
2	Acacia	Acacia dealbata	8	16	0.336	IV-rank
			10	9	0.369	
			12	15	0.96	
			16	1	0.123	
			20	1	0.21	

Section F4 of Khevi-Ubisa-Shorapani-Argveta section (E60 Highway)
Environmental Impact Assessment

Total Acacia:				42	1.998	
3	ashtree	Fraxinus excelsior	8	2	0.024	IV-rank
			10	3	0.114	
			12	1	0.056	
Total ashtree:				6	0.194	
4	alder	Alnus barbata	8	1	0.019	V-rank
			10	1	0.038	
			12	1	0.058	
			14	1	0.088	
			16	3	0.36	
			20	2	0.4	
Total alder:				9	0.963	
5	willow	Salix magnifica	12	3	0.153	VI-rank
			14	2	0.15	
			16	2	0.198	
			18	2	0.27	
			20	12	2.04	
			24	5	1.3	
			28	1	0.37	
			32	1	0.5	
			36	1	0.67	
Total willow:					29	5.651
6	oriental hornbeam	Carpinus orientalis	8	14	0.238	VIII-rank
			10	10	0.3	
			12	12	0.516	
			14	10	0.62	
			16	3	0.246	
			18	2	0.222	
			20	2	0.288	
Total oriental hornbeam:					53	2.43
Grand total:				204	16.858	
In addition to the above, the wood resource of less than 8 cm diameter						Note

was also recorded with the following quantity:					
zelkova	150	unit	0.01	m3	Red list
Acacia	110	unit	0.008	m3	
oriental hornbeam	80	unit	0.01	m3	
oak Geo.	15	unit	0.001	m3	
hawthorn	40	unit	0.002	m3	
holly	22	unit	0.001	m3	
total	417	unit	0.032	m3	
grand total	621	unit	16.89	m3	

Date of preparation of listing: 20.12.2017.





Wood Resource Listing

Forest Fund Territorial Authority with the right of management - LEPL Imereti Forestry Service of National Forestry Agency

Forest district - Zestaponi - Kharagauli , forest district- Satsable

Quarter_34, district - former Sak.forest; area _34869 m2,

Slope inclination (degree) -15-25.

Quantity of the wood resources of 8 cm and more taxation diamter subject to recording (in pieces), volume (m3),according to the diamters and varieties of wood resources

#	Species (variety)	Species (variety)	Diameter (D)	Number of trees	Volume (v)	Note
1	2	3	4	5	6	7
1	hornbeam	Carpinus caucasica	8	18	0.27	VI-rank
			10	7	0.231	
			12	24	1.224	
			14	6	0.45	
			16	16	1.584	
			18	16	2.16	
			20	31	5.27	
			24	8	2.08	
			28	6	2.22	
			32	2	1	
			36	2	1.34	
			40	1	0.84	
Total hornbeam:					137	18.669
2	Oak Geo.	Quercus iberica	12	2	0.09	VI-rank
			14	1	0.068	
			16	1	0.09	
			20	1	0.157	
			24	1	0.256	
			28	1	0.356	

Section F4 of Khevi-Ubisa-Shorapani-Argveta section (E60 Highway)
Environmental Impact Assessment

			32	2	1	
			40	1	0.78	
			44	1	0.97	
Total oak:				11	3.767	
3	crab apple	Malus sylvestris	16	1	0.099	VI-rank
			20	1	0.17	
Total wild apple:				2	0.269	
4	alder	Alnus barbata	8	13	0.247	V-rank
			10	2	0.076	
			12	14	0.812	
			16	4	0.48	
			18	13	2.08	
			20	16	3.2	
			24	1	0.3	
			28	5	2.05	
			32	1	0.55	
			36	1	0.73	
Total alder:				70	10.525	
5	hazel	Corylus avellana	8	20	0.3	VI-rank
			10	14	0.462	
			12	14	0.714	
			20	2	0.34	
Total hazel:				50	1.816	
6	common pear	Pyrus communis	12	1	0.051	VI-rank
			20	2	0.34	
			28	1	0.37	
			32	1	0.5	
			36	1	0.67	
Total common pear:				6	1.931	
7	oriental hornbeam	Carpinus orientalis	8	31	0.527	VIII-rank

			10	17	0.51		
			12	8	0.344		
			14	4	0.248		
			16	1	0.082		
Total oriental hornbeam:				61	1.711		
8	chestnut	Castanea sativa	8	13	0.156	VI-rank	
			10	8	0.184	(red list)	
			12	3	0.135		
			14	2	0.136		
			16	6	0.54		
			18	8	0.992		
			20	11	1.727		
			24	7	1.792		
			28	6	2.136		
			32	2	1		
			36	3	1.869		
			40	8	6.24		
			48	4	4.76		
			52	2	2.84		
			56	2	3.34		
Total chestnut:				85	27.847		
9	Lime tree		Tilia caucasica	8	1	0.012	V-rank
		10		1	0.034		
		12		7	0.392		
		14		2	0.168		
		16		2	0.224		
		18		3	0.45		
		20		7	1.323		
		28		1	0.412		
		32		1	0.556		
		36		1	0.723		
		40		3	2.736		
		44		1	1.134		
		56		1	1.93		
		60	1	2.26			
Total lime tree:				32	12.354		

10	maple	Acer campestre	8	1	0.012	VI-rank
			20	3	0.471	
			24	1	0.256	
			32	1	0.5	
			36	2	1.246	
			52	1	1.42	
Total maple:					9	3.905
11	taller ash	Fraxinus excelsior	8	9	0.108	V-rank
			12	4	0.224	
			14	4	0.336	
			16	5	0.56	
			18	3	0.45	
			24	1	0.279	
			36	1	0.723	
			40	3	2.736	
			52	1	1.64	
total taller ash:					31	7.056
12	bladder nut	Staphylea colchica	8	7	0.126	VII-rank
			10	8	0.248	(red list)
			12	18	0.846	
			14	5	0.335	
Total bladder nut:				38	1.555	
13	yew-tree	Taxus baccata	10	1	0.031	VII-rank
						(red list)
Total yew-tree:				1	0.031	
14	zelkova	Zelkova carpinifolia	8	4	0.072	VII-rank
			10	4	0.124	(red list)
			12	2	0.094	
			16	2	0.18	
Total zelkova:				12	0.47	

15	Wild plum	Prunus insititia	8	2	0.03	VI-rank
			10	4	0.132	
			12	1	0.051	
			16	2	0.198	
			32	1	0.5	
total wild plum:				10	0.911	
16	hawthorn	Crataegus microphylla	8	2	0.036	VII-rank
			10	4	0.124	
			12	1	0.047	
			16	2	0.18	
			32	1	0.466	
Total hawthorn:				10	0.853	
17	cedar	Cedrus deodara	16	5	0.35	VI-rank
			20	19	4.56	
			24	15	11.55	
			28	22	13.64	
			32	29	25.81	
			36	15	12.45	
			40	5	5.35	
			44	6	8.04	
			48	4	6.6	
			52	1	1.99	
Total cedar:					121	90.34
18	Acacia	Acacia dealbata	8	37	0.777	IV-rank
			10	16	0.656	
			12	41	2.624	
			14	11	1.034	
			16	22	2.706	
			18	25	4.25	
			20	84	17.64	
			24	83	25.73	
			28	47	20.21	
			32	19	10.83	
			36	8	6	
			40	2	1.84	

			44	2	2.22	
			56	1	1.84	
total Acacia:				398	98.357	
19	tree of heaven	ailanthus altissima	8	11	0.242	V-rank
			12	14	0.798	
			16	11	1.21	
			18	4	0.56	
			20	10	1.8	
			24	3	0.84	
			28	1	0.4	
Total tree of heaven:				54	5.85	
20	Elm	Ulmus foliacea	8	2	0.036	VII-rank
			12	1	0.047	
			20	5	0.725	
			24	2	0.466	
			28	2	0.666	
			32	1	0.466	
Total elm:				13	2.406	
21	Circassian walnut	juglans regia	8	1	0.015	VI-rank
			20	1	0.17	(red list)
			40	1	0.84	
Total Circassian walnut:				3	1.025	
22	Fig-tree	Ficus carica	12	2	0.094	VII-rank
			16	2	0.198	
Total fig-tree:				4	0.292	
23	honey-locust	gleditschia caspica	12	1	0.047	VI-rank
			20	1	0.17	
Total honey-locust:				2	0.217	

24	mulberry tree	morus alba	8	6	0.108	VII-rank
			16	3	0.27	
			24	3	0.699	
			28	1	0.333	
Total mulberry tree:				13	1.41	
25	asp	Populus alba	56	1	2.02	V-rank
Total asp:				1	2.02	
26	willow	Salix magnifica	20	1	0.145	VII-rank
Total willow:				1	0.145	
27	persimmon	Diospyros kaki	8	13	0.234	VII-rank
			10	4	0.124	
			12	9	0.423	
			14	5	0.335	
			16	4	0.36	
			18	4	0.48	
			20	8	1.16	
			24	1	0.233	
			28	1	0.333	
Total persimmon:				49	3.682	
Grand total:				1224	299.414	

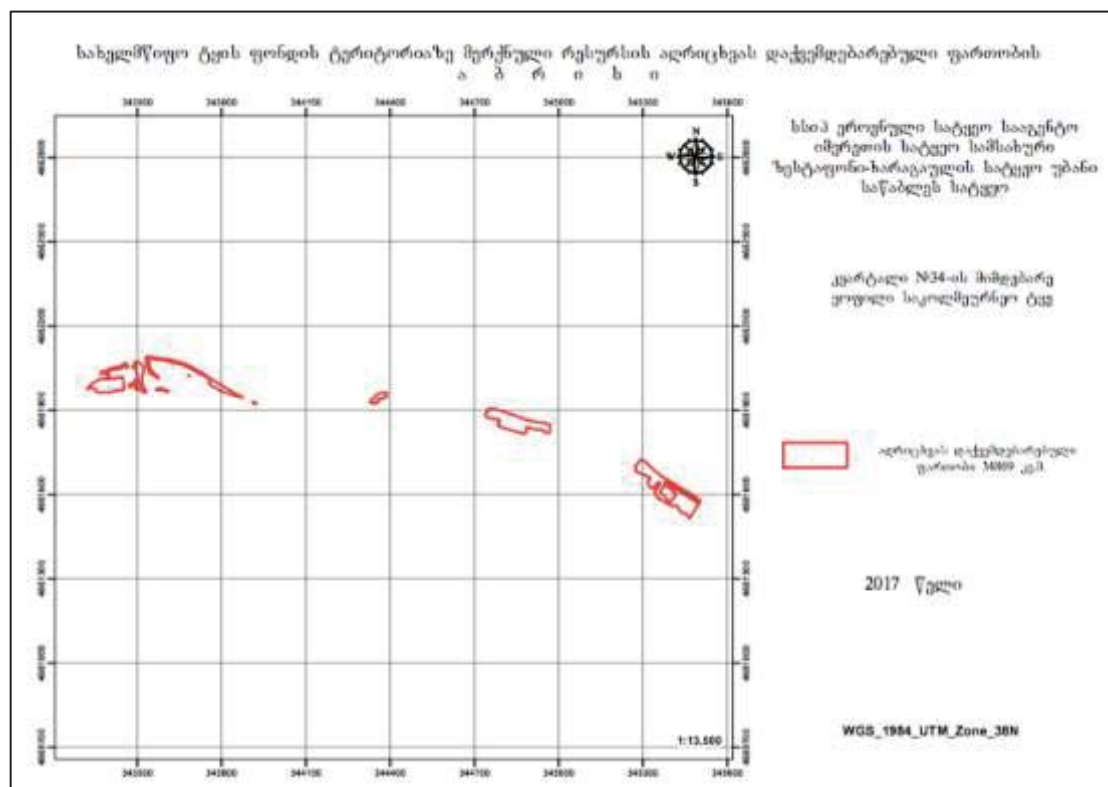
In addition to the above, the wood resource of less than 8 cm diameter was also recorded with the following quantity:					Note	
hornbeam	25	unit	0.001	m	3	

Section F4 of Khevi-Ubisa-Shorapani-Argveta section (E60 Highway)
Environmental Impact Assessment

Oak Geo.	5	unit	0.001	m 3	
hazel	1550	unit	0.4	m 3	
blackberry	900	unit	0.002	m 3	
persimmon	13	unit	0.001	m 3	
bladder nut	250	unit	0.005	m 3	
Fig-tree	7	unit	0.001	m 3	
elm	51	unit	0.002	m 3	
tree of heaven	80	unit	0.005	m 3	
mulberry tree	41	unit	0.002	m 3	
maple	12	unit	0.001	m 3	
oriental hornbeam	550	unit	0.03	m 3	
pine-tree.	2	unit	0.001	m 3	
crab apple	5	unit	0.001	m 3	
wild plum	10	unit	0.002	m 3	
ash-tree	15	unit	0.001	m 3	
wild cherry	5	unit	0.001	m 3	
hawthorn	335	unit	0.05	m 3	
cornel	135	unit	0.005	m 3	
laurel cherry	50	unit	0.004	m 3	
winterberry	55	unit	0.001	m 3	
greenbrier	1160	unit	0.03	m 3	
Acacia	100	unit	0.02	m 3	
zelkova	9	unit	0.001	m 3	red list
chestnut tree	22	unit	0.002	m 3	red list
Total	5387	unit	0.57	m 3	
Grand total:	6611	unit	299.984	m 3	

Date of preparation of the listing: 20.12.2017.

Section F4 of Khevi-Ubisa-Shorapani-Argveta section (E60 Highway)
 Environmental Impact Assessment





APPENDIX H

Noise Barrier Cost Estimate

Section F4 of Khevi-Ubisa-Shorapani-Argveta section (E60 Highway)
Environmental Impact Assessment

description of works	Unit price		quantity for meter					cost/m
	UNIT	\$	L	l	h	n.	q.ty	
"B A R R I E R AND ANTI-NOISE BARRIERS ANTIRUMOR BARRIER COMPOSED BY ALUMINUM PANELS- SUPPLY AND INSTALLATION OF THE COMPLETE BARRIER "	mq	\$ 338,02			4		4	\$1.352,08
WORKS OF ART FOUNDATIONS - DIAPHRAGMS - PALI MEDIAPALI TRIVELLATI IN CEMENTITIOUS CONGLOMERATE - WITH TUBE SHAPE OF 600 MM EXTERNAL DIAMETER	mc	\$ 78,32	10	0,2826		0,25	0,7065	\$ 55,33
"WORKS OF ART MURATURES - CONGLOMERATES CEMENT - STRUCTURAL CONCRETE FOR FONDAZIONE WORKS IN C.A. O C.A.P. - C28 / 35 RESISTANCE CLASS (RCK> = 35 N / mmq) "	mc	\$ 136,18	10	0,2826		0,25	0,7065	\$ 96,21
"ARTWORK STEELS AND STEEL STRUCTURES STEEL IN ROUND BARS B450C IMPROVED BARS "	kg	\$ 1,18			56,52	0,25	14,13	\$ 16,74
"ARTWORK FORMWORK - ARMORIES - CENTI NATURE HORIZONTAL OR VERTICAL PLAN COREBOXES FOR CEMENTIZED CONGLOMERATES "	mq	\$ 24,43	0,8		4	0,25	0,8	\$ 19,54
"WORKS OF ART MURATURES - CONGLOMERATES CEMENT - STRUCTURAL CONCRETE FOR FONDAZIONE WORKS IN C.A. O C.A.P. - C28 / 35 RESISTANCE CLASS (RCK> = 35 N / mmq) "	mc	\$ 136,18	0,8	0,8	0,5	0,25	0,08	\$ 10,89
"ARTWORK STEELS AND STEEL STRUCTURES STEEL IN ROUND BARS B450C IMPROVED BARS "	kg	\$ 1,18			6,4	0,25	1,6	\$ 1,90
			total cost for 1m noise barrier for funfation considering one pile each 4 meters					\$ 200,61

APPENDIX I

Modeling of Vibration generated by tunneling activities in the calcarenitic formations along the tunnel TUN-4006 of F4 section

1. GENERAL APPROACH IN ANALYSIS

This report refers to the study carried out in order to estimate and evaluate the critical environmental issues, in terms of vibration, which will be generated by the construction of the new highway and the related tunneling activities in the carbonatic and volcanic formation formations.

The goal is to estimate of vibration levels during Road construction generated by those processes involving the use of all the categories of machinery (Bull Dozers, Motor Graders, Wheel Excavator, Wheel Loader, Vibro Roller, Tandem Roller, Roller Tire, Pneumatic Hammer, Dump Truck) necessary to complete the work. In particular, the analysis to evaluate the level of vibrations in nearby houses has been carried out by the following steps:

- Estimating/determining the vibration levels expected in the buildings as a result of the construction works of the new road, using a forecasting model based reference data sets;
- Verifying the reliability of simulated values by comparison with the permissible limits posed by international reference standards;
- Identification of monitoring during construction and post-operam and mitigation measures (if necessary).

2. FRAMEWORK OF IMPACT PROBLEMS AND PROVIDED ACTIVITIES

Vibration problems during the construction phase are the result of the direct emission of vibrations generated by the working activities and by the emission of low frequency noise, as represented in term of cause-effect in Table 1.

Problems	Principal causal factors	Potential effects
Vibration	Demolition of rock banks with jackhammers, sledgehammers Excavations by mechanical means Carryovers by mechanical means Compaction embankment substrates made with vibro-rollers or rollers Transit of heavy vehicles (Dump Truck, Concrete Mixer Truck,...)	Vibrations transmitted from the ground to the structural elements of buildings, with the emission of noise through solids
Low frequency noise emission	Machines in the construction site	Vibrations structural elements (windows and furniture's) with emission of noise in correspondence of the resonance frequencies

Table 1 - Causal factors and potential impacts

In general, the aspects influencing the level of vibro-acoustic noise in receptor buildings are mainly the following (see Table 2):

Factor	Mode of influence
Nature and characteristics of the soil	vibrations are more expected in the presence of rigid subsoil and rock
Distance between plano-altitude of construction sites and building foundations	vibrations tend to decay by the distance from their source according to an exponential curve
Features of the foundations of buildings	The loss of energy of vibration due to the coupling with foundation is greater in case of high-bearing foundations, – i.e. bigger is the bearing capacity of foundation more vibration energy of can be absorbed. The coupling losses also depend on the type of foundation
Structural characteristics of the buildings	vibrations inside the building are lower with the increasing mass of the building

Table 2: Factors and Modes of Influence in Vibration Transmission

3. ANALYSIS OF POTENTIAL ADVERSE EFFECTS

To produce a significant effect, the sources of vibration must be in proximity of to the buildings and according to the scientific literature no more than a few tens of meters. The effects of vibrations in buildings can range from a nuisance to exposed people, to architectural or structural damage.

Vibration sources such as construction activities can cause discomfort to the residents of buildings and in some cases could be of possible of potential damage to structures, especially in the presence of particularly critical structural conformation and/or use).

In general structural damage to the building caused by vibration phenomena are extremely rare and almost generally generated by the contribution of other factors. Other forms of damage, defined "threshold level", is the one that without compromising the structural safety of the buildings, can cause a reduction of the value or the use. The damage threshold takes the form of cracks in the plaster, enhancements of existing cracks, damage of architectural elements.

4. REFERENCE STANDARDS

There are several technical standards, which constitute a useful reference for the evaluation of the disturbance and damages caused by vibration phenomena.

For the disturbance to people, the main references are:

- ISO 2631 / Part 2 "Evaluation of human exposure to whole-body vibration ",
- UNI 9614 regulation "Measurement of vibrations in buildings and evaluation criteria of the disorder."

For damage to the buildings the main references are:

- UNI 9916 "Criteria for measuring and assessing the effects of vibration on buildings",
- DIN 4150 and BS 7385.

The above standards provides a guide for the selection of appropriate methods of measurement, data processing and evaluation of the vibratory phenomena for the evaluation of the effects of vibration on buildings (risk of structural damage), with reference to their structural response and architectural integrity.

The physical quantities used to quantify the effects of vibration on humans and on building structures are described below.

Induced Vibratory phenomena are the motions of structures (in this case building and constructions) at frequencies ranging from 1 to and 80 Hz. The characterization is carried out in terms of effective average value (RMS) of the speed (in mm/s) or the acceleration (in mm/s²). Speed is usually used to evaluate the effects of vibrations on buildings, and acceleration (weighted) to assess the human perception.

Measurement, are normally done by accelerometers, providing the level of acceleration, or "geophones", providing a signal proportional to the speed.

Converting the acceleration values "a" to the corresponding values of speed "v", can be done , having the frequency, "f", by the relation: $v = a / 2 \pi f$.

According to the noise analysis, both speed values and acceleration are evaluated on the scale of dB, by the relations:

$$L_{acc} = 20 \log \frac{a}{a_0} \quad \text{where } a_0 = 0.001 \frac{mm}{s^2} = 10^{-6} \text{ m/s}^2$$

$$L_{vel} = 20 \log \frac{v}{v_0} \quad \text{where } v_0 = 1 \cdot 10^{-6} \frac{mm}{s}$$

DESTINATION OF USE	LEVEL (dBpa)		ACCELERATION (mm/s ²)		VELOCITY (mm/s)	
	Z Axis	XY Axes	Long	Crossin g	Long	Crossin g
			.		.	

Critical areas	74	71	5.0	3.6	0,10	0,28
Residential buildings (night)	77	74	7.0	5.0	0,14	0,40
Residential buildings (day)	80	77	10.0	7.2	0,20	0,56
Offices	85	83	20.0	14.4	0,40	1,10
Factories	92	89	40.0	28.8	0,80	2,20

Table 3: Values and limit levels of acceleration in weight of vibration disturbance (UNI 9614 – DIN 4150-2).

Category	Types of constructions	Velocity of vibration in mm/s *			
		Measurement at the foundation			Measurement at the last floor
		Frequency ranges (Hz)			Various frequencies
		< 10	10 ÷ 50	50 ÷ 100 **	
1	Buildings used for commercial purposes, industrial buildings and similar	20	20 ÷ 40	40 ÷ 50	40
2	Residential buildings and similar	5	5 ÷ 15	15 ÷ 20	15
3	Buildings very sensitive to vibrations, not included in the previous categories and of great intrinsic value	3	3 ÷ 8	8 ÷ 10	8

* Is the maximum of the three components of the velocity at the point of measurement
 ** Frequencies greater of 100 Hz should be referred to this column

Table 4: Reference values for the speed of vibration to evaluate the action of short duration vibrations on buildings (UNI 9916 – DIN 4150-3)

5. POTENTIAL IMPACT ON BUILDINGS

The present study has the goal to estimate the induced vibrations in the buildings during the construction phase and the evaluation in terms of disturbance to people (UNI 9614, DIN 4150-2) and damage to buildings (UNI 9916, DIN 4150-3). The following lists the procedural steps followed:

1. Identification of the potentially impacted buildings and evaluation of their distance from the construction sites of the new Road.
2. Analysis of the highway project in correspondence of settlements and buildings Analysis of the geotechnical characteristics of the foundation soils and bedrock
3. List of construction machines used in the construction of the highway in correspondence areas of interest. Analysis of about the vibrations spectra generated by the used construction machines.
4. Estimation of surface vibration levels using, in order to evaluate the attenuation due to the propagation of waves in the ground, the formulations proposed in the literature (for example Dong-Soo Kim, Jin-Sun Lee and GP Wilson).
5. Analysis literature data concerning the propagation of vibrations to the interior of buildings, in order to obtain transfer relationships of acceleration levels between exterior and interior building for various types of buildings.
6. Estimate of inside buildings vibration by application of the transfer function evaluation of vibration levels inside buildings by comparison with the limits set by the regulations.
7. Identification of critical points and possible mitigation actions.

6. EMISSION SPECTRA OF THE WORKSITE MACHINERY AND EQUIPMENTS

The vibration emissions in the construction phase are widely variable in relation to the type of equipment/operating machinery employed, to the context of use and to the operator. In this study we were used both data source bibliographic either data directly acquired through measures carried out in construction of large works in Italy.

As regards the bibliographic data, it was in particular used the volume LH Watkins - "Environmental impact of roads and traffic" - Appl. Science Publ., which represents a set of experimental data on the emission of vibrations by various types of construction machines, used in road construction.

On Table below is shown the acceleration levels in dB at various frequencies of certain construction machinery that have greatest impact (Hydraulic Hammer and Roller Compactor), measured at 5m and 2m away from the source of vibration.

Other machinery type Dozer, Motor Grader, Wheel Excavator, Wheel Loader, Dump Truck have lower levels of acceleration and therefore are not able to create vibrations that can exceed the limits set by the standard.

The frequency of vibration produced by equipment is expressed in Hz, and level of vibration is expressed in dB.

H z	1	1.2 5	1.6	2	2.5	3.1 5	4	5	6.3	8	10	12. 5	16	20	25	31. 5	40	50	63	80
Pneumatic hammer – reference distance: 5 m																				
d B	70	68	70	71	72	76	77	81	87	98	88	85	98	95	97	100	101	103	102	101
Roller Compactor – reference distance: 2 m																				
d B	74. 9	77. 5	75. 8	75. 0	76. 2	77. 8	76. 3	76. 7	77. 7	79. 2	81. 9	96. 2	91. 0	82. 6	96. 1	90. 6	104. 0	97. 4	97.6	96. 1
Heavy Truck – reference distance: 10 m																				
d B	0	0	0	40	40	41	41	42	47	52	54	56	62	69. 5	79	73	71. 6	72	80	78
Wheel Loader – reference distance: 10 m																				
d B	0	0	0	52	52	52	53. 6	55	54	57. 6	61	62	66	69. 5	84. 6	84. 6	78	83. 5	83	78
Tracked Machines – reference distance: 10 m																				
d B	0	0	0	69	69	69	69	71	68	79. 5	78. 5	75. 5	92	91. 6	96	96	96	96	97	96

Table 5: Levels of vibration of various machinery on respect of the frequency.

Notice that max amplitude of vibration occurs at frequencies range from 25 to 50 Hz. This frequencies range was considered in the analysis.

In Picture below are shown acceleration spectrums, of some machinery measured at 5m distance from the source of vibration in which it can be noted that the Hydraulic Hammer and the Drum Roller are machinery greatest impact, with acceleration levels emitted around 100dB for good part of the spectrum.

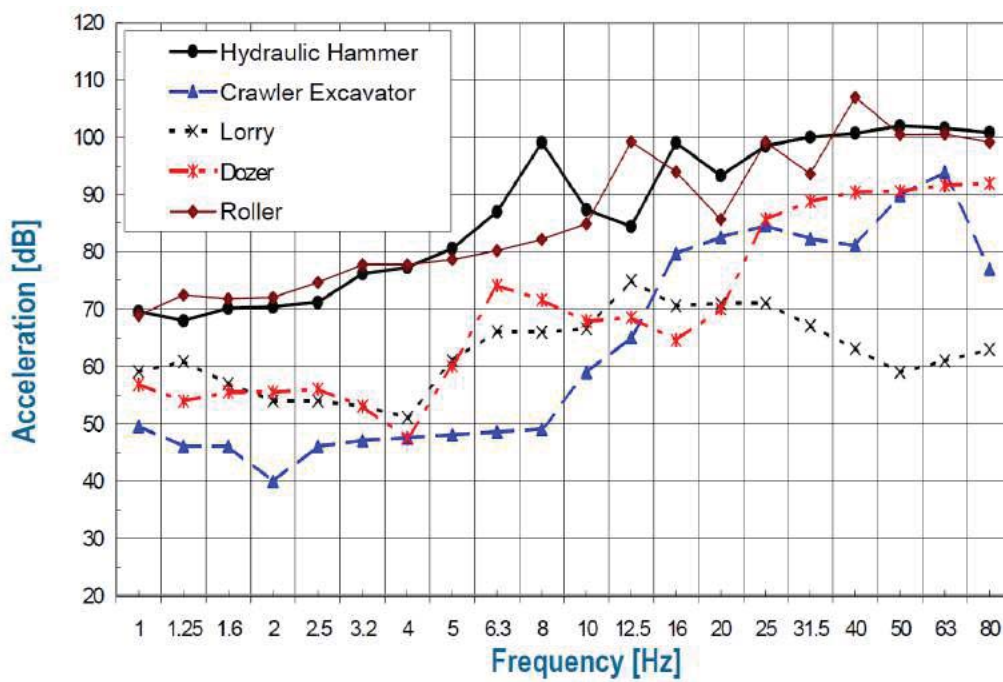


Figure 1: Acceleration spectrum of different machinery.

7. DYNAMIC CHARACTERISTICS OF SUBSOIL

Due to vertical inhomogeneity of the subsoil, carbonatic and volcanic formations covered by a weathered/alterated material and alluvial soil, it can be assumed that important attenuations and modification of spectrum –toward lower frequencies- will occur at the transition between the competent (hard) formation and the altered layer/alluvia-vegetal soil where the shallow foundations of buildings are inserted.

The situation of the uppermost part of the subsoil – arable, altered and alluvial- can be represented by the average values shown below, obtained by the geotechnical investigations and geophysical measurements.

It is also important to consider the below formula and table showing the formula of attenuation and some typical damping parameters attenuation due to the absorption of the ground

$$A_r = 20 \log \left[e^{\frac{\omega \eta (x-x_0)}{2c}} \right]$$

Where: $\omega = 2 \pi f$ is the pulsation wave (with f = frequency in Hz)
 c is the speed of wave propagation in the soil in m / s
 η is the absorption factor of the soil

Soil type	η
Rock	0.01
Sand, gravel	0.1
Silt, Clay	0.2 – 0.5

Table 7: Values of the damping parameter as a function of the soil type

In the above expression the exponential term represents dissipation phenomena of mechanical energy, which is dependent on the frequency, on the propagation velocity and on the loss mean factor. This means that the high frequencies are extinguished after a short distance, while lower frequencies propagate at greater distances.

In particular for the overburden soil above the calcarenitic formation the level of acceleration at the distance “r” from a point source of energy is given by:

$$a(r) = a_0 + 10 \log \left(\frac{r_0}{r} \right) - 8,69 \log (r - r_0)$$

Where:

- L_0 is the reference level;
- d_0 is the reference distance for L_0 ;

- r is the distance from the source;
- α is the attenuation constant of the terrain.

The term relating to the dissipation of mechanical energy is obtained by the relationship $e^{-\alpha(r-d_0)}$.

The values of “ α ” given from Rudder are the following:

TYPE OF TERRAIN	SHEAR-WAVE VELOCITY (m/s)	$\alpha \times m$
Moist clay	152	0,025-0,25
Alluvial deposit of clay	152	0,019-0,43
Wet clay	152	0,31-0,50
Deposits to ambient humidity	259	0,04-0,13
Dry sand	152-396	0,007-0,07
Compact sand with gravel	250	0,015-0,045
Gravel and deposit sand	250	0,023-0,053
Gritty sand saturated with water	110	0,09-0,3
Gritty sand saturated with ice water	110	0,05-0,17

Table 7: Values of the attenuation constant “ α ” for different kinds of soil and for the frequency of 15 Hz

The above values were obtained for the frequency $f=15$ Hz and for $\alpha = 2\pi f \eta / c$ where “ η ” is the loss factor of the terrain and “ c ” is the speed of propagation by the transverse propagation mode.

8. TYPE OF EQUIPMENTS USED IN CONSTRUCTION AND TYPICAL EMISSION SPECTRA/ATTENUATION OF MACHINERIES AND BLASTING CHARGE

In the case of evaluation of the impact of vibration sources realized, simple analytical formulas allow an approximate calculation of the attenuation of the vibrations as a result of propagation in the soil.

In the scientific literature there are tables and diagrams allowing estimating the attenuation or amplification caused by the various structural components of buildings. By combining this information, it is possible, with some approximation (typically +/- 5 dB) to estimate the levels of vibration that will develop in potentially impacted buildings. Taking into account uncertainty above, it can still evaluate whether the planned source of vibration is potentially impacting, or if the same is certainly acceptable.

The vibration level at a receiver at a distance "x" from the point at which it is generated is equal to the level at the reference distance "x₀", minus the sum of the attenuations that occurring in the soil between "x₀" and "x":

$$L(x) = L(x_0) - \sum iA_i$$

The basic level L(x₀) is generally derived from experimental measurements at distances between 2m and 25m. The components of attenuation and amplification of vibrations in the ground and on the building, introduced in the calculation model as average values, are:

- geometric attenuation, in relation to the type of source and wave;
- attenuation for internal dissipation of the soil;
- Attenuation due to obstacles or discontinuity of the ground.

The below table shows the decay diagram of the vibration velocity for certain types of machineries.

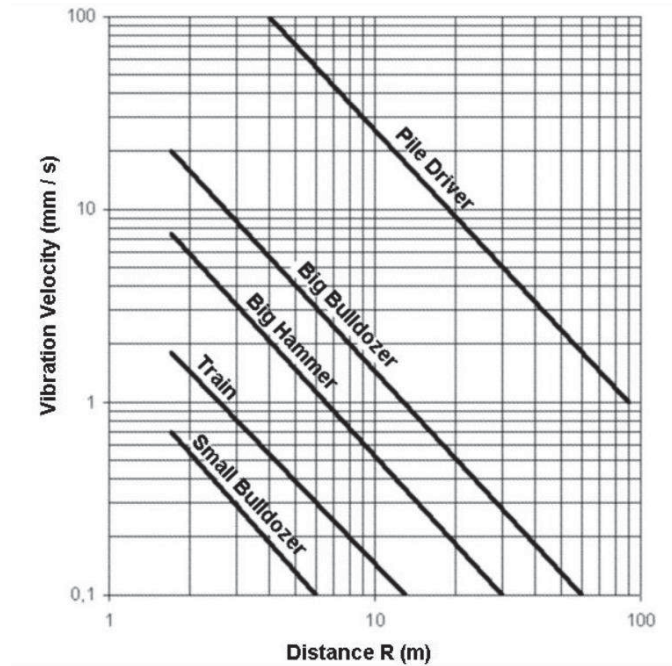


Figure 2: Decay curves of the vibration velocity

Source location	Source type	Induced wave	n
Surface	Point	Body wave	2.0
		Surface wave	0.5
	Infinite line	Body wave	1
		Surface wave	0
In-depth	Point	Body wave	1.0
	Infinite line		0.5

Table 8: Values of attenuation due to radiation damping for various combinations of source location and type

Considering that, for a conservative estimation a concentrated source has to be estimated, the exponent “ n ” should be 0.5 for the surface waves (prevailing in the case of source placed on the surface), and “ n ” equal to 1 for the volume waves which are prevailing in the case of deep source such as in tunnels. The assessment of attenuation or the amplification in the buildings structure must also be considered.

Various types of foundation systems can determine attenuations or amplifications, inside buildings compared to the levels on the ground.

In particular for the type of buildings which are prevalent in the area of the tunnels, it should be considered that these shallow and small foundations should determine a certain attenuation of the acceleration levels in the buildings for the fact that the interface soil-structure is not perfectly coupled and also small. For that the system soil-foundation will generate dissipative phenomena. The attenuation caused by bad ground-foundation coupling is illustrated in Figure 3 for different categories of buildings. The category of large reinforced concrete buildings with continuous foundations can be associated to large buildings in masonry with continuous foundations which curve suggests an attenuation of 2 dB.

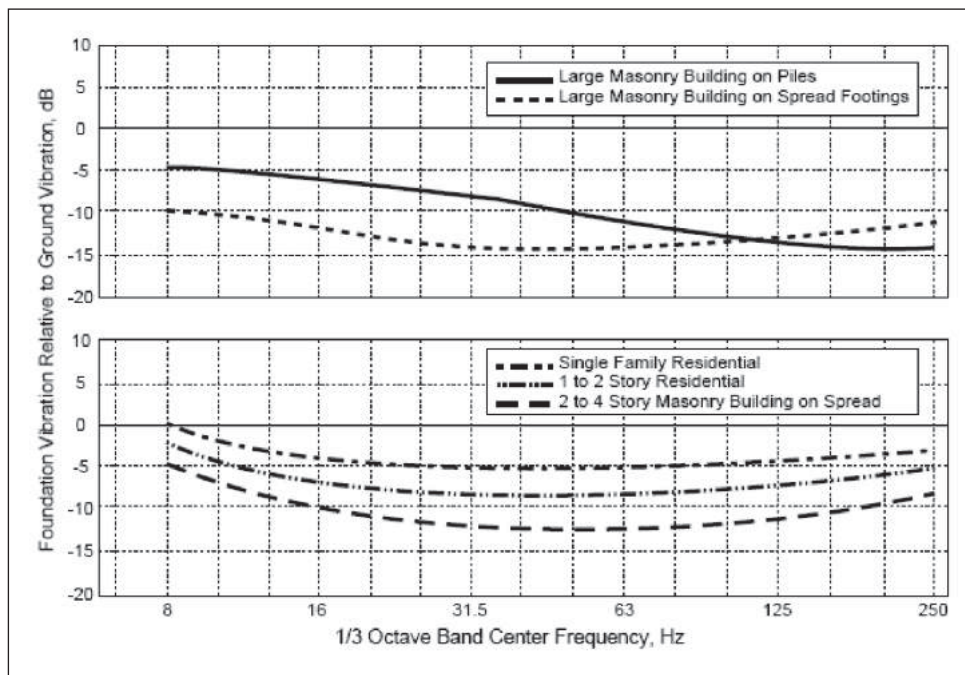


Figure 3 - Coupling losses for various types of buildings

The Table below shows the results at various frequencies of such interaction effects with the structures. In particular these are the standard parameters used in modeling and similar analysis.

Band (Hz)	1	1.2 5	1.6	2	2.5	3.1 5	4	5	6.3	8	10	12. 5	16	20	25	31. 5	40	50	63	80
Loss by coupling the soil-foundation (masonry building)	4.8	4.8	4.8	4.8	4.8	4.8	4.9	5.0	5.1	10	11	12	13	13	14	15	15	15	14	14
Loss by coupling the soil-foundation (concrete building)	3	3	3	3	3	3	3	3	3	8	9	10	11	11	12	13	13	13	12	12
Attenuation by propagation from floor to floor	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0
Amplification of the horizontal elements	4.5	4.5	4.4	4.4	4.3	4.2	4.0	3.8	3.6	3.3	3.0	1	4.4	16. 5	4	0.0	0.0	0.0	0.0	0.0

(dimension 4-5m)																				
------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 9: Reference parameters for the calculation of the interaction with structures

9. CALCULATION OF VIBRATIONS DURING EXCAVATION OF TUNNEL TUN-4006

Based the above considerations, and given the fact that the vibrations transmission to the ground is a side effect difficult to reduce, mostly during tunneling activities; the best approach is to consider the risk/disturbance for the population and buildings and to enforce the actions required for the mitigation of these effects.

In the studied case, the modeling does not point out levels of risk for standard buildings due to the excavation techniques and the attenuation provided by the cushion of altered/weathered rock and arable/vegetal soil. In addition the type of foundations of the buildings, shallow and small, will determine an additional damping factor.

According to the recorded geomechanical parameters and stratigraphy for the computation of attenuation the following model should be considered:

- Tunneling technique: Roadheader from 7 to 10 m below the surface (as a conservative approach a TBM computation has been applied)
- Medium of propagation:

Calcarenites (N_1^2) at the source followed by:

2 meters of weathered calcarenites followed by

4 meters of alluvial soil (eQ) and 1 m of topsoil

For simplicity the topmost soil and the Alluvial deposits can be modeled as a single layer having a thickness of about 5 meters.

The sequence is characterized by an inversion of the VP and VS waves, suggesting a poor propagation of the energy in the upward direction

Layer n.	Lithology	Bed depth (m)	Thickness (m)	Waves velocity		Dynamic density (t/m^3)	Poisson Modulus (-)	Dynamic Elastic Modulus (kg/cm^2)	Dynamic Shear Modulus (kg/cm^2)	Dynamic Compressibility Volumetric Modulus (kg/cm^2)	Dynamic Compressibility Edometric Modulus (kg/cm^2)	Vp/Vs (-)
				Vp (m/s)	Vs (m/s)							
				γ	ν							
1	Soil	1	1	300	130	1,51	0,38	705	255	1017	1357	2,3
2	eQ	5	4	500	230	1,66	0,37	2400	879	2981	4153	2,2
3	Weathered N_1^2	7	2	1240	720	1,97	0,25	25493	10233	16707	30350	1,7
4	N_1^2	-	-	2340	1320	2,23	0,27	98299	38803	70204	121942	1,8

Table 10: Stratigraphy of the terrain starting for surface for tunnel TUN-4006 and relevant parameters

In a very conservative assumption it can be assumed that:

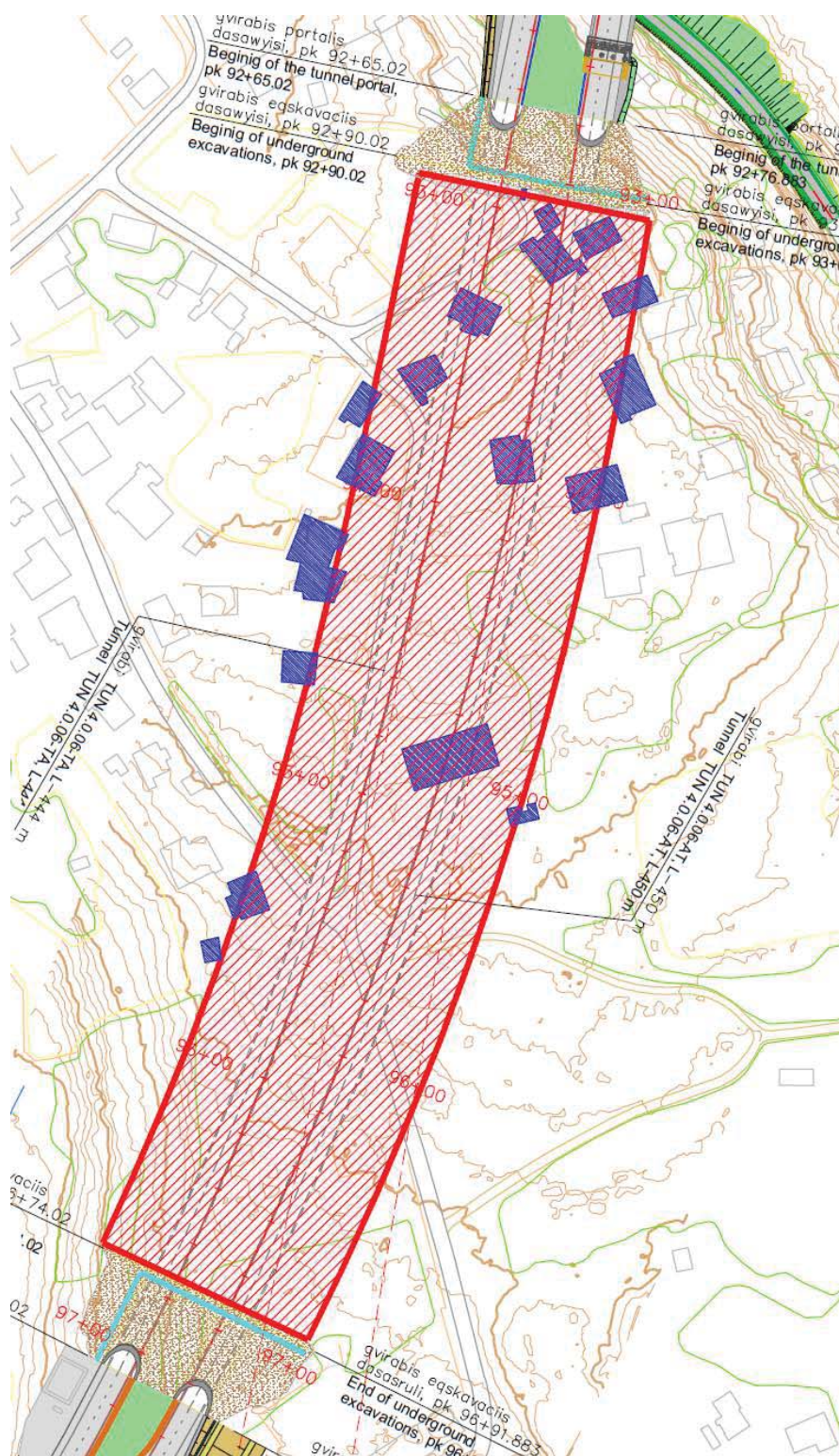
- The vibrations generated at the source will propagate with velocity of 10 mm/s (conservative source: big hammer and bulldozer);
- After travelling 2 meters into the weathered calcarenites, vibration at the boundary weathered calcarenite-alluvial soil are estimated at 7-8 mm/s. A strong backscattering is expected at this boundary due to the strong inversion of Vp and Vs velocity.
- After this points vibrations will be strongly attenuated by the travel into 5 meters of alluvial soil with poor geomechanical parameters. (Vs velocity decreased by 70%, Vp velocity decreased by 50%),
- The expected value at the surface will be 5-4 mm/s .
- At this point the coupling with the foundations will generate a further dumping effect whose amount depends on the type of foundation.

The results of calculations fit with the results provided in the scientific literature for tunnels done by TBM, which represents a stronger source of noise.

For the above consideration an area of influence has to be considered with a distance from the source of 20 meters (total width about 75 meters) also in consideration of the poor quality of the building.

For that it is recommended to proceed with photo-documentation of the state of the buildings, to avoid conflicts with the population and to set up a couple of monitoring stations to have reference data to provide in case of controversy (see figure 4).

Figure 4 – Area of influence and buildings potentially affected



添付 8.2

Land Acquisition and Resettlement Action Plan (土地収用・住民移転実施計画)

DOCUMENT NUMBER	GD.LAR.4000.GE.RP.0040
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**PREPARATION OF DETAILED DESIGN FOR NEW
CONSTRUCTION OF KHEVI-UBISA-SHORAPANI-
ARGVETA SECTION (E60 HIGHWAY ROUTE), BIDDING
DOCUMENTS, ENVIRONMENTAL IMPACT ASSESSMENT
AND DETAILED LAND ACQUISITION AND
RESETTLEMENT PLAN**

LAND ACQUISITION AND RESETTLEMENT PLAN

00	March 2018	ISSUED FOR APPROVAL	Consulta	Team Leader	Project Director
			Cons	TL	PD
Rev.	Date	Issues description	Prepared	Checked	Approved

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CONTENTS

ABBREVIATIONS	5
GLOSSARY OF TERMS	7
1 INTRODUCTION.....	9
2 CENSUS AND IMPACT ASSESSMENT	12
2.1 AFFECTED LAND PLOTS	12
2.2 IMPACT ON AGRICULTURAL CROPS.....	12
2.3 IMPACT ON TREES	14
2.4 IMPACT ON STRUCTURES	18
2.5 IMPACT ON BUSINESS.....	18
2.6 IMPACT ON COMMON PROPERTY	19
2.7 IMPACT ON VULNERABLE HOUSEHOLDS	19
2.8 SUMMARY OF IMPACTS.....	19
3 SOCIO-ECONOMIC INFORMATION.....	22
3.1 GENERAL OVERVIEW.....	22
3.2 SOCIO-ECONOMIC SURVEY RESULTS.....	26
4 LEGAL AND POLICY FRAMEWORK	32
4.1 GENERAL	32
4.2 LEGAL FRAMEWORK	32
4.2.1 <i>Georgia's Laws and Regulations on Land Acquisition and Resettlement.....</i>	<i>32</i>
4.2.2 <i>ADB's Policy on Involuntary Resettlement.....</i>	<i>33</i>
4.2.3 <i>Comparison of ADB Policy with Georgian Laws and Legislation.....</i>	<i>35</i>
4.2.4 <i>Description of JICA policies on land acquisition and resettlement.....</i>	<i>36</i>
4.2.5 <i>Comparison of JICA Policies with Georgian Laws and Legislation.....</i>	<i>37</i>
4.2.6 <i>Resettlement Policy Commitments for the Project.....</i>	<i>41</i>
4.2.7 <i>Land Acquisition Process.....</i>	<i>42</i>
4.3 COMPENSATION ELIGIBILITY AND ENTITLEMENTS.....	43
4.3.1 <i>Eligibility.....</i>	<i>43</i>
4.3.2 <i>Definition of Entitlements.....</i>	<i>43</i>
4.3.3 <i>Assistance for severely affected and Vulnerable AH.....</i>	<i>50</i>
4.3.4 <i>Valuation and Compensation Rates.....</i>	<i>51</i>
5 INSTITUTIONAL ARRANGEMENTS.....	54
5.1 INTRODUCTION.....	54
5.2 LAND REGISTRATION ORGANIZATIONS	54
5.2.1 <i>Gamgeoba of Community</i>	<i>54</i>
5.2.2 <i>Sakrebulo.....</i>	<i>54</i>
5.2.3 <i>Property Rights Recognition Commission</i>	<i>54</i>
5.2.4 <i>Rayon Registration Office</i>	<i>55</i>
5.3 LAND ACQUISITION AND RESETTLEMENT ORGANIZATIONS	55
5.3.1 <i>RDMRDI of Georgia.....</i>	<i>55</i>
5.3.2 <i>TRRC.....</i>	<i>56</i>
5.3.3 <i>Rayon LAR Team.....</i>	<i>56</i>

5.3.4	Local Governments	56
5.4	OTHER ORGANIZATIONS AND AGENCIES	57
5.4.1	Civil Works Contractor	57
5.4.2	Consultants and Auditors	57
5.4.3	Court of Georgia	57
5.4.4	Ministry of Finance	57
5.4.5	Ministry of Justice	57
5.4.6	Ministry of Economy and Sustainable Development.....	57
5.4.7	JICA.....	58
5.4.8	Monitoring Agency.....	58
6	CONSULTATION AND PARTICIPATION	59
7	GRIEVANCE REDRESS MECHANISM.....	62
7.1	GRC RECORDS AND DOCUMENTATION	64
8	IMPLEMENTATION SCHEDULE.....	65
8.1	GENERAL	65
8.2	LARP APPROVAL AND INITIAL TASKS	65
8.3	LARP IMPLEMENTATION.....	65
8.4	POST IMPLEMENTATION EVALUATION	66
8.5	LARP IMPLEMENTATION TIME SCHEDULE	66
9	COSTS AND FINANCING.....	68
9.1	COMPENSATION FOR LAND.....	68
9.2	COMPENSATION OF STRUCTURES.....	69
9.3	COMPENSATION FOR LOSS OF BUSINESS AND OTHER INCOMES	71
9.4	COMPENSATION FOR HARVEST	72
9.5	COMPENSATION FOR TREES	73
9.6	RESETTLEMENT ASSISTANCE.....	78
9.7	RESETTLEMENT MANAGEMENT COST	79
9.8	COST OF RESETTLEMENT	79
10	MONITORING AND REPORTING	81
11	ANNEXES	83
	ANNEX 1 LEGALIZATION OF PRIVATE OWNERSHIP OF LAND IN GEORGIA	83
	ANNEX 2 INFORMATION BOOKLET	89
	ANNEX 3 FIRST MINUTES OF MEETING	100
	<i>Annex 3.1 Questions from attendees.....</i>	<i>101</i>
	<i>Annex 3.2 List of attendees.....</i>	<i>103</i>
	<i>Annex 3.3 Pictures.....</i>	<i>106</i>
	ANNEX 4 SECOND MINUTES OF MEETING.....	107
	<i>Annex 4.1 Questions and Answers.....</i>	<i>108</i>
	<i>Annex 4.2 List of attendees.....</i>	<i>110</i>
	<i>Annex 4.3 Pictures.....</i>	<i>117</i>
	ANNEX 5 INDIVIDUAL MEETING WITH PAPs.....	118
	<i>Annex 5.1 Questions asked during the meetings.....</i>	<i>118</i>
	<i>Annex 5.2 Photos of meeting.....</i>	<i>120</i>
	<i>Annex 5.3 List of Individual contacted PAPs</i>	<i>121</i>

TABLE 2-1 TYPE OF LAND	12
TABLE 2-2 IMPACT ON AGRICULTURAL CROPS	13
TABLE 2-3 IMPACT ON TREES	14
TABLE 2-4 IMPACT ON STRUCTURES.....	18
TABLE 2-5 BUSINESS.....	18
TABLE 2-6 VULNERABILITY	19
TABLE 2-7	19
TABLE 3-1: DISTRIBUTION OF POPULATION IN GEORGIA, IMERETI AND ZESTAPHONI MUNICIPALITY ACCORDING TO YEARS (1000 PEOPLE).....	23
TABLE 3-2: POPULATION IN VILLAGES, BOROUGHES AND ZESTAPHONI CITY WITHIN THE PROJECT AFFECTED ZONE ACCORDING TO 2014 DATA (PEOPLE)	23
TABLE 3-3: POPULATION DISTRIBUTION IN THE MUNICIPALITY OF ZESTAPHONI (PEOPLE)	23
TABLE 3-4: ETHNICAL DISTRIBUTION	24
TABLE 3-5: NATURAL RESOURCE AND AGRICULTURE.....	24
TABLE 3-6: CROPS FOR CATTLE BREEDING (HA).....	25
TABLE 3-7: MEDICAL FACILITIES	25
TABLE 3-8 SURVEYED FAMILIES.....	26
TABLE 3-9 MARITAL STATUS	27
TABLE 3-10 OCCUPATION AND EDUCATION LEVEL.....	29
TABLE 3-11 HOUSEHOLD ASSETS	30
TABLE 3-12 ONE YEAR CROP	30
TABLE 3-13 LIVESTOCK	31
TABLE 3-14 PRODUCT SELL.....	31
TABLE 4-1 COMPARISON OF GEORGIAN LAWS ON LAR AND ADB RESETTLEMENT POLICY.....	35
TABLE 4-2 COMPARISON OF GEORGIAN LAW ON LAR AND JICA POLICIES ON LAND ACQUISITION AND RESETTLEMENT	38
TABLE 4-3 ENTITLEMENT AND COMPENSATION MATRIX	46
TABLE 7-1 GRIEVANCE RESOLUTION PROCESS	63
TABLE 8-1 LARP SCHEDULE.....	67
TABLE 9-1 COMPENSATION FOR LAND	68
TABLE 9-2 COMPENSATION FOR STRUCTURES	69
TABLE 9-3 BUSINESS.....	71
TABLE 9-4 VENDERS	72
TABLE 9-5 RENT/LEASE.....	72
TABLE 9-6 COMPENSATION FOR HARVEST	72
TABLE 9-7 COMPENSATION FOR TREES.....	73
TABLE 9-8 RESETTLEMENT ASSISTANCE	78
TABLE 9-9 RESETTLEMENT MANAGEMENT COST.....	79
TABLE 9-10 RESETTLEMENT BUDGET	79
TABLE 11-1 COMPARISON OF GEORGIAN LAWS ON LAR, ADB AND JICA RESETTLEMENT POLICY.....	91
TABLE 11-2 ENTITLEMENT AND COMPENSATION MATRIX.....	92
TABLE 11-3 GRIEVANCE RESOLUTION PROCESS	98
FIGURE 1-1 F4 ALIGNMENT	10
FIGURE 3-1 IMERETI REGION.....	22
FIGURE 3-2 AGE DISTRIBUTION OF POPULATION.....	27
FIGURE 3-3 AGE AND SEX DISTRIBUTION OF POPULATION.....	27



FIGURE 3-4 EDUCATION LEVEL IN THE PROJECT AFFECTED VILLAGES.....	28
FIGURE 3-5 POPULATION DISTRIBUTION BY EDUCATION AND SEX.....	28
FIGURE 5-1 LAR ORGANIZATION CHART	58
FIGURE 7-1 GRIEVANCE ORGANIZATION CHART	64

ABBREVIATIONS

ACS	acquisition and compensation scheme
ACM	Acquisition and Compensation matrix
AH	affected Household
AP	Affected Person
CBO	community based organization
CSC	Construction supervision consultant
DD	Detail Design
DMS	Detailed measurement survey
EMA	external monitoring agency
ETCIC	Eurasian Transport Corridor Investment Center
ESIA	Environmental and Social Impact Assessment
EWHCIP	East West Highway Corridor Improvement Project
FS	Feasibility Study
GoG	Government of Georgia
GPS	Global Positioning System
GRCE	Grievance Redress Committee
GRCN	Grievance Redress Commission
GRM	Grievance Redress Mechanism
IA	implementing agency
IFI	International Financial Institution
IP	indigenous peoples
JICA	Japan International Cooperation Agency
Km	Kilometer
LAR	land acquisition and resettlement
LARC	land acquisition and resettlement commission
MOES	Ministry of Economic and Sustainable Development
M&E	monitoring and evaluation
MTFF	Multi Tranche Financial Facilities
MOF	Ministry of Finance

MPR	monthly progress report
MRDI	Ministry of Regional Development and Infrastructure
NAPR	National Agency of Public Registry
PAPs	Project affected persons
PIB	Public Information Booklet
PR	Public Relation
PRRC	Property Rights Recognition Commission
NGO	non-governmental organization
RAP	Resettlement action plan
RD	Roads Department
RDMRDI	Roads Department of the Ministry of Regional Development and Infrastructure of Georgia
RDRD	Road Department and Resettlement Division
RoW	Right of way
RPF	resettlement Policy framework
RS	resettlement service
RU	Resettlement Unit
SES	socioeconomic survey
SPS	Safeguard Policy Statement
SSC	Social Safeguard Consultant
TRRC	TRANSPORT REFORM AND REHABILITATION CENTER
WB	World Bank

GLOSSARY OF TERMS

Project Affected Person (AP) or Affected Household (AH)	<p>Means any people, households, firms, or private institutions who, on account of changes that result from the project will have their (i) standard of living adversely affected; (ii) right, title, or interest in any house, land (including residential, commercial, agricultural, forest, and/or grazing land), water resources, or any other moveable or fixed assets acquired, possessed, restricted, or otherwise adversely affected, in full or in part, permanently or temporarily; and/or (iii) business, occupation, place of work or residence, or habitat adversely affected, with or without displacement.</p>
Eligibility	<p>Means any person(s) who at the cut-off-date was located within the area affected by the project, its sub-components, or other subproject parts thereof, and are affected by the project. Eligibility is irrespective of (a) formal legal rights to land, or (b) customary claim to land or asset, or (c) no recognizable legal right or claim to the land APs are occupying.</p>
Entitlement	<p>Means the range of measures comprising cash or kind compensation, relocation cost, rehabilitation assistance, transfer assistance, income substitution, and relocation which are due to APs, depending on the type and degree nature of their losses, to restore their social and economic base.</p>
Land acquisition	<p>Means the process whereby a person is compelled by the Government through the Executing Agency of the Project to alienate all or part of the land s/he owns or possesses in favour of the State in the implementation of the Project or any of its components in return for consideration.</p>
Replacement cost	<p>Means the method of valuing assets to replace the loss at market value, or its nearest equivalent, plus any transaction costs such as administrative charges, taxes, registration, and titling costs. Where national law does not meet this standard the replacement cost will be supplemented as necessary. Replacement cost is based on market value before the project or dispossession, whichever is higher. In the absence of functioning markets, a compensation structure is required that enables affected people to restore their livelihoods to levels at least equivalent to those maintained at the time of dispossession, displacement, or restricted access. For loos that cannot easily be valued or compensated for in monetary terms (e.g. access to public services, customers, and supplies; or to fishing, grazing, or forest areas), attempts are made to establish access to equivalent and culturally acceptable resources and earning opportunities.</p>

Rehabilitation

Means the measures required to (i) restore access to public facilities, infrastructure, and services; (ii) cultural property and common property resources; (iii) mitigate loss of access to cultural sites, public services, water resources, grazing, or forest resources including establishment of access to equivalent and culturally acceptable resources and income-earning opportunities; and, (iv) restore the economic and social base of APs seriously affected by the loss of assets, incomes, and employment. All such people will be entitled to rehabilitation assistance measures for restoring incomes and living standards. Such measures must be determined in consultation with APs, including any APs whose rights might not be formally recognized.

Resettlement

Means full or partial, permanent or temporary physical displacement (relocation, loss of residential land/ or shelter) and economic displacement (loss of land, assets, access to assets, income sources, or means of livelihoods) resulting from (i) involuntary acquisition of land, or (ii) involuntary restrictions on land use or on access to parks and protected areas. The definition applies to impacts experienced, regardless of whether it involves actual relocation.

Resettlement Action Plan

Means the time-bound action plan prepared to compensate and/or mitigate the impacts of resettlement. A FULL resettlement plan is required for projects or subprojects with significant impacts (see definition below), and an ABBREVIATED resettlement plan is required for projects or subprojects with non-significant impacts.

Relocation

Means the physical shifting of APs from his/her pre-project place or residence, place for work or business premises.

Significant impact

Means more than 200 people are affected by resettlement through (i) loss of 10% or more of productive assets (income generating) or (ii) physical displacement/dislocation (loss of housing).

Vulnerable

Means any people who might suffer disproportionately or face the risk of being marginalized from the effects of resettlement i.e; (i) female-headed households with dependents; (ii) disabled household heads; (iii) poor households as defined by the official poverty line; (iv) landless elderly households with no means of support; (v) households without security of tenure; (vi) cultural or ethnic minorities; and (vii) refugees or internally displaced people.

1 INTRODUCTION

1. The Government of Georgia (GOG) has received a loan from the Asian Development Bank (ADB) through a Multi tranche Financing Facility (MFF) for implementing the Road Corridors Development Program (the Program) to rehabilitate, improve or construct several roads in various regions of Georgia. The program includes the Khevi–Ubisa-Shorapani-Argveta section (E60 Highway Route) which will be financed under different funds.

2. This LARP was prepared by IRD and SPEA consulting and it is based on a preliminary survey appraisal conducted on November 16, 2017, according to the requirements of the ADB's Safeguard Policy Statement (SPS) (2009) as well to the Resettlement Policy Framework prepared by the East –West Highway Corridor Improvement Project AF- Upgrading and construction of Khevi-Argveta Section F4 of the E-60 Highway approved on April 2017.

3. This section F4 is under consideration for funding from JICA, according to JICA guidelines for environmental and social Considerations (April, 2010). It must be noted that those guidelines require JICA to confirm that the projects are not deviate significantly from the WB Safeguard Policy, therefore this project is also required to be in line with WB's Operational Policy 4.12.

The F4 section characteristics

4. The total length of Section F4 is of 14+747.78 km on the Tbilisi-Argveta carriageway (TA) and of 14+729.87 on the Argveta-Tbilisi carriageway (AT). In FS the length was of 15+800 km.

The Bridges of the Section F4

5. There are 12 bridges for this section and one Underpass. The first, the second and the forth bridge are Steel bridges with big spans (smallest in 48 m). The first and the second bridges are crossing the turns of the Dzirula River. The forth steel bridge is crossing Kvirila River. The third, fifth and sixth bridges are not crossing a flowing rivers but small streams. They are reinforced concrete structures with pre-stressed beams.

6. Overall the Shorapani-Argveta section represents an important section of the motorway; it is located in complicated topographic and geological conditions. This section represents the extension of Zestaphoni-Kutaisi motorway. Design section starts at km 185 of Tbilisi-Senaki-Leselidze motorway and ends at km 200 of the same road in Argveta. This section is directly connected to Argveta interchange which is under construction.

7. Road axis has been designed separately for two independent right and left lanes. The axis is located on the outer edge of the paved section (1.0 m) of the central reserve: Tbilisi-Argveta direction TA, Argveta-Tbilisi direction AT.

8. The alignment passes hilly-mountainous relief from km 0+000 to km 1+300, on the left side of the existing road both as exposed road and through two tunnels. The alignment runs in the gorge of the river Dzirula from km 1+300 to km 3+000, crosses the river Dzirula several times. The alignment runs on the left side of the existing road, crosses the river Borilmela, enters the tunnel and joins the existing road in Shorapani from km 3+000 to km 4+300. Design road follows the existing road from km 4+300 to km 5+640.

9. Widening of the road takes place at the expense of cutting into the slope on the left, then the alignment turns to the right, crosses the river Kvirila and the railway two times, then the alignment develops northward of Zestaphoni through three tunnels. From km 9+670 to the end of the route design road bypasses Zestaphoni, joins the interchange

under construction at km 14+720 at the village Argveta located on Zestaphoni-Kutaisi motorway.

Figure 1-1 F4 Alignment



Road design - interchanges

10. An interchange is a system of interconnecting roadways which consists of a combination of ramps and grade separations at the junction of highway with other roads. Interchanges are utilized to reduce or eliminate traffic conflicts, to improve safety, to increase traffic capacity and most of all to allow the accessibility at the highway. Not only may the topography of the terrain but also the type of traffic classification affect the interchange design. Interchange types are characterized by the shape of ramps such as diamond, loop, hook, directional, or variations of these types.

11. Crossing conflicts at interchanges are eliminated by using different levels for the crossings. Turning conflicts are either eliminated or minimized, depending upon the type of interchange design.

Design parameters for interchange ramps are the following:

Interchange-1 (Shorapani)

This IC 1 is located around ch 3+000 under bridge BRI 4103 TA/AT.

Its type is “Diamond” with Roundabouts located on both side of the Highway. These two roundabout are connected with the existing main road and a Local road.

In the area of this IC-1 will be located also the Base camp.

Interchange-2 (Zestafoni - East)

This IC-2 is located around ch 5+800 before BRI 4104 TA/AT.

Its type is “Trumpet” with one Roundabout.

The Roundabout is on the existing main road and it is connecting the local traffic.



Interchange-3 (Zestafoni - West)

This IC-3 is located around 11+800.

Its type is “Diamond” with two Roundabouts. There is an Underpass over the Ramp connected two Roundabouts. These two roundabout are connected with the existing Local roads in these area.

Interchange-4 (Argveta)

This IC-4 is in the end of F4 section.

It is designed by the previous project.

LARP Preparation and completion

12.This LARP has been prepared according to the Georgian Laws, the ADB, Safeguard policies Statement (2009), JICA Guidelines for environmental and social consideration (April, 2010) and the Resettlement Policy Framework of the East West Highway Improvement Corridor Project . The Resettlement Policy Framework (RPF) was prepared by the Roads Department of the Ministry of Regional Development and Infrastructure of Georgia (RDMRDI) with support from the World Bank (WB) developed and disclosed in 2016 under the parent EWHCI Project, and specificities of the Khevi-Argveta section road section under the EWHCIP Additional Financing.

2 CENSUS AND IMPACT ASSESSMENT

13. A preliminary survey appraisal on the localization, assessment and evaluation measures to be delivered to the PAP has been done on November 16th 2017 the way to figure out the amount and magnitude of the compensation. The survey was conducted together with the national and international resettlement expert and an Independent Professional Assessor according to the international standard on property evaluation.

14. A preliminary inventory of all the impacts has been done following the latest alignment as per detailed engineering design for the F4 section. Digitized cadastral maps were collected from Registration Offices of NAPR. The final road alignment will be superimposed on the digitized cadastral maps and land survey using GPS on site to identify precisely the affected land parcels, demarcation of land parcels including correction in geometric details and quantification of land parcels. Finally, adjustment of road corridor against the planned design will be further refined to better design the following issues: access roads to plots, area of small land, public utilities etc. After that, the cadastral details from land survey, the Detailed Measurement Survey (DMS) and census will be completed for this F4 project. Cut-off date is the start date of DMS which is 10th of December, 2017.

2.1 Affected Land Plots

15. According to the survey results, mentioned road section will affect 609 land plots. From the mentioned 609 land plots, 32 are in state ownership, 577 land plots are in private ownership.

1. Project affected land plots have been grouped in following categories according to ownership types, based on legal right on ownership:

I category: Project affected private land plots, registered in Public Register: 381 with total affected area of 378,749 m².

II category: Legalizable project affected land plots: 194 land plot with affected area of 150,965 m².

III category: Non legalizable; ownership is not subject for legalization- 2 land plot, with total area of 11956 m²

IV category: State land (is not occupied arbitrarily by population) 32 plot with affected area 101,155 m².

The information on usage types of affected land plots is given in Table 2.1 below.

Table 2-1 Type of land

Type of land	Number
Agricultural	493
Residential area	50
Non-agricultural	66

2.2 Impact on Agricultural Crops

2. On the project impact there is arable land plot where populations have planted corn and beans. According to the survey under the project impact zone there is account for 1,003,602 sq.m of corn, bean and other vegetables. Detailed information will be presented in final LARP.

Table 2-2 Impact on agricultural crops

Agricultural crop	Unit	Harvest for 1 Ha land plot	Market cost of plant unit, GEL	Compensation of agricultural crops harvest per 1 Ha, GEL	Area
Potato	Tons	26	600	15600	620
Beans	Kg	800	5	4000	268496
Garlic	Kg	1600	5	8000	1485
Tomato	Tons	20	800	16000	1135
Corn	Kg	5000	0.8	4000	275174
Pumpkin	Piece	1000	3.5	3500	224131
Cucumber	Tons	15	0.7	10500	650
Strawberry	Kg	4000	1.3	5200	30
Onion	Tons	30	0,6	18000	687
Soybean	Tons	4	550	2200	226225
Sunflower	Tons	2	720	1440	50
Eggplant	-	-	-	5000	400
Herbs	-	-	-	5000	1457
Raspberries	-	-	-	104000	130
Leeks	-	-	-	5000	490
Other vegetables	-	-	-	5000	2442
Total					1003602

2.3 Impact on Trees

3. According to survey impact zone there are 14,552 trees on 301 land plots. The quantity of trees presented in table below is preliminary.

Table 2-3 Impact on trees

Plants	Age group	Cost of seedling, Gel	Cost of harvest unit, Gel	Number of compensation years	Full productivity per year, kg	Harvest compensation for per year (Gel)	Total compensation for adult perennial seedling with considering the cost (Gel)	Quantity
1	2	3	4	5	6	7	8	9
Cherry (sweet cherry)	Seedling (<5)	5	2	5	4	8,0	35	216
	5-10	5	2	5	10	20,0	75	377
	11-20	5	2	5	16	32,0	117	186
	21+	5	2	5	10	20,0	75	8
Peach	Seedling (<5)	6	1,5	5	4	6,0	27	25
	5-10	6	1,5	5	15	22,5	85	96
	11-20	6	1,5	5	40	60,0	216	10
	21+	6	1,5	5	25	37,5	137	3
Walnut	Seedling (<5)	10	5	5	4	20,0	80	32
	5-10	10	5	10	15	75,0	535	65
	11-20	10	5	10	30	150	1235	177
	21+	10	5	10	40	200	1510	149
Quince	Seedling (<5)	4	1,5	5	3	4,5	20	16
	5-10	4	1,5	5	15	22,5	83	104
	11-20	4	1,5	5	30	45,0	162	93
	21+	4	1,5	5	20	30,0	109	2
Pear	Seedling (<5)	4	1,2	5	7	8,4	33	26
	5-10	4	1,2	7	20	24,0	122	98
	11-20	4	1,2	7	70	84,0	416	100
	21+	4	1,2	7	45	54,0	269	27
Plum (variety of plum)	Seedling (<5)	4	0,8	5	8	6,4	26	223

	5-10	4	0,8	5	15	12,0	46	194
	11-20	4	0,8	5	30	24,0	88	284
	21+	4	0,8	5	20	16,0	60	55
Mulberry	Seedling (<5)	5	1,5	5	4	6,0	26	8
	5-10	5	1,5	5	10	15,0	58	127
	11-20	5	1,5	5	16	24,0	89	119
	21+	5	1,5	5	10	15,0	58	53
Hazelnut	Seedling (<5)	2	4	5	2	8,0	30	632
	5-10	2	4	5	5	20,0	75	819
	11-20	2	4	5	6	24,0	90	1184
	21+	2	4	5	4	16,0	55	36
Sour plum (cherry plum)	Seedling (<5)	3	0,8	5	7	5,6	23	109
	5-10	3	0,8	5	15	12,0	45	439
	11-20	3	0,8	5	50	40,0	143	527
	21+	3	0,8	5	25	20,0	73	52
Apple	Seedling (<5)	4	1	5	5	5,0	22	21
	5-10	4	1	6	25	25,0	109	62
	11-20	4	1	6	70	70,0	298	52
	21+	4	1	6	40	40,0	172	5
Vine	Seedling (<5)	2	1,5	4	5	7,5	23	234
	5-10	2	1,5	4	7	10,5	31	162
	11-20	2	1,5	4	9	13,5	40	3433
	21+	2	1,5	4	5	7,5	23	1283
Fig	Seedling (<5)	3	1,5	5	5	7,5	29	22
	5-10	3	1,5	6	10	15,0	66	108
	11-20	3	1,5	6	30	45,0	192	200
	21+	3	1,5	6	20	30,0	129	2
Kiwi	Seedling (<5)	3	1,5	4	5	7,5	24	0
	5-10	3	1,5	4	10	15,0	45	9
	11-20	3	1,5	4	30	45,0	129	0
	21+	3	1,5	4	20	30,0	87	0
Tangerine	Seedling (<5)	3	1,25	5	10	12,5	47	4
	5-10	3	1,25	5	30	37,5	134	15
	11-20	3	1,25	5	80	100,0	353	2

	21+	3	1,25	5	50	62,5	222	0
Orange	Seedling (<5)	4	1,5	5	10	15,0	57	0
	5-10	4	1,5	5	30	45,0	167	1
	11-20	4	1,5	5	80	120,0	424	0
	21+	4	1,5	5	50	75,0	267	0
Lemon	Seedling (<5)	4	1,3	5	5	6,5	27	4
	5-10	4	1,3	5	15	19,5	72	15
	11-20	4	1,3	5	35	45,5	163	3
	21+	4	1,3	5	20	26,0	95	0
Bay-tree	Seedling (<5)	1	4	5	1	4,0	15	68
	5-10	1	4	5	2	8,0	29	326
	11-20	1	4	5	2	8,0	29	153
	21+	1	4	5	1	4,0	15	1
Cherry laurel	Seedling (<5)	2	0,25	8	2	0,5	5	0
	5-10	2	0,25	8	4	1,0	8	3
	11-20	2	0,25	8	10	2,5	16	0
	21+	2	0,25	8	7	1,75	12	0
Barberries	Seedling (<5)	5	2,5	5	3	7,50	31	4
	5-10	5	2,5	5	5	12,50	49	17
	11-20	5	2,5	5	7	17,50	66	5
	21+	5	2,5	5	5	12,50	49	0
Mildness	Seedling (<5)	4	1,5	6	3	4,5	23	3
	5-10	4	1,5	6	10	15,0	67	9
	11-20	4	1,5	6	20	30,0	130	7
	21+	4	1,5	6	10	15,0	67	0
Loquat	Seedling (<5)	4	2	6	3	6,0	29	5
	5-10	4	2	6	10	20,0	88	21
	11-20	4	2	6	20	40,0	172	15
	21+	4	2	6	10	20,0	88	2
Feijoa	Seedling (<5)	1	1,5	3	5	7,5	18,5	0
	5-10	1	1,5	5	10	15	56	3
	11-20	1	1,5	5	25	37,5	133	1
	21+	1	2	5	12	24	90	0
Persimmon	Seedling (<5)	2	1	5	5	5,0	20	22

	5-10	2	1	6	10	10,0	44	124
	11-20	2	1	6	30	30,0	128	128
	21+	2	1	6	20	20,0	86	5
Pomegranate	Seedling (<5)	4	2	5	5	10,0	39	17
	5-10	4	2	6	10	20,0	88	145
	11-20	4	2	6	30	60,0	256	292
	21+	4	2	6	20	40,0	172	29
Chestnut	Seedling (<5)	7	1	5	30	30,0	112	0
	5-10	7	1	10	50	50,0	357	1
	11-20	7	1	10	120	120,0	1057	0
	21+	7	1	10	125	125,0	847	0
Strawberry tree	Seedling (<5)						15	1
	5-10						25	2
	11-20						50	0
	21+						80	0
Currant	Seedling (<5)	1.5	2	5	1.5	16.5	14	0
	5-10	1.5	2	5	2	21.5	18	6
	11-20	1.5	2	5	2.5	26.5	22.5	0
	21+	1.5	2	5	2	21.5	18	0
Dogwood	Seedling (<5)						17	1
	5-10						24	15
	11-20						31	9
	21+						24	14
Red raspberry	Seedling (<5)						20	47
	5-10						28	4
	11-20						37	0
	21+						28	0
Hawthorn	Seedling (<5)						2	117
	5-10						4	101
	11-20						6	202
	21+						6	31
Staphylea	Seedling (<5)						16	22
	5-10						50	136
	11-20						80	100

	21+						65	24
Jujube	Seedling (<5)						30	0
	5-10						140	5
	11-20						550	1
	21+						445	0
Total								14552

2.4 Impact on Structures

4. Under the impact of this project there is 166 buildings which will be demolished during the construction of the road. From this 166 there are 21 residential houses, 115 auxiliary (cattle-sheds, toilet, storage and etc.) and 30 commercial structures.

5. During the construction of the tunnels there is possibility that some of residential houses will be temporary resettled, information will be given as addendum of the final LARP.

Table 2-4 Impact on Structures

Type of building	Number
Residential	21
Commercial	30
Auxiliary	115
Total	166

2.5 Impact on Business

6. According to the survey the project impact on 14 business facilities out of which there are 4 restaurants, 2 is little shops and other 8 little factories or other industrial facilities. This means that 41 people will lose their job. The difference between the number of affected commercial building shown in table 2-4 above and number business affected is due to fact that some of affected commercial buildings are abandoned. Project also will affect 5 street vendors who are selling ceramics.

Table 2-5 Business

N	Business Owner	Business Type	Employs (With tax declaration)	Employs (Without tax declaration)
1	Bonusi Ltd	Factory	3	0
2	Joni Tabagari	2 Restaurants	0	14
3	Ramazi Kurtanidze	Little Factory	0	0
4	Nana Surmava	Shop	0	0
5	Teimuraz Chankotadze	Factory	0	6
6	Kvali Ltd	Factory	4	0
7	Isa Kaia	Restaurant	0	5

8	Varvara Magradze	Shop	0	0
9	Sergo Kupatadze	Factory	0	0
10	Kiknavelidze Merabi	Factory	3	4
11	Giorgi Glunchadze	Rubber/tire repair	0	0
12	Evgeni Zibzibadze	Restaurant	0	1
13	Zviadi Jabiradze	Factory	0	1
	Total		10	31

2.6 Impact on Common Property

7. Project won't impact on the objects of public or cultural importance.

2.7 Impact on vulnerable households

Table 2-6 Vulnerability

Vulnerability Category	Number of HH
Women Headed HH	14
Group of disabilities	12
Below poverty line	4
Internally displaced people	5
Other vulnerabilities	5

2.8 Summary of IMPACTS

Table 2-7

N	Impacts	Unit	
Land Tenure Patterns			
1	Total Land parcels affected	No	609
2	Total land Area to be acquired	Sq.m	642,825
3	Category 1. Private Registered Plots	No	381
		Sq.m	378,749
5	Category 3. Private Legalizable	No	194
		sq.m	150,965
6	Category 4. State Owned Illegally Used by Private Users (Non-legalizable).	No	2
		Sqm	11956
7	Category 5. State Owned (Not Used by Private Users)	No	32
		Sq.m	101,155
Land Use and Compensation Categories			

8	Land plots along the road- 35 GEL	№	59
		Sq.m	38260
9	Residential and commercial land plots- 20 GEL	№	200
		Sq.m	168016
10	Agricultural (Dzirula-Sakara) – 8 GEL	№	39
		Sq.m	44918
11	Agricultural (Sakara-Argveta)- 6 GEL	№	277
		sq.m	278520
17	State Owned and Non Legalizable land plots– 0 GEL	№	34
		sq.m	113111
Agricultural Patterns			
18	Potato	Sq.m	620
19	Beans	Sq.m	268,496
20	Garlic	Sq.m	1,485
21	Tomato	Sq.m	1135
22	Corn	Sq.m	275174
23	Pumpkin	Sq.m	224,131
24	Cucumber	Sq.m	650
25	Strawberry	Sq.m	30
26	Onion	Sq.m	687
27	Soybean	Sq.m	226,225
28	Sunflower	Sq.m	50
29	Eggplant	Sq.m	400
30	Herbs	Sq.m	1,457
31	Raspberries	Sq.m	130
32	Leeks	Sq.m	490
33	Other vegetables	Sq.m	2,442
34	Affected Trees	№	14,552
Affected Structures			
35	Residential houses	№	21
36	Comercial buildings	№	30
37	Auxelary buildings	№	115
38	Gates and Fences	№	277
Affected Businesses			
39	Restaurants	№	4
40	Shop	№	2
41	Factories and other industrial facilities	№	8

Affected Households			
42	Severely affected Households	No	379
43	Vulnerable Households	No	36
44	Resettled households	No	21
45	AHs losing non-legalizable land plots	No	1
46	AH losing Jobs	No	43
47	Total AH	No	455
48	Total Affected Persons	No	2047

3 SOCIO-ECONOMIC INFORMATION

3.1 General Overview

8. Imereti is one of the historic-geographic regions of Georgia. It is surrounded by Likhi Ridge from the east, by Tskhenistskali river from west, by Caucasian Ridge from the north and by Meskheta Mountains from the south. There are following municipalities in Imereti region: cities- Kutaisi, Tkibuli, Tskaltubo, Baghdati, Vani, Zestaphoni, Terjola, Samtredia, Sachkhere, Khoni and Kharagauli.

Figure 3-1 Imereti Region



9. According to feasibility study, the project impact area covers Zestaphoni municipality and its villages: Ilemi, Argveta, Futi, Tseva, Shoropani, Dzirula, Zemo Sakara, Kvemo Sakara and Zestaphoni city.

10. Zestaphoni municipality area is located on Kolkheti Lowland and Imereti Upland. Its area totals 42 300 ha, out of which 7027 ha is occupied by agricultural land plots and 16 500 ha – by forest. The municipality is bordered by Terjola, Baghdati, Kharagauli and Chiatura municipalities. The relief of administrative unit is fragmented by river valleys. The elevation of the most part of the municipality area ranges between 90-200 m asl, and in the southern and eastern parts the elevation reaches 1 088 m. The soil is alluvial in lowland, and in elevated areas it is subtropical.

11. Zestaphoni city is in the western Georgia and it is the administrative center of the municipality. The city is located on Kolkheti Lowland, on both banks of Kvirila river, at 160 m asl. It is situated 183 km (by railway) from Tbilisi. Zestaphoni includes several settlements such as:

12. Kveda Sakara village is included in Zestaphoni municipality, on the interstream area of Kvirila and Cholaburi rivers, at 170 m asl, 4 km from Zestaphoni.

13. Kveda Ilemi village is located in Zestaphoni municipality, in Dzirula river valley, at 300 m asl, in 10 km from Zestaphoni city.

14. Futi village is located in Zestaphoni municipality, in Dzirula river valley, at 320 m asl, in 9 km from Zestaphoni city.

15. Argveta village is located in Zestaphoni municipality, on the right of Dzirula river, at 120 m asl, in 7 km from Zestaphoni city.

16. Shorapani borough is located in the eastern part of Imereti Lowland, in Kvirila and Dzirula river valley, at 170 m asl, on S1 of the Highway of Georgia and Khashuri-Samtredia railway line.

17. Dzirula village is located in Zestaphoni municipality, at the confluence of Dzirula and Chkherimela rivers, at 320 m asl, in 15 km from Zestaphoni.

18. Kveda Tzeva is situated in Zestaphoni municipality, on the right side of Dzirula river, at 540 m asl, in 12 km from Zestaphoni city.

19. Many rivers flow on the area of the municipality, they are: Kvirila, Dzirula, Cholabura, Chkherimela, Buja and their tributaries.

20. It must be underlined that Zestaphoni city is built on the banks of Kvirila river that have a length 140 km and a catchment area of 3630 km². Zestaphoni municipality includes 1 city (Zestaphoni city), 1 borough (Shorapani) and up to 50 villages.

21. Villages within the project impact zone are mainly built on the Kvirila and Dzirula river valleys, the elevation of which ranges between 170 and 580 m asl.

Population and Demography

As for official data of January, 2016, the populations of Zestaphoni municipality comprise 58,041 people.

Table 3-1: Distribution of population in Georgia, Imereti and Zestaphoni municipality according to years (1000 people)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Georgia	4,394	4,382	4,385	4,436	4,469	4,497	4,483	4,490	3,713	3,720	3,718
Imereti	697	694	693	700	704	707	703	703	533	532	529
Zestaphoni Municipality	75	75	75	75	75	75	75	75	57	57	57

Source: (www.geostat.ge)

Table 3-2: Population in villages, boroughs and Zestaphoni city within the project affected zone according to 2014 data (People)

Location	Total Number of Population	Man	Woman
Zestaphoni municipality	58041	37124	20917
Zestaphoni city	20814		
Shorapani	1258	596	662
Argveta	1329	652	677
Dzirula	84	37	47
Ilemi	525	253	272
Puti	1564	780	784
Kveda Tseva	178	91	87
Kveda Sakara	1989	944	945
Zeda Sakara	2099	1008	1091

Source: (www.geostat.ge)

Table 3-3: Population distribution in the municipality of Zestaphoni (People)

Number of Population			No of pensioners	No of socially unprotected people	No of IDPs
Man	Woman	Both			
37124	20917	58041	12700	8200	780

Source: (www.geostat.ge)

22. According to the requirements of the JICA Guidelines of Environmental and Social Consideration (April, 2010), as well ADB Safeguards Policy Update (2009) "no

indigenous peoples” (IPs) per SPS (Safeguard Policy Statement) 2009, definition have been identified and will not be triggered in this project. These groups are fully integrated into the Country institutional, cultural, and economic processes, and they do not fit the IP definition of ADB.

Table 3-4: Ethnical distribution

Ethnicity	Ethnical distribution of population %
Georgian	99,4
Abkhaz	0,1
Russian	0,3
Armenian	0,1
Osetian	0,1

Source: (www.geostat.ge) 2014

Natural Resources and Agriculture

LAND RESOURCES.

23. Agriculture is the main source of income for population. Agricultural land plots cover 7027 ha of the municipality area that is only 46% of the whole territory. 5159 ha out of which the above-mentioned area is arable lands. As for greenhouse areas, it totals as 6 ha. Detailed information on Imereti region and Zestaphoni Municipality is given in Table 3-5.

Table 3-5: Natural Resource and agriculture

Land Use	Imereti (ha)	Zestaphoni Municipality(ha)
Total agricultural	65.737	7.027
Arable	51.033	5.159
Mowing	5.410	363
Green house	462	6

Source: (www.geostat.ge)

Water resources

WATER STOCKS

24. There is moderate stock of surface and underground water resources in Zestaphoni, however, the information on assessed water resource data is unavailable. The rivers flowing within the municipality area are: Kvirila, Dzirula, Cholaburi, Chkherimela, Buja and their tributaries.

POTABLE WATER

25. Monitoring over potable water quality is not provided in the municipality and accordingly pollution cases are not recorded. Population of the municipality villages use wells for potable water supply; the microbiological monitoring of these wells are not carried out either.

26. According to municipality administration (Gangeoba) officials, the overall condition of Zestaphoni aqueduct network is unfavorable; there are no water meters in large settlements of the municipality. The city has sewers but in poor condition.

Crop Culture and Cattle Breeding

27. Arable and mowing land plots cover 368.159 ha in Georgia. Cattle breeding are widely spread in the municipality. People keep breeding cattle and small ruminants both for meat and dairy products.

28.As for the crop culture, crops vine, maize and melons covers large part of the agricultural land. A detail on annual and perennial crops in Zestaphoni municipality and Imereti region is given Table 3-6.

Table 3-6: Crops for cattle breeding (ha)

	Imereti (ha)	Zestaphoni (ha)
Total agricultural land plots	51033	7027
Annual crops	39135	4066
Perennial crops	8831	1510

Source:(www.geostatic.ge)

29.In the last decade, the yields of vines, maize and melons have been reduced and the reason rely mainly on inadequate ways to combat pests, weeds and diseases, week management of soils due to the high cost on fertilizers, lack of watering and drought.

Economics

30.The viticulture is the leading field of the economics in the municipality, 80% of produced agricultural products comes from. Its development is supported by favorable soil-climatic conditions. Vineyards occupy 5,000 ha area. Wine Sviri is produced from vine species, grown on municipality area (Tsolikouri, Tsitska, Krakhuna). There are two active wine producing factories in the municipality. Maize is the main crop culture; feed and vegetable crops are also grown.

31.Iron industry, electro-technical and food industry are major fields of manufacturing sector. Zestaphoni ferro-alloy, Georgian-American Alloys plant are significant among other industrial activities. There were other important plants, such as “Saqkabeli” in Zestaphoni and “Elektroelementi” in Shorapani. Pottery is developed in Shrosha village.

Road and Railway of Georgia runs through the municipality area, as well as internal roads of national significance such as – Dzirula-Kharagauli and the Zestaponi-Chiatura, Zestaponi-Baghdati. Khashuri-Samtredia railway runs through municipality area, and the section to Sachkhere.

Healthcare

32.Five hospitals, several clinics and medical emergency centers operate in the municipality. They serve the population according to location of their residence. However the populations of remote villages, who live far from the center, face some problems in relation to the distance. Unfortunately there is no helicopter in the region, for provision of transportation of patients to hospitals in case of necessity. There is a lack of qualified personnel in the healthcare institutions of the region, which encourage the local population to go to other cities of the country to receive adequate cure adding additional expenses. Detailed information on local medical institutions is given in Table 3-7.

Table 3-7: Medical facilities

#	Names of Medical Institutions (including hospitals, out-patient clinics, medical emergency service)	Location (city, village)
1	Peromedi	Zestaphoni city
2	Geohospital	Zestaphoni city
3	Elite	Zestaphoni city
4	Clinic	Zestaphoni city
5	Out-patient clinics in 18 administrative units	In administrative units

Source:(www.geostatic.ge)

Media

33. There are two TV channels in the municipality area (“Argo” and “Imeri”) and 1 radio broadcasting – “Argo” and local a newspaper “Zestaponis Moambe”.

Utilities

34. Sewerage system is arranged only in cities of the region. Power supply is provided for population of cities and villages. Power is supplied by the company “EnergoProGeorgia”. As for water supply, the population of villages suffers from poor conditions in this regard, as there is no main water canal in the villages and local residents use wells. Gas supply in some suburbs of Zestaphoni municipality still requires improvement. UWSCG is responsible for water supply and “Socar-Georgia” – for gas supply.

Waste Management

35. Special service carries out the waste management in Zestaphoni municipality; its main duty is waste collection, register of its volume and disposal on the landfill. Composition and amount of waste is unknown, but the waste management improvement is indicated by the fact that 5 special trucks and 150 recycle bins of 1 m3 volume were purchased by the municipality. Waste removal is carried out by the cleaning service from Zestaphoni and the adjoining territory of the highway. The collected waste is placed on the local landfill locating on the territory of Meore Sviri. The landfill is fenced by the wire-mesh, but it doesn’t meet the requirements of the set standards. There are lots of small, illegal landfills on the territory of the municipality, especially in the villages. In addition, the waste volume is not assessed. Only metal scrap is collected by the scrap points, but the volume of collected scrap is unknown as well.

Education and Culture

36. There are 33 public schools in Zestaphoni municipality, with 8700 pupils, 2 vocational education centers, 4 private schools, 42 libraries, 1 theatre and a Zestaphoni Local Museum. The newspaper “Zestaponis Moambe” is distributed throughout the municipality. There are up to 50 orthodox churches in the municipality.

37. There is no higher education institution in the municipality and accordingly youth have to leave for Tbilisi and other large cities of the country to receive higher education.

3.2 Socio-Economic Survey Results

38. The presented chapter provides the results of social-economic survey of 20% of population of affected village, performed during the months of August and September 2017 on 1500 family’s residents on the area and villages interested by the alignment of the F4.

39. According to the official data of 2016, the number of persons of Zestaponi municipality was 58,041 k (National Statistics Office of Georgia).

40. Social survey was conducted in the following villages of Zestaponi Municipality: Ilemi, Argveta, Futi, Tseva, Shorapani, Dzirula, Zemo Sakara, Kvemo Sakara and Zestaponi town.

41. Information about the surveyed families is provided in the Table 3-8.

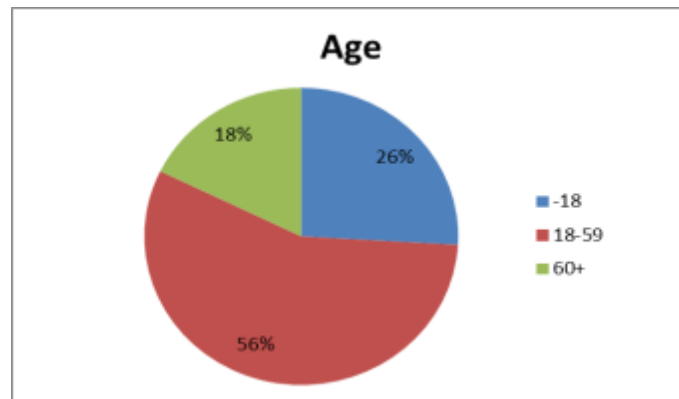
Table 3-8 Surveyed Families

Number of interviewed household	Average number of family members of	Interviewed males	Interviewed females
---------------------------------	-------------------------------------	-------------------	---------------------

	interviewed households		
1500	4	49%	51%

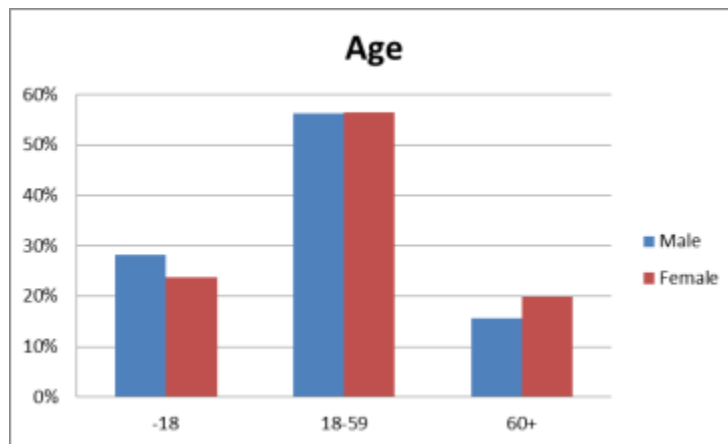
42.As for the age distribution, 26% of them are 18 years old, 56% - from 19 to 59 years old, 18% - 60 years old or more. Age distribution is given on the Figure 3-2.

Figure 3-2 Age distribution of population



43.Below in Figure 3-3 is given population distribution by age and sex.

Figure 3-3 Age and sex distribution of population.



44.As for the marital status, 56% of population aged over 18 years is married. 1% is divorced and 9% is widow. Detail information about the interviewed population on the marital status is provided in the Table 3-9.

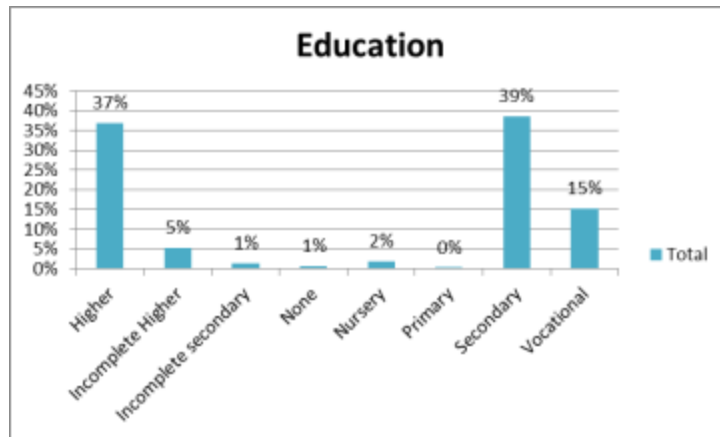
Table 3-9 Marital Status

Status	%
Married	70%
Unmarried	19%
Divorced	1%
Widowed	9%
Total	

45.The major part of the surveyed people – 39% - has secondary education, 37% - higher education and 15% - vocational education. **Figure 3-4** provides the information

on education level in the project affected villages. Data are taken from socio-economic survey results, carried out within preparation of LARP.

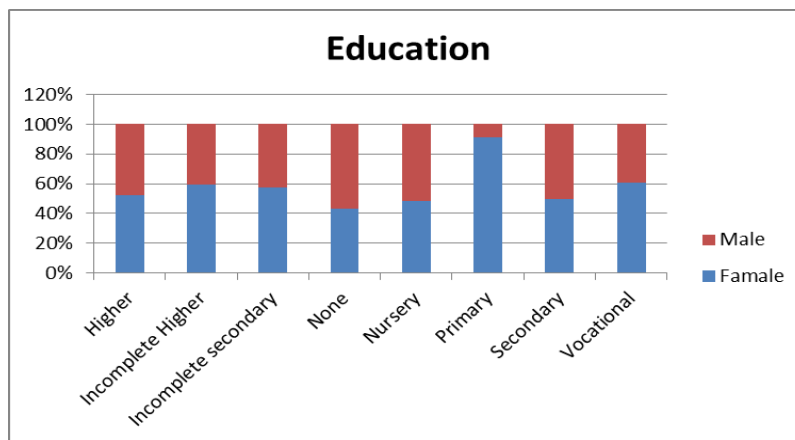
Figure 3-4 Education Level in the Project Affected Villages.



46. According to the survey results 52% of interviewed populations with higher education are woman, but in case of population with secondary education it is 50%. Majority of population with vocational education are woman (61%). Detailed information is showed in **Figure 3-5**

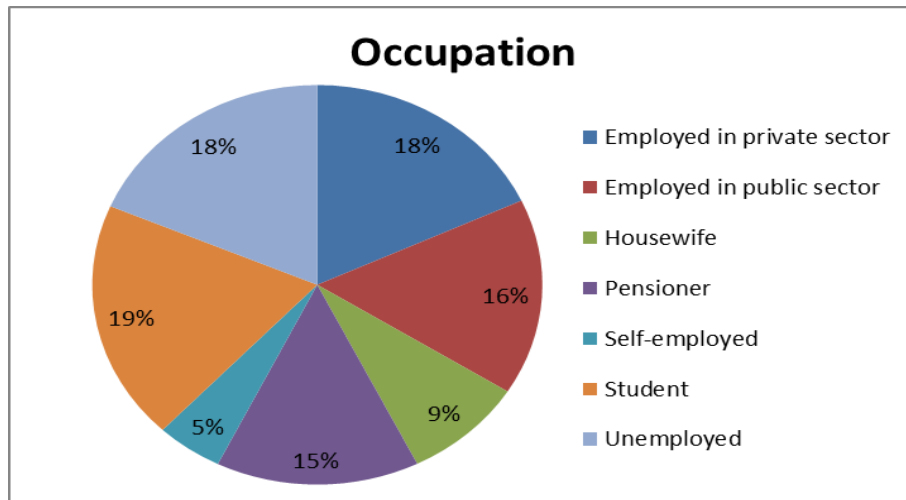
47. Women with higher or vocational education are 54% of interviewed women aged over 18.

Figure 3-5 Population distribution by education and sex



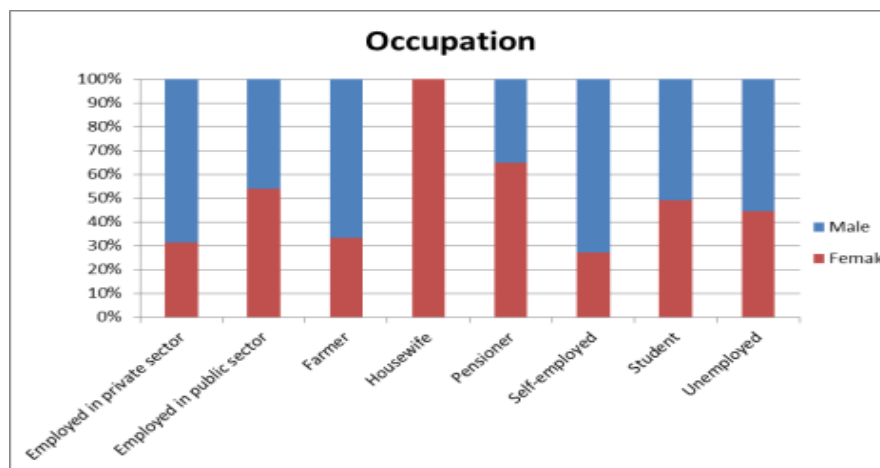
48. According to the survey results on employment status, 34% of surveyed people are employed, almost 18% is unemployed, 9% - housewives, 19% - students or pupils, 15% - pensioners. The Figure 3-6 provides percentage and quantitative distribution of population according to employment status.

Figure 3-6 Percentage and quantitative distribution of the population according to the employment status



49. Below in Figure 3-7 is shown quantitative distribution of the population according to the employment status and sex. As shown below majority of employed people in private sector are men (68%), but in case of public sector women (54%).

Figure 3-7 Distribution of the population according to the employment status and sex



50. In table 3-10 is shown distribution of employed population by education level.

Table 3-10 Occupation and Education Level

Occupation	Higher	Secondary	Vocational
Employed in private sector	28%	30%	28%
Employed in public sector	42%	10%	18%
Housewife	8%	19%	18%
Self-employed	6%	7%	13%
Unemployed	16%	35%	24%
Total	100%	100%	100%

Livelihood

51. According to the survey, it is found that the average wage of the population in the target villages is 672 GEL, besides, the majority (59%) states that the main source of income is wage, 15% of the surveyed families said that main source is pension/allowance , only 5 % said that it is self-employment.

52. Even one member of every second household has loan (in the bank, micro-financing institutions or from private persons).

Household assets

53. Full majority of families have electricity functional all the time and mobile phones, almost 40 % of said that they don't have functional water supply, hot water and sewerage.

54. Majority of interviewed households have refrigerators, television, mobile phone and gas. Detailed information is given below in table 3-10.

Table 3-11 Household assets

1. Refrigerator	95%
2. Television	96%
3. Gas	88%
4. Gas Heater	69%
5. Computer	65%
6. Mobile phone/telephone	95%
7. Washing machine	80%
8. Car	39%
9. Other, specify _____	0%

55. Majority of population uses gas for heating (69%) and 31% uses firewood.

Agriculture

56. In table 3-11 is given information about how many interviewed families are growing one year crops

Table 3-12 One Year Crop

Crops	Zestaphoni city (Household)	Villages (Household)	Total (Household)
Corn	20	297	317
Fruit	24	285	309
Potatoes	6	171	177
Vegetables	14	209	223
Walnut/Hazelnut	20	277	297
Grapes	20	283	303
Hay	0	85	85
Other	0	0	0

57. Below in table 3-12 is given information about quantity of households which own livestock

Table 3-13 Livestock

Livestock	Zestaphoni city (Household)	Villages (Household)	Total (Household)
Cow, Ox and buffalo	5	195	200
Horse or donkey	2	3	5
Pigs	4	36	40
Sheep	3	7	10
Chicken or Turkey	11	236	247
Other	0	0	0

58. In table 3-13 is given information about families who sell products.

Table 3-14 Product sell

Product Sell	Zestaphoni city (Household)	Villages (Household)	Total (Household)
Dairy product	2	75	77
Honey	1	6	7
Handmade items	1	1	2
Fruit	4	4	8
Vegetables	2	1	3
Flour	1	2	3
Other	0	6	6

4 LEGAL AND POLICY FRAMEWORK

4.1 General

59. The legal and policy framework of the Project is based on national laws and legislations related to Land Acquisition and Resettlement (LAR) in Georgia, ADB's Safeguard Policy Statement 2009 and JICA Guidelines for Environmental and Social Considerations (April, 2010).

4.2 Legal Framework

4.2.1 Georgia's Laws and Regulations on Land Acquisition and Resettlement

60. In Georgia, the legislative acts given below regulate the issues of obtaining State ownership rights to privately owned land parcels based on the necessary public needs caused due to road constructions activities:

- The Constitution of Georgia, August 24, 1995 (Last update 16 October 2013)
- The Civil Code of Georgia, June 26, 1997 (amend. 2000, 2002, 2003, 2004, 2005, 2006, 207, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016)
- The Law of Georgia on Notary Actions , December 4 2009 (amend. 2010, 2011, 2012, 2013, 2014, 2015)
- Law on Public Health 27 June 2007 (amend. 2009, 2010, 2011, 2012, 2013, 2014, 2015)
- The Law of Georgia on Ownership Rights to Agricultural Land, March 22, 1996 (amend. 1997, 1998, 1999, 2000, 2003, 2004, 2007, 2010, 2012, 2014, 2016)
- Law on Compensation of Land Substitute Costs and Damages due to Allocating Agricultural Land for Non-Agricultural Purposes 1997 (amend. 2005, 2006, 2007, 2009, 2010, 2011, 2013, 2014, 2015)
- The Law of Georgia on Recognition of the Property Ownership Rights Regarding the Land Plots Owned (Used) by Physical Persons or Legal entities; 11 June 2007 (amend. 2007, 2008, 2009 2010, 2011, 2012)
- Law on state property 2010 (amend 2011, 2012, 2013, 2014, 2016)
- The Law of Georgia on Public Register- No820 –IIs; December 19 of 2008; (amended 2009 2010, 2011, 2012, 2013, 2014, 2015)
- In frames of national project, the Law of Legal Power of Land Parcels Systemic and Sporadic Registration and Improvement of Quality of Cadastral Data. June 17 of 2016. (amended December 14 2016)
- The Law of Georgia on the Rules for Expropriation of Ownership for Necessary Public Need, July 23, 1999 (amend. 2005, 2007, 2010, 2013, 2017)
- The Civil Procedural Code of Georgia, November 14, 1997(amend. 1998-2015)
- The Law of Georgia on State property, June 21, 2010
- Labour Code, May 25, 2006
- Tax Code, January 2005
- Law on Entrepreneurship, October 28, 1994

61. The existing Laws provide that compensation for lost assets, including land, structures, trees and standing crops, should be based on the current market price without depreciation. Overall the above laws/regulations provide that the principle of replacement cost compensating at market value is reasonable and legally acceptable. The laws also identify the types of damages eligible to compensation and indicate that compensation is to be given both for loss of physical assets and for the loss of incomes.

Finally, these laws place strong emphasis on consultation and notification to ensure that the APs participate in the process. Income loss due to loss of harvest and business closure will be compensated to cover net loss. The above-listed laws and regulations give the possibility of applying the following mechanisms for legal application of the property rights:

- 1) Obtaining the right on way without expropriation through the payment of due compensation (on the basis of a contract of agreement or a court decision) prior to commencement of the activities.
- 2) Expropriation which gives the possibility of obtaining permanent right to land and/or other real estate property on the basis of Eminent Domain Law or a court decision through the payment of due compensation.

62. Land will be acquired, first on the basis of negotiated settlement with individual affected entities. Should the contract negotiation not yield an agreement, the expropriation process under the eminent domain will start. Under the existing Law in Georgia, the President will issue an order for expropriation based on the request from relevant state agencies. Relevant regional court will assess the presidential order and determine the case of public needs, and grant the expropriation entity rights to obtain land. The court will also appoint a third party to assess the market value of lost assets and determine the compensation payable to relevant land owners accordingly to the value of assets thus found.

4.2.2 ADB's Policy on Involuntary Resettlement

63. Three important elements of ADB's involuntary resettlement policy are: (i) compensation to replace lost assets, livelihood, and income; (ii) assistance for relocation, including provision of relocation sites with appropriate facilities and services; and (iii) assistance for rehabilitation to achieve at least the same level of well-being with the project as without it. For any ADB operation requiring involuntary resettlement, resettlement planning is an integral part of project design, to be dealt with from the earliest stages of the project cycle, taking into account the following basic principles:

- (i) Screen the project early on to identify past, present, and future involuntary resettlement impacts and risks. Determine the scope of resettlement planning through a survey and/or census of displaced persons, including a gender analysis, specifically related to resettlement impacts and risks.
- (ii) Carry out meaningful consultations with affected persons, host communities, and concerned nongovernment organizations. Inform all displaced persons of their entitlements and resettlement options. Ensure their participation in planning, implementation, and monitoring and evaluation of resettlement programs. Pay particular attention to the needs of vulnerable groups, especially those below the poverty line, the landless, the elderly, women and children, and Indigenous Peoples, and those without legal title to land, and ensure their participation in consultations. Establish a grievance redress mechanism to receive and facilitate resolution of the affected persons' concerns. Support the social and cultural institutions of displaced persons and their host population. Where involuntary resettlement impacts and risks are highly complex and sensitive, compensation and resettlement decisions should be preceded by a social preparation phase.
- (iii) Improve, or at least restore, the livelihoods of all displaced persons through (i) land-based resettlement strategies when affected livelihoods are land based where possible or cash compensation at replacement value for land when the

- loss of land does not undermine livelihoods, (ii) prompt replacement of assets with access to assets of equal or higher value, (iii) prompt compensation at full replacement cost for assets that cannot be restored, and (iv) additional revenues and services through benefit sharing schemes where possible.
- (iv) Provide physically and economically displaced persons with needed assistance, including the following: (i) if there is relocation, secured tenure to relocation land, better housing at resettlement sites with comparable access to employment and production opportunities, integration of resettled persons economically and socially into their host communities, and extension of project benefits to host communities; transitional support and development assistance, such as land development, credit facilities, training, or employment opportunities; and (iii) civic infrastructure and community services, as required.
 - (v) Improve the standards of living of the displaced poor and other vulnerable groups, including women, to at least national minimum standards. In rural areas provide them with legal and affordable access to land and resources, and in urban areas provide them with appropriate income sources and legal and affordable access to adequate housing.
 - (vi) Develop procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement to ensure that those people who enter into negotiated settlements will maintain the same or better income and livelihood status.
 - (vii) Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets.
 - (viii) Prepare a resettlement plan elaborating on displaced persons' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget, and time-bound implementation schedule.
 - (ix) Disclose a land acquisition and resettlement plan, including documentation of the consultation process in a timely manner, before project appraisal, in an accessible place and a form and language(s) understandable to affected persons and other stakeholders. Disclose the final resettlement plan and its updates to affected persons and other stakeholders.
 - (x) Conceive and execute involuntary resettlement as part of a development project or program. Include the full costs of resettlement in the presentation of project's costs and benefits. For a project with significant involuntary resettlement impacts, consider implementing the involuntary resettlement component of the project as a stand-alone operation.
 - (xi) Pay compensation and provide other resettlement entitlements before physical or economic displacement. Implement the resettlement plan under close supervision throughout project implementation.
 - (xii) Monitor and assess resettlement outcomes, their impacts on the standards of living of displaced persons, and whether the objectives of the resettlement plan have been achieved by taking into account the baseline conditions and the results of resettlement monitoring. Disclose monitoring reports.

4.2.3 Comparison of ADB Policy with Georgian Laws and Legislation

64. Overall, the legislation of Georgia adequately reflects the major provisions of the ADB Safeguards Policy Statement 2009 but a few differences are to be noted. The most significant of these differences is that under Georgian legislation/regulation, emphasis is put on the definition of formal property rights and on how the acquisition of properties for public purposes is to be implemented and compensated while in the case of ADB policy emphasis is put both on the compensation of rightfully owned affected assets and on the general rehabilitation of the livelihood of Affected People (AP) and Households (AH). Because of this, ADB policy complements the Georgian legislation/regulation with additional requirements related to (i) the economic rehabilitation of all AP/AH (including those who do not have legal/formal rights on assets acquired by a project); (ii) the provision of indemnities for loss of business and income, (iii) and the provision of special allowances covering AP/AH expenses during the resettlement process or covering the special needs of severely affected or vulnerable AP/AHs. Also, in addition, the legislation of Georgia does not require any specific measure regarding the need to prepare LARPs based on extensive public consultations. The differences between Georgia law/regulation and ADB policy are outlined in Table 4-1.

Table 4-1 Comparison Of Georgian Laws On Lar And Adb Resettlement Policy

Georgia Laws and Regulations	ADB Involuntary Resettlement Policy
Land compensation only for titled landowners. In practice legalizable land owners are also compensated after they register their ownership with the NAPR.	Lack of title should not be a bar to compensation and/or rehabilitation. Non-titled landowners receive rehabilitation assistance.
Only registered houses/buildings are compensated for damages/demolition caused by a project	All Affected houses/buildings are compensated for buildings damages/demolition caused by a project.
Crop losses compensation provided only to registered Landowners	Crop losses compensation provided to landowners and sharecrop/lease tenants whether registered or not LARP
Land Acquisition Committee is the only pre-litigation final authority to decide disputes and address complaints regarding quantification and assessment of compensation for the affected assets.	Complaints & grievances are resolved informally through community participation in the Grievance Redress Committees (GRC), Local governments, and NGO and/or local-level community based organizations (CBOs).
Decisions regarding LAR are discussed only between the landowners and the Land Acquisition Authorities.	Information on quantification, affected items value assets, entitlements, and compensation/financial assistance amounts are to be disclosed to the APs prior to appraisal
Loss of income is considered for compensation but no provision for income/livelihood rehabilitation, allowances for severely affected or vulnerable APs, or resettlement expenses.	ADB policy requires rehabilitation for income/livelihood, severe losses, and for expenses incurred by the APs during the relocation process.
There is provision for consultation with APs but there is no specific plan for public consultation under the Georgian laws	Public consultation and participation is the integral part of ADB's policy which is a continuous process at conception, preparation, implementation and finally at post implementation period

65. To reconcile the gaps between Georgia laws/regulations and ADB Policy (ADB's SPS 2009), RDMRDI has adopted this policy for the Project, ensuring compensation at full replacement cost of all items, the rehabilitation of informal settlers, and the provision of subsidies or allowances for AHs those will be relocated, suffer business losses, or will be severely affected.

4.2.4 Description of JICA policies on land acquisition and resettlement

- (i) Involuntary resettlement and loss of means of livelihood are to be avoided when feasible by exploring all viable alternatives.
- (ii) When, after such an examination, avoidance is proved unfeasible, effective measures to minimize impact and to compensate for losses must be agreed upon with the people who will be affected.
- (iii) People who must be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported, so that they can improve or at least restore their standard of living, income opportunities and production levels to pre-project levels.
- (iv) Compensation must be based on the full replacement cost¹ as much as possible.
- (v) Compensation and other kinds of assistance must be provided prior to displacement.
- (vi) For projects that entail large-scale involuntary resettlement, resettlement action plans must be prepared and made available to the public. It is desirable that the resettlement action plan include elements laid out in the World Bank Safeguard Policy, OP 4.12, Annex A.
- (vii) In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance. When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people.
- (viii) Appropriate participation of affected people must be promoted in planning, implementation, and monitoring of resettlement action plans.
- (ix) Appropriate and accessible grievance mechanisms must be established for the affected people and their communities.

66. Above principles are complemented by World Bank OP 4.12, since it is stated in JICA Guideline that “JICA confirms that projects do not deviate significantly from the World Bank’s Safeguard Policies”. Additional key principle based on World Bank OP 4.12 is as follows.

- (x) Affected people are to be identified and recorded as early as possible in order to establish their eligibility through an initial baseline survey (including population census that serves as an eligibility cut-off date, asset inventory, and socioeconomic survey), preferably at the project identification stage, to prevent

¹ Description of “replacement cost” is as follows.

Land	Agricultural Land	The pre-project or pre-displacement, whichever is higher, market value of land of equal productive potential or use located in the vicinity of the affected land, plus the cost of preparing the land to levels similar to those of the affected land, plus the cost of any registration and transfer taxes.
	Land in Urban Areas	The pre-displacement market value of land of equal size and use, with similar or improved public infrastructure facilities and services and located in the vicinity of the affected land, plus the cost of any registration and transfer taxes.
Structure	Houses and Other Structures	The market cost of the materials to build a replacement structure with an area and quality similar or better than those of the affected structure, or to repair a partially affected structure, plus the cost of transporting building materials to the construction site, plus the cost of any labor and contractors’ fees, plus the cost of any registration and transfer taxes.

a subsequent influx of encroachers of others who wish to take advantage of such benefits.

- (xi) Eligibility of Benefits include, the PAPs (Project Affected Persons) who have formal legal rights to land (including customary and traditional land rights recognized under law), the PAPs who don't have formal legal rights to land at the time of census but have a claim to such land or assets and the PAPs who have no recognizable legal right to the land they are occupying.
- (xii) Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based.
- (xiii) Provide support for the transition period (between displacement and livelihood restoration).
- (xiv) Particular attention must be paid to the needs of the vulnerable groups among those displaced, especially those below the poverty line, landless, elderly, women and children, ethnic minorities etc.
- (xv) For projects that entail land acquisition or involuntary resettlement of fewer than 200 people, abbreviated resettlement plan is to be prepared.

67. In addition to the above core principles on the JICA policy, it also laid emphasis on a detailed resettlement policy inclusive of all the above points; project specific resettlement plan; institutional framework for implementation; monitoring and evaluation mechanism; time schedule for implementation; and, detailed Financial Plan etc.

4.2.5 Comparison of JICA Policies with Georgian Laws and Legislation

68. Overall, the legislation of Georgia adequately reflects the major provisions of the JICA Guidelines for Environmental and Social Considerations (April, 2010) but a few differences are to be noted. The most significant of these differences is that under Georgian legislation/regulation, emphasis is put on the definition of formal property rights and on how the acquisition of properties for public purposes is to be implemented and compensated while in the case of JICA guidelines emphasis is put both on the compensation of rightfully owned affected assets and on the general rehabilitation of the livelihood of Affected People (AP) and Households (AH). Because of this, JICA policy complements the Georgian legislation/regulation with additional requirements related to (i) the economic rehabilitation of all AP/AH (including those who do not have legal/formal rights on assets acquired by a project); (ii) the provision of indemnities for loss of business and income, (iii) and the provision of special allowances covering AP/AH expenses during the resettlement process or covering the special needs of severely affected or vulnerable AP/AHs. Also, in addition, the legislation of Georgia does not require any specific measure regarding the need to prepare LARPs based on extensive public consultations.

69. To reconcile the gaps between Georgia laws/regulations and JICA Policy, RDMRDI has adopted the JICA policies for the Project, ensuring compensation at full replacement cost of all items, the rehabilitation of informal settlers, and the provision of subsidies or allowances for AHs those will be relocated, suffer business losses, or will be severely affected. The differences between Georgia law/regulation and JICA policies are outlined in Table 4-1.

Table 4-2 Comparison of Georgian law on LAR and JICA policies on Land Acquisition and Resettlement

No.	JICA Guidelines	Laws of Georgia	Gap between JICA Guidelines and Laws of Georgia	How to fill the identified gaps
1.	Involuntary resettlement and loss of means of livelihood are to be avoided when feasible by exploring all viable alternatives. (JICA GL)	No provision for avoidance of involuntary resettlement and loss of means of livelihood	Laws of Georgia have no provision for avoidance of involuntary resettlement and loss of means of livelihood	During DD there was made some changes to avoid involuntary resettlement. For example design of one of the tunnels was completely changed to avoid resettlement of several households.
2.	When population displacement is unavoidable, effective measures to minimize impact and to compensate for losses should be taken. (JICA GL)	No provision for minimization of impact caused by population displacement	Laws of Georgia have no provision for minimization of impact caused by population displacement	For minimize impact PAPs will be given full replacement cost for assets and allowances for severely affected HH, vulnerable HH and relocation/shifting allowances.
3.	People who must be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported, so that they can improve or at least restore their standard of living, income opportunities and production levels to pre-project levels. (JICA GL)	Loss of income is considered for compensation but no provision for income/livelihood rehabilitation, allowances for severely affected or vulnerable APs, or resettlement expenses	Laws of Georgia have no provision for income/livelihood rehabilitation, allowances for severely affected or vulnerable APs, or resettlement expenses	To improve or at least restore there standards of living APs will be given compensation for severely affected HH, vulnerable HH and relocation/shifting allowances.
4.	Compensation must be based on the full replacement cost as much as possible. (JICA GL)	No specific provision for compensation based on the full replacement cost	Laws of Georgia have no provision for compensation based on the full replacement cost	Compensation will be given in full replacement cost.
5.	Compensation and other kinds of assistance must be provided prior to displacement (JICA GL)	No specific provision for timing of provision of compensation and other kinds of assistance	Laws of Georgia have no provision for timing of provision of compensation and other kinds of assistance	Compensation and other kinds of assistance will be provided prior to displacement
6.	For projects that entail large-scale involuntary resettlement, resettlement action plans must be prepared and made available to	No provision for preparation of resettlement action plans for the projects that entail large-scale involuntary resettlement	Laws of Georgia have no provision for preparation of resettlement action plans	LARP will be disclosed on the website of RD.

	the public. (JICA GL)			
7.	In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance. (JICA GL)	There is provision for consultation with APs but there is no specific plan for public consultation under the Georgian laws	Laws of Georgia have no provision for specific plan for public consultation	During the DD two public consultations was held and also individual consultations with stakeholders (Detailed information is given in annex 3, 4, 5).
8.	When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people. (JICA GL)	No provision for giving explanations in a form, manner, and language that are understandable to the affected people	Laws of Georgia have no provision for giving explanations in a form, manner, and language that are understandable to the affected people	During Public consultation fully explanation was given in language that was understandable for PAPs. Also they were given informational leaflets.
9.	Appropriate participation of affected people must be promoted in planning, implementation, and monitoring of resettlement action plans. (JICA GL)	No provision for promotion of appropriate participation of affected people in planning, implementation, and monitoring of resettlement action plans	Laws of Georgia have no provision for promotion of appropriate participation of affected people in planning, implementation, and monitoring of resettlement action plans	RDMRDI will follow the JICA GL.
10.	Appropriate and accessible grievance mechanisms must be established for the affected people and their communities. (JICA GL)	Land Acquisition Committee is the only pre-litigation final authority to decide disputes and address complaints regarding quantification and assessment of compensation for the affected assets.	Laws of Georgia have provision of Land Acquisition Committee as pre-litigation final authority to decide disputes and address complaints regarding quantification and assessment of compensation for the affected assets.	Complaints & grievances are resolved informally through community participation in the Grievance Redress Committees (GRC), Local governments, and NGO and/or local-level community based organizations (CBOs)
11.	Affected people are to be identified and recorded as early as possible in order to establish their eligibility through an initial baseline survey (including population census that serves as an eligibility cut-off date, asset inventory, and socioeconomic survey), preferably at the project	No provision for requirement of identification and record of affected people in early stage to establish their eligibility through an initial baseline survey	Laws of Georgia have provision or requirement of identification and record of affected people in early stage	Affected identified during DMS. Cut-off-date was declared as start date of DMS.

	identification stage, to prevent a subsequent influx of encroachers of others who wish to take advance of such benefits. (WB OP4.12 Para.6)			
12.	Eligibility of benefits includes, the PAPs who have formal legal rights to land (including customary and traditional land rights recognized under law), the PAPs who don't have formal legal rights to land at the time of census but have a claim to such land or assets and the PAPs who have no recognizable legal right to the land they are occupying. (WB OP4.12 Para.15)	<ul style="list-style-type: none"> - Compensation for land is conducted only for titled landowners. - Only registered houses/buildings are compensated for damages/demolition caused by a project. - Crop losses compensation provided only to registered Landowners 	Laws of Georgia accept compensation only on titled landowners, registered houses/buildings and registered landowners(crops)	<ul style="list-style-type: none"> - Lack of title should not be a bar to compensation and/or rehabilitation. - Non-titled landowners receive rehabilitation assistance. - All Affected houses/buildings are compensated for buildings damages/demolition caused by a project. - Crop losses compensation provided to landowners and sharecrop/lease tenants whether registered or not.
13.	Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based. (WB OP4.12 Para.11)	No provision for preference on land-based resettlement strategies for displaced persons whose livelihoods are land-based.	Laws of Georgia have no provision for preference on land-based resettlement strategies	Compensation to PAPs will be given in cash.
14.	Provide support for the transition period (between displacement and livelihood restoration). (WB OP4.12 Para.6)	No provision for provision of support for the transition period	Laws of Georgia have no provision for provision of support for the transition period	RD will provide support during and displacement.
15.	Particular attention must be paid to the needs of the vulnerable groups among those displaced, especially those below the poverty line, landless, elderly, women and children, ethnic minorities etc. (WB OP4.12 Para.8)	No provision for particular attention on vulnerable groups among those displaced, especially those below the poverty line, landless, elderly, women and children, ethnic minorities etc	Laws of Georgia have no provision for particular attention on vulnerable groups	RD will take attention to the needs of vulnerable people during implementation of LARP throughout appropriate measures.
16.	For projects that entail land acquisition or involuntary resettlement of fewer than 200 people, abbreviated	No provision for preparation of abbreviated resettlement plan for the projects that entail land	Laws of Georgia have no provision for preparation of abbreviated resettlement plan	Fully LARP is applied.

	resettlement plan is to be prepared. (WB OP4.12 Para.25)	acquisition or involuntary resettlement of fewer than 200 people		
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4.2.6 Resettlement Policy Commitments for the Project

70. The resettlement policy for the project has been designed to (a) cover all APs irrespective of their title to land, (b) provide replacement cost compensation for lost assets, and (c) restore or enhance the livelihoods of all categories of APs. The households/persons affected by the project interventions will receive cash compensation for land and other assets at full replacement cost as per market price at the time of dispossession. Additional measures will be taken to ensure minimum disruption during the project construction period. Physically and economically affected households will receive due compensation, relocation assistance, and allowances in accordance with the following guidelines and policy which are also part of the Land Acquisition and Resettlement Framework⁵ of the Program and the Georgian laws on land acquisition and ADB's SPS 2009:

- Land acquisition, and other involuntary resettlement impacts will be avoided or minimized exploring all viable alternative project designs.
- Where unavoidable, a time-bound LARP will be prepared and APs will be assisted in improving or at least regaining their pre-program standard of living.
- Land will be acquired through a contract agreement to the extent possible. Expropriation process will be sought only as the last resort when all possibilities of negotiation fail.
- Vulnerable and severely APs will be provided special assistance.
- Non-titled APs (e.g., informal dwellers or squatters, APs without registration details) will receive a livelihood allowance in lieu of land compensation and will be fully compensated for losses other than land.
- Legalizable APs (APs possessing ownership documents but with title formalization pending, as well as APs who are not registered but have residential land or agricultural plots adjacent to the residential land) will be legalized and fully compensated for land losses.
- The land users who are not registered but legitimately use agricultural land not adjacent to residential plots will be provided with cash compensation at full replacement cost, according to the Decree of the Government of 2011. The payments will be executed without registration in NAPR.
- Provision of income restoration and rehabilitation compensation will be made.
- The LARP will be disclosed to the APs in the local language which is Georgian.
- Payment of compensation, resettlement assistance and rehabilitation measures the rates set in this LARP will be fully provided prior to the contractor taking physical acquisition of the land and prior to the commencement of any construction activities on a particular package.

- Compensation will be provided at least at the rates detailed in this LARP although some modification in excess will be possible during the discussions preceding the signing of the contract
- Complaints will be reviewed using the existing grievance redress mechanisms.
- For projects that entail large-scale involuntary resettlement, resettlement action plans must be prepared and made available to the public. It is desirable that the resettlement action plan include elements laid out in the World Bank Safeguard Policy, OP 4.12
- Appropriate participation of affected people must be promoted in planning, implementation, and monitoring of resettlement action plans.
- Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based.
- Provide support for the transition period (between displacement and livelihood restoration).
- In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance. When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people.

4.2.7 Land Acquisition Process

71. Complete and accurate registration of private land as per current laws governing land acquisition in Georgia is the precondition for proceeding with acquisition of private land by agencies requiring land for land based infrastructure development. RDMRDI for construction of the Khevi-Argveta road section F4 will acquire private land under eminent domain through negotiated settlement wherever possible, based on meaningful consultation with APs, including those without legal title to assets. The land buyer will offer adequate and fair price for land and/or other assets. RDMRDI will ensure that the process of land acquisition with the APs openly address the risks of asymmetry of information and bargaining power of the parties involved in such transactions. Only in case there is no agreement to land acquisition, expropriation will be sought.

72. The detail design consultant has prepared an estimate of compensation and entitlement of individual APs under the subtitle of Acquisition and Compensation Matrix (ACM). ACM is a detailed program for execution of LARP as per land acquisition and resettlement framework consistent with JICA Guidelines for Environmental and Social Considerations (April, 2010) and ADB's involuntary resettlement policy (SPS 2009).

73. Following the ACM, LARC, assisted by LAR Team at rayon level will offer to each of the APs the compensation rates defined in this LARP. Upon successful settlement, Land Acquisition Agreements will be signed with legalized/titled owners of acquired land parcels and Agreement of Entitlement with the non-titled APs. Any grievances of the APs will be resolved through approved grievance redress mechanism of the Project.

74. In case an AP does not accept the rates defined in this LARP even after attempts to resolve through the grievance redressing mechanism exercise, RDMRDI will seek concurrence of the appropriate authority in the management for proceeding with

Expropriation Process under the eminent domain for acquisition of the land through Rayon courts.

75.The detail design consultant has prepared fresh maps of the acquired plots with geometric details required for legalization. RDMRDI will provide these maps to the concerned legalizable owners. The process will be followed by endorsement of these maps and ownership documents by the Sakrebulo and finally getting them registered in the local registration office prior to the receipt of the project compensation. A detailed procedure of legalization of legalizable owners is provided in Annex 1.

4.3 Compensation Eligibility and Entitlements

4.3.1 Eligibility

76.APs entitled for compensation or at least rehabilitation provisions under the Project are:

- All APs losing land either covered by legal title/traditional land rights, Legalizable, or without legal status;
- Tenants and sharecroppers whether registered or not;
- Owners of buildings, crops, plants, or other objects attached to the land; and
- APs losing business, income, and salaries.

77.Compensation eligibility will be limited by a cut-off date to be set for each subproject on the day of the beginning of the AP Census and DMS. APs who settle in the affected areas after the cut-off date will not be eligible for compensation. They, however will be given sufficient advance notice, requested to vacate premises and dismantle affected structures prior to project implementation. Their dismantled structures materials will not be confiscated and they will not pay any fine or suffer any sanction.

4.3.2 Definition of Entitlements

78.Entitlement provisions for PAPs losing land, houses, assets, business, income, and rehabilitation subsidies, will include provisions for permanent and temporary loss of land, residential house and commercial buildings, annual crops and trees, relocation subsidy, and business loss allowance based on tax declarations and/or lump sums as determined in the LARP.

79.These entitlements are detailed below:

80.**Loss of land (agricultural, residential, and commercial)** will be cash compensated at replacement cost as per market price at the time of dispossession. The unit rate per square meter of land will be determined in accordance to the widely adopted International Valuation Standards (IVS). The EA or the Consultant responsible for LARP development will hire independent licensed appraiser to meet the requirement stipulated under the RPF, follow the RPF's valuation methodology and determine unit rates for compensation per each type of loss any PAP may incur as a result of proposed road rehabilitation project.

81.The amount of cash compensation shall allow PAP to acquire alternative land parcels equal in value and productivity to the parcel released for road project purposes. If during LARP preparation, the need is identified that PAP may have to incur additional costs for preparation of new land parcel to levels similar to those of the affected land, PAPs will receive additional one-time allowance to cover costs.

82.Additionally, any fees/taxes related to processing legalization of ownership rights to project affected land parcel being under legitimate possession of PAP, costs and fees for sub-division, registration of inaccurate records and at the NAPR registration of transaction of ownership title will also be covered by Executing Agency (RD).

83. When greater than 20% of an income generating land is affected, PAP (land-users, leaseholders and sharecroppers) will receive an additional allowance for severe impacts equal to the market value of a year's gross yield of the land lost or one-time subsistence in the amount of minimum subsistence level of income for the family of five for 3 months, whichever is greater.

84. **Loss of shared agricultural land (pasture, grazing)** local communities losing access to shared pasture, hay field, grazing will be provided with replacement land of similar size, productivity, and location acceptable to affected community. Provision of such replacement land will be the responsibility of local government. However, the Executing Agency will bear the responsibility to monitor the process and ensure that such replacement land is timely provided to project affected community at the earlier stage of project cycle to prevent deterioration of livelihood within project influence area. If such replacement is not possible, Livelihood Restoration Plan will be prepared and implemented to address the needs of affected community and preserve their livelihood at least similar to pre-project level.

85. The Executing Agency will cover any costs, land tax or registration fees if applicable according to laws or local regulations in force.

86. **Structures (residential houses, supplementary constructions, fences, walls, commercial facilities, etc.) are** cash compensated at replacement cost (i.e. Construction Cost) at current market value calculated for project affected structure and other fixed assets free of salvageable materials, depreciation and transaction costs.

87. Construction cost calculation considers market cost of the materials to build a replacement structure with an area and quality similar to or better than those of the affected structure, or to repair a partially affected structure, plus the cost of transporting building materials to the construction site, the cost of any labor and contractor's fees, and the cost of any registration and transfer and any applicable taxes/fees. The compensation for residential houses/commercial buildings will include the cost of lost water and electricity connections.

88. In case of partial impacts, full cash assistance to restore the remaining structure will apply; if partial impact/demolition of a section of the building threatens deterioration of the structure or raises safety and security concerns, cash compensation will apply to the entire building and affixed assets of the affected structure.

89. **Residual land will be fully compensated** (The portion of land that is left after the land is divided and purchased, if is too small for further agricultural/residential use or is difficult to access)

90. **Trees:** Cash compensation shall reflect income replacement. Cash compensation will be calculated at current market value and according to type, age, and productive value of project affected fruit tree. Annual yield capacity of a mature fruit bearing tree multiplied to market price of a fruit (kg/GEL) and multiplied to the number of years required to grow a new tree to same productivity age.

91. In addition, each fruit bearing tree shall be compensated for purchase of seedlings. PAPs will be eligible to dispose logged trees themselves. Construction Company will log down project affected trees and ensure free delivery of timber to the residence of PAPs.

92. In case of non-fruit perennials no cash compensation will be issued for perennials not bearing fruits. PAPs will be eligible to dispose logged trees themselves.

93. In case of perennials standing outside of private land:

- Fruit trees: Construction Company will deliver logged down trees and transfer to the Municipality. Municipality may later distribute to local population below poverty levels.
- Non-fruit trees: The legal implementation of the mentioned activity requires, that Perennials standing on the forestry land must be delisted from the State forest fund in accordance with the corresponding Decrees of Government of Georgia Construction Company will deliver logged down trees and transfer to the

Municipality. Municipality may later distribute to local population below poverty levels.

94.Crops: Cash compensation at current market rates for the net annual harvest by default.

Crop compensation will be paid to landowners, land users, tenants or other users based on their specific sharecropping agreements being made between these parties, if any.

95.Businesses owner compensation for permanent business losses will be eligible in cash for one year's income based on a tax declaration or, if unavailable, based on the official minimum annual salary; compensation for temporary business will be eligible for cash covering the income of the interruption period based on a tax declaration or, if available one-time subsistence will be calculated in the amount of consumer basket for a family of five members multiplied to three (3) months.(Amounts to be updated monthly based on national indicators for given month).

96.Business workers and employees: Indemnity for lost wages for the period of business interruption. In cases where tax declaration reports are unavailable, then official minimum monthly salary multiplied to the number of months of actual stoppage of business. In case of permanent loss of job compensation equals 1 year of the salary.

97.Agricultural land leaseholders and workers: Affected leaseholders will receive either a renewal of the lease in other plots or cash corresponding to the yearly yield of land lost for the remaining years of the lease up to a maximum of 3 years. Sharecroppers will receive their share of harvest at market rates (if impact is temporary) plus one additional crop compensation (if impact is permanent). Agricultural workers, with contracts to be interrupted, will receive an indemnity in cash corresponding to their salary in cash including portion in-kind compensation for the remaining part of the agricultural year.

98.Residential land renters/leaseholders and house renters: who have leased land and/or a house for residential purposes will be provided with a cash grant of three (3) months' rent at the prevailing market rate in the area and will be assisted in identifying alternative accommodation.

Relocation subsidy: PAPs forced to relocate will receive a one-time relocation subsidy sufficient to cover transport costs and living expenses for one month. If for project-related reasons the relocation is delayed, such as untimely payment of compensation, the payment of living expenses will be extended to the period under which the person is not able to relocate to a new place.

Additional Rehabilitation Measures

99.In compliance with ADB and JICA policy requirements and RPF LARP shall consider additional rehabilitation measures to be provided once vulnerable and severely affected PAPs are detected during LARP related surveys (DMS, census, socio-economic survey, title search) and LARP preparation.

100.Assistance for vulnerable people: In addition to the compensation of lost land and assets vulnerable PAHs will be provided with additional rehabilitation measures; in particular, one-time allowance set to 3 months payment of the minimum subsistence level in the amount of consumer basket for family of five members. During implementation, the situation of these vulnerable people will be monitored and additional assistance provided as needed to ensure that the objectives of the RPF and policies are met.

101.Additionally, other capable members of families with vulnerable PAPs will be given priority in employment in project-related jobs.

102.PAPs - holders of severely affected land parcels: PAPs experiencing road project severe impact will also be provided additional assistance: one-time

rehabilitation allowance for severe impact will equal allowance for 3 months of consumer basket for family of five members.

103. **Relocation/Shifting allowance:** will equal allowance for 3 months of consumer basket for family of five members, plus 200 Gel for transportation.

104. **Rehabilitation measures for roadside vendors:** RDMRDI according with close communication with municipality and affected vendors, will provide safer space for them rather than opening a shop along the highway.

Official Fees and Taxation

105. In none of these cases, the PAPs will be liable for any taxes and eventual transaction fees.

106. Fees for Notary service, court related administrative fees, fees for legalization, sub-division and registration at the NAPR will be paid by the Executing Agency; Taxes will be subsidized unless waived by the Government of Georgia.

107. Additionally, charges to cover bank service fees will be included on top of the amount of cash compensation to be received by PAPs at the banks.

Table 4-3 Entitlement and compensation matrix

Type of Loss	Application	Definition of AH/APs	Compensation Entitlements
Land			
Permanent loss of all types of land (arable, residential, industrial, commercial)	All land losses independent from impact severity	PAPs (with fully registered title)	PAPs will receive cash compensation at full replacement cost at current market value ¹¹ . The unit rate will be confirmed in the LARP. If any remaining part of the land owned by the registered owners is no longer appropriate for use, such remaining part will also be purchased subject to the agreement with the owner.
		PAPs (possessors of legalizable land parcel)	Assistance to PAPs in the process of legalization of project affected land parcel being under their possession. Once legalization and registration of ownership title is accomplished, land acquisition will be undertaken and PAP will receive cash compensation at full replacement cost at current market value at unit rate proposed in approved LARP. If any remaining part of the land owned by the registered owners is no longer appropriate for use, such remaining part will also be purchased subject to the agreement with the owner.
		Leaseholder of private or public lands	Free of charge renewal of lease in other plots of equal value/productivity of affected land parcel or cash compensation equivalent to market value of gross yield of affected land for the remaining lease years (up to a maximum of 3 years). In addition, cash compensation to reimburse the proven investments incurred by the Leaseholder to improve the leased land.
		Leaseholder (not	Cash compensation equivalent to market value of gross yield of

		registered)	affected land for the remaining lease years (up to a maximum of 3 years).
		Non-titled, non-legalizable land users/Squatters	Non-legalizable APs losing agricultural land plot, which is the only land plot owned by AH and provides main source of income for AH, will be compensated with one-time self-relocation allowances in cash equal to 3 months of minimum subsistence income.
Permanent loss of community land (pastures, grazing land)		Local community losing access to pasture, grazing land	Affected community will be free of charge allocated replacement land of similar size, productivity, and location acceptable to affected community by the local government. If such replacement is not possible, Livelihood Restoration Plan will be prepared and implemented to address the needs of affected community and preserve their livelihood at least similar to pre-project level.
Structures			
Residential house and auxiliary buildings	Project affected residential auxiliary buildings subject to partial/full demolition	All PAPs	All impacts will be considered as full impacts disregarding the actual impact percentage. Impacts will be compensated in cash at full replacement costs free of depreciation and transaction costs. In addition, Livelihood Restoration initiatives will be provided to PAPs that may face deterioration of livelihood through indirect impact of proposed road project. (e.g. project impact is extended only on residential dwelling subject to full cash compensation at replacement costs and additional one-time allowances to transport salvaged materials and personal belongings. However, other income generating assets (agricultural land/private commercial facilities) may remain outside of project impact; correspondingly, these assets may not be included in the suggested compensation package. PAPs after moving and settling down to a new location may at least temporarily lose income due to lack of access (increased travel time, complicated accessibility) to the above mentioned income generating assets not affected by the proposed project.
		Residential tenants/renters	One-time allowance equals monthly rental fee (specified in the lease agreement) multiplied by 3; if Lease agreement is not available, minimum monthly salary multiplied by 3; In addition one-time technical assistance for transportation personal belongings to a new location; or one-time cash allowance to cover costs for transportation personal belongings. LARP developer consultant will determine

			reasonable amount depending on the project nature and specificity.
Commercial structure	Project affected commercial facilities subject to partial/full demolition	Titleholder	Cash compensation at replacement cost at current market value calculated for project affected structure and other fixed assets free of salvageable materials, depreciation and transaction costs. If partial demolition threatens deterioration of structure or raises safety and security concerns the cash compensation, will apply to the full structure.
		Tenant of commercial facility	One-time allowance equal to monthly rental fee (specified in the lease agreement) multiplied by 3; if Lease agreement is not available, minimum monthly salary multiplied by 3.
State/Municipality owned buildings affected by project	Project affected state/Municipality owned buildings subject to partial/full demolition	IDPs, refugees, squatters occupying facilities for residential purposes	Accommodation in a government resettlement area or a self-relocation allowance as stipulated in the approved LARP.
Fences/Walls	All PAPs with fences to be affected	All PAPs	Cash compensation at replacement (construction) cost according to the material and linear meter length of affected fence/wall.
Annual Crops	Crops affected	All PAPs (including squatters)	Crop compensation in cash at gross market value of actual or expected harvest. Compensation for this item will be provided even in case if the crops were harvested. Crop compensation will be paid to landowners, land users, tenants or other users based on their specific sharecropping agreements being made between these parties, if any.
Perennials standing on private land parcels	Project affected Fruit bearing perennials	All PAPs (including squatters)	Cash compensation at market value on the basis of type, age, and productive value of fruit tree; Each fruit bearing tree in addition shall be compensated for purchase of saplings. PAPs will be eligible to dispose logged trees themselves. Construction company ensures free logging and delivery of timber to the residence of PAPs.
	Project affected non-fruit bearing perennials	All PAPs (including squatters)	No cash compensation will be issued for perennials not bearing fruits. PAPs will be eligible to dispose logged trees themselves.
Perennials (on public/State land)	Standing trees	Perennials standing outside of private land	Construction Company will deliver logged down trees and transfer to the Municipality. Municipality may later distribute to local population below poverty levels.
	Standing non fruit trees	Perennials standing outside of	The legal implementation of the mentioned activity requires, that Perennials standing on the forestry

		private land	land must be delisted from the State forest fund in accordance with the corresponding Decrees of Government of Georgia Construction Company will deliver logged down trees and transfer to the Municipality. Municipality may later distribute to local population below poverty levels.
Income loss			
Lessors/landlords	Loss of income through termination of Lease agreements	All PAPs holding lease/rental agreement	One-time allowance equal to monthly rental fee (specified in the lease agreement) multiplied by 3; if Lease agreement is not available, minimum monthly salary multiplied by 3.
Business Employment	Temporary or permanent loss of business or employment	All PAPs (including squatters)	All kind of running business (officially registered or not-vendors etc.) will be compensated in cash equal to 1-year based on tax declaration or, if unavailable (Loss of income from both formal and informal economic activities) based on the official minimum substance income. All kind of unofficial business (e.g. street vendors) will compensate based on official minimum substance income multiple on active period up to 1 year. Worker/employees: Indemnity for lost wages for the period of business interruption. In cases where tax declaration reports are unavailable, then official minimum monthly salary multiplied to the number of months of actual stoppage of business.
		Agricultural workers losing their contract	Cash indemnity corresponding to their salary for the remaining part of the agricultural year, and where needed livelihood restoration measures
Additional Rehabilitation Measures			
Technical assistance in legalization, registration procedures		All PAPs with registered title/possessors of legalizable land parcels	Free of charge technical assistance to PAPs during legalization, sub-division of project affected parcel, registration of corrections and/or sales transaction. Project related State taxes, official fees and transactions costs if not waived will be covered by the GoG.
Relocation/Shifting allowance	Transport and transitional livelihood allowances	All PAPs affected by relocation	Will equal allowance for 3 months of consumer basket for family of five members, plus 200 Gel for transportation.
Community Resources			Access shall be maintained or reinstated; Rehabilitation/substitution of the affected structures/utilities (i.e. bridges, roads, schools, health-centers, potable water supply systems, irrigation channels, etc.)
Vulnerable PAPs		PAPs below poverty	Allowance equivalent to 3 months of minimum subsistence income** and employment priority in project-related

		line; disabled people; pensioners ; widows; Female headed household; impoverish ed; IDPs; Refugees	jobs.
Severely Affected		Aps who will lose more than 20% of land plot.	Severely AH will receive an allowance equivalent to 3 months minimum subsistence for a family of 5 person
Temporary impact	Loss of access to land parcel	Owners/Us ers	Temporary access will be set up by Construction Company. In cases of temporary loss of access to land parcel results in loss to crops, the construction company will be compensate APs. All losses and amount of due compensation shall be determined according to the principles of compensation entitlements provided under the RPF and LARP.
	Avoidance of interruption of temporary access road to the business activity	Business units	Temporary access will be set up by Construction Company.
	Temporary loss of income caused by occupying land parcels for the camps and quarries	Owners/us ers	During camps' site selection process, Construction Company should coordinate with relevant state agencies and give priority to vacant lands not used for agricultural /residential purposes. In case the land parcels selected for camps and quarries will have private land-users, all losses and amount of due, compensation shall be determined according to the principles of compensation entitlements provided under the RPF and LARP.
Any other unforeseen Impacts	As required	Any	Road Department and the construction contractor will address and mitigate/compensate unforeseen resettlement impact during project.

4.3.3 Assistance for severely affected and Vulnerable AH

108. Vulnerable households are households who by virtue of gender, ethnicity, age, physical or mental disability, economic disadvantage, or social status may be more adversely affected by resettlement than others and who may be limited in their ability to claim or take advantage of resettlement assistance and related development benefits.

109. Below poverty line, women headed households, households with members with disabilities or lonely pensioner is considered as vulnerable. The vulnerable household requires special assistance for resettlement.

110. Vulnerable AHs are entitled to an allowance equivalent to 3 months of minimum subsistence for a family of 5 person and employment priority in project-related jobs. AHs are considered as vulnerable in case they are registered as poor in the local social

services or are women-headed. In absence of an official minimum subsistence, these figures are taken from the Government of Georgia Statistics Department data on minimum subsistence income for a family of 5 people.

111. Severely AH will receive an allowance equivalent to 3 months minimum subsistence for a family of 5 person.

4.3.4 Valuation and Compensation Rates

112. Valuation of compensation rates of different affected assets is various. Methodology used for determination of the compensation amount payable for damage to land owners:

Method N1 Cost Replacement approach – which contains full expenses of constructing (creating) analogous property, includes:

Direct costs:

- Cost of material;
- Construction expenses:
- Workers' wages;
- Construction profit and overhead costs;
- Transportation costs;
- And other expenses necessary for construction activities.

Indirect costs:

- Professional service costs:
 - > Architect/designer service costs;
 - > Legal service costs;
 - > Other expenses.
- Permit costs;
- Insurance costs;
- Other expenses.

Cost (replacement) approach in its turn includes 3 methods:

- 1) Method of square (cubic) meters;
- 2) Element (cost estimation) method;
- 3) Resource method.

113. In the given case, cost replacement - element (cost estimation) method has been used for calculation of the value of the project affected structures.

114. We draw up cost estimation for construction (arrangement) of the structures in replace to the structures, located on the project affected private land parcels. The type and amount of the construction material, used for the construction of the particular buildings and structures are given in this cost estimation. As for the cost of the construction materials, they are taken according to the Construction Resource Prices, published by the Construction Assessors Union.

115. The prices given in the mentioned publication were checked through the survey of market prices, when the conformity of main construction material was checked. In the result it was proved that the prices, given in the Construction Resource Prices corresponded to the existing market prices.

116. The construction (arrangement) expenses of the structures on the private land plots are fully reflected in the attached cost estimations.

117. **Method N.2 Sales Comparison Approach** – direct comparison of the appraisal object with other object, the market price of which is known (it is sold or similar action is taken). Following actions are taken while using this approach:

- Obtaining market data, analyses and classification, which gives the possibility to determine analogous property;
- Determination of the comparable elements, used for comparison of the object of the estimated property with analogues;
- Determination of the type and the degree of differences between selected comparable elements;
- Adjustment of prices of the defined comparable elements of analogues;
- Adjustment of all analogue prices in relation to the estimated property according to the defined comparable elements;
- Determination of the market price of the estimated property according to the adjusted prices of analogues.

118. Amendments are introduced according to comparable elements with following order:

- Transfer of property rights;
- Financial conditions;
- Selling conditions;
- Further expenses related to the sale;
- Market sale dynamics (sale date);
- Location;
- Physical characteristics;
- Economic characteristics;
- Usage;
- Absence of movable property.

119. In the given case sales comparison approach has been used for calculation of the market prices on land plots.

120. Market prices of land parcels and other immovable property are calculated according to the official exchange rate of GEL stated by the National Bank of Georgia for the given period of time.

Calculation methods of Compensation Costs for Perennials

121. Determination method of the loss revenue has been used for identification of compensation value of the perennial plants during the period that is essential for growing the analogue seedling to the corresponding age of the existing plants.

122. Cost of perennial plants is determined in accordance with their age. Price of fruit trees will be calculated by multiplying of the annual harvest market price to those years that is essential for growing the new perennial seedling to the same age of existing trees.

Estimation of fruit trees is performed by the following formula:

$$Q = pY [a_f - x]^1, [x - 1]^2, [a_s - 1]^3 \quad a_s < x < a_f,$$

Where:

Q – Compensation value of perennial trees;

P– Retail price of fruit/product that is set in accordance with the current market prices;

Y – Yield rate that is determined according to the Department of Statistics and monograph "Georgian Fruit-Growing" Vol. II (1973) and Vol. IV (1978) by Mr. Gogotur Agladze – Doctor of science of agriculture, member of the Academy of Science of Agriculture of Georgia and Russian Federation, the state prize laureate of Georgia, yield rate is also defined by data summarizing. Results are given in the table #5.

X – Current age of perennials that is determined by visual inspection and interview with owners.

a_s – full fruit bearing starting age is determined according to the table #6 that is compiled based on results of interviews conducted by specialists.

a_f – last age of fruit bearing is determined according to the table #6 that is compiled based on results of interviews conducted by specialists.

1 – Number of years remaining until completion of fruit bearing for each specific tree species;

2 – Number of years that a tree needs to achieve the proper age;

3 – Number of years that a tree needs to achieve the age of full fruit bearing.

Note: Out of 1,2 and 3 options, only one is used, these options are used according to relevance, (prioritizing of less years), in order to define compensation value of the loss income for each specific tree.

Based on the above given formula, compensation value of perennial plants has been calculated by considering the principle of the loss income (sum of values of a certain tree total harvest during the period of growing a new tree to the age of an existing one).

5 INSTITUTIONAL ARRANGEMENTS

5.1 Introduction

123. The Road Department of the Ministry of Regional Development and Infrastructure of Georgia (RDMRDI) will be the Executing Agency (EA) having the lead responsibility for road construction, as well as the implementation of this LARP. RDMRDI with the assistance of the consultants will develop and implement the LARP for each project based on the policy and procedures set out in the RPF. In addition to the RDMRDI, a number of other government departments and private agents will play an instrumental role in the design, construction and operation of the project. Pursuant to the active legislation, the Ministry of Natural Resources and Environmental Protection is responsible for environmental issues. The Ministry of Justice is responsible for legal matters regarding land ownership, and National Agency of Public Registry (NAPR) within the Ministry of Justice is in charge of the registration of land ownership and its transfer through purchase agreement from landowners to the Road Department. The local government at Sakrebulo and village level will also be involved.

124. The specific role and responsibility of each State Agency participating in the given project is detailed below.

5.2 Land Registration Organizations

125. Government agencies active at various levels in the process of legalization of privately owned land parcels are described hereunder.

5.2.1 Gamgeoba of Community

126. Community level Gamgeoba is the executive branch of self-government headed by Gamgebeli. Gamgebeli has the primary role in the process of legalization and registration of land parcels. Gamgebeli confirms ownership of affected land plots, parameters of land plots and endorses the cadastral maps and related data prepared for case of legalization⁷. Gamgebeli plays important role for legalization of non-rightful owners (owners in possession before the enactment of current law on privatization of land in Georgia without prior permission of the government). Gamgeoba has power to authorize details of the occupied land parcel and verify its usage pattern as the first hand verification and authorization for further consideration in the Property Rights Registration Commission (PRRC) as a basic step for registration with the Public Registry. Neighbors of applicants for legalization have roles in the authorization process.

5.2.2 Sakrebulo

127. Sakrebulo is the representative branch of self-government at rayon and village level. The village/rayon level Sakrebulo has now less involvement in the process of legalization of legalizable land plots. However, Rayon Sakrebulo assists the PRRC in the process of authorization of application of non-rightful owners.

5.2.3 Property Rights Recognition Commission

128. Under the Law of Georgia on Recognition of the Property Ownership Rights Regarding the Land Plots Owned (Used) by Physical Persons or Legal entities; 2007, the Government of Georgia has established the PRRC (Property Rights Recognition Commission) at the Rayon level for recognition of ownership rights of non-rightful owners for registration. PRRC verifies and authorizes application of ownership for registration with the NAPR. PRRC authorizes application of only those PAPs, who are

not registered but have residential land or agricultural plots adjacent to the residential land (“non-rightful land owners”, according to definition of Georgian regulations).

5.2.4 Rayon Registration Office

129.NAPR is in charge of the registration of land ownership and its transfer through acquisition agreement from landowners to the RDMRDI. Rayon Archives are now transferred in the possession of the Rayon Registration Offices of the NAPR. Rayon Archive is used for cross verification of ownership document and validity of physical possession of land by persons seeking registration as legalizable owner, in the case, owner does not have available documentation proving ownership rights on the adjacent land plot or in case there is any doubt regarding the plot.

130.Rayon Registration Office of the NAPR is the Rayon level authority for executing registration of land parcels in the name of the applicants based on package of application documents provided by rightful owners (APs possessing ownership documents but with title formalization pending) or by non-rightful owners after receiving appropriate certificate from PRRC as the case may be. The owners submit both soft copy and hard copy of plot maps with geometric details for record in the Rayon and Central NAPR. Rayon NAPR is involved in the updating and implementation of LARP.

5.3 Land Acquisition and Resettlement Organizations

5.3.1 RDMRDI of Georgia

131.RDMRDI has the overall responsibility of design, land acquisition and resettlement, construction, construction monitoring and supervision of the Project. This also includes financing and executing land acquisition and resettlement tasks and cross-agency coordination. RDMRDI will exercise its functions through its existing Resettlement Unit (RU), which is subdivision of the Roads Development and Resettlement Division (RDRD), and LAR Commission.

132.A Resettlement Unit (RU) under the RDRD headed by a Head of the Unit and staffed with other personnel having specific experience and skills in LAR is responsible for LAR activities related to the project. RU is responsible for all technical work to accomplish all LAR preparation and implementation tasks and coordination within the RDMRDI, as well as at central and local government levels.

133.As for the monitoring and management resettlements 9 officials are assigned to the central office of RD. This project will be monitored by 2 officials of the central unit.

134.LAR Commission (LARC) within RDMRDI has the authority to finally endorse all LAR related decisions and actions (i.e. approval of LARP, initiation of compensation payments etc.). LARC sits for reviewing issues for decision on as and when necessary basis. LARC will oversee and monitor implementation of the LARP to ensure that all APs are duly compensated and that mitigating measures are instituted by the Civil Works Contractor as a result of temporary impacts. It is also the final pre-litigation authority to provide decision on grievances those cannot be resolved at the regional level. LARC will ensure that the Project is implemented in accordance with the ADB and JICA policy requirements and the approved LARP. A Grievance Redress Committee (GRC) at the Gamgeoba level of the Rayons will be working to resolve the grievances of APs as a means of reducing grievances and avoiding expropriation process for acquisition of land.

135.The structure of the LARC includes experienced and skilled experts of economics and law, who simultaneously take responsible positions in RDMRDI. In case of need, on the basis of agreement with RDMRDI management and LARC the structure can be expanded inviting professionals of different sectors in response of the volume of LAR work for a project. The core team of the LARC is represented by RU, which is

supplemented by legal experts, financial experts, engineers and the like from other departments of RDMRDI.

136. The specific tasks of the RU will be to (i) establish LARC capacity at the regional level offices of the RDMRDI; (ii) ensure proper internal monitoring; and (iii) hire, following ADB and JICA policy recommendation the external monitoring agency; (iv) conduct all technical work to accomplish all LAR preparation and implementation tasks; (v) maintain the coordination of all land acquisition and resettlement related activities within the RDMRDI, as well as at central and local government levels; and (vi) provide all necessary documentation to ensure the prompt allocation of land acquisition and resettlement budgets to the APs.

137. As for the monitoring and management resettlements 9 officials are assigned to the central office of RD. This project will be monitored by 2 officials of the central unit.

5.3.2 TRRC

138. Transport Reform and Rehabilitation Centre (TRRC), a special independent agency, has been established within RDMRDI for financial management of ADB and World Bank financed projects. TRRC will get funds directly from the Ministry of Finance allocated for the project and disburse it to PAPs following requisition from RU, RDMRDI. TRRC will review, scrutinize and transfer the amount of compensation and allowances in the bank account of PAPs mentioned in the Compensation and Allowance Ledger prepared, confirmed and produced by RU of RDMRDI for each AP.

139. The main field of the Center's activities is to provide consulting services for international finance institutions (the World Bank, Asian Development Bank, Japanese International Cooperation Agency, etc.).

5.3.3 Rayon LAR Team

140. Rayon LAR Team will assist the central LARC and provide assistance to APs in the process of legalization of legalizable owners. Based on the RDMRDI's LARC decision and the LARP prices, the offer of acquisition of land parcels shall be undertaken. If an AP agrees on the acquisition he/she will confirm such agreement in writing by signing the Sales/Acquisition Agreement that will be registered with the Public Registry. This agreement will serve as the basis for compensation payment processing and release. If agreement is not reached between the AP and the LAR Team, the later will inform the LARC, which will take decision to start expropriation.

141. Kutaisi team of RU will be responsible on implementation of the project. The team of Kutaisi is composed by 2 senior officials and 2 consultants, out of them 2 will be assigned to the project.

5.3.4 Local Governments

142. Local administration especially at Rayon level has direct jurisdiction for land administration, valuation, verification and acquisition. To confirm the surveys and the asset valuations carried out by the LAR consultants, RDMRDI through its consultants will establish Rayon Level LAR Teams which will have designated officials from the Rayon administration (Rayon Sakrebulo; Gamgebeli) and representatives of each affected village/community administration (representatives of all affected community/village).

5.4 Other Organizations and Agencies

5.4.1 Civil Works Contractor

143. Civil Works Contractor to be appointed by the RDMRDI to undertake the construction will be responsible for mitigating impacts resulting from the construction activities. Based on the LARP and the Technical Design, the parcel of land that will be identified and acquired as part of road ROW will be demarcated to clearly delineate it from the remaining non-acquired parts. The construction activities shall be monitored closely by the RDMRDI to ensure compliance to the temporary mitigating measures.

5.4.2 Consultants and Auditors

144. The design consultant will be responsible for preparation of LARP and a construction supervision consultant will be in place to supervise civil works construction.

145. **Design Consultant:** The design consultant has an international social development and resettlement specialist and a national resettlement / social specialist for finalizing LARP for each construction stage. The design consultant has hired a survey and independent audit agency for land acquisition and resettlement survey and documentation including census, socioeconomic survey, inventory of losses, and valuation of land and assets for replacement value. LARP has been prepared based on findings of the surveys following the final alignment as per detailed engineering design.

146. **Construction Supervision Consultant:** Construction supervision consultant (CSC) will have land acquisition and resettlement specialists to oversee all resettlement related issues that may arise during the construction works.

5.4.3 Court of Georgia

147. The Court of Georgia shall be the last resort for issues and concerns regarding the implementation of the LARP. In case there is no agreement between the RDRD and the APs concerning the acquisition of private properties, the RDMRDI with the mandate for expropriation based on existing legislations will submit to the Court a request for expropriation. Upon its approval and following prescribed procedure, RDMRDI will then take over the concerned property after having been given by the Court the right of the Expropriator. Review of specific cases starts at local courts.

148. Furthermore, in cases where complaints and grievances regarding LARP implementation and compensation are not solved at the various levels as prescribed in the agreed Grievance Redress Mechanism, the APs will have the right to appeal the case to the court. Supreme court of Georgia as a last resort. Its decision shall be final and executor.

5.4.4 Ministry of Finance

149. The budgets for the implementation of LARP will be provided to RDMRDI by the Ministry of Finance following its official approval. The LARP budget will be allocated on the accounts of TRRC that is responsible for the financial management of the project.

5.4.5 Ministry of Justice

150. The Ministry of Justice is responsible for legal matters regarding land ownership, and National Agency of Public Registry (NAPR) within the Ministry of Justice is in charge of the registration of land ownership and its transfer through acquisition agreement from landowners to the Road Department.

5.4.6 Ministry of Economy and Sustainable Development

151. Ministry of Economy and Sustainable Development (MOESD) issues a decree confirming necessity for expropriation and assigning RD as an entity that can be

granted the right for expropriation. Decision on the expropriation will be resolved in about 1 month.

5.4.7 JICA

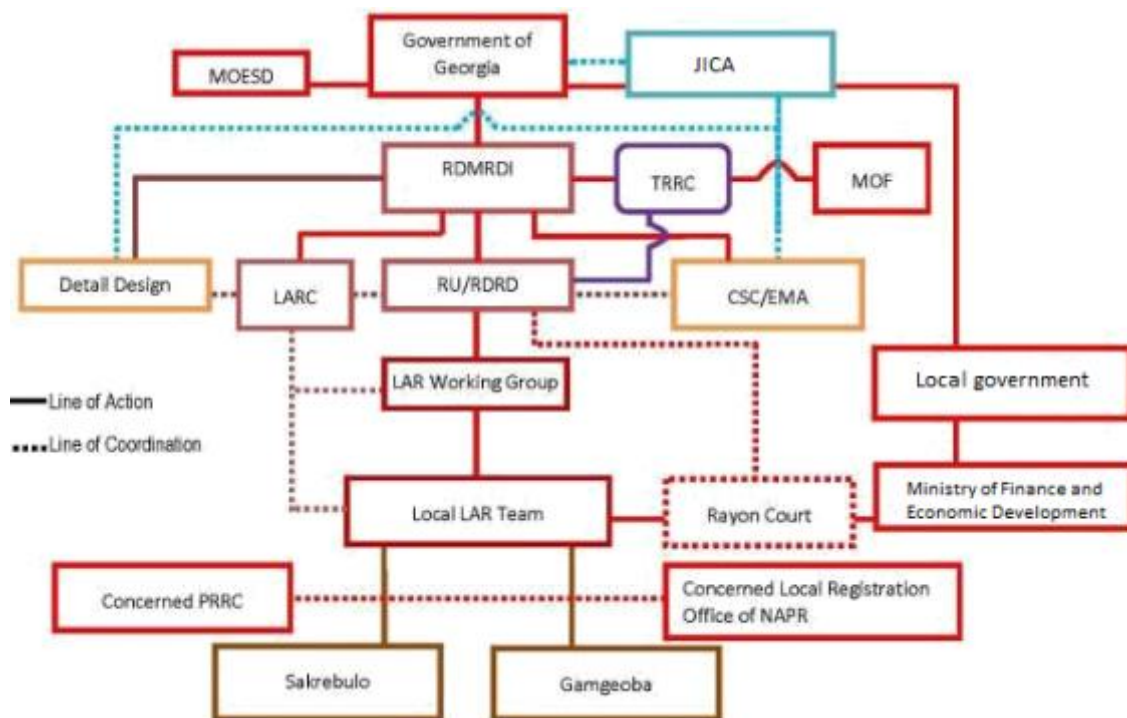
152. Besides supervising the Project periodically, JICA will review LARP and External and Internal Monitor's compliance reports, and provide clearance to contract awards signing and initiation of civil works.

5.4.8 Monitoring Agency

153. RDMRDI will appoint an independent external monitoring agency (EMA) for external monitoring and ex-post evaluation of the LARP implementation. External monitoring covers all aspects of LARP implementation, starting from legalization and finishing with payment of all compensation and rehabilitation allowances before starting civil works. The external monitoring will be executed by the hired company or person.

154. An organization chart showing all the concerned institutions to be involved in the LAR activities is depicted in the following Figure:

Figure 5-1 LAR Organization Chart



6 CONSULTATION AND PARTICIPATION

General overview

155. Following JICA policies, the RDMRDI will ensure that RPF and LARP is translated into Georgian and distributed to local government agencies. Besides, will be prepared Public Information Booklet (PIB), i.e. reduced version of the final RPF in understandable language and format for PAPs. The Public Information Booklet will be prepared into English and Georgia languages and provided to all PAPs and local governments to be publicly disclosed in the project site. Local government representatives are responsible to make the Public Information Booklet accessible to the local population, including potentially affected communities within the project influence area for review, comments and input made during the disclosure period. All comments and suggestions will be collected through the LAR Team and provided to Consultant, RDMRDI and JICA and if relevant reflected in the final version of LARP).

156. All government agencies involved in LARP preparation and implementation process will be informed about the project, and their assistance will be solicited in the conduct of the inventory of affected assets and the census of PAPs. In addition, prior to LARP finalization and its submission, PAPs will be thoroughly informed on the results of the census and inventory of impacts, and their preferences on compensation and/or other resettlement assistance will be given due consideration. The processes and mechanisms ensuring the active involvement of PAPs and other stakeholders will be detailed in the LARP, which will also include an appendix with dates, list of participants, and minutes of consultation meetings.

Objectives of Public Information and Consultation

157. Information dissemination to PAPs and involved agencies is an important part of LARP preparation and implementation. Consultation with PAPs and ensuring their active participation will reduce the potential conflicts and minimize the risk of project delays. To ensure that local authorities, as well as representatives of PAPs, will be included in the planning and decision-making processes, RDMRDI and Consultant will continue a dialogue with rayon and municipality authorities and NGOs, as relevant, during the entire project implementation process to ensure:

- Fully sharing information about the proposed subproject components and LARP activities with the PAP;
 - Obtaining information about the needs and priorities of PAPs, as well as receiving information about their reactions to proposed policies and activities;
 - That PAPs are fully informed about the decisions that will directly affect their incomes and living standards, and that they will have the opportunity to participate in activities and decision-making about issues that will directly affect them;
 - PAPs are given contact information of project responsible persons from local authorities/RD that will provide timely sufficient feedback to their inquiries
- Obtaining the cooperation and participation of the PAPs and communities in activities necessary for resettlement planning and implementation;
 - Transparency in all activities related to land acquisition and resettlement.

Consultation during LARP Preparation and Implementation

158. Public consultation and participation plan will be included in the Project to involve the stakeholders, especially the people either directly benefiting from, or affected by the subprojects, through participation in the design, implementation, and monitoring of the subprojects. All communications will be in the language most appropriate for involved and engaged parties in the project area. During LARP preparation and implementation, the Consultant with assistance as required from the RDMRDI will undertake the following:

- Conduct information dissemination and consultation for all PAPs, NGOs and other stakeholders;
- Establish the rates/unit prices to be used as the basis of compensation awards, and confirm land acquisition and impact on properties identified through the DMS/census, demarcation and inventory, in consultation with PAPs;
- Conduct a survey as part of the DMS to:
 - inform them about possible resettlement options;
 - request information from PAPs about their preferences and choices of resettlement options; and,
 - request that PAPs indicate services such as education/health/markets that they are currently using and their distance from such services;
- Consultation regarding the PAPs preferred option for livelihood stabilization and/or rehabilitation assistance (where required). This applies to PAPs experiencing significant impacts and vulnerable PAPs.

Public Information Booklet

159. To ensure that PAPs, their representatives, and local government agencies in subproject areas fully understand the details of the LARP process, and are also informed about the compensation and rehabilitation packages applicable to the Project, a Public Information Booklet (PIB) will be prepared by the consultant.

This PIB will be distributed to all PAPs and communities in the subproject area. The PIB will be translated into Georgian. The general contents of the PIB will include the following:

Brief description of the project, implementation schedule;

- Project impacts, entitlements and rights of PAPs;
- Resettlement and rehabilitation policies for all types of impacts;
- Institutions responsible for resettlement and time-frame (schedule);
- Information dissemination to and consultations with PAPs and stakeholders;
- What to do if PAPs have a question or a problem;
- Outline of the grievance redress procedure; and
- Requirements for monitoring and evaluation, including independent monitoring.

RPF and LARP Disclosure

160. The Final LARP in Georgian will be disclosed on the RD website and at RD offices. The Georgian LARP will be disclosed to the PAPs at the relevant rayon centers and Municipality buildings once road projects are identified. Its English version will be disclosed on the JICA website after approval by JICA and GoG.

161. Once a LARP for a road project will be prepared and approved by RDMRDI, and the JICA, it will be disclosed at the relevant rayon centers and Municipality buildings. A



pamphlet in Georgian, summarizing compensation eligibility and entitlement provisions, will be sent to all PAP/AHs before the initiation of the compensation/rehabilitation process and before signing contract awards. The consultation process will be continued throughout the project cycle.

7 GRIEVANCE REDRESS MECHANISM

162. A grievance mechanism will be available to allow an AP appealing any decision on which they disagree, practice or activity arising from land or other assets compensation. APs will be fully informed of their rights and of the procedures for addressing complaints whether verbally or in writing during consultation, survey, and time of compensation. Care will always be taken to prevent grievances rather than going through a redress process. This can be obtained through careful LAR design and implementation, by ensuring full participation and consultation with the APs, and by establishing extensive communication and coordination between the affected communities, the EA, and local governments in general. Complaint & Grievances will be addressed through the process described below in Table 7-1.

163. The GRM consist of project-specific systems established at the municipal level and regular system established at RDMRDI. Grievance Redress Committee (GRCE) established at municipal level as a project-specific instrument, functional for the whole period of the project implementation. Grievance Redress Commission (GRCN) is formed as an informal structure within the RDMRDI to ensure grievance review, resolution and record.

164. Grievance Redress Commission (GRCN) is formed by the order of the Head of RDMRDI as a permanently functional informal structure, engaging personnel of RDMRDI from all departments having regard to the LAR issues and complaint resolution. This includes top management, Safeguard or LAR Units, Legal Departments, PR department and other relevant departments (depending on specific structure of the Implementing Agency - IA). The GRCN is involved at the Stage 2 of grievance resolution process. The Order shall also state that if necessary representative of local authorities, NGOs, auditors, APs and any other persons or entities can be included in the commission as its members.

165. A Grievance Redress Committee (GRCE) is an informal, project-specific grievance redress mechanism, established to administer the grievances at Stage 1. This informal body will be established at community level in each affected Municipality (village/community authority). The GRCE shall include representatives of Municipal LAR Teams and local communities. The RD representative in the Municipal LAR Team shall coordinate the GRCE formation. He/she will then be responsible for the coordination of GRC activities and organizing meetings (Convener)..

166. If considered necessary, GRCEs will be established at the community level with an office order from the RD with provision of 7 members of following composition:

- | | |
|--|----------------------------|
| (i) Representative of Resettlement Unit of IA | : Convener; Contact Person |
| (ii) Representative Rayon LAR team | : Member Secretary |
| (iii) Gamgebeli – concerned Gamgeoba (village level) | : Member |
| (iv) Representative of APs | : Member |
| (v) Representative of NGO | : Member |
| (vi) Representative of Civil Works Contractor | : Member |
| (vii) LAR Specialist of Supervision Consultants | : Member |

167. Representative of the Resettlement Unit of IA is coordinating the work of the Committee and at the same time he/she is nominated as a contact person for collecting the grievances and handling grievance log. The local authorities at the municipal level, civil works Contractor, Supervising Company (Engineer), as well as APs (through informal meetings) are informed about the contact person and his contact details are available in offices of all mentioned stakeholders.

168. The Contact Person collects and records the grievances, informs all members of the Committee and the management of RD regarding the essence of the problem, engages the relevant stakeholders in discussions with the applicant of grievance,

handles the process of negotiation with AP at the stage 1 of the grievance resolution. The Contact Person prepares the minutes of meetings and ensures signatures. In case the grievance is resolved at the stage 1, the Contact Person records the fact of closing the grievance in his log and informs RDMRDI management about this in written. If the complainants are not satisfied with the GRC decisions, they can always use the procedures of Stage 2 of grievance resolution process. In that case the Contact Person helps the AP in lodging an official complaint (the plaintiff should be informed of his/her rights and obligations, rules and procedures of making a complaint, format of complaint, terms of complaint submission, etc).

169. The APs should be informed about the available GRM. This could be achieved through implementing information campaigns, distributing brochures (e.g. Communication Plan), Keeping all focal points up-to-date & maintaining regular communication with them, allowing multiple entry points for complaints, introducing forms for ease of reporting complaints.

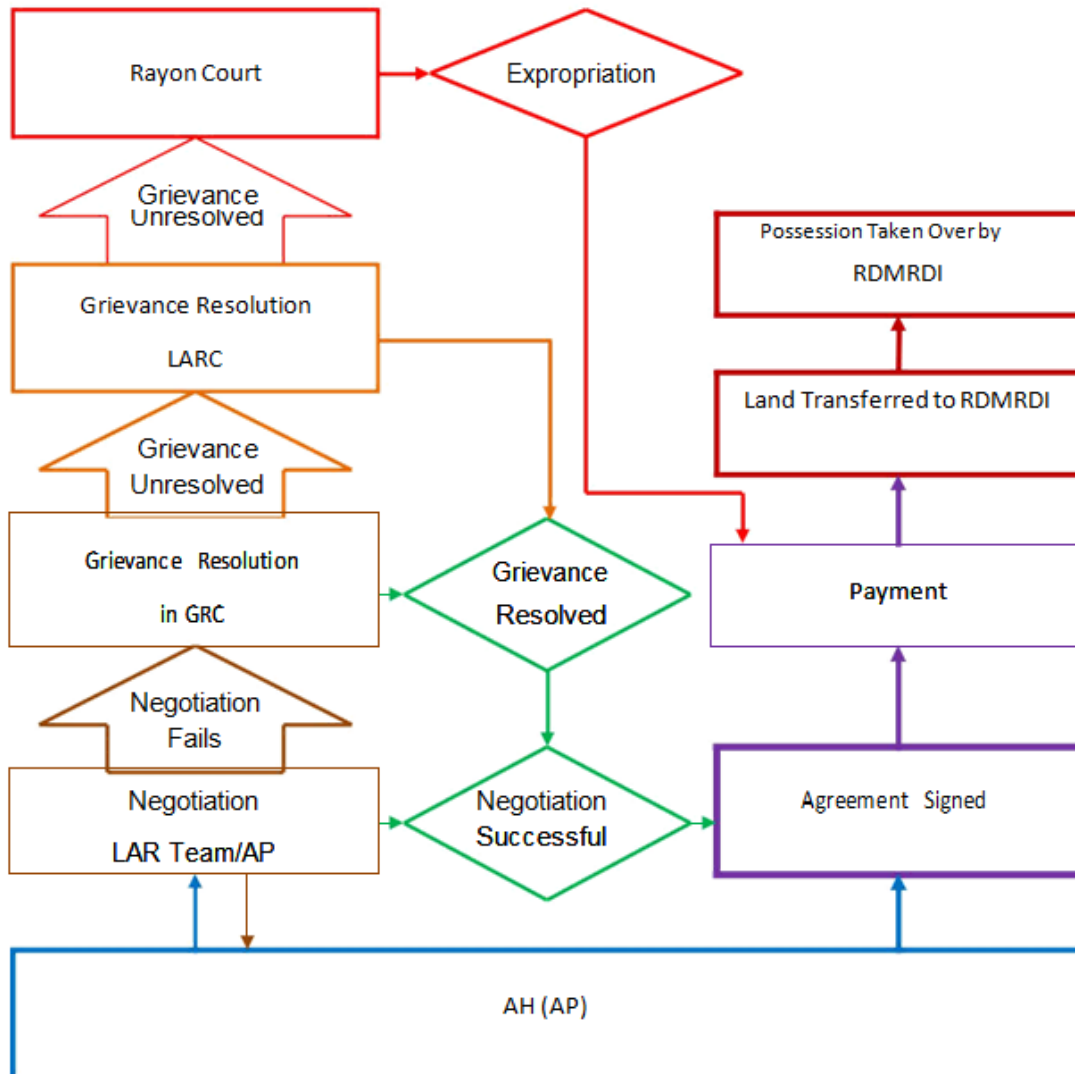
Table 7-1 Grievance Resolution Process

Steps	Action level	Process
Step 1	Negotiations with APs	The complaint is informally reviewed by the grievance redress committee (GRC), which takes all necessary measures to resolve the dispute amicably.
Step 2	GRC Resolution	<p>If the grievance is not solved during the negotiations, the GRC will assist the aggrieved APs to formally lodge the grievances to the GRC.</p> <p>The aggrieved APs shall submit their complaints to the GRC within 1 week after completion of the negotiations at the village level. The aggrieved AP shall produce documents supporting his/her claim. The GRC member secretary will review the complaint and prepare a Case File for GRC hearing and resolution. A formal hearing will be held with the GRC at a date fixed by the GRC member secretary in consultation with Convener and the aggrieved APs.</p> <p>On the date of hearing, the aggrieved AP will appear before the GRC at the Gamgeoba office for consideration of grievance. The member secretary will note down the statements of the complainant and document all details of the claim.</p> <p>Response time for the GRC to acknowledge receipt is 14 days and after date of hearing for Respond/resolve maximum time is 10 days. The decisions from majority of the members will be considered final from the GRC at Stage 1 and will be issued by the Convener and signed by other members of the GRC. The case record will be updated and the decision will be communicated to the complainant AP.</p>
Step 3	Decision from central RDMRDI	<p>If any aggrieved AP is unsatisfied with the GRC decision, the next option will be to lodge grievances to the RDMRDI at the national level. The RDMRDI shall review the complaint in compliance with the procedures specified in the Administrative Code of Georgia. Response time according the Administrative Code of Georgia is 30 days, but Internally, according the RD's internal electronic correspondence system, the mandated time for response is 10 days).</p> <p>GRC should assist the plaintiff in lodging an official complaint (the plaintiff should be informed of his/her rights and obligations, rules and procedures of making a complaint, format of complaint, terms of complaint submission, etc).</p> <p>The plaintiff shall be informed of the decision.</p>
Step 4	Court decision	<p>If the RDMRDI decision fails to satisfy the aggrieved APs, they can pursue further action by submitting their case to the appropriate court of law (Rayon Court) without any reprisal.</p> <p>The aggrieved AP can take a legal action not only about the amount of compensation but also any other issues, e.g. occupation of their land by the contractor without their consent, damage or loss of their property, restrictions on the use of land/assets, etc.</p>

7.1 GRC Records and Documentation

170.RU of RDMRDI headquarters will keep record of complaints received for its use as well as for review by JICA policy during regular supervisions

Figure 7-1 Grievance Organization Chart



8 IMPLEMENTATION SCHEDULE

8.1 General

171. The time bound implementation schedule of the LARP has been prepared in consultation with the RDMRDI. All activities related to LAR have been planned to ensure that compensation is paid prior to displacement and commencement of civil works construction. The most important acquisition activity, relating to the privatization process in Georgia, is the legalization of legalizable owners of the identified land parcels for acquisition. The titled and non-titled but legalizable owners of land parcels to be acquired have been identified in the survey.

172. The present document is the LARP. RDMRDI has reviewed and approved this document including compensation package and compensation rates and forwarded to the JICA for approval. Tasks for the LARP are divided into (i) Final Preparation including LARP approval various Initial tasks including legalization of legalizable APs and signing of contracts with APs.; (ii) LARP implementation including processing and making payment of compensation and allowances and (iii) evaluation of implementation. Public consultation, internal monitoring and grievance redress will be undertaken intermittently throughout the project duration. The LAR milestones include (i) approval of LARP, (ii) signing of contract awards, (iii) letter to proceed for civil works construction and (iv) start of physical civil works. A post –implementation evaluation will be carried out after completion of LARP implementation.

8.2 LARP Approval and Initial Tasks

173. The Resettlement Unit of the RD under RDMRDI sets up relevant institutions and line up ETCIC (Eurasian Transport Corridor Investment Center), LARC, Working Group/LAR Team, GRC and the like for the Project. Upon completion of the LARP from the detail design consultant, the RU reviews and approves the document including compensation rates. RD will submit the approved LARP to JICA for approval. Meanwhile, RD will implement actions for legalization of legalizable owners listed in the ACS (Acquisition and Compensation scheme) of LARP (ACS-I) at the field level. All arrangements will be set for signing the contract agreement with the APs and the process will be executed for land purchase and compensation agreements. The capacity building exercise will be enhanced during this stage. Representatives of the APs and NGOs may be involved in LAR training at this stage. After completion of legalization of all legalizable owners of land parcels under LARP, RDMRDI will award civil works contracts (signing of contract awards). The initial LAR activities will be the following:

- (i) Establishment of LAR Institutions and GRM;
- (ii) Legalization of Rightful owners of land parcels;
- (iii) Agreement with APs and signing contract agreements;
- (iv) Updating of LAR Budgets and ACS;
- (v) Confirmation of updated impact data and of compensation amounts;
- (vi) Approval of LARP by JICA and Government.

8.3 LARP Implementation

174. Payment of compensation and allowances under LARP will commence after a number of preparatory tasks have been completed. These tasks are:

- (i) Signing of contracts with APs
- (ii) Disclosure and consultation
- (iii) Capacity building training of LAR institutions, APs and NGOs
- (iv) Grievance resolution
- (v) Requisition to ETCIC for payment of compensation and allowances
- (vi) Transfer of compensation and allowance to APs' bank account and registration of land in PR on RDMRDI name
- (vii) Relocation of affected structures/ assets
- (viii) Compliance review and reporting
- (ix) Notice to proceed for Civil works construction
- (x) Monitoring

8.4 Post Implementation Evaluation

175. The post-implementation evaluation will be conducted after one year of completion of the LARP implementation and upon start of the civil works construction. An independent External Monitoring Agency (EMA) will carry out the evaluation. The EMA will carry out interim monitoring on a quarterly basis. In case, if the CSC is engaged at the stages when external monitoring is required, the CSC may have the responsibility for the external monitoring and post implementation evaluation.

8.5 LARP Implementation Time Schedule

176. The time bound LARP implementation is presented in Figure 8.1. Land purchase agreements and payment of compensation and allowances will go simultaneously and a sequence of one week time from offer of compensation to agreement, agreement to requisition and requisition to payment transfer is considered. A buffer period of one month has been included in the schedule for relocation of housing. Relocation of housing will also go by sections. Under the circumstances, the implementation schedule may include phased approach for civil works construction.

Table 8-1 LARP Schedule

	2017	2018								
	Dec	Jan	Feb	March	April	May	June	July	August	Sept.
Finalization of 2nd (draft) RAP Report			2 Febr.							
JICA review				2 March						
Finalization of revised LARP Report										
Disclosure of LARP Report in Georgia										
Signing for Starting of Negotiation by AP										
Legalization										
Agreements Signing by AP including Transfer of Ownership										
Allocation of LARP Budget										
Transfer of Budget to ETCIC*										
Transfer of Budget to AP's Bank Account										
Compensation deposit in Treasury account x unsolved cases										
Grievance resolution										
Relocation of affected structures										
Internal Monitoring										
External Monitoring, Phase One										
External Monitoring, Phase Two										
*ETCIC : "Eurasian Transproject Corridor Investment Center"										

Page 1

Phase Two Monitoring will be conducted within one year from the completion of LAR

9 COSTS AND FINANCING

177.All LARPs preparation and implementation costs, including cost of compensation and resettlement administration, will be considered in the project budget. Road Department is responsible for finding the project related funding.

178.Land compensation value has been provided by independent evaluator. Land plots have been divided in 4 categories based on their location and usage.

179.The compensation cost of structures are determined by considering all costs necessary for construction of the same building, current market prices.

- All LARPs should contain the information about the budget, including:
- Unit compensation rates for all affected items and allowances by indicating methodologies.
- A cost table for all compensation expenses including external monitoring and contingencies;
- LARP implementation costs.

9.1 Compensation for Land

I Price category: Land plots along the road-35 Gel

II Price category: Residential and commercial land plots-20 Gel

III Price category: Agricultural (Dzirula-Sakara)-8 Gel

IV Price category: Agricultural (Sakara-Argveta)- 6 Gel

V Price category: State land- 0 Gel

Table 9-1 Compensation for land

		Price per 1 m ² (GEL)	Area	Compensation (GEL)
I	Land plots along the road	35	38260	1339100
II	Residential and commercial land plots	20	168016	3360320
III	Agricultural (Dzirula-Sakara)	8	44918	359344
IV	Agricultural (Sakara-Argveta)	6	278520	1671120
V	State and Non legalizable land	0	113111	0
	Total		642,825	6,729,884

9.2 Compensation of Structures

180. The compensation cost of structures are determined by considering all costs necessary for construction of the same building, current market prices. Detailed information about compensation of buildings is presented below.

Table 9-2 Compensation for structures

N	Location	Land Plot Number	Compensation (Gel)
1	Dzirula Village	14	120650
2	Dzirula Village	15	3655
3	Ilemi Village	21	222070
4	Ilemi Village	23	20945
5	Ilemi Village	28	17780
6	Ilemi Village	29	33880
7	Ilemi Village	32	174150
8	Ilemi Village	35	26620
9	Ilemi Village	36	132410
10	Shorapani	52	5420
11	Tsiflavake	53	20870
12	Puti Village	59	240
13	Shorapani	85	3345
14	Shorapani	86	61360
15	Shorapani	88	161065
16	Shorapani	89	83740
17	Shorapani	91	150580
18	Shorapani	92	1975
19	Shorapani	113	250330
20	Shorapani	114	165690
21	Shorapani	115	156525
22	Shorapani	116	247510
23	Shorapani	117	6185
24	Shorapani	118	1740
25	Shorapani	121	1450
26	Shorapani	122	1790
27	Shorapani	123	1560
28	Shorapani	124	1715
29	Shorapani	125	1730
30	Shorapani	126	3485
31	Shorapani	136	108735
32	Shorapani	137	119145
33	Shorapani	138	369610

34	Shorapani	139	229850
35	Shorapani	140	1315
36	Shorapani	141	4195
37	Shorapani	142	110370
38	Shorapani	143	186835
39	Shorapani	145	117165
40	Shorapani	146	102875
41	Shorapani	147	59785
42	Shorapani	148	15080
43	Shorapani	149	11540
44	Shorapani	153	31005
45	Shorapani	154	146035
46	Shorapani	155	420750
47	Shorapani	157	51750
48	Shorapani	158	215190
49	Zestaphoni	160	26935
50	Zestaphoni	161	203030
51	Zestaphoni	174	590
52	Zestaphoni	180	4020
53	Zestaphoni	189	6985
54	Zestaphoni	190	4375
55	Zeda Sakara	218	6950
56	Zeda Sakara	219	9265
57	Zeda Sakara	233	15930
58	Zeda Sakara	234	2450
59	Zestaphoni	239	380370
60	Zestaphoni	240	226630
61	Zestaphoni	241	162870
62	Zestaphoni	242	48000
63	Zestaphoni	244	289590
64	Zestaphoni	245	161025
65	Zeda Sakara	247	230505
66	Zestaphoni	249	189660
67	Zeda Sakara	251	30595
68	Zestaphoni	289	196310
69	Kveda Sakara	328	25490
70	Kveda Sakara	335	60405
72	Kveda Sakara	344	5270
73	Kveda Sakara	345-346	270085
74	Kveda Sakara	348	12995

75	Kveda Sakara	350	23715
76	Kveda Sakara	356	2320
77	Kveda Sakara	357	70590
78	Argveta	503	4070
79	Argveta	514	12950
80	Kveda Sakara	517	3970
81	Argveta	525	243955
82	Kveda Sakara	532	11830
83	Zestaphoni	537	990
a	Argveta	549	13140
85	Argveta	566	2890
86	Argveta	574	3315
Total			7,345,760

9.3 Compensation for Loss of Business and other Incomes

Table 9-3 Business

N	Business Owner	Income with tax declaration	Employs (With tax declaration)	Employs (Without tax declaration)	Income Compensation	Salary Compensation (with tax declaration)	Salary Compensation (without tax declaration)
1	Bonusi Ltd	119204	3	0	119204	6000	0
2	Joni Tabagari	624	0	14	624	0	58581.6
3	Ramazi Kurtanidze	1300	0	0	1300	0	0
4	Nana Surmava	700	0	0	700	0	0
5	Teimuraz Chankotadze	-71	0	6	4184.4	0	25106.4
6	Kvali Ltd	2445	4	0	2445	10500	0
7	Isa Kaia	3759	0	5	3759	0	20922
8	Varvara Magradze	8156	0	0	8156	0	0
9	Sergo Kupatadze	3767	0	0	3767	0	0
10	Kiknavelidze Merabi	-1783	3	4	4184.4	4800	16737.6
11	Giorgi Glunchadze	-	0	0	4184.4	0	0
12	Evgeni Zibzibadze	-	0	1	4184.4	0	0
13	Zviadi Jabiradze	-	0	1	4184.4	0	4184.4
Total			10	31	160877	21300	125532

Table 9-4 Venders

Street Venders	Employ	Income Compensation	Compensation for Employ
Joni Tabagari	1	4184.4	4184.4
Joni Tabagari	0	4184.4	0
Isa Kaia	0	4184.4	0
Evgeni Zibzibadze	1	4184.4	4184.4
Khatuna Maglakelidze	0	4184.4	0
Total		20922	8368.8

Table 9-5 Rent/Lease

Lessor	Lessee	Lease Amount	Compensation
Nona Bebiashvili	Bonusi Ltd	500	1500
Bogiro Ltd	Isa Kaia	400	1200
Bogiro Ltd	Varvara magradze	300	900
Total			3600

9.4 Compensation for Harvest

181.All affected persons will be paid compensation for harvest with full market rate. Detailed information about crop compensation is presented below.

Table 9-6 Compensation For harvest

Agricultural crop	Unit	Harvest for 1 Ha land plot	Market cost of plant unit, GEL	Compensation of agricultural crops harvest per 1 Ha, GEL	Area	Compensation
Potato	Tons	26	600	15600	620	967
Beans	Kg	800	5	4000	268496	107398
Garlic	Kg	1600	5	8000	1485	1188
Tomato	Tons	20	800	16000	1135	1816
Corn	Kg	5000	0.8	4000	275174	110070
Pumpkin	Piece	1000	3.5	3500	224131	78446
Cucumber	Tons	15	0.7	10500	650	683
Strawberry	Kg	4000	1.3	5200	30	16
Onion	Tons	30	0,6	18000	687	1237
Soybean	Tons	4	550	2200	226225	49770
Sunflower	Tons	2	720	1440	50	7
Eggplant	-	-	-	5000	400	200
Herbs	-	-	-	5000	1457	729
Raspberries	-	-	-	104000	130	1352

Leeks	-	-	-	5000	490	245
Other vegetables	-	-	-	5000	2442	1221
Total					1003602	355,343

9.5 Compensation for Trees

182. Value of perennials was determined according to their age. Price of fruit trees was calculated by multiplying the market price of annual harvest to that number of years that is needed for growing new tree planting up to the age of the existing fruit trees.

Table 9-7 Compensation for Trees

Plants	Age group	Cost of seedling, Gel	Cost of harvest unit, Gel	Number of compensation years	Full productivity per year, kg	Harvest compensation for per year (Gel)	Total compensation for adult perennial seedling with considering the cost (Gel)	Quantity	Compensation
1	2	3	4	5	6	7	8	9	10
Cherry (sweet cherry)	Seedling (<5)	5	2	5	4	8,0	35	216	7560
	5-10	5	2	5	10	20,0	75	377	28275
	11-20	5	2	5	16	32,0	117	186	21762
	21+	5	2	5	10	20,0	75	8	600
Peach	Seedling (<5)	6	1,5	5	4	6,0	27	25	675
	5-10	6	1,5	5	15	22,5	85	96	8160
	11-20	6	1,5	5	40	60,0	216	10	2160
	21+	6	1,5	5	25	37,5	137	3	411
Walnut	Seedling (<5)	10	5	5	4	20,0	80	32	2560
	5-10	10	5	10	15	75,0	535	65	34775
	11-20	10	5	10	30	150	1235	177	218595
	21+	10	5	10	40	200	1510	149	224990
Quince	Seedling (<5)	4	1,5	5	3	4,5	20	16	320

	5-10	4	1,5	5	15	22,5	83	104	8632
	11-20	4	1,5	5	30	45,0	162	93	15066
	21+	4	1,5	5	20	30,0	109	2	218
Pear	Seedling (<5)	4	1,2	5	7	8,4	33	26	858
	5-10	4	1,2	7	20	24,0	122	98	11956
	11-20	4	1,2	7	70	84,0	416	100	41600
	21+	4	1,2	7	45	54,0	269	27	7263
Plum (variety of plum)	Seedling (<5)	4	0,8	5	8	6,4	26	223	5798
	5-10	4	0,8	5	15	12,0	46	194	8924
	11-20	4	0,8	5	30	24,0	88	284	24992
	21+	4	0,8	5	20	16,0	60	55	3300
Mulberry	Seedling (<5)	5	1,5	5	4	6,0	26	8	208
	5-10	5	1,5	5	10	15,0	58	127	7366
	11-20	5	1,5	5	16	24,0	89	119	10591
	21+	5	1,5	5	10	15,0	58	53	3074
Hazelnut	Seedling (<5)	2	4	5	2	8,0	30	632	18960
	5-10	2	4	5	5	20,0	75	819	61425
	11-20	2	4	5	6	24,0	90	1184	106560
	21+	2	4	5	4	16,0	55	36	1980
Sour plum (cherry plum)	Seedling (<5)	3	0,8	5	7	5,6	23	109	2507
	5-10	3	0,8	5	15	12,0	45	439	19755
	11-20	3	0,8	5	50	40,0	143	527	75361
	21+	3	0,8	5	25	20,0	73	52	3796
Apple	Seedling (<5)	4	1	5	5	5,0	22	21	462
	5-10	4	1	6	25	25,0	109	62	6758
	11-20	4	1	6	70	70,0	298	52	15496
	21+	4	1	6	40	40,0	172	5	860

Vine	Seedling (<5)	2	1,5	4	5	7,5	23	234	5382
	5-10	2	1,5	4	7	10,5	31	162	5022
	11-20	2	1,5	4	9	13,5	40	3433	137320
	21+	2	1,5	4	5	7,5	23	1283	29509
Fig	Seedling (<5)	3	1,5	5	5	7,5	29	22	638
	5-10	3	1,5	6	10	15,0	66	108	7128
	11-20	3	1,5	6	30	45,0	192	200	38400
	21+	3	1,5	6	20	30,0	129	2	258
Kiwi	Seedling (<5)	3	1,5	4	5	7,5	24	0	0
	5-10	3	1,5	4	10	15,0	45	9	405
	11-20	3	1,5	4	30	45,0	129	0	0
	21+	3	1,5	4	20	30,0	87	0	0
Tangerine	Seedling (<5)	3	1,25	5	10	12,5	47	4	188
	5-10	3	1,25	5	30	37,5	134	15	2010
	11-20	3	1,25	5	80	100,0	353	2	706
	21+	3	1,25	5	50	62,5	222	0	0
Orange	Seedling (<5)	4	1,5	5	10	15,0	57	0	0
	5-10	4	1,5	5	30	45,0	167	1	167
	11-20	4	1,5	5	80	120,0	424	0	0
	21+	4	1,5	5	50	75,0	267	0	0
Lemon	Seedling (<5)	4	1,3	5	5	6,5	27	4	108
	5-10	4	1,3	5	15	19,5	72	15	1080
	11-20	4	1,3	5	35	45,5	163	3	489
	21+	4	1,3	5	20	26,0	95	0	0
Bay-tree	Seedling (<5)	1	4	5	1	4,0	15	68	1020
	5-10	1	4	5	2	8,0	29	326	9454
	11-20	1	4	5	2	8,0	29	153	4437

	21+	1	4	5	1	4,0	15	1	15
Cherry laurel	Seedling (<5)	2	0,25	8	2	0,5	5	0	0
	5-10	2	0,25	8	4	1,0	8	3	24
	11-20	2	0,25	8	10	2,5	16	0	0
	21+	2	0,25	8	7	1,75	12	0	0
Barberries	Seedling (<5)	5	2,5	5	3	7,50	31	4	124
	5-10	5	2,5	5	5	12,50	49	17	833
	11-20	5	2,5	5	7	17,50	66	5	330
	21+	5	2,5	5	5	12,50	49	0	0
Mildness	Seedling (<5)	4	1,5	6	3	4,5	23	3	69
	5-10	4	1,5	6	10	15,0	67	9	603
	11-20	4	1,5	6	20	30,0	130	7	910
	21+	4	1,5	6	10	15,0	67	0	0
Loquat	Seedling (<5)	4	2	6	3	6,0	29	5	145
	5-10	4	2	6	10	20,0	88	21	1848
	11-20	4	2	6	20	40,0	172	15	2580
	21+	4	2	6	10	20,0	88	2	176
Feijoa	Seedling (<5)	1	1.5	3	5	7.5	18.5	0	0
	5-10	1	1.5	5	10	15	56	3	168
	11-20	1	1.5	5	25	37.5	133	1	133
	21+	1	2	5	12	24	90	0	0
Persimmon	Seedling (<5)	2	1	5	5	5,0	20	22	440
	5-10	2	1	6	10	10,0	44	124	5456
	11-20	2	1	6	30	30,0	128	128	16384
	21+	2	1	6	20	20,0	86	5	430
Pomegranate	Seedling (<5)	4	2	5	5	10,0	39	17	663
	5-10	4	2	6	10	20,0	88	145	12760

	11-20	4	2	6	30	60,0	256	292	74752
	21+	4	2	6	20	40,0	172	29	4988
Chestnut	Seedling (<5)	7	1	5	30	30,0	112	0	0
	5-10	7	1	10	50	50,0	357	1	357
	11-20	7	1	10	120	120,0	1057	0	0
	21+	7	1	10	125	125,0	847	0	0
Strawberry tree	Seedling (<5)						15	1	15
	5-10						25	2	50
	11-20						50	0	0
	21+						80	0	0
Currant	Seedling (<5)	1.5	2	5	1.5	16.5	14	0	0
	5-10	1.5	2	5	2	21.5	18	6	108
	11-20	1.5	2	5	2.5	26.5	22.5	0	0
	21+	1.5	2	5	2	21.5	18	0	0
Dogwood	Seedling (<5)						17	1	17
	5-10						24	15	360
	11-20						31	9	279
	21+						24	14	336
Red raspberry	Seedling (<5)						20	47	940
	5-10						28	4	112
	11-20						37	0	0
	21+						28	0	0
Hawthorn	Seedling (<5)						2	117	234
	5-10						4	101	404
	11-20						6	202	1212
	21+						6	31	186
	Seedling (<5)						16	22	352

Staphylea	5-10						50	136	6800
	11-20						80	100	8000
	21+						65	24	1560
Jujube	Seedling (<5)						30	0	0
	5-10						140	5	700
	11-20						550	1	550
	21+						445	0	0
Total							14,552	1,404,733	

9.6 Resettlement Assistance

183. Three types of assistance are provided for the affected families:

- I. Assistance for strongly affected households: assistance for such households amounts to three month minimum subsistence wage for a family with 5 members (349.5.* Gel x 3 months).
- II. Assistance for socially vulnerable families: assistance for such families is three month minimum subsistence wage for a family with 5 members (349.5 Gel x 3 months).
- III. Assistance for relocation/shifting: assistance for such families is three month minimum subsistence wage for a family with 5 members - (349.5 Gel x 3 months), plus 200 Gel for transportation.

184. Information about detailed calculation of assistance is given in the table 9.8

Table 9-8 Resettlement Assistance

Assistance	Unit price (Gel)	Number	Total compensation
Severe affected households	1,046	379	396,434
Socially vulnerable families	1,046	36	37,656
Relocation/Shifting	1,246	21	26,166
Total			460,256

*** 349.5 GEL is a subsistence minimum for a family with 5 members of February 2018.**

9.7 Resettlement management cost

185. Roads Department will need to employ one independent monitoring agency for external monitoring of LARP implementation for a period of 2 months (unless construction supervision consultant is not hired during implementation of LARP). Miscellaneous expenses have been kept as a provision to cover the administrative cost as may be incurred during implementation of the LARP. Details of the LARP implementation management cost is given in Table 9-6

186. Cost of external monitoring shown in table below is only for external monitoring phase two. Because phase one monitoring will be done by RDMRI employ.

Table 9-9 Resettlement management cost

	Unit	Quantity	Unit cost	Total cost
Cost for external monitoring	Months	24	4,000	96,000
Various administrative expenses	Months	24	1,000	24,000
				120,000

9.8 Cost of resettlement

187. The budget of Resettlement Action Plan covers: proper compensation, resettlement allowance and unexpected costs, which is 10% of the total cost.

Table 9-10 Resettlement Budget

Name	Unit cost	Amount	Total cost (Gel)
Land parcels	Various	642825	6,729,884
Structures	Various	-	7,345,760
Trees	Various	14,552	1,404,733
Crop	Various	100360 2	355,343
Fences and Gates	Various		161,134
Other assets	Various		37,420
Severe impact allowance	Subsistence minimum for 3 months (349.5x3)	379	397,381.5
Relocation/Shifting allowance	Subsistence minimum for 3 months (349.5x3)+ Transportation cost (200 Gel)	21	26,218.5

Vulnerability allowance	Subsistence minimum for 3 months (349.5x3)	36	37,746
Business, employment and venders compensation	-		316,078
Rent/Lease	Various	3	3,600
External and Internal monitoring	-		120,000
Sum			16,935,298
Unexpected costs	10%		1 ,693,530
Total			18,628,828

10 MONITORING AND REPORTING

188.LAR tasks according to JICA requests external monitoring for the project. The Project will be subjected to internal monitoring. In high risk projects, or other projects, where it is considered necessary, external monitoring will be conducted by RDRD/RDMRDI. External monitoring will be assigned to SSC (Social Safeguard Consultant).

Internal Monitoring

189.Internal monitoring will be carried out routinely by RDRD/RDMRDI either directly or through the services of a consultant. The results will be communicated to JICA through the quarterly project implementation reports. Indicators for the internal monitoring will be those related to process and immediate outputs and results. This information will be collected directly from regional RDMRDI level and reported monthly to RDRD/RDMRDI to assess the progress and results of LARP implementation, and to adjust the work program, if necessary. The monthly reports will be quarterly consolidated in the standard supervision reports to the relevant IFI (e.g. JICA). Specific monitoring benchmarks will include:

- Timeliness, information campaign, quality of information and consultation with APs;
- Status of land acquisition and payments on land compensation;
- Compensation for affected structures and other assets;
- Relocation of APs;
- Payments for loss of income;
- Selection and distribution of replacement land areas; and
- Income restoration activities
- Results of income restoration activities and compensation provided in terms of measuring extent to which affected livelihoods were restored, identifying gaps, which affected livelihoods were not satisfactory restored.

190.The above information will be collected by RDRD/RDMRDI which is responsible for monitoring the day-to-day resettlement activities of the project through the following instruments:

- Review of census information for all APs;
- Consultation and informal interviews with APs;
- In-depth case studies;
- Sample survey of APs;
- Key informant interviews; and
- Community public meetings.

External Monitoring

191.Where necessary, external monitoring will be carried out by the SSC for the project activities. Indicators for External Monitoring tasks will be carried out in two phases.

192.**Phase One.** This external Monitoring phase will be carried out by RDMRDI in parallel with the implementation of a LARP and will be concluded after the LARP is fully implemented by the preparation of a compliance report. An acceptable Compliance Report will be condition to start the implementation of physical civil works for the project.

193.During this phase the SSC will (i) do the investigations and define the indicators needed for phase two activities and ii) closely monitor the implementation of the LARP. LARP

implementation monitoring will entail the following tasks: (a) review of LARP/Information pamphlet disclosure; (b) review of action taken by the PIU to compensate the APs with particular attention to the way this action fits LARP stipulations; (c) review all compensation tallies; (d) verify whether the compensation is provided thoroughly to all APs and in the amounts defined in the RP and in the AP contracts; (e) assess the satisfaction of the APs with the information campaign and with the compensation/rehabilitation package offered to them; (f) review the legalization process and assess its effectiveness; (g) review complaints & grievances case; (h) carry out an AP satisfaction survey with a 20% sample of the APs. The SSC will prepare the Compliance Report immediately after the completion of LARP implementation. The Compliance report will include well-argued sections on the following:

- Assessment of the way the compensation has been carried out in relation to RP stipulations;
- Verification that all APs were compensated in the amounts stipulated in the RP;
- Review of complaint and grievance cases and of their solution;
- Assessment of the rehabilitation program for vulnerable Aps;
- Assessment of the satisfaction of the Aps;
- Lesson learned to be applied to the next projects, and;
- General assessment of RP implementation and recommendations to RDMRDI.

194. **Phase Two.** Within one year from the completion of the LARP, the whole construction will be assessed. The supervision consultant will hire phase two external monitoring agency/consultant. (The cost for EMA for 12 months has already included to total cost of the supervision consultant.)

195. The following are main indicators for the investigations to be carried out in this external Monitoring phase:

- Socio-economic conditions of the APs in the post-resettlement period;
- Communications and reactions from APs on entitlements, compensation, options, alternative developments and relocation timetables etc.;
- Changes in housing and income levels;
- Rehabilitation of informal settlers;
- Effectiveness of property valuation for rehabilitation purposes;
- Effectiveness of Grievance procedures;
- Level of satisfaction of APs in the post resettlement period.

11 ANNEXES

Annex 1 Legalization of private ownership of land in Georgia

A. INTRODUCTION

196. Correct and accurate initial registration of ownership rights is the necessary condition for undertaking voluntary acquisition or mandatory expropriation of real property. Pursuant to article 312 of the Civil Code of Georgia the records at the Public Registry are considered accurate until their inaccuracy is not proved. Therefore, throughout the presumption of the article 312 of the Civil Code of Georgia the inaccurate data available at the Public Registry shall be corrected with precise data. Therefore, landowners shall carry out precise demarcation and legalization of his/her land parcel(s) through proper procedure. The land owners have to apply to the Public Registry with necessary documents as proof of the ownership and description of land, Cadastral Map with precise survey data and documents verifying ownership right (Receive-Delivery Act, or Registration Certificate, or the extract from the land distribution list issued by the local self-government body, or the statement on the landowner's registration as a tax payer in 1992-2001 years).

197. After the disintegration of the Soviet Union, all land in Georgia came under the state ownership. The Government of Georgia (GOG) started privatization of land in 2004 as an essential part of the economic reform in the country. The GOG applies various methods to privatize state-owned property including competitive bidding, auctions, lease, redemption and direct sale. However, lands under private occupation with traditional rights are being legalized through registration with National Agency for Public Registry (NAPR) of the Ministry of Justice. The pattern of privately owned lands in Georgia is determined by allocation of land plots after the independence from Soviet system. In the Soviet times the agricultural lands were used by collective farms financed by the State. During the privatization process the lands of collective farms were divided into small parcels and distributed among households who no longer receive agricultural subsidy from the State.

B. STATUS ON REGISTRATION ON PURE LAND AND REALITY IN PRESENT SITUATION

198. The registration for pure land (land parcel without having structure) has not been -stopped. However, in practice, most of the owners are not initiating any new land registration for the pure land because; (i) there is no requirement for them for new registration as buying and selling of pure land is not so prevalent in present situation (ii) these owners are using their respective plots based on the mutual understanding among the neighbors.

199. In reality, some of these land parcels and owners can still be converted into legal owners provided the initiation for land registration for pure land is taken by the owners. These cases under the current situation are considered as Legalizable Owners. Currently, there is no problem associated with urban and residential plots. Also, there is some cases pending in the court related to land registration, which needs to be addressed. The current ownership of land can be broadly categorized as follows:

- (i) **Legal Owner/ Title Holder:** Owners and users of land having their title registered in the Public Registry.
- (ii) Legalizable Owner:
 - a. **Rightful Owners** – the owners with old document proof although not having registration in the Public Registry under the Laws of Georgia on Privatization of

State-owned Agricultural Land, (July 8, 2005) and The Law of Georgia on Public Register (No820 –lis; December 19 of 2008); (the current legislation).

- b. **Non-rightful owners** - unauthorized land users having right to legalize landownership rights provided by the current legislation. The legalization of landownership rights, under the current legislation is allowed for following cases:
- The state owned agricultural or non-agricultural land plot with residential house or supporting structures on it - occupied by the physical or legal person without permission before the current law came in force in 2007.
 - Land plot occupied by person without permission is adjacent to the land parcel rightfully owned or used by this person, taking into account that the illegally occupied land parcel should be of less area than the legally owned adjacent land parcel.

However, there are certain restrictions on privatization of land² (attachment-2).

- (iii) **Non-Legalizable Landowners:** Illegal/Squatters having no right to legalize landownership rights under the current legislation. Persons having no document of possessing the land in concern before the enactment of the current law in 2007 are not legalizable.

200. Legalization of Rightful Landownership rights is executed directly by Rayon Registration Offices of NAPR. The applicants should submit old documents proofing the ownership rights and precise cadastral maps of the land plot and structures on it.

201. Legalization of Non-rightful Landownership rights is authorized by Property Recognition Commission (in each Rayon) through reviewing the application documents, evaluating eligibility against the restriction lists given in the law and local land use development plans. In case of positive decision and upon payment by the applicant of relevant amount of money to a special account, if applicable, the Commission issues certificate on ownership right. Based on that certificate the Rayon Registration Office of NAPR will register the ownership rights on land plot and structures.

C. NATIONAL SURVEY

202. In 2003-2004, USAID, along with some International Donors carried out a national level survey of land all over Georgia. These donors started the mapping of land for whole of Georgia. The mapping was done through an independent survey by physical verification of the land parcels and consultation with the owners. The positive aspect of the USAID survey was that it recognized the plots. However, the ownership details and the parcel boundary were not demarcated on the ground by the survey. Also, the details of ownership were not updated because most of the people do not initiate any registration for pure land. Therefore, there is a

² According to the Law of Georgia On Privatization of Agricultural Land Existing in State Ownership (Article 2, Clause 3), the following categories of State-owned lands are not subject to privatization: (a) Pasturelands other than those leased out before the enactment of this law which under the act issued by the competent state or local government (self-government authority) are duly allotted to the buildings and premises located thereon which are the private property of individuals or legal entities or the property of the state; (b) Cattle transfer routes; (c) The first zone (zone of strict regime) in sanitary protection area around water supply units; (d) Lands of forest funds, which are used for agricultural purposes; (e) Recreational lands; (f) Lands occupied with historical, cultural, natural and cult-religious monuments; (g) Lands of protected territories; (h) Agricultural lands that are used by the Budget-funded institutions and legal persons of public law in form of usufruct. The lands indicated in b, c, d and e may be privatized only if significant projects are implemented, on which government of Georgia, based on the suggestion of the Ministry of Economic Development of Georgia, shall take special decision. At the same time the land indicated in c may be privatized if the conditions of sanitary protection are met. (26.10.2007).



difference between the USAID survey and the map existing during the privatization process (Rayon Map/Archives) regarding the issues related to the exact ownership, boundary of each plot and its due recognition.

D. LAND ACQUISITION AND RESETTLEMENT SURVEYS AND DOCUMENTATION FOR THE PROJECT

203. As the land acquisition and resettlement (LAR) activities at the feasibility study (FS) level were based on tentative alignments and existing imprecise cadastral maps, and since there was no detail estimate of losses and ownership at FS, fresh land acquisition and resettlement surveys have been being carried out through detail measurement survey, valuation survey, census survey and socioeconomic survey. The road alignment as per final engineering design is being superimposed on the updated cadastral map of Registered land plots obtained from Rayon NAPR and aerial photo (ortho-photo) of concerned area. Each of the affected Registered land plots in the project right of way are being identified along with its dimensions on the ortho-photo. The affected plots are being listed up and cadastral details collected from Rayon NAPR, and local government offices as applicable.

204. Based on this, the survey team proceeded to the sites for field survey which included identification of each plot and verification of the details shown in the National Survey Map (National Cadaster Map) and the reality on the ground. The verification survey process includes title searching through review of available documents and discussions with the owners about land parcel boundary and further discussion with the local government, the representative of the NAPR (local archives are currently transferred to NAPR rayon offices) for its cross verification. Based on these methods final details of each parcel and ownership will be confirmed. This will help to identify the legal owners, the legalizable owners (rightful and non-rightful) and the illegal occupants of state owned land. The list of various categories of ownership will be recorded with the help of local government.

205. The FS noted that some of the owners of affected land parcels have the land documents (old documents) as proof of ownership obtained during the post-soviet period. These land owners did not Register their land parcels in the rayon level registration office as it was not mandatory for them. As general estimation registered land owners in Georgia constitute 10-15% of all the legalizable pool of land owners/users.

E. H.1 - REGISTRATION OF RIGHTFUL OWNERS

206. Recognition of ownership rights in relation with the rightfully owned/used land plot is executed through registration of ownership right directly in the Public Registry. For that purpose, the applicant has to submit:

- (i) Documents confirming rightful ownership of the land plot (annex 3).
- (ii) Precise cadastral maps of the land plot.
- (iii) Document confirming payment of the fee for the property recognition (51 Gel).
- (iv) Identification documents of the applicant.

207. The process and procedure for registration of Rightful Owners needs complete the steps described as follows:

Step 1 Preparation of fresh and precise cadastral map by the owners through private agencies. The map will include all the dimensions of plots and geometrical details. The cost of preparation of map ranges from 0.06 GEL to 0.10 GEL per sqm of land to be recognized. The duration for preparation of map will be approximately a week time. However, within

the project frame, the consultant will prepare precise cadastral maps for the affected land plots and these maps along with required land descriptions will be given to the legalizable and other land owners free of charge.

Step 2 In case the owner does not have available ownership proving documentation (annex-3) or in case there is any doubt regarding the plot, the owner has to apply to the local community level self-government (Sakrebulo and Gamgeoba) and local Rayoon NAPR Office (where Archives are kept) for the proof and cross verification of the land details.

Step 3 After the verification from NAPR rayon Office, the owners will take the endorsement from the community municipal office (Gamgeoba)..

Step 4 Following the authorization from Gamgebeli the owners will approach to the Rayon level Registration Office of the NAPR. The owners will provide all the above proof to the registration office. The registration office will verify the completeness of all required application documents. The owners have to submit both the soft copy and hard copy of the plot maps along with its coordinates for record in the Public Registry office. The registration process will take 4 working days in normal situation and the property recognition fee will be 51 GEL per registration. In case of urgency, the owners have to pay 150 GEL to get the registration done in one working day and 200 GEL, if the registration needs to be done immediately. However, the registration office for affected legalizable owners will not charge the urgency cost and will be able to complete each case in maximum 6 days. after the finalization of registration, the Public Registry office will compile the land records and will update the cadastral details. The updated details will be sent to the central Public Registry for centralized record.

In case, there remains further dispute related to ownership, the case may be referred to the court. The project authority may estimate the price of that particular land and may deposit the amount in the State Budget allocated for the Project.. The payment to the real owner will be executed from the State Budget according to the court decision upon confirmation by the Roads Department as LARP implementing agency. The case will be resolved in the Rayon Court.

F. H.2 - REGISTRATION OF NON-RIGHTFUL OWNERS

208. For recognition of the ownership rights on non-rightfully owned land plot the owner/user should submit to Property Recognition Commission application letter through the Office of Sakrebulo with the following supplementary documentation:

- (i) Document confirming the fact of non-rightful ownership/use of the land plot (see annex 3) or attestation of witness (neighbours etc.).
- (ii) Precise cadastral maps of the land plot
- (iii) Information needed for determination of the fee for property recognition
- (iv) Copies of the identification documents of the applicant

209. The process and procedure for registration of Non-Rightful Owners needs the following steps as described below:

- Step 1** Preparation of fresh and precise cadastral map by the owners through private agencies. The map will include all the dimensions of plots and geometrical details. The cost of preparation of map ranges from 0.06 GEL to 0.10 GEL per sqm of land to be recognized. The duration for preparation of map will be approximately a week time. However, within the project frame, the consultant will prepare precise cadastral maps for the affected land plots and these maps along with required land descriptions will be given to the legalizable and other land owners free of charge.
- Step 2** The map and its details will be authorized and the land usage pattern will be verified by the neighbours. The community local administration (Gamageoba) may also certify the authorization.
- Step 3** Following the authorization from the neighbours, the same has to be notarized. Cost of notarian confirmation of neighbours witness will be 15 GEL for each case.
- Step 4** The land owner/user will approach to the Property Recognition Commission through Office of Sakrebulo with a package of documents confirming eligibility for legalization of the land plot according to the current legislation. This includes ownership documents (see annex-3) related to the adjacent land plots owned by the applicant rightfully.
- Step 5** In case if, the owner does not have available documentation proving ownership rights on the adjacent land plot or in case there is any doubt regarding the plot, the owner will apply to the local NAPR Archives for the proof and cross verification of the land details.
- Step 6** after the verification, the Office of Sakrebulo will endorse the application and authorize the case for recognition.
- Step 7** Following the authorization from Sakrebulo, the owners will approach to the Property Recognition Commission. The owners will provide all the above proof to the Commission. The Commission will verify the documents, make physical verification and organize an open disclosure meeting on site with prior notice to the concerned community peoples. If the documents are clear and the land is free from any dispute from anybody, then the Commission will notify the applicant to deposit payment for the land (if applicable). after payment, or if the payment is not applicable, the commission will issue certificate on ownership right to the owners.
- Step 8** Based on the above steps, the owners will go to the Public Registry at their respective rayon for registration. The owners have to submit both the soft copy and hard copy of the plot maps along with its coordinates. The registration process will take 4 working days in normal situation and the property recognition fee will be 51 GEL per registration. In case of urgency, the owners have to pay 150 GEL to get the registration done in one working day and 200 GEL, if the registration needs to be done immediately. However, the registration office for affected legalizable owners will not charge the urgency cost and will be able to complete each



case in maximum 6 days. after the finalization of registration, the Public Registry office will compile the land records and will update the cadastral details. The updated details will be sent to the central Public Registry for centralized record.

In case there remains further dispute related to ownership; the case may be referred to the court. The project authority may estimate the price of that particular land and may deposit the amount in the State Budget allocated for the Project. The payment to the real owner will be executed from the State Budget according to the court decision upon confirmation by the Road Department as LARP implementing agency.

Actions at Detail Design

210. The most important issue for timely acquisition of land is the coordination between the Roads Department and the respective rayon and municipality level administration (Rayon and municipal Gamgeoba and PRRC). These issues have been identified and brought to the notice of concerned stakeholders by the DD consultant, through consultation and review of existing process of privatization. The Consultant during the process obtained full cooperation process from the concerned registration services and local government offices. Services of an experienced survey and audit agency have been utilized to identify the current owners (users) of affected land parcels as per final engineering design of the road.

211. All the legalizable owners (rightful and non-rightful) have been identified through extensive title search. Fresh and precise maps of land parcels (with standard coordinates) and geometric details will be provided to the legalizable owners in CD-ROM and printed copies. A generic instruction leaflet has been distributed to the affected persons on the process of legalization of legalizable land parcels. The survey agency is also counseling the AP persons on the process and its urgency for timely receipt of compensation for their acquired land. All legalizable owners will be provided with the detailed cadastral maps and case-specific instructions on further steps for legalization.

212. The registration will be completed for the legalizable owners during the implementation of LARP and prior to the disbursement of compensation. The cost involved in the registration process will be reimbursed from the Project during LARP preparation and implementation. The affected legalizable owners have to initiate the land registration at their own cost in the beginning with such assurance from the Roads Department.

Annex 2 Information Booklet

PREPARATION OF DETAILED DESIGN FOR NEW CONSTRUCTION OF KHEVI-UBISA-SHORAPANI-ARGVETA SECTION (E60 HIGHWAY ROUTE)

Public Information Booklet

Project Description

213. This project design prepared by IRD and SPEA consulting and it is based on a preliminary survey appraisal conducted on November 16th 2017, according to the requirements of the ADB's Safeguard Policy Statement (SPS) (2009) and JICA policies as well to the Resettlement Policy Framework prepared by the East–West Highway Corridor Improvement Project AF-Upgrading and construction of Khevi-Argveta Section F4 of the E-60 Highway approved on May 2017.

The total length of Section F4 is of 14+747.78 km on the Tbilisi-Argveta carriageway (TA) and of 14+729.87 on the Argveta-Tbilisi carriageway (AT). Design section starts at km 185 of Tbilisi-Senaki-Leselidze motorway and ends at km 200 of the same road in Argveta. This section is directly connected to Argveta interchange which is under construction.

Widening of the road takes place at the expense of cutting into the slope on the left, then the alignment turns to the right, crosses the river Kvirila and the railway two times, then the alignment develops northward of Zestaphoni through three tunnels.

Five long span bridges and one short span bridge will be constructed during the project works. The total length of the five bridges is 4,912 meters, the longest of which is 941 meters. The bridges are grouped into the following main typologies:

- Steel-concrete bridges - bridges 1,2,4: maximum span length up to 60 m for bridges 1 and 2 and up to 72 meters for bridges 4-AT and 4-TA.
- Precast concrete bridges – bridges 3 and 5: maximum span up to 34m

214. Six tunnels will be constructed with double tubes with length from 399 m to 1166 m.

215. To construct the roadbed in the project section concrete retaining walls and reinforced concrete support structures will be required on several sections due to the difficult relief conditions of the project section.

The following types of culverts will be constructed:

- Underpasses for rural roads, which are construction of cast in situ reinforced concrete structures of closed contours cross sections 6.0x4.5 m - 6 units for passing rural roads is envisaged in the design.
- Cattle passes, which ensure cattle cross the project road. Construction of cast in situ reinforced concrete structures of closed contours cross sections 4.0x2.5 m - 4 units is envisaged in the design.
- Culverts, for which cast in situ reinforced concrete culverts cross section 2.0x2.5 m - 17 units, 4.0x2.5m - 2 units is envisaged in the design to provide water discharge from ravines and canals.

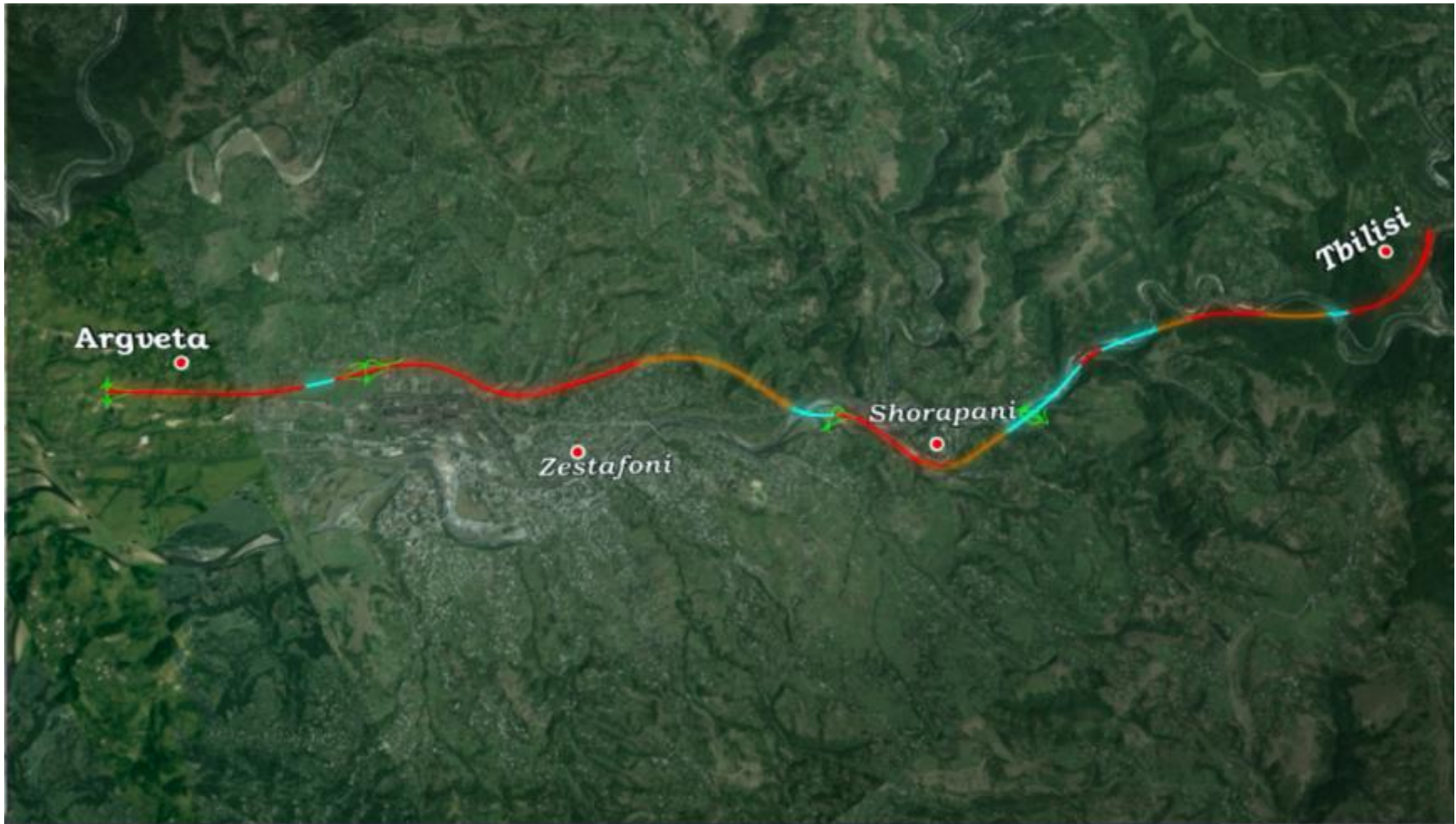
216. Eight underpasses will be constructed using reinforced concrete culverts. One overpass will be constructed at km 11+854 with a length of 40 meters.

217. Two different pavement structures will be used:

- Concrete pavement structure for the motorway and interchanges; and
- Asphalt pavement structure for all Slip Roads and all Minor Roads and bridges.

218. Project Alignment is shown below

F4 Alignment



Comparison of ADB and JICA Policy with Georgian Laws and Legislation

219. Overall, the legislation of Georgia adequately reflects the major provisions of the ADB Safeguards Policy Statement 2009 and JICA policy, but a few differences are to be noted. The most significant of these differences is that under Georgian legislation/regulation, emphasis is put on the definition of formal property rights and on how the acquisition of properties for public purposes is to be implemented and compensated while in the case of ADB policy emphasis is put both on the compensation of rightfully owned affected assets and on the general rehabilitation of the livelihood of Affected People (AP) and Households (AH). Because of this, ADB policy complements the Georgian legislation/regulation with additional requirements related to (i) the economic rehabilitation of all AP/AH (including those who do not have legal/formal rights on assets acquired by a project); (ii) the provision of indemnities for loss of business and income, (iii) and the provision of special allowances covering AP/AH expenses during the resettlement process or covering the special needs of severely affected or vulnerable AP/AHs. Also, in addition, the legislation of Georgia does not require any specific measure regarding the need to prepare LARPs based on extensive public consultations. The differences between Georgia law/regulation and ADB policy are outlined in Table 4-1.

Table 11-1 Comparison of Georgian Laws on LAR, ADB and JICA Resettlement Policy

Georgian Laws	ADR Policy	JICA Policy
Land compensation only for titled landowners. In practice legalizable land owners are also compensated after they register their ownership with the NAPR.	Lack of title should not be a bar to compensation and/or rehabilitation. Non-titled landowners receive rehabilitation assistance.	Eligibility of benefits includes, the PAPs who have formal legal rights to land (including customary and traditional land rights recognized under law), the PAPs who don't have formal legal rights to land at the time of census but have a claim to such land or assets and the PAPs who have no recognizable legal right to the land they are occupying. (WB OP4.12 Para.15)
Only registered houses/buildings are compensated for damages/demolition caused by a project	All Affected houses/buildings are compensated for buildings damages/demolition caused by a project.	
Crop losses compensation provided only to registered Landowners	Crop losses compensation provided to landowners and sharecrop/lease tenants whether registered or not LARP	
Land Acquisition Committee is the only pre-litigation final authority to decide disputes and address complaints regarding quantification and assessment of compensation for the affected assets.	Complaints & grievances are resolved informally through community participation in the Grievance Redress Committees (GRC), Local governments, and NGO and/or local-level community based organizations (CBOs).	Appropriate and accessible grievance mechanisms must be established for the affected people and their communities. (JICA GL)
Decisions regarding LAR are discussed only between the landowners and the Land Acquisition Authorities.	Information on quantification, affected items value assets, entitlements, and compensation/financial assistance amounts are to be disclosed to the APs prior to appraisal	
Loss of income is considered for compensation but no provision for income/livelihood rehabilitation, allowances for severely affected or vulnerable	ADB policy requires rehabilitation for income/livelihood, severe losses, and for expenses incurred by the APs during the relocation process.	People who must be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported, so that they can improve or at least

APs, or resettlement expenses.		restore their standard of living, income opportunities and production levels to pre-project levels.
There is provision for consultation with APs but there is no specific plan for public consultation under the Georgian laws	Public consultation and participation is the integral part of ADB's policy which is a continuous process at conception, preparation, implementation and finally at post implementation period	In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance. When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people.

220.To reconcile the gaps between Georgia laws/regulations and ADB Policy (ADB's SPS 2009), RDMRDI has adopted this policy for the Project, ensuring compensation at full replacement cost of all items, the rehabilitation of informal settlers, and the provision of subsidies or allowances for AHs those will be relocated, suffer business losses, or will be severely affected.

Right to Compensation and Compensation Packages

221.APs entitled for compensation or at least rehabilitation provisions under the Project are:

- All APs losing land either covered by legal title/traditional land rights, Legalizable, or without legal status;
- Tenants and sharecroppers whether registered or not;
- Owners of buildings, crops, plants, or other objects attached to the land; and
- APs losing business, income, and salaries.

222.Compensation eligibility will be limited by a cut-off date to be set for each subproject on the day of the beginning of the AP Census and DMS. APs who settle in the affected areas after the cut-off date will not be eligible for compensation. They, however will be given sufficient advance notice, requested to vacate premises and dismantle affected structures prior to project implementation. Their dismantled structures materials will not be confiscated and they will not pay any fine or suffer any sanction.

Table 11-2 Entitlement and compensation matrix

Type of Loss	Application	Definition of AH/APs	Compensation Entitlements
Land			
Permanent loss of all types of land (arable, residential, industrial, commercial)	All land losses independent from impact severity	PAPs (with fully registered title)	PAPs will receive cash compensation at full replacement cost at current market value ¹¹ . The unit rate will be confirmed in the LARP. If any remaining part of the land owned by the registered owners is no longer appropriate for use, such remaining part will also be purchased subject to the agreement with the owner.
		PAPs (possessors of legalizable land parcel)	Assistance to PAPs in the process of legalization of project affected land parcel being under their possession. Once legalization and registration of ownership title is accomplished, land acquisition will

			<p>be undertaken and PAP will receive cash compensation at full replacement cost at current market value at unit rate proposed in approved LARP.</p> <p>If any remaining part of the land owned by the registered owners is no longer appropriate for use, such remaining part will also be purchased subject to the agreement with the owner.</p>
		Leaseholder of private or public lands	<p>Free of charge renewal of lease in other plots of equal value/productivity of affected land parcel or cash compensation equivalent to market value of gross yield of affected land for the remaining lease years (up to a maximum of 3 years).</p> <p>In addition, cash compensation to reimburse the proven investments incurred by the Leaseholder to improve the leased land.</p>
		Leaseholder (not registered)	<p>Cash compensation equivalent to market value of gross yield of affected land for the remaining lease years (up to a maximum of 3 years).</p>
		Non-titled, non-legalizable land users/Squatters	<p>Non-legalizable APs losing agricultural land plot, which is the only land plot owned by AH and provides main source of income for AH, will be compensated with one-time self-relocation allowances in cash equal to 3 months of minimum subsistence income.</p>
Permanent loss of community land (pastures, grazing land)		Local community losing access to pasture, grazing land	<p>Affected community will be free of charge allocated replacement land of similar size, productivity, and location acceptable to affected community by the local government.</p> <p>If such replacement is not possible, Livelihood Restoration Plan will be prepared and implemented to address the needs of affected community and preserve their livelihood at least similar to pre-project level.</p>
Structures			
Residential house and auxiliary buildings	Project affected residential auxiliary buildings subject to partial/full demolition	All PAPs	<p>All impacts will be considered as full impacts disregarding the actual impact percentage. Impacts will be compensated in cash at full replacement costs free of depreciation and transaction costs.</p> <p>In addition, Livelihood Restoration initiatives will be provided to PAPs that may face deterioration of livelihood through indirect impact of proposed road project. (e.g. project impact is extended only on residential dwelling subject to full cash compensation at replacement costs and additional one-time allowances to transport salvaged materials and personal belongings. However, other income generating assets (agricultural land/private commercial facilities) may remain outside of project impact; correspondingly, these</p>

			assets may not be included in the suggested compensation package. PAPs after moving and settling down to a new location may at least temporarily lose income due to lack of access (increased travel time, complicated accessibility) to the above mentioned income generating assets not affected by the proposed project.
		Residential tenants/renters	One-time allowance equals monthly rental fee (specified in the lease agreement) multiplied by 3; if Lease agreement is not available, minimum monthly salary multiplied by 3; In addition one-time technical assistance for transportation personal belongings to a new location; or one-time cash allowance to cover costs for transportation personal belongings. LARP developer consultant will determine reasonable amount depending on the project nature and specificity.
Commercial structure	Project affected commercial facilities subject to partial/full demolition	Titleholder	Cash compensation at replacement cost at current market value calculated for project affected structure and other fixed assets free of salvageable materials, depreciation and transaction costs. If partial demolition threatens deterioration of structure or raises safety and security concerns the cash compensation, will apply to the full structure.
		Tenant of commercial facility	One-time allowance equal to monthly rental fee (specified in the lease agreement) multiplied by 3; if Lease agreement is not available, minimum monthly salary multiplied by 3.
State/Municipality owned buildings affected by project	Project affected state/Municipality owned buildings subject to partial/full demolition	IDPs, refugees, squatters occupying facilities for residential purposes	Accommodation in a government resettlement area or a self-relocation allowance as stipulated in the approved LARP.
Fences/Walls	All PAPs with fences to be affected	All PAPs	Cash compensation at replacement (construction) cost according to the material and linear meter length of affected fence/wall.
Annual Crops	Crops affected	All PAPs (including squatters)	Crop compensation in cash at gross market value of actual or expected harvest. Compensation for this item will be provided even in case if the crops were harvested. Crop compensation will be paid to landowners, land users, tenants or other users based on their specific sharecropping agreements being made between these parties, if any.
Perennials standing on private land parcels	Project affected Fruit bearing	All PAPs (including squatters)	Cash compensation at market value on the basis of type, age, and productive value of fruit tree; Each fruit bearing tree in addition

	perennials		shall be compensated for purchase of saplings. PAPs will be eligible to dispose logged trees themselves. Construction company ensures free logging and delivery of timber to the residence of PAPs.
	Project affected non-fruit bearing perennials	All PAPs (including squatters)	No cash compensation will be issued for perennials not bearing fruits. PAPs will be eligible to dispose logged trees themselves.
Perennials (on public/State land)	Standing trees	Perennials standing outside of private land	Construction Company will deliver logged down trees and transfer to the Municipality. Municipality may later distribute to local population below poverty levels.
	Standing non fruit trees	Perennials standing outside of private land	The legal implementation of the mentioned activity requires, that Perennials standing on the forestry land must be delisted from the State forest fund in accordance with the corresponding Decrees of Government of Georgia Construction Company will deliver logged down trees and transfer to the Municipality. Municipality may later distribute to local population below poverty levels.
Income loss			
Lessors/landlords	Loss of income through termination of Lease agreements	All PAPs holding lease/rental agreement	One-time allowance equal to monthly rental fee (specified in the lease agreement) multiplied by 3; if Lease agreement is not available, minimum monthly salary multiplied by 3.
Business Employment	Temporary or permanent loss of business or employment	All PAPs (including squatters)	Business owner: (i) Cash compensation equal to one year income, if loss is permanent; (ii) cash compensation for the period of business interruption, if loss is temporary. Worker/employees: Indemnity for lost wages for the period of business interruption. In cases where tax declaration reports are unavailable, then official minimum monthly salary multiplied to the number of months of actual stoppage of business.
		Agricultural workers losing their contract	Cash indemnity corresponding to their salary for the remaining part of the agricultural year, and where needed livelihood restoration measures
Additional Rehabilitation Measures			
Technical assistance in legalization, registration procedures		All PAPs with registered title/possessors of legalizable land parcels	Free of charge technical assistance to PAPs during legalization, sub-division of project affected parcel, registration of corrections and/or sales transaction. Project related State taxes, official fees and transactions costs if not waived will be covered by the GoG.

Relocation/Shifting allowance	Transport and transitional livelihood allowances	All PAPs affected by relocation	Will equal allowance for 3 months of consumer basket for family of five members, plus 200 Gel for transportation.
Community Resources			Access shall be maintained or reinstated; Rehabilitation/substitution of the affected structures/utilities (i.e. bridges, roads, schools, health-centers, potable water supply systems, irrigation channels, etc.)
Vulnerable PAPs		PAPs below poverty line; disabled people; pensioners; widows; Female headed household; impoverished; IDPs; Refugees	Allowance equivalent to 3 months of minimum subsistence income** and employment priority in project-related jobs.
Severely Affected		Aps who will lose more than 20% of land plot.	Severely AH will receive an allowance equivalent to 3 months minimum subsistence for a family of 5 person
Temporary impact	Loss of access to land parcel	Owners/Users	Temporary access will be set up by Construction Company. In cases of temporary loss of access to land parcel results in loss to crops, the construction company will be compensate APs. All losses and amount of due compensation shall be determined according to the principles of compensation entitlements provided under the RPF and LARP.
	Avoidance of interruption of temporary access road to the business activity	Business units	Temporary access will be set up by Construction Company.
	Temporary loss of income caused by occupying land parcels for the camps and quarries	Owners/users	During camps' site selection process, Construction Company should coordinate with relevant state agencies and give priority to vacant lands not used for agricultural /residential purposes. In case the land parcels selected for camps and quarries will have private land-users, all losses and amount of due, compensation shall be determined according to the principles of compensation entitlements provided under the RPF and LARP.
Any other unforeseen Impacts	As required	Any	Road Department and the construction contractor will address and mitigate/compensate unforeseen resettlement impact during project.

Grievance Redress Mechanism



223.A grievance mechanism will be available to allow an AP appealing any decision on which they disagree, practice or activity arising from land or other assets compensation. APs will be fully informed of their rights and of the procedures for addressing complaints whether verbally or in writing during consultation, survey, and time of compensation. Care will always be taken to prevent grievances rather than going through a redress process. This can be obtained through careful LAR design and implementation, by ensuring full participation and consultation with the APs, and by establishing extensive communication and coordination between the affected communities, the EA, and local governments in general. Complaint & Grievances will be addressed through the process described below in Table 3.

224.The GRM consist of project-specific systems established at the municipal level and regular system established at RDMRDI. Grievance Redress Committee (GRCE) established at municipal level as a project-specific instrument, functional for the whole period of the project implementation. Grievance Redress Commission (GRCN) is formed as an informal structure within the RDMRDI to ensure grievance review, resolution and record.

225.Grievance Redress Commission (GRCN) is formed by the order of the Head of RDMRDI as a permanently functional informal structure, engaging personnel of RDMRDI from all departments having regard to the LAR issues and complaint resolution. This includes top management, Safeguard or LAR Units, Legal Departments, PR department and other relevant departments (depending on specific structure of the Implementing Agency - IA). The GRCN is involved at the Stage 2 of grievance resolution process. The Order shall also state that if necessary representative of local authorities, NGOs, auditors, APs and any othe persons or entities can be included in the commission as its members.

226.A Grievance Redress Committee (GRCE) is an informal, project-specific grievance redress mechanism, established to administer the grievances at Stage 1. This informal body will be established at community level in each affected Municipality (village/community authority). The GRCE shall include representatives of Municipal LAR Teams and local communities. The RD representative in the Municipal LAR Team shall coordinate the GRCE formation. He/she will then be responsible for the coordination of GRC activities and organizing meetings (Convener)..

227.If considered necessary, GRCEs will be established at the community level with an office order from the RD with provision of 7 members of following composition:

- | | | | |
|---|---|-----------|----------------|
| 1. Representative of Resettlement Unit of IA | : | Convener; | Contact Person |
| 2. Representative Rayon LAR team | : | Member | Secretary |
| 3. Gamgebeli – concerned Gamgeoba (village level) | : | Member | |
| 4. Representative of APs | : | Member | |
| 5. Representative of NGO | : | Member | |
| 6. Representative of Civil Works Contractor | : | Member | |
| 7. LAR Specialist of Supervision Consultants | : | Member | |

228.Representative of the Resettlement Unit of IA is coordinating the work of the Committee and at the same time he/she is nominated as a contact person for collecting the grievances and handling grievance log. The local authorities at the municipal level, civil works Contractor, Supervising Company (Engineer), as well as APs (through informal meetings) are informed about the contact person and his contact details are available in offices of all mentioned stakeholders.

229.The Contact Person collects and records the grievances, informs all members of the Committee and the management of RD regarding the essence of the problem, engages the

relevant stakeholders in discussions with the applicant of grievance, handles the process of negotiation with AP at the stage 1 of the grievance resolution. The Contact Person prepares the minutes of meetings and ensures signatures. In case the grievance is resolved at the stage 1, the Contact Person records the fact of closing the grievance in his log and informs RDMRDI management about this in written. If the complainants are not satisfied with the GRC decisions, they can always use the procedures of Stage 2 of grievance resolution process. In that case the Contact Person helps the AP in lodging an official complaint (the plaintiff should be informed of his/her rights and obligations, rules and procedures of making a complaint, format of complaint, terms of complaint submission, etc).

230. The APs should be informed about the available GRM. This could be achieved through implementing information campaigns, distributing brochures (e.g. Communication Plan), Keeping all focal points up-to-date & maintaining regular communication with them, allowing multiple entry points for complaints, introducing forms for ease of reporting complaints.

Table 11-3 Grievance Resolution Process

Steps	Action level	Process
Step 1	Negotiations with APs	The complaint is informally reviewed by the grievance redress committee (GRC), which takes all necessary measures to resolve the dispute amicably.
Step 2	GRC Resolution	<p>If the grievance is not solved during the negotiations, the GRC will assist the aggrieved APs to formally lodge the grievances to the GRC. The aggrieved APs shall submit their complaints to the GRC within 1 week after completion of the negotiations at the village level. The aggrieved AP shall produce documents supporting his/her claim. The GRC member secretary will review the complaint and prepare a Case File for GRC hearing and resolution. A formal hearing will be held with the GRC at a date fixed by the GRC member secretary in consultation with Convener and the aggrieved APs. On the date of hearing, the aggrieved AP will appear before the GRC at the Gangeoba office for consideration of grievance. The member secretary will note down the statements of the complainant and document all details of the claim.</p> <p>Response time for the GRC to acknowledge receipt is 14 days and after date of hearing for Respond/resolve maximum time is 10 days. The decisions from majority of the members will be considered final from the GRC at Stage 1 and will be issued by the Convener and signed by other members of the GRC. The case record will be updated and the decision will be communicated to the complainant AP.</p>
Step 3	Decision from central RDMRDI	<p>If any aggrieved AP is unsatisfied with the GRC decision, the next option will be to lodge grievances to the RDMRDI at the national level. The RDMRDI shall review the complaint in compliance with the procedures specified in the Administrative Code of Georgia. Response time according the Administrative Code of Georgia is 30 days, but Internally, according the RD's internal electronic correspondence system, the mandated time for response is 10 days).</p> <p>GRC should assist the plaintiff in lodging an official complaint (the plaintiff should be informed of his/her rights and obligations, rules and procedures of making a complaint, format of complaint, terms of complaint submission, etc). The plaintiff shall be informed of the decision.</p>
Step 4	Court decision	<p>If the RDMRDI decision fails to satisfy the aggrieved APs, they can pursue further action by submitting their case to the appropriate court of law (Rayon Court) without any reprisal.</p> <p>The aggrieved AP can take a legal action not only about the amount of compensation but also any other issues, e.g. occupation of their land by the contractor without their consent, damage or loss of their property, restrictions on the use of land/assets, etc.</p>

Public Hearings and Contact Information



231. Public hearings will be held to discuss the construction of Khevi-Argveta road, where any stakeholder will have the possibility to receive full information about the project, make comments, which will be further discussed and considered.

Contact Information:

Gamma Consulting LTD

Specialist of Social Environment- Elene Mgaloblishvili

Tel: +995 591 405 868 Email: elene@gamma.ge



Annex 3 First Minutes of Meeting

Minutes of Meetings

KHEVI-UBISA-SHORAPANI-ARGVETA SECTION (E60 HIGHWAY ROUTE)

Zestaphoni City

20.12.2017

Chairman of the meeting: Zura Mgaloblishvili, Director of Gamma Consulting Ltd

Secretary of the meeting: Elene Mgaloblishvili, Social Specialist of Gamma Consulting Ltd

Attendees: Representatives of Roads Department of Georgia, Medea Kvakhadze and Vasil Bazadze (Kutaisi Office), representative of Zestaphoni municipality, representatives of the affected villages and APs, representative of IRD (Lorenzo Carapellese), representatives of Gamma Consulting Ltd (Zurab Mgaloblishvili, Elene Mgaloblishvili). List of attendees is enclosed

Agenda:

1. Information about the project mean RoW
2. Land registration and legalization process
3. Entitlements of PAPs
4. Discussion with Stakeholders.

Mr. Zura Mgaloblishvili introduce to the attendees information about project and companies and institutions that are responsible for design and implementation.

Mr. Lorenzo Carapellese described the aliment and main difficulties to avoid natural and cultural important premise. He also underlined the cooperation of the local people to our team and workers all along the RoW.

Ms. Elene Mgaloblishvili represented movies about the project and commented it. After presentation of the project the desiccation was open, quotation and comments are shown below.

During the discussion the official of the Road Departments from Kutaisi intervened giving explanation and suggestion on the legalization process and technical procedures, also providing assistance on registration of their land plots.

During the consultations to attendees was given Information leaflets describing private ownership legalization process in Georgia and Information about project impact (Information leaflets are provided in annex 1 and 2).

Annex 3.1 Questions from attendees

	Authors of comments and suggestions	Content of comments and suggestions	Response
1.	Original document includes personal information.	Will the Project facilitate employment?	The civil works contractor contract will envisages the prioritized employment of the locals and RD and local authorities will take care that these provisions are met.
2.		Can the civil works contractor dispose the remained soil materials on the private land plots adjacent to the project? And if they will, will the land owners compensated for the inflicted damage?	Temporal disposal of the soil materials on the private land plots is admissible only following the negotiations between the building company and the land owner and in case of giving out relevant compensation.
3.		Will be the local roads and infrastructure damaged during project implementation and then restored?	On the sites where the Project envisages such damages, the infrastructure will be moved after finishing the construction period. In case of unforeseen damage RD will impose control over the civil works company to ensure rehabilitation of all damaged infrastructure.
4.		What is the land compensation price?	At present the research/evaluation process of identification of market rate for land compensation is underway. Evaluation methodology implies identification of market price on the basis of data on executed transactions related to land sale/purchase; published proposals of land sellers; real negotiations with potential sellers of land plots.

			Final individual prices will be presented to each AH when the representative of RD will come to affected landowner to sign the contract. However the rates of price (per sq.m) for different types of land will be disclosed with the LARP earlier.
5		For those of us, who does not have a new registration on the lands, shall we do it ourselves or will you help us?	For everyone who needs new registration we will make cadastral drawings and help to register lands.
6	Original document includes personal information.	With the help of local authorities I have constructed a room. Inventory of my property has already taken place. I want to know whether I can arrange a roof, and whether I will receive a compensation for the roofing?	Anything done after inventory will not be compensated.
7		I want to ask better access roads for Shorapani village, to be either for population to go to the direction of Zestaphoni or Tbilisi.	Project engineers will be informed about request.



Annex 3.2 List of attendees

ხევი-უბისა-შორაპანი-არგვეთას მშენებლობის პროექტის, მიწის შესყდვისა და განსახლების საკითხთა
საჯარო განხილვაზე დამსწრეთა სია
20.12.2017

N	გვარი, სახელი	ორგანიზაცია, თანამდებობა ან სახეზღვრული ადგილი	საკონტაქტო ინფორმაცია
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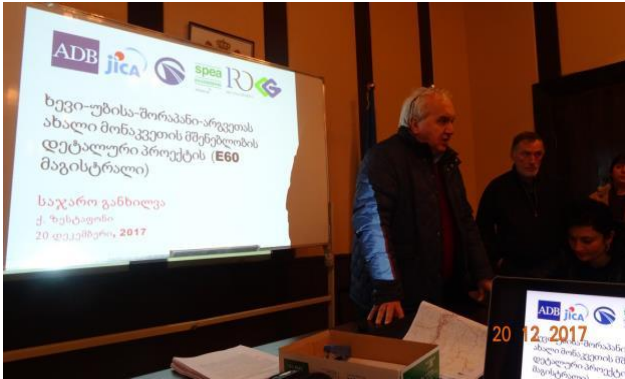
ხევი-უბისა-შორაპანი-არგვეთას მშენებლობის პროექტის, მიწის შესყდვისა და განსახლების საკითხთა

საჯარო განხილვაზე დამსწრეთა სია

20.12.2017

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Annex 3.3 Pictures





Annex 4 Second Minutes of Meeting

Minutes of Meeting

KHEVI-UBISA-SHORAPANI-ARGVETA SECTION (E60 HIGHWAY ROUTE)

Zestaphoni City

24.01.2017

Chairman of the meeting: Lorenzo Carapellese, IRD

Secretary of the meeting: Elene Mgaloblishvili, Gamma Consulting Ltd

Attendees: Representatives of Roads Department of Georgia, Medea Kvakhadze and Vasil Bazadze (Kutaisi Office), representative of Zestaphoni municipality, representatives of the affected villages and APs, representative of IRD (Lorenzo Carapellese), representatives of Gamma Consulting Ltd (Zurab Mgaloblishvili, Elene Mgaloblishvili). List of attendees is enclosed

Ms. Elene Mgaloblishvili introduce to the attendees information about project and companies and institutions that are responsible for design, implementation and execution.

Mr. Lorenzo Carapellese described the RoW and main difficulties to avoid natural and cultural important premise. He also underlined the cooperation of the local people to our team and workers all along the RoW. He also talked about the purpose of the meeting.

Ms. Elene Mgaloblishvili represented movies and drawings of project commented it. After presentation of the project the desiccation was open, quotation and comments are shown below.

During the consultations to attendees was given Information leaflets describing private ownership legalization process in Georgia and Information about project impact (Information leaflets are provided in annex 1 and 2).

Annex 4.1 Questions and Answers

	Authors of comments and suggestions	Content of comments and suggestions	Response
1.	Original document includes personal information.	We live on a territory where a highway will be constructed and part of our vineyard is under the project impact and remaining land is too small. How can I continue agricultural activities?	According the entitlement matrix developed for the project you will receive compensation for land and perennials as well as for harvest and annual corps. Also in case if PAPs are losing more than 20% of their lands they will receive one time allowances, which equals 3 month minimum subsistence for family from 5 persons. With this amount you can buy the land for agricultural activities.
2.		What is the source of financing this project?	The government of Georgia is getting the loan from JICA to finance this project civil works. However, the RAP expenses are paid from national budget.
3.		My house is under the project impact, but the yard is not within the construction territory. I would like to know whether the house and the yard will be fully compensated, or the compensation only covers the house.	If residential building is under impact of project, full residential land will be compensated.
4.		What will be your comment regarding the damaged houses? Will not the construction worsen their condition?	In the areas where vibration can cause damage of the building. Prior of civil works condition of the buildings in those areas will be described and documented. In case if constructions will cause some damage it will be compensated.
5.		Will we have bus stop areas near the village?	Bus stops areas will be included in the project of access roads.
6.		Is it possible to relocate a public center from its current location to the center of Shorapani, namely an old administrative building? It will be more comfortably accessible for the population and they will not have a parking problem anymore.	The request will be transferred to the RD for further consideration.

7.	Original document includes personal information.	How will be compensated annual crop? Do we have possibility to harvest crops this year?	In any case, crop compensation for 1 year will be given to APs in cash at market rate by default at the gross crop value of expected harvest, even in case if you already have taken this year crop before starting the land acquisition process. The start of land acquisition is expected from spring of this year.
8.		Who is paying registration fees?	Government will cover land registration fees in case if registration will be required.
9.		How will be compensated impact on houses and axillary buildings?	The impact on structures will be compensated at replacement cost, taking into account current prices on materials, transportation, workforce etc. These prices are calculated without any depreciation. The amount paid as compensation should be sufficient to construct the same type of structure in similar place today.
10.		What is the land compensation rate?	Independent auditors are fixing the land market price at the moment based on relevant research of land market and valuation of your land plots.



Annex 4.2 List of attendees

ხევი-უბისა-შორაპანი-არგვეთას ახალი მონაკვეთის მშენებლობის დეტალური პროექტის (E60 მაგისტრალი), სატენდერო დოკუმენტაციის, გარემოზე ზემოქმედების შეფასების და მიწის შესყიდვის დეტალური გეგმის მომზადება
 DETAILED DESIGN FOR THE CONSTRUCTION OF KVHEVI-UBISA-SHORAPANI=ARGVETA ROAD (E60 HIGHWAY), DEVELOPMENT OF BIDDING DOCUMENTS, ENVIRONMENTAL IMPACT ASSESMENT AND RESETTLEMENT ACTION PLAN
 SECTION F4 (KV.TSEVA-ARGVETA)/ მონაკვეთი F4-ის (ქვ.წევა-არგვეთა)
 მოსახლეობასთან შეხვედრა/List of Attendees

24.01.2018

N	გვარი, სახელი Full Name	დასახლება/სოფელი Place of living	სამუშაო ადგილი Place of work	ტელეფონის ნომერი Phone Number	ხელმოწერა Signature
1.	Original document includes personal information.				
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N	გვარი, სახელი Full Name	დასახლება/სოფელი Place of living	სამუშაო ადგილი Place of work	ტელეფონის ნომერი Phone Number
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N	გვარი, სახელი Full Name	დასახლება/სოფელი Place of living	სამუშაო ადგილი Place of work	ტელეფონის ნომერი Phone Number
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Annex 4.3 Pictures



Annex 5 Individual meeting with PAPs

Individual consultation was held with the owners of the residential houses, business owners and some vendors. Consultant's team contacted and had consultations with stakeholders who didn't attend on first Public Consultation. During the consultations, Stakeholders was given Information leaflets and Information about project impact (Information leaflets are provided in annex 1 and 2).

Individual consultation meetings were held 25th and 26th of January by representatives of Gamma Consulting. Questions of stakeholders asked during consultations are given below, as well as photos of the meetings. For PAPs who didn't attended on Public Consultation meeting and were not visited individually because of their absent on place, information leaflets and contact information were left in Zestaphoni City Hall Building.

Annex 5.1 Questions asked during the meetings

No	Authors of comments and suggestions	Content of comments and suggestions	Response
1.	Original document includes personal information.	Can we sow harvest this year? Will we be able to take the harvest this year?	The start of civil works is planned in January of 2019. In this case you can harvest as it was planned.
2.		How much time we will have for physical relocation?	After signing of the contract you will have as minimum 3 months to find or build new place to live, before construction will start.
3.		How will be calculated compensation for the loss of business?	Cash compensation equal to one year declared income.
4.		Can we use materials after house demolishing?	After signing of the contract you will be able to demolish buildings and reuse materials.
5.		How will be calculated compensation for fruit trees?	Cost of perennial plants is determined in accordance with their age and productivity. Price of fruit trees will be calculated by multiplying of the average annual harvest market price to those years that is essential for growing the new perennial seedling to the same age of existing trees.
6.		When is the starting date for civil work?	The start of civil works is planned in January of 2019.
7.		How will be calculated compensation for loss of employment?	In cases where tax declaration reports are unavailable, then official minimum monthly salary multiplied to the 3 months.
8.		How will be calculated price of buildings?	Structures will be cash compensated at replacement cost. Replacement cost calculation considers market cost of the materials to build a replacement structure with an area and quality similar to or



	Original document includes personal information.		better than those. The lost structures will be compensated at replacement cost, taking into account current prices on materials, transportation, workforce etc.
9.		Will you provide assistance during the registration of land plots?	RD will assist you with providing cadastral maps and which will be provided for the land registration.

Annex 5.2 Photos of meeting



Annex 5.3 List of Individual contacted PAPs

KHEVI-UBISA-SHORAPANI-ARGVETA SECTION (E60 HIGHWAY ROUTE) SECTION F4
 List of those who received informational booklets
 ხევი-უბისა-შორაპანი-არგვეთას მონაკვეთის მშენებლობის პროექტის (60 მაგისტრალი)
 საინფორმაციო ბუკლეტის მიმღებთა სია

N	სახელი, გვარი	საკონტაქტო ინფორმაცია	ხელმოწერა (მივიღე საინფორმაციო ბუკლეტი)
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KHEVI-UBISA-SHORAPANI-ARGVETA SECTION (E60 HIGHWAY ROUTE) SECTION F4

List of those who received informational booklets

ხევი-უბისა-შორაპანი-არგვეთას მონაკვეთის მშენებლობის პროექტის (60 მაგისტრალი) საინფორმაციო ბუკლეტის მიმღებთა სია

N	სახელი, გვარი	საკონტაქტო ინფორმაცია	ხელმოწერა (მივიღე საინფორმაციო ბუკლეტი)
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添付 12.1

調査団員・氏名

添付 12.1 調査団員・氏名

氏名	担当業務	所属
青木 博	総括／交通計画 1	株式会社パデコ
相馬 陽平	副総括／交通計画 2	株式会社パデコ
武田 宏夫	道路計画	株式会社パデコ
千葉 晴紀	橋梁計画	株式会社オリエンタルコンサルタンツグローバル
久保谷 伸博	橋梁設計 1	株式会社オリエンタルコンサルタンツグローバル
森本 修平	橋梁設計 2	株式会社オリエンタルコンサルタンツグローバル
中根 恒夫	橋梁設計 3	株式会社オリエンタルコンサルタンツグローバル (株式会社オリエンタルコンサルタンツ)
松島 由夫	橋梁設計 4	株式会社オリエンタルコンサルタンツグローバル (株式会社オリエンタルコンサルタンツ)
李 弘揆	トンネル計画	株式会社オリエンタルコンサルタンツグローバル
島 馨	落石防止 ・斜面对策計画	株式会社パデコ (応用地質株式会社)
福嶋 健次	自然条件調査	株式会社パデコ (OYO インターナショナル株式会社)
角田 直毅	交通調査 ・需要予測	株式会社パデコ
佐井 茂	社会配慮	株式会社パデコ (株式会社日本開発サービス)
永井 愛里	環境配慮	株式会社パデコ
多田羅 萌	経済・財務分析	株式会社パデコ
山本 典文	積算・施工計画 1	株式会社パデコ
小林 一典	調達・施工計画 2	株式会社パデコ
佐々木 直子	業務調整／積算補助 ／研修企画	株式会社パデコ

添付 12.2

主要協議資料
: 本添付は非公開