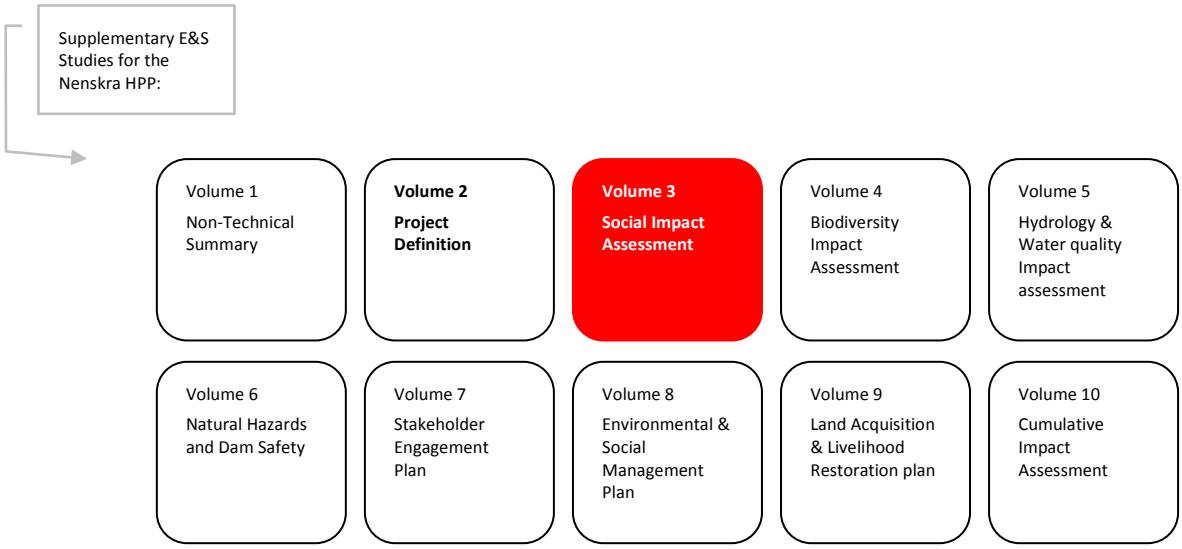
JSC Nenskra Hydro

# Nenskra Hydropower Project

# Supplementary Environmental & Social Studies

# Volume 3
# Social Impact Assessment




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November 2017

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# Acronyms

| | |
|---|---|
| APA | Agency of Protected Area |
| AIIB | Asian Infrastructure Investment Bank |
| CSR | Corporate Social Responsibility |
| EBRD | European Bank for Reconstruction and Development |
| ECAs | Export Credit Agencies |
| EHS | Environment, Health and Safety |
| EIA | Environmental Impact Assessment |
| EPC | Engineering-Procurement-Construction |
| EPP | Emergency Preparedness Plan |
| E&S | Environmental & Social |
| ESAP | Environmental & Social Action Plan |
| ESIA | Environmental & Social Impact Assessment |
| ESMS | Environmental & Social Management System |
| EU | European Union |
| FS | Feasibility Study |
| FSL | Full Supply Level |
| GEL | Georgian Lari |
| GIIP | Good International Industry Practices |
| GSE | Georgian State Electrosystem |
| GHG | Greenhouse Gas |
| HEPP | Hydro Electric Power Plant |
| HR | Human Resources |
| HS | Health & Safety |
| ICOLD | International Commission on Large Dams |
| IFC | International Finance Cooperation |
| KfW | *Kreditanstalt für Wiederaufbau* (German Development Bank) |
| LALRP | Land Acquisition and Livelihood Restoration Plan |
| LESA | Lenders Environmental & Social Advisers |
| MoE | Ministry of Environment Protection and Natural Resources |
| NACHP | National Agency for Cultural Heritage Preservation of Georgia |
| NGO | Non-Governmental Organization |
| NTS | Non-Technical Summary |
| OECD | Organisation for Economic Co-operation and Development |
| OESA | Owners Environmental & Social Advisers |
| PA | Protected Area |
| PAP | Project-affected Person |
| PH | Powerhouse |
| PRs | EBRD Performance Requirements |
| PS | IFC Performance Standards |
| SEP | Stakeholder Engagement Plan |
| [SOC] | Management or mitigation measures resulting from the social assessment made in this document |
| SoW | Scope of Work |

| | |
|---|---|
| SR | Asian Development Bank's Safeguard Requirement |
| STI | Sexually Transmitted Infection |
| TL | Transmission Line |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |

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# Preamble

The Nenskra Hydropower Project (The Project) is developed by JSC Nenskra Hydro (The Project Company). The developer's main shareholders are K-water - a Korean government agency - and Partnership Fund - an investment fund owned by the Government of Georgia.

In August 2015, The Project Company submitted the final Environmental & Social Impact Assessment Report (ESIA) for the Project to the Government of Georgia (GoG) as part of the national environmental permitting process. The report had been prepared by Gamma Consulting Limited – a Georgian environmental consulting company - and the assessment was based on the findings of field investigations carried out in 2011 and 2014. Public consultation meetings had been held in May 2015 in alignment with Georgia's ESIA regulations. The Environmental Permit was awarded by the Environmental Authorities in October 2015. In the present document, the ESIA approved in 2015 is referred as the 2015 ESIA.

Since the award of the environmental permit in 2015, several International Financial Institutions[1] (the Lenders) have been approached to support the Project. To ensure compliance with their environmental and social policies, the Lenders have required that a number of Supplementary Environmental and Social (E&S) Studies be undertaken to complement the 2015 ESIA report. A first version of the Supplementary Environmental and Social Studies was publicly disclosed in February 2017.

This report is the final Volume n°3 - Social Impact Assessment of the Supplementary Environmental and Social Studies prepared by SLR Consulting and issued in 2017 after the public disclosure period held from March 2017 to September 2017. It takes into account the comments received between March 2017 and September 2017 from the various stakeholders engaged by the Project. It should be read in conjunction with the other E&S studies which comprise the following:

- Volume 1: Non-Technical Summary
- Volume 2: Project Definition
- **Volume 3: Social Impact Assessment - SIA - (this volume).**
- Volume 4: Biodiversity Impact Assessment
- Volume 5: Hydrology and Water Quality Impact Assessment
- Volume 6: Natural Hazards and Dam Safety
- Volume 7: Stakeholder Engagement Plan (SEP)
- Volume 8: Environmental & Social Management Plan (ESMP)
- Volume 9: Land Acquisition & Livelihood Restoration Plan (LALRP)
- Volume 10: Cumulative Impacts Assessment (CIA)

[1] At the time of writing, the Lenders include the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the Korean Development Bank (KDB) and Korea Trade Insurance Corporation (K-SURE) .

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# Summary

## A. Project overview

The proposed Project is located in the Nenskra and Nakra valleys, situated in the north-western part of Georgia in the Samegrelo-Zemo Svaneti Region. The main components comprise a 125-metre high[2], 870-metre long asphalt face rockfill dam on the upper Nenskra River creating a live storage of about 176 million cubic metres and a reservoir occupying 267 hectares. The Nakra River will be diverted into the Nenskra reservoir through a 12-kilometre long transfer tunnel. The above-ground powerhouse is located on the left side of the Nenskra River some 15 kilometres downstream from the dam, and water from the reservoir is conveyed to the powerhouse through a 15-kilometre headrace.

This Social Impact Assessment report is based on the definition of the Nenskra HPP components and implementation schedule as known in December 2016. This definition includes further details provided by the EPC Contractor after the 2015 ESIA report has been released. Land required for the project comprises land for the main components which are the dam-reservoir, operators' village, powerhouse, Nakra weir and transfer tunnel inlet, and the temporary construction facilities, borrow areas and spoil disposal areas. Land is also required for road widening works on the dam and weir access roads, and for a 35 kV power line from the powerhouse to the dam site – though this could possible simply follow the road.

Some early works were carried out from October 2015 and will continue until the start of the main construction period which is planned to start in Q1 or Q2 2018. The duration of the main construction work is four years, and power generation is planned to start end of 2021 if the conditions are favourable.

During the construction period, the Project will be provided with electricity by a 110 kV Transmission Line (TL) from Khaishi to the powerhouse worksite. The TL is designed, built and operated by a third party and consequently it is considered as an "associated facility" and is not included in the scope of the SIA.

Once the scheme is operating, electricity generated at the powerhouse will be conveyed to a new substation located in the Nenskra valley by a permanent 220 kV TL where it will feed into the National Grid. The TL will be designed, constructed, installed, commissioned, owned, operated and maintained by Georgian State Electrosystem (GSE). Consequently, it is considered as an "associated facility" and is not included in the scope of the SIA. The Project Company has included in the Implementation Agreement between JSCNH and GoG requirements that GSE will prepare an ESIA and LALRP for the TL in alignment with Lenders' E&S policies.

## B. Socioeconomic environment

*Study area and collection of baseline information*

The study area encompasses the Nenskra and Nakra valleys where all settlements and people potentially affected by the Project are located. As no accurate recent secondary socioeconomic data was available for the study area, a household survey was undertaken, targeting 100% of project affected households, defined as those residing permanently in the two valleys. Only two households refused to be interviewed (see Annex 2). The survey collected socioeconomic and

[2] Dam height was previously disclosed as 130 m. Dam height is now referred to as 125 m as this relates to the height from the deepest point on the upstream face of the dam, whereas the 130 m previously quoted relates to the height from the deepest point on the downstream face of the dam. The reservoir full supply level and the design of the dam have not changed. This has been amended to provide consistency with other Project documents.

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demographic data, communicated basic information on the Project to the communities, and recorded the views and concerns of local people about the Project. Focus groups and key informant interviews were also conducted. An inventory of the community infrastructures was established.

*Demography, settlements and ethnicity*

The Nenskra valley contains the Chuberi village, and two hamlets which are part of the Khaishi village. This valley has 1,148 permanent residents (268 households) living in 13 hamlets along the river. The Nakra valley encompasses Naki village and one hamlet from Lakhalmula village, and counts 300 permanent residents (85 households) living in 5 hamlets. About 30 to 40 families now reside outside the two valleys, and return only for the summer months. The vast majority of people in the valleys were born there, and are Georgian nationals.

The Consultants conducting the Supplementary E&S Studies assessed whether the "Indigenous Peoples" policies of the potential Lenders apply to this Project. The criteria used to assess if the potential Lenders policies on "Indigenous Peoples" apply are quoted from the EBRD and the ADB policies. Although slightly different in wording, policies used by other potential lenders to be involved in the Project (i.e. policies of the EIB and IFC) are similar in substance and spirit.

The Asian Development Bank 2009 Safeguard Policy Statement uses the term Indigenous Peoples to refer to a distinct, vulnerable, social and cultural group, possessing the following characteristics in varying degrees:

- Characteristic 1: Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
- Characteristic 2: Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- Characteristic 3: Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture;
- Characteristic 4: A distinct language, often different from the official language of the country or region.

For the EBRD, Performance Requirement 7 uses the term "Indigenous Peoples" to refer to a social and cultural group, distinct from dominant groups within national societies, possessing all of the above four characteristics (similar to the ADB policies above) in varying degrees and in addition the group must also possess the fifth characteristic below to a varying degree:

- Characteristic 5: Descent from populations who have traditionally pursued non-wage (and often nomadic/transhumant) subsistence strategies and whose status was regulated by their own customs or traditions or by special laws or regulations.

The findings of the Supplementary E&S Studies and a detailed historical and anthropological study conducted for JSC Nenskra Hydro by a reputed Georgian Scholar suggest that the people in the Project area identify themselves as Svans, and are recognised as such by the rest of Georgia. The Svan are an ethnic sub-group within the broader "Kartvelian" (Georgian) ethnos, which also includes other ethnic sub-groups such as Mingrelians, Lazes.

The Svans have been historically attached to the Upper and Lower Svaneti territories where they currently live; they speak Svan which is a language different from Georgian but derived from the same Proto-Kvartelian ancestor language. The Svans are integrated into modern Georgian society, they are subject to and adhere to Georgian laws, have no specific governance systems and live a lifestyle that is similar to others who live in similar remote mountainous regions of Georgia. Svans have access to and benefit from the same resources and socio-economic infrastructure as other groups. From an administrative perspective Svans are not considered, by

mountainous regions of Georgia. Svans have access to and benefit from the same resources and socio-economic infrastructure as other groups. From an administrative perspective Svans are not considered, by the Georgian state, as a distinct minority group. There is no evidence that Svans were or are a marginalized and vulnerable social and cultural group vis-à-vis other ethnic groups in Georgia. Based on these findings, the Consultants conducting the Supplementary E&S Studies assessed that the "Indigenous Peoples" policies of the potential Lenders do not apply (a detailed analysis is presented in section 2.2.6).

*Land tenure*

In the study area, legal and formalized land tenure was introduced in 2008 and coexists and sometimes overlaps with the customary land tenure, which is well recognised by the local communities. However, there have been reports of difficulties for people wishing to register traditionally owned land. This is a factor that has needed to be taken account in the land acquisition and livelihood restoration planning.

In the Nenskra and Nakra valleys, almost all the land is officially State Land, and categorized by the State as Agricultural Land, and outside the settlements most of the land is also categorized as Forest Fund Land.

Within the settlements, individual land plots all well demarcated, and almost always fenced. Outside the settlements, in the forested areas, customary ownership is also most of the time well defined. Ownership and right of use of pasture areas is defined by customary rights: specific areas are owned by groups of families sharing the same ancestry and customary right of use of these areas are inherited. These customary rights for pasture areas are not recognized by the Georgian legal system. The project team has conducted a detailed mapping and census study to identify the users of affected pasture areas through extensive consultation with the local community.

*Livelihoods and economic activities*

Traditionally, farming was the main activity in both valleys. However, the people's traditional way of life has evolved and most households also have additional income from logging for commercial sale and diverse other activities. Almost all families have several sources of income Only 25 families (7% of 353 households) work only in agriculture. The vast majority of families engage in several remunerative activities. Logging was recognized as a key income source in the economy of the Nenskra and Nakra valleys by most informants. With regard to employment, prior to Project early works, 27% of households have at least one member permanently employed in the public service, and 11% have at least one member receiving a salary from a private company. Agriculture and livestock farming are largely for home consumption. On average, based on households' interviews, 4 cattle are owned per households. Home production is important with production of grains and tubers, dairy products, herbs and vegetables, and secondary forest products. People are largely self-reliant, doing much of their own construction and mechanical repair work. Also, there is a large amount of neighbourly assistance in farming and other activities (e.g. house construction). However, the population is still very dependent on the larger society for services and supplies.

*Vulnerability and women's role*

Households are considered as vulnerable if they possess at least one of the following characteristics:

- Registered as poor in the local social services;
- Women-headed households;
- Elder-headed households (≥ 70 years old) without any other bread-winner in the household;

- Households headed by disabled people.

In the Nenskra and Nakra valleys, a total of 150 households (42%) are considered as vulnerable in Nakra and Nenskra valleys, including 82 woman-headed households (23%). Twenty-three households are elderly-headed households without other bread winner in the family, and 8 households are headed by a disabled person. More than a fifth of all households in the project area (78 of 353 or 22%) report receiving Poverty allowance and being officially registered as being under the national poverty line (Table 42). This is above the national average, which was 11% in 2014 (National Statistics Office of Georgia, 2015), but below typical values for remote mountainous areas where poverty can be as high as 50% (ADB, 2014).

- Amongst these vulnerable households, 29 households will be affected by the land acquisition process. This includes 10 woman-headed households.
- Thirteen vulnerable households (6 women-headed) are affected by the upgrading of the Nenskra road and will lose strips of non-productive land along the road, fences and 2 structure and some trees. The impact on their incomes and livelihoods is considered as not significant.
- Sixteen vulnerable households (including 3 woman-headed households) will be affected by loss of summer pasture areas:
- Eleven vulnerable households (2 woman-headed) will temporarily lose access to a pasture area at the Nakra water intake site during the construction period. The impact on their incomes and livelihoods is considered as not significant.
- Five vulnerable households (1 woman-headed) will lose access to pasture areas at the Nenskra dam & reservoir site. The impact on their incomes and livelihoods is considered significant for the 4 vulnerable households (2 woman-headed) affected by temporary loss of pasture at the Dam construction camp during construction; and severe for one household affected by permanent loss of pasture in the Nenskra reservoir.

Forty-three of the interviewed households stated that at least one of their members receives a refugee allowance. These refugees are internally displaced people that arrived in the Nenskra and Nakra valleys following the Abkhazian conflict in the early 1990s. The refugees are Svan and have settled in the local communities, with whom they had kinship ties. Five of these families are affected by the land acquisition process (see Vol.9 LALRP). There are also five households affected by the Project land acquisition that include at least one IDP through marriage. Therefore, in total there are 10 households affected by the Project land acquisition that include at least one IDP. Those IDPs who are affected by the Project will benefit from the livelihood restoration packages, as is the case for any other affected vulnerable people. The project will not exacerbate any existing or potential vulnerabilities.

The women's role in the local community is important, though subordinate to the men's. A significant number of women work as educators or nurses' aides, while housewives produce cheese, preserved foodstuffs and some craft items to contribute to the family budget. Reportedly, domestic violence is not a salient issue, although it was impossible to determine the extent to which such issues were being downplayed during the two women's focus group discussions. According to the focus group conducted with women, gender violence is not an issue in the study area.

*Community infrastructure*

Community infrastructure is mostly basic. School buildings are in a poor state of repair, though people appreciate the quality of the teachers and the importance of education. The health clinics provide first-aid assistance only. Police are based in Khaishi, which is 10 kilometres from Chuberi and some 35 kilometres from Naki. However, law and order is maintained largely

through the community. There are few shops in Chuberi, though none in Naki. Public transport is scant in Chuberi and non-existent in Naki.

Itinerant marketers travel to Chuberi several times a week to sell basic commodities from the back of their minivans. Demand in Naki is too weak to support even this level of commercial activity. There are no repair services in either valley. Several corn water mills are used in each valley. Each community has a town hall building, though the physical infrastructure is dilapidated. There are two churches in Chuberi, and 10 church buildings in Naki, but only three of which are in a state of repair to allow church services to be held. Each community has a football field for recreational activity.

There is no collective water supply system. Individual households are supplied with water from springs and seeps by flexible aboveground pipes in which the water is conveyed by gravity. Each household installs its's own individual pipe. River water is not used as drinking water.

*Community health*

In the Project area there is one public health clinic – situated in Chuberi, and there are no permanent public health services in the Nakra valley. Common health problems are common colds, rheumatisms, food and/or alcohol poisoning, injuries caused by axes or chainsaw, and common viruses. Diarrhoea is said to be frequent amongst children. The study area is not located in a malariogenic zone.

*Security and human rights*

The primary security risk is geopolitical; is related to the proximity (located 7 kilometres from the dam) of the administrative boundary line between Georgia and the breakaway region of Abkhazia, which is considered by the government of Georgia as Russian-occupied territory. However, this security risk is a national concern and is managed by the government of Georgia. In the event of any risk situation the Project will follow the government's instructions.

The project also prevents economical, civil and social risks by identifying potential for violence, understanding the root causes of conflict, and considering the local way of resolving conflict (authority and judiciary' capacity, as well as their capability to respond to situations of violence in a lawful manner). The local communities reported one crime in the past five years in the Nenskra valley. They usually prefer to settle disputes internally using the traditional dispute resolutions – which is a Georgian practice and not specific to Svaneti - by referring the matter to the elders or to religious leaders. If internal resolution is not successful, the dispute is then brought to the local authorities. The project will liaise regularly with representatives of these local institutions to assess and monitor social risks.

In terms of human rights Georgia has strengthened ties with the European Union through the signature and ratification of the European Union Association Agreement. The signing of the agreement represents a commitment by Georgia to progress on human rights. The Project will support government in this way by promoting respect for human rights.

The Project will liaise regularly with state forces to ensure good communication and coordination with private security providers. With regards to private security providers, the Project Company will include compliance with the Voluntary Principles on Security and Human Rights as a contractual requirement, and will only engage licenced private security services providers with a known and approved background. The Project will take appropriate measures to avoid the use of individuals who are credibly implicated in human rights abuses. Private security forces will be regularly trained and monitored to ensure their obligation to provide security in manner consistent with the Voluntary Principles on Security and Human Rights.

Human right abuses will be reported and recorded in area of operation related to Project activities, and refer to local authorities. Effort will be made to ensure that information used is

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based on credible allegation and reliable evidence, to ensure safety of sources and to prevent recurrence.

## C. Positive impacts and benefits sharing

The biggest contribution the Project will make to Georgia is in the positive impact of the power production. The Project represents a significant infrastructural priority for the country and benefits of the highest support from the Government of Georgia ("GoG"). The main Project rationale is to guarantee the energy supply needed during the winter season and to maximize the export capacity during the summer season and is expected to significantly contribute to the economic and social development of the country.

The Project will also have the following local positive impact:

- Upgrading of public roads by the Project should make the communities in the Nakra and Nenskra valleys more accessible, and facilitate more frequent public transportation at lower cost and with better safety;
- Rehabilitation of the bridges used by the Project vehicles on the main roads in the valleys;
- Generation of employment during the construction period and, to a lesser extent, during the operational period;
- Tax which will be paid to Mestia Municipality;
- Procurement opportunities will be generated;
- Skill development and vocational training will be provided during the construction and operational phases, and
- A Community Investment Programme has been developed with the participation of local authorities and will be implemented as a benefit sharing mechanism.

## D. Social and socioeconomic impacts

*Land acquisition and resettlement*

Impacts caused by the Project's land acquisition are analysed and their mitigation measures are presented in details in report Vol. 9 – Land Acquisition and Livelihood Restoration Plan (LALRP).

The salient points regarding land acquisition and resettlement are as follows:

- The total land requirement is 882.5 hectares; comprising 427.8 hectares for permanent facilities and 454.7 hectares for temporary facilities. All the temporary and permanent land required will be subject to the Land Acquisition Process developed by the Project with the Government. On completion of the construction works, land affected by temporary land use only will be rehabilitated. In total 89 households are affected (as described below), including 29 vulnerable households. **There will be no permanent physical displacement**.
- There will be no impact on land used for residential purposes in the two valleys. In Chuberi village (Nenskra valley) the Project land take represents 5 percent of arable land (cultivated and non-cultivated) out of which 0.75 percent will be affected permanently, and 2 percent of pasture land, of which 0.8 percent will be affected permanently. In Naki village (Nakra valley), the land take represents a loss of 1 percent of the land used for pasture only, of which 0.16 percent will be affected permanently, and there is no loss of arable land.
- The principal land requirement is at the dam-reservoir site, which requires 560 hectares of forest / pasture land including 205 hectares for the temporary construction camp

and spoil disposal areas. The dam will occupy 83 hectares, and the reservoir 270 hectares. The land take affects a total of 25 households who will lose pasture land (16 temporarily during construction, and 9 permanently). Five of these households are vulnerable, including 2 woman-headed household.

- The second most important land requirement is at the powerhouse, which requires 188.8 hectares of land. However, most of the land (159.7 hectares) is required for the temporary construction camp and spoil disposal areas. The permanent land take is 29.1 hectares required for the powerhouse and associated facilities. Five households will be affected and will lose trees, arable land and fences. These households are not vulnerable and there is no female headed household. Two of these households are living within 500 meters of the powerhouse. During the construction period, they will be disturbed by noise, dust and vibrations from drilling, blasting and general construction activity. The EPC contractor will define and implement technical measure to guarantee appropriate health and safety conditions for these 2 households (15 people) during construction.
- The Nakra weir and transfer tunnel intake requires a land take of 36.7 hectares, of which 0.9 hectare will be used for the permanent infrastructures. The land use is pasture and hay fields. 27 households are affected of which 11 are vulnerable, including 2 women-headed households.
- The Nenskra road widening requires the acquisition of 4.5 hectares of arable land and affects 35 households, including 14 vulnerable households of which 6 are women-headed households. The households are affected by loss of private land, loss of assets (such as wooden fences, and wooden sheds), loss of perennial trees and loss of annual crops.
- The operators' village requires the acquisition of 2.5 hectares of forest land and affects one household that is not vulnerable.
- The remaining land acquisition is for the 35 kV supply line, the 110 kV transmission line and the Nakra road widening. The land acquisition is expected to be in the order of 90 hectares, but the alignment of the transmission line and supply lines will be defined later and the Nakra road widening works have not been defined, and so the number of affected households and type of land affected will be defined at a later stage and an updated LALRP covering these areas will be prepared prior to any land take.
- Logging is often undertaken close to the pasture areas in the forestry lands. During informal interviews, it was confirmed that the pasture areas that will be affected by the project have already been logged, especially in the area to be covered by the Nenskra reservoir. Therefore, the impact on logging activities is considered low. Prior to the development of the Project, the Government initiated a program of large-scale licenses for logging in order to regain management of the forested area. While local people with permits are still allowed to cut 5 cubic metres per year for household use, locals are not able to engage in commercial logging activities as they cannot effectively compete for the large-scale licenses, which are obtained by commercial enterprises. At the time of the field surveys, Government had sent in officers to enforce the new system. There was, therefore, an understandable reluctance on the part of the local population to speak openly about their involvement in the logging and sawmill industries, either in households' interviews or during thematic interviews or focus groups. However, as part of the Land Acquisition and Livelihood Restoration Plan (Vol. 9) implementation, regular monitoring will be conducted to ensure that all project induced impacts on livelihood are addressed.

*Access to the upper Nenskra valley*

The baseline situation of the Nenskra valley upstream of the future reservoir is characterised by very limited anthropogenic activities. There is some hunting and during the soviet period there were some logging activities – though this is no longer the case. Once constructed, the Nenskra dam will be a physical barrier blocking the access to this area and the border with the Russian Federation. Consequently, the Project will establish a cattle track from the dam, along the Nenskra reservoir leading to the area upstream of the reservoir. This measure will allow local people to access currently unused/disused pasture areas and for border control forces to access the border.

*Interaction with water uses, fishing, beekeeping and other downstream activities*

No discernible negative impacts on the use of water by communities are expected. There are no permanent irrigation systems for agricultural purposes using the Nenskra and Nakra river water. River water is not used as potable water but only used occasionally to water private gardens and intermittently (in summer period) periods may be used for domestic purposes. Springs and seeps are the source of potable water used for drinking and domestic uses. However, the Project will monitor the quality and availability of water and in the case of adverse negative impacts caused by the Project will provide alternative source of water.

Impacts on recreational fishing could occur on the reaches of the rivers with reduced flow – because of a potential reduction in the fish population. However, the Project will implement a river habitat management plan aimed at improving/maintaining fish spawning grounds to minimise the impact on the fish population.

While, beekeeping was not declared as a significant income source by the interviewees, three of the households affected by the land acquisition at the Powerhouse do practice beekeeping on a land plot affected by the Project. Beekeeping activities could be disturbed during the construction period by the Project traffic. However, it is not anticipated that bees will suffer from any long-term impact such as loss of foraging areas. To minimise potential impacts the project will help beekeepers temporarily move beehives away from traffic affected areas.

There are no on-going mining or forestry concession in the Project area, and the GoG has no plans to issue new concession. Consequently, the Project will not have an impact on commercial natural resources exploitation.

There is only limited tourism in the Nenskra valley (some limited kayaking and hiking) and no activities in the Nakra valley. Tourism is not a source of income for people. The presence of the Project and improvement of the access roads could attract and facilitate visits by tourists to the valleys. During the kayaking season, from May to October, the Nenskra flow pattern during Project operation will be generally similar to its natural state. The ability of th reservoir to buffer most of the flood events in the Nenskra valley and result in fewer extremes of flow, could benefit the kayaking activities. The sudden release of water from the powerhouse will be progressive and should not constitute a new danger for kayakers (this is discussed further in Section 6 Health and Safety).

All other formal and informal local businesses, such as family owned guest houses or shops would benefit from new business opportunities.

## E. Risks related to community health and safety

Key impacts and risk during the construction are summarized as follows:

- Road use by Project vehicles will create fugitive dust and exhaust gas emission, nose & vibration, traffic congestion and an increase in the risk of traffic accidents. In addition, there are potential safety risks to the cattle which graze freely along the roads in the project area. The principal affected roads are the Nenskra dam and Nakra weir access roads which will be used by the construction traffic. However, the Zugdidi-Khaishi road

will also be affected - but to a lesser extent - by the transport of supplies and material. These risks will be mitigated by the implementation of a Traffic Management Plan. Children have been identified as a high-risk group for traffic impacts and , therefore, an awareness campaign will be implemented for local school children.

- The recruitment of workers for the construction from other region of Georgia may represent a risk of increased prevalence of transmissible diseases, including sexually transmitted diseases. Maximization of use of local workforce and accommodation of non-local workers in controlled worker camps will reduce this risk. The Project will aim to recruit 100% of the necessary unskilled construction workers from the Nenskra and Nakra valleys. If insufficient numbers of workers are available locally, the recruitment will be extended to the nearest villages in the Mestia Municipality and the Svaneti region as secondary catchment areas. The Project also has targets to recruit 50% of the required semi-skilled workers from Mestia Municipality if available, and 75% from Georgia as a whole. .Health screening and health monitoring of the workforce will be carried out, and community health awareness campaigns organized.
- No health impacts are anticipated related to water supply during construction, as the supply of household potable and domestic water is from springs and seems that are not expected to be affected by the Project. However, monitoring of the quality and availability of spring water will be carried out.
- To prevent exposure of communities to the health and safety hazards present at worksites, access to worksites will be controlled and restricted. The worksites will be secured through use of security personnel to prevent unauthorized public access.

Key risks related to operation are as follows:

- Regular daily variations in the flow of the Nenskra River downstream from the powerhouse represent a public safety risk. People or livestock present in the riverbed at that time of a rapid increase in river flow would be in danger of drowning. Awareness campaigns will be carried out and warning signs installed to inform people of the risk.
- Occasional irregular increased discharge downstream from the dam caused by spillage of reservoir water can occur. People or livestock present in the riverbed at that time of a rapid increase in river flow would be in danger of drowning. Awareness campaigns will be carried out and warning signs installed to inform people of the risk. The Nakra transfer tunnel will be equipped with a gate that will be closed during flood events when the Nenskra reservoir is a fully supply level so that flood flow rates in the Nenskra are not higher than natural flows (i.e. baseline flow rates without the dam).
- On rare occasions there may be a need to open the reservoir bottom outlet gate, which would result in an extremely sudden high flow in the Nenskra downstream from the dam and possibly represent a risk of flooding. However, this would be a very rare event and would probably only occur after a major earthquake, when for safety reasons it will be necessary to lower the reservoir water level or in the case that the spillway is blocked at the same time as a flood event. Flood studies will be undertaken to establish the extent of any flooding that could occur and integrated into the Emergency Preparedness Plan (see below).
- The physical presence of the Nenskra dam and the potential for dam failure represents a risk for downstream communities. The dam has been designed and will be constructed and operated so that the likelihood of dam failure is extremely remote. The Project Company has made a commitment that the risk of dam failure will be within the tolerable limits defined by GIIP – such as the Australian Commission on Large Dams

(ANCOLD). A detailed description of dam failure modes and mitigation measures is provided in Vol. 6 – Natural hazards and dam safety. These measures include:

- A dam failure risk assessment will be conducted in alignment with the International Commission on Large Dams (ICOLD) methodologies[3];
- The dam is designed to withstand the Maximum Credible Earthquake without failing and to evacuate safely the Probable Maximum Flood, both events have a return period in excess of 10,000 years;
- Natural hazard studies have been undertaken to evaluate the risk of natural hazard events triggering a series of events that could lead to dam failure. Natural hazard events are not expect to directly cause dam failure, though events such as avalanche and debris may affect the dam features such as the spillway and bottom outlet – which are safety features – and consequently safeguards have been defined to monitor the risk of such events, protect structures and plan emergency actions to be taken in the event that a dangerous situation is detected.
- The coffer dam is likewise designed to withstand seismic and flood events. However, the coffer dam is only 10 metres in height and the volume of water retained significantly smaller that the main reservoir.
- An Emergency Preparedness Plan has been prepared which identifies which communities are exposed to the risk of dam failure and defines the warning, evacuation and other actions to be taken in the event of an emergency situation.

- The Nakra River is naturally vulnerable to a risk of flooding. Mudflow events on lateral tributaries can block the river resulting in temporary flooding upstream of the blockage - and downstream flooding when the blockage is breached. The Project could potentially increase this risk because of the reduced capacity of the river to flush away sediment. To address this risk, the Project has included gates on the Nakra weir and a gate on the transfer tunnel inlet. Operation of the gates allows the natural flow of the Nakra to be re-established when required and to ensure the sediment transport function of the river. Studies will be undertaken to establish what further actions can be taken to best minimise the risk of flooding caused by mudflow events and accumulation of sediment.
- As for during construction, no impact on water supply is anticipated during operation. Springs and seeps used as a source of potable and domestic water are not expected to be affected by the Project. However, the water quality and availability will be monitored and alternative supply of water provided in the case of Project induced impacts.

## F. Labour and working conditions

The Project will require a peak workforce of about 1,100 workers for construction. To ensure maximum local benefits are achieved through the construction phase and minimise the influx of workers from outside the region, the Project will aim at maximising the percentage of local worker recruited:

- The Project will aim at 100% of unskilled workers[4] recruited from the Nenskra and Nakra valleys (see Vol.2 “Project Definition”). If insufficient numbers of workers are

[3] http://www.icold-cigb.org/

[4] Unskilled occupations correspond to International Standard Classification of Occupation (ISCO-08) Skill Level 1 See International Labour Office – ISCO-08 “Volume I - International Standard Classification of Occupation – Structure, group definitions and correspondence tables”

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available locally, the recruitment will be extended to the nearest villages in the Mestia Municipality and the Svaneti region as secondary catchment areas.

- The Project will aim to recruit 50% of semi-skilled[5] workers from Mestia Municipality, if available and 75% workers in total from Georgia.
- The Project will aim at minimum 80% of all recruited workers (including skilled, semi-skilled and unskilled) are Georgian citizen.

The large majority of the people employed will be demobilized at the end of the construction. Their demobilization will induce a decrease of their income. Social unrest could arise if the demobilization is not properly planned.

During operation, the hydropower facilities will employ between 50 to 100 staff on site. Most jobs would be skilled positions. Unskilled labour positions would be limited to security and operator's village maintenance. The Project will undertake vocational training and skill development activities during the construction phase in order to increase the local employment levels during the operational phase.

Project-induced in-migration is unlikely to occur during construction, but any such in-migration could induce risks of anti-social behaviour, pressure on social services, increase in sexually transmitted diseases, local inflation. These risks are still relevant for the workforce that will be brought from other regions of Georgia to work on the Project.

With regard to forced labour and child labour, Georgian law prohibits forced or compulsory labour. Georgian labour laws have been revised and amended on various occasions since 2008, culminating in the adoption of a new labour code in June 2013. Despite recent modifications in consultation with the ILO, gaps still persist between Georgian legislation and the Lenders requirement, notably with respect to child labour, collective bargaining, retrenchment, worker accommodations, gender discrimination and non-employee workers. For instance, the Georgian labour code, which defines that, children aged 14-16 are allowed to perform the "light work". However, the code does not specify what could be considered a "light work", for how many hours and under what conditions it may be undertaken.

The mitigation strategy will include the following measures:

- The EPC contractor will define and implement a Health and Safety Management Plan targeting its workforce, which will be monitored, and
- The supply chain will also be monitored to ensure that it is managed sustainably, protecting against the use of child and forced labour, and complying with the Georgian Labour Code and all core ILO conventions to protect employee rights.
- The Project will maximize the use of the local workforce, with local employment targets, including 15% of position for women, established with the EPC contractor. A Recruitment and Labour Management Plan will be produced and monitoring of local workforce employment will be undertaken;
- Regular employee standards audits will be conducted to ensure labour conditions are compliant with National legislation, Lenders' requirements and core ILO standards.
- Job opportunities will be communicated locally, and direct recruitment offices will be opened in Chuberi and Naki;
- Monitoring of the supply chain will allow to enhance local indirect business opportunity where and when possible;

[5] Semi-skilled occupations correspond to ISCO Skill Level 2, and skilled occupations correspond ISCO Skill Level 3 and 4.

- All workers coming from other parts of Georgia will be accommodated in working camps;
- A workers demobilisation plan will be developed to identify the workers to be demobilized and manage this process as smoothly as possible;
- A system to monitor in-migration will be developed and implemented together with local authorities;
- As part of the Community Investment Programme, the Project will work with local authorities to obtain funding for the rehabilitation and support the existing heath facilities to address additional pressure from newcomers. A Memorandum of Understanding will be developed and agreed to define the responsibilities of each party (Project and local health authority);
- As part of the Community Investment Programme, the Project will define and develop skills development activities and vocational training to enhance the possibilities of local employment;

## G. Cultural heritage

No historical or archaeological sites have been identified within the area where the Project's structures and facilities will be constructed, and no churches/chapels or places of worship are located near the Project's components. However, as the Svaneti region has a rich historical background, and as archaeological artefacts (remains of metallurgical production) have been found in the Nenskra and Nakra valleys, it may be possible that chance finds of artefacts occur during civil engineering works. This will be managed through a Chance Find Procedure prepared and implemented by the EPC Contractor. The Chance Find Procedure complies with the Georgian Law on "Cultural Heritage Protection" (2007).

It is not anticipated that the Project will have any impact on the intangible cultural heritage, customs and traditions of the Svans. During the construction period, potential impacts on intangible cultural heritage will be mitigated by the measures defined above for (i) the minimisation of risk of project-related in-migration, and (ii) the impacts on the social cohesion of the local communities. In addition, and in order to provide enhancement rather than mitigation, the Community Investment Programme developed for the Project will include initiatives supporting the preservation of the local intangible cultural heritage, customs and traditions of the Svans.

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# 1 Introduction

## 1.1 Project overview

### 1.1.1 Project developer

The Project is developed by JSC Nenskra Hydro (JSCNH –also referred to as The Project Company). JSCNH's main shareholders are K-water, which is a Korean government agency, and Partnership Fund - an investment fund owned by the Government of Georgia.

### 1.1.2 Type of project and project situation

The Project is a greenfield high head hydropower project and is located in the upper reaches of the Nenskra and Nakra valleys in the north-western part of Georgia in the Samegrelo-Zemo Svaneti region (see Map 1-1 and Map 1-2).

### 1.1.3 Main project components

The main project components and key characteristics are summarised in the table below. A detailed description is provided in vol. 2 - Project definition.

**Table 1 – Principal project components and key characteristics**

| Component | Characteristic |
|---|---|
| Type of dam | Asphalt face rockfill |
| Dam height | 125 m[6] |
| Dam length | 870 m |
| Reservoir volume | 176 million $m^3$ |
| Reservoir area | 267 ha at full supply level |
| Nakra diversion weir | Concrete structure equipped with 2 gates for sediment management |
| Nakra transfer tunnel | 12.25 km in length equipped with an inlet gate |
| Headrace tunnel | 15.1 km in length |
| Penstock (underground) | 1,790 m in length |
| Powerhouse (above ground) | 3 turbines with a total capacity of 280 MW |

[6] Dam height was previously disclosed as 130 m. Dam height is now referred to as 125 m as this relates to the height from the deepest point on the upstream face of the dam, whereas the 130 m previously quoted relates to the height from the deepest point on the downstream face of the dam. The reservoir full supply level and the design of the dam have not changed. This has been amended to provide consistency with other Project documents.

265000 270000 275000 280000 285000 290000 295000

4780000 4775000 4770000 4765000 4760000

Nenskra Dam and Reservoir

Nakra Intake

Transfer Tunnel

Headrace Tunnel

Powerhouse and Switchyard

Memuli

Nenskra

Okrili

Tita

Sgurishi

Kari

Zeda Marghi

Devra

Letsperi

Kvemo Marghi

Lekalmakhi

Kedani

Lakhami

Lakhani

Darchi-Ormeleti

Lukhi

Tobari

Laknashura

Lekverari

Lenkvashi

Anili

Kvitsani

Nakra

Latsomba

Nodashi

Shtikhiri

Dizi

Enguri

Krumpreri

Kveda Ipari

Jorkvali

Kheira

Ipari

Lejia

N

WGS 84 UTM 38 N

0 0.5 1 2 3 Km







SLR global environmental solutions

JSC Nenskra Hydro

NENSKRA HYDROPOWER PROJECT
Supplementary
Environmental & Social Studies
Volume 3 - Social Impact Assessment

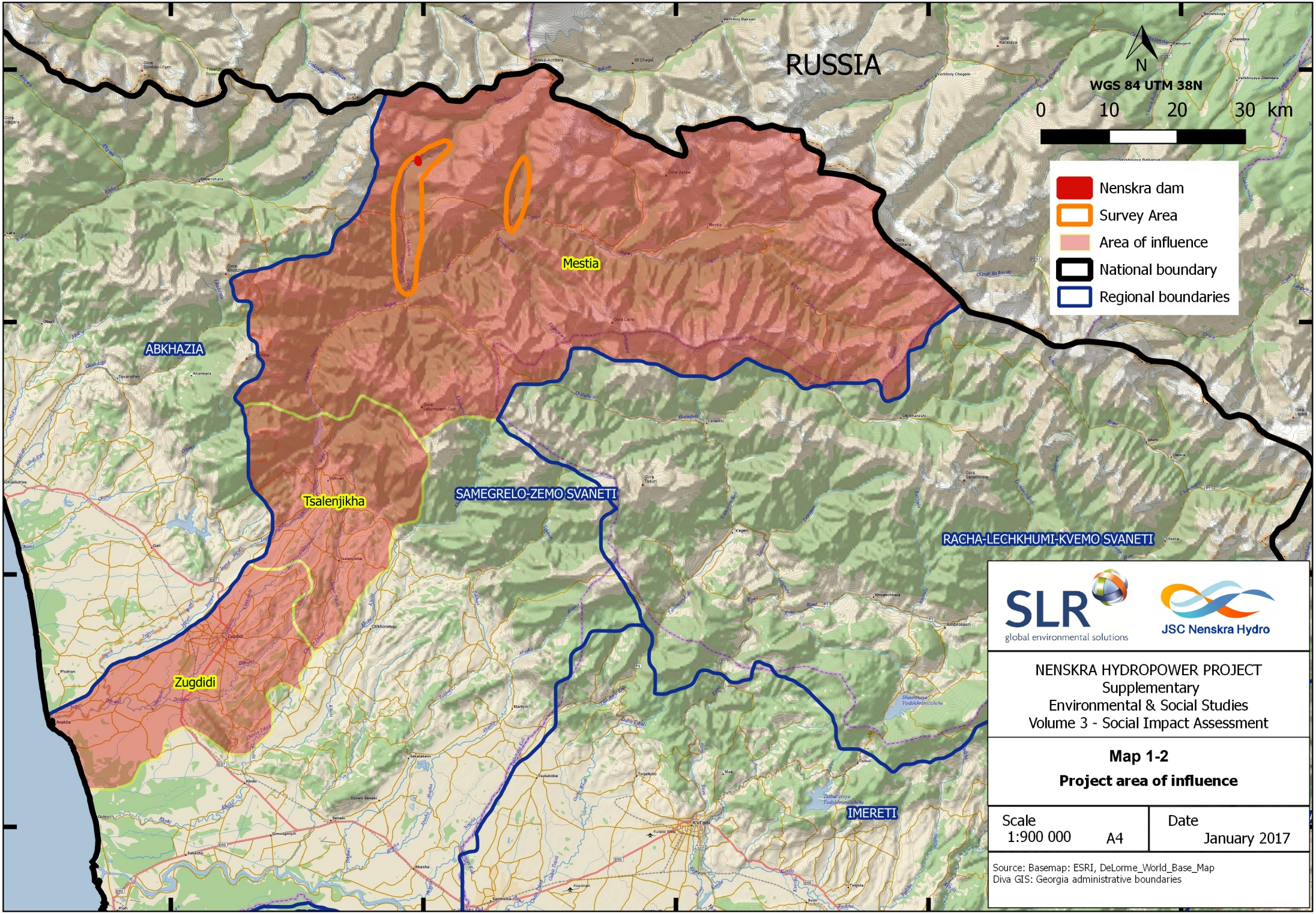
**Map n° 1-1**
**Project Location**

| Scale | Date |
|---|---|
| 1:80,000 @ A3 | February 2017 |

File n°901.6.2_ES Nenskra_Project location_V03Feb2017
Source:
L_6768-B-GE-GE-GE-DW-003_003
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L_6768-B-UW-TT-GE-DW-001_001

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RUSSIA
N
WGS 84 UTM 38N
0 10 20 30 km
Nenskra dam
Survey Area
Area of influence
National boundary
Regional boundaries
Mestia
ABKHAZIA
Tsalenjikha
SAMEGRELO-ZEMO SVANETI
RACHA-LECHKHUMI-KVEMO SVANETI
Zugdidi
IMERETI
SLR
global environmental solutions
JSC Nenskra Hydro
NENSKRA HYDROPOWER PROJECT
Supplementary
Environmental & Social Studies
Volume 3 - Social Impact Assessment
Map 1-2
Project area of influence
Scale
1:900 000
A4
Date
January 2017
Source: Basemap: ESRI, DeLorme_World_Base_Map
Diva GIS: Georgia administrative boundaries

Nenskra Dam and Reservoir
Transfer Tunnel
Nakra Intake
Headrace Tunnel
Powerhouse and Switchyard
Tita
Sgurishi
Kari
Zeda Marghi
Larilari
Devra
Letsperi
Kvemo Marghi
Lekalmakhi
Kedani
Lakhani
Lukhi
Tobari
Khaishi
Skordzeti
Lenkvashi
Anili
Kvitsani
Nakra
Latsomba
Nodashi
Shtikhiri
Dizi
Kveda Ipari
Jorkvali
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265000E
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4770000N
4765000N
4760000N
N
WGS 84 UTM 38 N
0 1 2 3 4 5 km
Legend
Households surveyed
Study_area
Secondary roads
Main road Zugdidi - Mestia
Nenskra Dam
Russia
Black Sea
Tbilisi
Turkey
Armenia
Azerbaijan
Nenskra Dam
Mestia
Enguri Reservoir
Zugdidi
SLR global environmental solutions
JSC Nenskra Hydro
NENSKRA HYDROPOWER PROJECT
Supplementary
Environmental & Social Studies
Volume 3 - Social Impact Assessment
Map n°1-3 - Survey Area
Scale: 1:120 0 @ A3
Date: Febr. 2017
File n° 901.8.7_ES Nenskra_SIA Study Area_V18April2016.qgs
Sources:
Salini_X04880-DWG-LNTP-001;
Salini_6768.0-P101-A
Basemap: ESRI, DeLorme_World_Base_Map
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### 1.1.4 Associated facilities

A 220 kV Transmission Line (TL) that connects the Project's powerhouse to a projected new substation located in the Nenskra valley will be built to evacuate the electricity produced by the Nenskra scheme and allow a tie-in to the national grid. The TL will be designed, built and operated by GSE (a third-party) and is considered as an "associated facility" and is not included in the scope of this SIA. The TL route will be defined at a later stage and GSE has confirmed that an ESIA will be prepared and a land acquisition processes undertaken in alignment with Lender E&S policies. The ESIA and LALARP for the TL will be prepared when the basic design has been completed, which is expected to be H2 2017. JSCNH has included a requirement for the GSE to undertake the TL ESIA and LALRP in alignment with Lender E&S policies in the Implementation Agreement that will be established between JSCNH and GoG.

### 1.1.5 Project schedule

The main construction period is planned to start in Q1 or Q2 2018 and will last 4 years. Some early works were, and will be, executed from October 2015 to September 2017: upgrading of access roads, construction of workers camps and technical installations. Power generation is planned to start end of 2021 if the conditions are favourable.

## 1.2 Purpose of the SIA

The SIA has been prepared as part of the Supplementary E&S Studies that have been undertaken to ensure compliance with Lender E&S Policies. The purpose of the SIA is to identify potential impacts on the local communities so that any adverse negative consequences can be avoided, minimised or mitigated and positive impacts enhanced.

The SIA is based on the current Project's status described in the report Vol.2 – Project Definition. This SIA will provide an outlook of the Nenskra and Nakra valleys. Socioeconomic impacts of the project will be assessed according to criteria such as category and type of impact, impact generation period and duration, probability of occurrence and significance level. Mitigation measures will be proposed for each impact. A monitoring program will be developed throughout the project implementation period.

## 1.3 Approach and methodology

The SIA was undertaken following the following steps:

- Scoping;
- Definition of the study area;
- Characterisation of the social baseline situation;
- Identification of potentially affected households;
- Assessment of impacts and definition of mitigations measures;
- Integration of the concerns and expectations of local communities expressed during the stakeholder engagement process.

### 1.3.1 SIA Scoping

As part of the Georgian environmental permitting process in 2015 an ESIA was prepared by Gamma Consulting Limited on behalf of the Project Company. A detailed gap analysis was conducted in May-June 2015 to identify gaps with Lenders policies, including sites visits and

key informants interviews. The gap analysis is considered as the scoping stage of the present SIA.

### 1.3.2 Study area

The study area is defined as the Project area of influence, which is presented in Map 1-2 above. It comprises the areas directly affected by the Project as well as areas concerned by indirect impacts.

The area directly impacted encompasses all communities living in the Nenskra and Nakra valleys. In the Nenskra valley, the dam is 5.6 kilometres upstream from the nearest inhabited settlement. Similarly, the diversion weir on the Nakra River is 3.3 kilometres upstream from the village of Naki.

The Project's impacts will extend outside of the Nenskra and Nakra valleys, and might also concern the Mestia Municipality as a whole, as well as the communities living in the Enguri valley. These communities will be concerned notably by the Project's vehicles traffic, employment and local supply opportunities. Impacts on downstream communities in the Enguri valley in terms of dam safety are described and assessed in report Vol. 6 - Natural Hazards and Dam Safety. Cumulative impacts encompassing these communities and the Mestia Municipality as a whole are assessed in report Vol. 10 – Cumulative Impact Assessment.

### 1.3.3 Baseline data collection

The baseline data collection was designed on the basis that no secondary socioeconomic baseline information was at that time available on the 353 households residing permanently in the valleys (268 households in Nenskra and 85 households in Nakra). Several methods were used to collect socioeconomic baseline data to inform the Social Impact Assessment:

- A household survey encompassing all households residing permanently in the Nenskra valley was conducted 6 -14 September 2015;
- A household survey encompassing all households residing permanently in the Nakra valley was undertaken 20-22 November, 2015.
- Focus groups were organized with women and with other strategic groups such as farmers in September 2015, focusing on gender relationships and means of livelihoods;
- An inventory of community infrastructure (schools, clinics, shops) was carried out during the households' surveys.

Prior to the start of the household survey a comprehensive list of households to be surveyed was prepared using aerial photographs and with the assistance of local authorities. Thirty-four buildings were identified as being abandoned or unoccupied. Some of which are owned by families with a primary residence elsewhere and who return during the summer for vacation and to visit family and friends. The livelihood and incomes of seasonally present households are not expected to be significantly affected by the Project and so these households were not included in the baseline surveys. These households could be exposed to construction and operational impacts such as traffic, noise or dust emissions during their summer holidays.

The Map 1 – 3 above shows the extent of the survey area. The area surveyed does not include the 220 kV TL, which is an associated facility and not included in the scope of this SIA (see section 1.1).

The Annex 2 presents a breakdown by village of the number of households interviewed. The questionnaire used for the household survey is provided in Annex 3.

### 1.3.4 Identification of potentially affected households

A census of the people affected by land acquisition was undertaken concurrently with the inventory of affected land plots and assets in Chuberi and Naki villages, during the period 27 October - 1 November, 2015, and 24-28 November, 2015.

Meetings have been held in October 2015 before the start of the cadastral and valuation survey that were part of the field surveys for the Vol. 9 – LALRP to announce the cut-off date and the methodology that would be used. One meeting was held in Chuberi on 25 October and one in Naki on 26 October. These meetings are detailed in the report Vol. 7 – SEP.

### 1.3.5 Assessment of impacts and definition of mitigation measures

The aim of the assessment is to answer the following questions:

- Prediction - what will happen to local communities as a consequence the Project?
- Evaluation - does this impact matter? How important or significant is it and to who?
- Mitigation – if it is significant, can anything be done about it?
- Residual Impact – is it still significant after the implementation of mitigation?

To answer these questions, the assessment followed the following steps:

- Evaluation of the sensitivity of the environmental or social component (see Table 2);
- Characterization of the potential impact:

Spatial extent and distribution of the impact

Number of people affected

Likelihood of occurrence

Impact duration frequency and reversibility

Rarity, sensitivity and resilience of the affected socioeconomic component

Stakeholders acceptability

- Evaluation of the magnitude and significance of the potential impacts (negligible, low, medium or high; see Table 3);
- Identification of proposed control and mitigation measures to avoid, minimise, mitigate and compensate potential impacts, and
- Evaluation of the residual impact and significance – which is a combination of sensitivity x impact magnitude severity after implementation of mitigation measures
- Where significant residual impacts remain, further options for mitigation may be considered and impacts are re-assessed until they are as low as is reasonably practicable for the Project

Section 9 presents a synthesis of all anticipated impacts, their significance, mitigation measures, and residual impacts.

### 1.3.6 Integration of stakeholder concerns and expectations

Stakeholders have been able to voice their concerns and expectations with regard to the Project on numerous occasions, in particular the following:

- Meetings were held with the local authorities in Chuberi and Naki villages on 5 September 2015 to inform them of the planned socioeconomic surveys and the supplementary E&S studies process;

- During the interviews of the comprehensive household survey, the surveyors explained basic information about the Project, as part of the interview introduction, and they collected the interviewees' perceptions of the Project and concerns about it;
- Public information meetings were held in Chuberi village on 16 December 2015 and in Naki village on the 17 December 2015. During these meetings the preliminary findings of the SIA and of the other Supplementary E&S studies were communicated to the local people. Their views and concerns about the anticipated impacts and the proposed mitigation measures were expressed to the Project. These meetings are described in details in the report Vol. 7 – SEP, where a copy of the material distributed is provided;
- Several meetings with the people affected by the land acquisition conducted throughout 2016;
- Opening and operation of the Project's public information centre in Chuberi village during the Summer 2017; followed by formal and informal meetings organized at villagers' request;
- Additional socioeconomic surveys conducted between September and October 2016 in order to (i) further assess the impact caused by the loss of pasture areas at the Nakra water intake site and at the Nenskra Dam and reservoir site and (ii) discuss with the affected households livelihood restoration options that could be technically and socially feasible;
- A community needs assessment undertaken in September and October 2016 in order to define the Project Community Investment Plan;
- Meetings and consultations undertaken during the disclosure of the Supplementary E&S studies from March to August 2017, in the two valleys and in Tbilisi:
- Community meetings in Nenskra and Nakra valleys from the 3 to 7 April 2017 (1 month after publishing Supplementary E&S Studies),
- Public consultation meetings with NGOs, Civil Society and the citizens from Svaneti living in Tbilisi, 27 and 28 April 2017,
- Public Consultation Meetings in Nenskra and Nakra Valleys, 1 to 3 May 2017.
- Additional Focus groups with women and vulnerable people conducted from the 2$^{nd}$ to the 4$^{th}$ of August 2017,
- Open House Meetings in Chuberi and Nakra, 22 to-24 August 2017.

The views and concerns expressed by the local people, how the Project integrated them into the project design, the E&S studies and management plans and the stakeholder engagement process in general are documented in Vol. 7 – SEP.

**Table 2– Assessment criteria for sensitivity of socioeconomic receptors**

| Receptor | Very Low Sensitivity | Low Sensitivity | Medium Sensitivity | High Sensitivity |
|---|---|---|---|---|
| 1. Community health | Very good health infrastructures and services<br>Good education level and health practices<br>Very low rate of Sexually Transmitted Infections (STI) and of other transmissible diseases (vector related, water and soil related diseases)<br>Good environmental health conditions (e.g. low exposure to potentially hazardous materials, Good housing conditions)<br>Very low incidents and fatalities rates<br>Good nutrition conditions | Reasonable health infrastructures and services<br>Average education level and health practices<br>Low rate of STI and of other transmissible diseases(vector related, water and soil related diseases)<br>Average environmental health conditions (e.g. average exposure to potentially hazardous materials, average housing conditions)<br>Average incidents and fatalities rates<br>Average nutrition conditions | Poor or limited health infrastructures and services<br>Poor level of education and poor health practices<br>High rate of STI and of other transmissible diseases (vector related, water and soil related diseases)<br>poor environmental health conditions (e.g. exposure to potentially hazardous materials, poor housing conditions)<br>High incidents and fatalities rates<br>Poor nutrition conditions | Very limited or non-existent health infrastructures and services<br>Very poor level of education and very poor health practices<br>Very high rate of STI and of other transmissible diseases (vector related, water and soil related diseases)<br>Very bad environmental health conditions (e.g. very high to potentially hazardous materials, very poor housing conditions)<br>Very high incidents and fatalities rates<br>Food insecurity / malnutrition |
| 2. Land tenure | One only recognized Land tenure system is existing<br>No or very few land-related tensions<br>Existing, widely used and up-to-date cadastre or land title registration system<br>Very low land pressure [7]<br>No informal land use everything is registered and acknowledged in the national legislation | Several land tenure systems are co-existing, with one of them sitting on top of the others<br>Some land related tensions are existing<br>Existing, often used but outdated cadastre or land title registration system<br>Average Land pressures [7]<br>Some limited informal land use most land is registered and acknowledged in the national legislation | Several land tenure systems are co-existing, with a clear hierarchy in practice<br>Land-related dispute are frequent<br>Existing but mainly unused cadastre or land title registration system<br>High land pressure [7]<br>Significant informal land use some limited land is registered and acknowledged in the national legislation | Several land tenure systems are co-existing, without any hierarchy in practice<br>Lots of land-related conflicts are open and unresolved<br>No existing cadastre or land title registration system<br>Very high land pressure [7]<br>All (nearly all) land use is informal and no (or very little) land is registered and acknowledged in the national legislation |

[7] Land pressure refers to pressure from the development or planned development of land for commercial, agricultural, urban use

**Table 2– Assessment criteria for sensitivity of socioeconomic receptors**

| Receptor | Very Low Sensitivity | Low Sensitivity | Medium Sensitivity | High Sensitivity |
|---|---|---|---|---|
| 3. Livelihood & economic activities | Economic activities are dominant<br>Livelihoods not based on land or community-owned resources<br>No dependency on natural resources in the affected area<br>Large proportion of educated and skilled workers amongst the local population<br>No pressure on resources used by local communities<br>Equivalent natural or economic resources are available in the vicinity of the Project area<br>Very high diversity of economic opportunities | Mix of economic and subsistence activities<br>Only a minor part of the livelihoods is based on land<br>Partial (minor)dependency on natural resources in the affected area<br>Average proportion of educated or skilled workers amongst the local population<br>Existing although minor pressure on resources used by local communities<br>Equivalent natural or economic resources are available in the vicinity of the Project area, although at some distance<br>Fairly high diversity of economic opportunities | Mix of economic and subsistence activities<br>The major part of the livelihoods is based on land,<br>Partial (major)dependency on natural resources in the affected area<br>Small number of educated or skilled workers amongst the local population<br>Strong pressure on resources used by local communities<br>Some alternative natural or economic resources are available for the local population, although not in sufficient quantity and/or far away.<br>Limited diversity of economic opportunities | Subsistence activities only<br>Land-based livelihood,<br>Complete dependency on natural resources in the affected area<br>Very few or no educated or skilled workers amongst the local population<br>Local resources are not sufficient to provide means of livelihoods for all the local population<br>Equivalent natural or economic resources are not available for the local population<br>Very limited diversity of economic opportunities |
| 4. Social structures / Gender | Integrated social groups<br>Highly monetized economy<br>Local social group are used to social changes<br>Low proportion of vulnerable people and groups<br>Low proportion of women's participation in decision making,<br>Low proportion of women's part in the labour market,<br>Low proportion of livelihood creation by women | Integrated social groups<br>Monetized economy<br>Local social group are used to social changes<br>Average proportion of vulnerable people and groups<br>Average proportion of women's participation in decision making,<br>Average proportion of women's part in the labour market,<br>Average proportion of livelihood creation by women | Isolated social groups<br>Economy only partially monetized<br>Traditional social structures with only limited exposure to social changes<br>High proportion of vulnerable people and groups<br>High proportion of women's participation in decision making,<br>High proportion of women's part in the labour market,<br>High proportion of livelihood creation by women | Isolated social groups<br>Economy mostly non-monetized<br>Traditional social structures not exposed to social changes<br>Very high proportion of vulnerable people and groups (more than 30% of the affected population)<br>Very high proportion of women's participation in decision making,<br>Very high proportion of women's part in the labour market,<br>Very high proportion of livelihood creation by women |

**Table 2– Assessment criteria for sensitivity of socioeconomic receptors**

| Receptor | Very Low Sensitivity | Low Sensitivity | Medium Sensitivity | High Sensitivity |
|---|---|---|---|---|
| 5. Public utilities & services / Infrastructures | Close proximity to a large population centre<br>High density of public services & utilities<br>Good quality of public utilities and services, no shortage. | Proximity to a large population centre<br>Average density of basic public services & utilities<br>Average quality of public utilities and services, irregularities and shortages can happen punctually. | Remote area<br>Density of basic public services & utilities insufficient for the local population<br>Poor quality of public utilities and services, frequent irregularities, shortages and malfunctions | Very remote area<br>Lack of basic public utilities and services<br>Very poor quality of public utilities and services, shortages and malfunctions are happening on a regular basis. |
| 6. Cultural heritage | Few assets (e.g. tangible or not tangible) with very little or no surviving archaeological interest (sites previously heavily damaged or destroyed)<br>Cultural sites or assets are not legally protected and/or do not have any traditional or customary protection<br>Local People do not use the cultural heritage assets anymore, or this use is strongly declining.<br>Other similar cultural heritage sites are available in the vicinity<br>Sites can easily be repaired, displaced or replaced | Designated or undesignated assets (material or cultural, e.g. tangible or not tangible) of local importance<br>Assets of limited value, but with potential to contribute to local research objectives, e.g. sites that have been ploughed and are under threat of continued destruction by ploughing<br>Cultural sites or assets legally recognized but not protected, and/or having a local traditional or customary significance<br>Local use of the cultural heritage assets is declining, but still continued.<br>Other similar cultural heritage sites are not available nearby, but similar sites can be found at the regional or national scale<br>Sites can be displaced or replaced, although with some technical difficulties | Assets (material or cultural, e.g. tangible or not tangible) protected under national legislation, sites that are on the protected monuments list<br>Assets that can contribute significantly to acknowledged national or regional research objectives<br>Local use of the cultural heritage assets is strong, and is an important social feature.<br>Other similar cultural heritage sites are not available at a regional or national scale<br>Sites can be displaced or replaced, but with great difficulties | Assets protected under national legislation and/or UNESCO world heritage sites designated for their cultural historic or archaeological value (including nominated sites)<br>Assets (material or cultural, e.g. tangible or not tangible) that can contribute significantly to acknowledged international research objectives<br>Local social identity is depending on the cultural heritage asset.<br>Other similar cultural heritage sites are not available at an international scale<br>Assets cannot be displaced or replaced. |

**Table 2– Assessment criteria for sensitivity of socioeconomic receptors**

| Receptor | Very Low Sensitivity | Low Sensitivity | Medium Sensitivity | High Sensitivity |
|---|---|---|---|---|
| 7. Human rights | Stable political and social context<br>High level of tolerance for opposition and dissent, including trade unions<br>Good relationships between national and local governments<br>Good relationships between local and national government and businesses (including private security forces)<br>No historical or recent social tensions or conflicts<br>Low prevalence of corruption<br>Very low prevalence of any forms of discrimination | Stable political and social context<br>Good level of tolerance for opposition and dissent, including trade unions<br>Good relationships between national and local governments<br>relationships between local and national government and businesses (including private security forces)<br>Very few recent social tensions or conflicts<br>Low prevalence of corruption<br>Low prevalence of any forms of discrimination | Unstable political and social context<br>Tolerance for opposition and dissent, including trade unions<br>Existing tensions between national and local governments<br>Existing tensions between local and national government and businesses (including private security forces)<br>Recent conflicts<br>High prevalence of corruption<br>Discriminations against or within local social groups | Highly unstable political and social context<br>No tolerance for opposition and dissent, including trade unions<br>Open disputes and conflicts between national and local governments<br>Open disputes and conflicts between local and national government and businesses (including private security forces)<br>Very recent or on-going armed conflicts<br>Generalized corruption<br>Generalized discriminations against or within local social groups |

**Table 3 – Assessment criteria for impact magnitude of socioeconomic impacts**

| Magnitude | Description |
|---|---|
| High | The socioeconomic groups affected are heavily dependent on affected socioeconomic resources or structures.<br>Affected socioeconomic receptors are strongly protected by national or international legislation, and have a high cultural value for local communities<br>Affected societal receptors have low resilience capacities<br>Equivalent natural, economic, societal or cultural resources are not available. |
| Medium | A significant part of the socioeconomic groups are heavily affected depend on socioeconomic resources or structures impacted.<br>Affected socioeconomic receptors are protected by national or international legislation, without coercive measure to ensure this protection, and/or they have a high cultural value for local communities<br>Affected societal elements have low resilience capacities<br>Equivalent natural, economic, societal or cultural resources are only partially available, at some distance from the societal receptors affected |
| Low | Only a small part of the socioeconomic groups affected depend on socioeconomic resources or structures impacted.<br>Affected socioeconomic receptors are protected by national or international legislation, without coercive measure to ensure this protection, and/or they have a high cultural value for local communities<br>Affected societal elements have moderate resilience capacities<br>Equivalent natural, economic, societal or cultural resources are only partially available, at some distance from the societal receptors affected |
| Negligible | Societal elements are not dependent on affected socioeconomic resources or structure.<br>Affected socioeconomic receptors are not protected by national or international legislation, and do not have a cultural value for local communities<br>Affected societal receptors have high resilience capacities<br>Equivalent natural, economic, societal or cultural resources are available in the vicinity of the societal receptors affected |

## 1.4 Links with the other E&S studies

The SIA is linked with the other Supplementary E&S studies as follows:

- Volume 2 – Project Definition provides all technical aspects of the Project that were used in the assessment.
- Volume 4 - Biodiversity Impact Assessment provided information on natural resources used by local people. Information on frequencies of sightings of wildlife by local people collected by the social assessment team during survey work was passed on to the biodiversity assessment team for use in the biodiversity assessment.
- Volume 5 - Hydrological and Water Quality Impact Assessment was used to assess impact on activities such as tourism (Section 5), and on Community Health and Safety (Section 6).
- Volume 6 – Natural hazards and dam safety was also used to assess impact on Community Health and Safety (Section 6).
- Volume 7 – SEP presents the engagement activities conducted with various stakeholders having interest in the Project or affected by it, as well as the future engagement activities.
- Volume 8 – Environment and Social Management Plan presents all the Project's commitments and recapitulates all mitigation measures, including the mitigation measures defined in this SIA. It also includes details on the Project's Community Investment Plan.
- Volume 9 – LALRP, this document provides a detailed description of the land acquisition with an assessment of impacts at household level, and describes the livelihood restoration measures.
- Volume 10 – Cumulative Impact Assessment.

Regarding impact on cultural heritage, this SIA refers to the 2015 ESIA in which baseline and impact on cultural heritage were adequately described and assessed.

## 1.5 Structure of the report

The SIA Report is structured into 10 main sections:

- Section 1 is the introduction and presents the SIA methodology;
- Section 2 describes the socio-economic baseline conditions;
- Section 3 enunciates the positive impacts of the Project and the proposed benefit sharing mechanism;
- Section 4 is the assessment of impacts related to Land Acquisition;
- Section 5 addresses other impacts on water uses, fisheries, beekeeping and tourism;
- Section 6 discusses the impacts, risks and management measures with regard to occupational and community health and safety;
- Section 7 addresses the impacts, risks and management measures with regards to labour and working conditions;
- Section 8 discusses impacts, risks and mitigation measures with regards to cultural heritage;
- Section 9 presents a synthesis of the impacts, their significance and mitigation measures.

# 2 Socioeconomic baseline situation

## 2.1 Description of the study area

### 2.1.1 Project area of influence

The project area of influence encompasses principally the two neighbouring river valleys where the Project facilities and structures will be constructed and which are the Nenskra valley to the west and the Nakra valley to the east, and the area between them. This area is mountainous, relatively remote, and sparsely populated. The geographical characteristics of the area have put significant constraints on the local production, making the people dependent on supplies from lower-lying commercial centres.

The Project will also influence - but to a lesser extent - the Enguri valley both upstream and downstream of the confluence with the Nenskra River. The Project will have an influence on the communities in the Mestia municipality of which the main town is Mestia (upstream from the confluence), Khaishi (at the confluence) and Zugdidi and its surrounding villages (downstream from the confluence). These areas can be considered as the wider area of influence and will be affected by principally by the Project's construction traffic along the Zugdidi-Mestia road, but will also benefit from employment opportunities, and the benefits of increased economic activities during the construction period.

These areas and their potential indirect and directs impacts are presented in Table 4 below. The Project area of influence is presented in Map 1-2 above.

**Table 4 - Directly and indirectly affected communities**

| Area / localities | Potential impacts or influence | |
|---|---|---|
| | **Construction** | **Operation** |
| Nenskra valley<br>Chuberi village + Tobari & Lukhi (part of Khaishi village)<br>Nakra valley<br>Naki village + Shtikhiri (part of Lakhalmula village) | Land acquisition, health and safety issues, upgrading of main roads, employment opportunities, Community Investment Programme | Dam safety, impacts on Nenskra and Nakra rivers flows<br>Employment |
| Settlements located along the Enguri River, between the confluence of Nakra and Enguri and the confluence of Nenskra and Enguri<br>Lakhalmula, Jorkvali,<br>Cheri. | Impacts from Project vehicles traffic. employment opportunities | -- |
| Downstream settlements in the Enguri valley, downstream of the Nenskra-Enguri confluence, down to the Enguri dam<br>Barbashi, Totani, Leburtskhila, Nalkorvali, Skordzeti, Lalkhorali, Khaishi village | Impacts from Project vehicles traffic, employment opportunities | Dam safety |
| Mestia municipality (includes all the localities cited above) | Positive impacts: yearly Property Tax, employment opportunities, supply chain, | Positive impact: yearly Property Tax, |

| Area / localities | Potential impacts or influence | |
|---|---|---|
| | Construction | Operation |
| Jvari and Tsalendjikha) | Impacts from Project vehicles traffic, employment opportunities | Dam safety |
| Zugdidi Municipality | Impacts from Project vehicles traffic. employment opportunities, supply chain, | Dam safety |

### 2.1.2 Project affected area

The project affected households are located in the villages and hamlets that are situated (i) in the Nenskra valley downstream from the dam and (ii) the Nakra valley downstream from the diversion weir. The affected areas are delineated by the confluence of each river with the Enguri River. It should be noted that there are no households located upstream of the hydraulic structures. However, some households use the land upstream of the structures for grazing livestock, hunting and in the past - before it became illegal - for logging.

All but a few affected households lie within the villages of Chuberi village (Nenskra valley) and Naki village (Nakra valley), both in the Mestia Municipality area.

From an administrative point of view, the Nenskra valley is divided in two villages. The southern part of the Nenskra valley is part of Khaishi village, and includes the two hamlets of Tobari and Lukhi. All other communities in the Nenskra valley are part of Chuberi village.

The Nakra valley is also divided between two settlements. The hamlet of Shtikhiri near the main road is part of Lakhalmula village, while all the other communities living in the valley are part of Naki village.

The remote villages of Chuberi (Nenskra valley) and Naki village (Nakra valley) are accessed by unpaved roads that branch off the main Zugdidi-Mestia road. The road to Chuberi branches off the Zugdidi-Mestia road at Khaishi (confluence of the Enguri and Nenskra rivers) and the administrative centre known as Kvemo Marghi (see Photo Sheet 1) is 6.5 km from Khaishi. The dam is 15 kilometres from Kvemo Marghi. The turnoff to the Naki village is located 20 km north of Khaishi (at the confluence of the Nakra and Enguri rivers) and the village is reached by a 4 km unpaved road. The Nakra diversion weir is located a further 4.2 km from last house in Naki.



*Road south of Chuberi (07/11/2015)*



*Road inside Letsperi hamlet, Chuberi village (09/09/2015)*



*Road to Naki (05/09/2015)*

*Photo Sheet 1 - Road to Chuberi and Naki*

## 2.2 Demography

This section examines the settlement pattern and settlement history of the project area, as well as the ethnic composition, language use and religious affiliation of the local population.

### 2.2.1 Settlements and population

#### 2.2.1.1 Nenskra valley

The Nenskra valley counts 13 hamlets, belonging to 2 administrative entities: Chuberi and Khaishi village. The valley encompasses the totality of Chuberi village, and the 11 communities that belong to it, 5 on the right bank and 6 on the left bank. The 2 southern hamlets in the valley, Tobari and Lukhi, are part of Khaishi village.

The analysis distinguishes between the right and left banks for the Nenskra valley because the project impacts are apt to be different in each case. The existing road from the national highway to Chuberi centre runs along the right bank. The hamlets on the right bank that belong administratively to Chuberi are all north of the turn-off where project vehicles will cross the river to the future powerhouse area. Project vehicles will continue on the left bank to the dam site, necessarily going through several of the hamlets north of Kvemo Marghi.

The latest demographic data gathered from the local authorities shows that there are 1,185 inhabitants and 321 households registered as living in Chuberi.

Based on the socioeconomic baseline survey conducted in September-October 2015., there are a total of 1,148 people living permanently in the Nenskra valley, 753 on the right bank and 395 on the left bank. Put otherwise, there are 353 households along the Nenskra, 172 on the right bank and 96 on the left bank. The average family size varies from 3.4 people per family in Letsperi to 5.0 people per family in the small hamlet of Kedani. The average family size is just above 4 people per family. In other words, the hamlets are mostly composed of nuclear families. The wife moves to the husband's residence; and the husband's residence is often adjacent to that of his parents.

There is relatively little seasonal labour migration reported in these communities, which can distort the gender balance by age grade. In the project area, only two families acknowledged that a member of the family returns periodically from a job elsewhere. For contrast, seven families have student-aged children who are studying outside the project area and return home on holiday. Rather, entire families move to elsewhere in Georgia or abroad, so that entire houses are vacant for much of, and in some cases, the entire, year. The review of residential occupation undertaken during the households' surveys in September 2015 indicates that about 20 households in the Nenskra valley and another 20 in the Nakra valley are seasonal residents and live there only during the summer months (July and August). Table 5 below summarizes the population, number of households by community, average family size, and gender balance in hamlets in the Nenskra valley.

**Table 5 - Characteristics of the population residing permanently in the Nenskra valley**

| Community | Total (permanent residents) | Number of Households (permanent residents) | Average Household Size | Number of Males | Number of Females |
|---|---|---|---|---|---|
| **NENSKRA RIGHT BANK** | | | | | |
| Sgurishi | 154 | 35 | 4.4 | 81 (53%) | 73 (47%) |
| Kari | 177 | 40 | 4.4 | 92 (52%) | 85 (48%) |
| Devra | 52 | 12 | 4.4 | 27 (52%) | 25 (48%) |
| Letsperi | 100 | 29 | 3.5 | 50 (50%) | 50 (50%) |
| Lakhami | 233 | 47 | 5 | 116 (49.8%) | 117 (50.2%) |
| Lukhi | 37 | 9 | 4.1 | 23 (62.2%) | 14 (37.8%) |
| Subtotal | 753 | 173 | 4.4 | 389 (51.7%) | 364 (48.3%) |
| **NENSKRA LEFT BANK** | | | | | |
| Tita | 9 | 2 | 4.5 | 3 (33%) | 6 (77%) |
| Zemo Marghi | 67 | 15 | 4.5 | 31 (46%) | 36 (54%) |
| LariLari | 100 | 20 | 5.0 | 50 (50%) | 50 (50%) |
| Kvemo Marghi | 151 | 43 | 3,5 | 76 (50.3%) | 75 (49.7%) |
| Lekalmakhe | 31 | 8 | 3.9 | 18 (58%) | 13 (42%) |
| Kedani | 15 | 3 | 5.0 | 8 (53%) | 7 (47%) |
| Tobari | 22 | 5 | 4.4 | 12 (54.5%) | 10 (45.5%) |
| Subtotal | 395 | 68 | 4.6 | 153 (49.2%) | 158 (50.8%) |
| **TOTAL** | 1,148 | 268 | 4.3 | 587 (51.1%) | 561 (48.9%) |

### 2.2.1.2 Nakra valley

In the Nakra valley, the communities are based in Naki village, and Shtikhiri, which is part of Lakhalmula village.

The latest demographic data gathered from the local authorities show that there are 360 inhabitants and 128 households registered as living in Naki.

Based on the data collected during the socioeconomic baseline survey conducted in September-October 2015, there are 300 people living permanently in the Nakra valley. Table 6 below summarizes the population residing permanently in the Nakra valley, the number of households by community, the average family size, and gender balance in the hamlets.

**Table 6 - Characteristics of the population residing permanently in the Nakra valley**

| Community | Total (**permanent residents**) | Number of Households **(permanent residents)** | Average Household Size | Number of Males | Number of Females |
|---|---|---|---|---|---|
| Nakra | 205 | 55 | 3,7 | 106 (52%) | 99 (48%) |
| Anil | 9 | 4 | 2.3 | 7 (77%) | 2 (23%) |
| Kvitsani | 54 | 15 | 3.6 | 26 (48%) | 28 (52%) |
| Latsomba | 20 | 7 | 2,9 | 10 (50%) | 10 (50%) |
| Shtikhiri | 12 | 4 | 3.0 | 6 (50%) | 6 (50%) |
| Total | 300 | 85 | 3,5 | 155 (51.5%) | 145 (48.5%) |

.

The largest community is Nakra, with 55 households, and the smallest is Shtikhiri, with only 4 households. Household size averages 3.4 people per family, which, as in Nenskra, denotes small nuclear families. Again, the gender balance is about equal, with the exception of the very small hamlet of Anil, where there were, at the time of the survey, three times as many men as women.

### 2.2.2 Settlement history

Present day settlement in the Nenskra valley date from the early 19th Century. The area had been settled in ancient times, and there are ancient stone remains in the area, including watchtowers and a Bronze Age cemetery, which yielded some important jewellery that is now held in the museum in the regional centre of Mestia. These ancient stones will not be affected by the Project. However, for whatever reasons, there was a long period when the valley was not inhabited or relatively uninhabited. Repopulation of the valley began only some 200 years ago, as people moved voluntarily primarily from the nearby villages of Pari and Nakra, into the then relatively pristine Nenskra River valley where land was available. The northernmost settlement, Sgurishi, was established only some 70 to 80 years ago, in the 1930s and 1940s.

In more recent years, there have been migrations in and out of the valleys, though the trend has been for out-migration. For example, the Director of Letsperi School explained that in 1976, an earthquake lead some people to move out of the Nenskra valley. Some of these families returned later. But a second earthquake, in 1987, created a second wave of people moving out of the valley. By contrast, in 1993, during the Abkhazian conflict, some people living in Abkhazia fled the region to settle in the Nenskra and Nakra valleys, hoping that they would soon be able to return to their homes. However, although some of these people are returning to the Gali district of Abkhazia, many of the Internally Displaced People that moved to the Nenskra valley are still living there. Some of these refugees had kinship ties in the valleys, and some of them married local residents. During the household survey conducted in September 2015, 43 of the interviewed households declared that at least one of their members is receiving a refuge allowance, and 188 individuals declared they are receiving this allowance.

However, despite this in-migration, the population of the valley has tended to decrease in the recent years. The number of pupils is decreasing (see Table 51 page 74).

Settlement history in the Nakra valley is quite different. The Naki village consists of 12 ancient villages, to which residents were forcibly resettled from remote outlying communities for administrative reasons only some 50 years ago. These communities were Tsaleri, Tavrari, Lashhrakhi, Kherkhvashi, Kichkhuldashi, Chubari, Jukhlani, Latsomba, Kvitsani, Anili, Lenkvashi and Nakra, this last community being the administrative centre. Nowadays, a number of these villages (Tsaleri, Tavrali, Kherkvashi, and Lashkhrashi) located in the mountains are only occupied occasionally by few families during the summer period. Some years ago, a landslide resulted in the inhabitants of Lenkvashi abandoning the village. In addition, the area of Chubari is not occupied anymore. The Naki hamlets that are occupied permanently are Nakra, Latsomba, Kvitsani and Anili.

Because settlement was relatively recent, people here remember where they came from, and may even maintain houses in their original natal area. They also still have clear ideas about customary rights in their areas of origin, for example, traditional summer pastures. People in Naki do not have relatives in the areas of origin because everyone was moved out during the Soviet period.

This local history of settlement of the project area is reflected in respondents' answers to the question 'When did your family move to this valley'? As might be expected from oral history, the longer families have been in the area, the more people believe they have always been

there. Thus, 80% of the households in the Nenskra valley believe that their families arrived in the last couple of centuries or have always been there (Table 7). By contrast, only 60% of the families in the Nakra valley believe they have always been there. Put otherwise, while 40% of the respondents in the Nakra valley report that their families came in the last century, only half that number of respondents believe that to be the case in the Nenskra valley.

**Table 7 - Period when family moved to this valley**

| | Always been here | A couple of hundred years ago | In the last hundred years or so | Between 90 and 10 years ago | Less than 10 year | Total |
|---|---|---|---|---|---|---|
| Nakra valley | 48 | 2 | 19 | 15 | 1 | 85 |
| | *56%* | *2%* | *22%* | *18%* | *1%* | *100%* |
| Nenskra valley | 71 | 2 | 9 | 12 | 2 | 96 |
| | *74%* | *2%* | *9%* | *13%* | *2%* | *100%* |
| Nenskra Left Bank | 132 | 8 | 13 | 17 | 2 | 172 |
| | *77%* | *5%* | *8%* | *10%* | *1%* | *100%* |
| Nenskra Right Bank | 251 | 12 | 41 | 44 | 5 | 353 |
| | *71%* | *3%* | *12%* | *12%* | *1%* | *100%* |

### 2.2.3 Residential pattern

The population in both the Nenskra and the Nakra valleys tends to live in communities that cluster along the road (See Map 2-1 and Map 2-2). In fact, while there are scattered cabins in the highland pasture areas that are used seasonally, the residential settlement pattern is for occupation of contiguous areas without isolated, outlying houses.

### 2.2.4 Land tenure

Land tenure in Mestia Municipality District is the product of the local history. Legal and formalized land tenure is recent, and customary land tenure prevails in most areas, including forest lands. A report prepared by several NGOs (Green Alternative, 2011) explains on the protection of property rights in Mestia that for centuries, the local population has owned property by inheritance and disposed land plots as distributed (or re-distributed) based on agreements between ancestors. It also states that most land plots have in fact never been legally registered in the high mountainous regions of Georgia, such as Svaneti.

During the communist period, the Svans were deprived of ownership rights to their customary lands, as it had become the collective property of the Soviet authorities. When lands confiscated by the communists were returned, the Svans regained their customary land, despite the fact that most did not have official documentation confirming ownership rights.

Since 2007, after the creation of the Commission for Recognition of Right to Ownership, the Mestia Municipality Commission for Recognition of Right to Ownership has begun to register ownership to land plots.

This report mentioned above also explains that Mestia residents have encountered difficulties in registering traditionally owned land plots (covering approximately 80% of Mestia district). The two grounds of the legalization of ownership rights prescribed under Georgian legislation - "*arbitrary occupation*" and "*lawful possession*" - in most cases, do not conform to the ownership form found in Mestia (and in Svaneti generally) - traditional possession.

In the Nenskra and Nakra valleys, almost all the land is State Land, officially categorized as Agricultural Land. Outside of the settlements, the land is almost everywhere registered as Forest Fund Land. Some people succeeded to officially register some residential land plots as their private land, but this is still categorized as Agricultural Land. In these cases, the land is registered under the name of the current owner.

Customary land tenure is well recognized in the local communities. Within the settlements, individual land plots all well demarcated, and almost always fenced. Outside the settlements, in the forested areas, customary ownership is also most of the time well defined. Specific areas are owned by groups of families sharing the same ancestry and customary right of use of these areas are inherited. Ownership and right of use of pasture areas is defined by customary rights. These customary rights for pasture areas are not recognized by the Georgian legal system.

It is complicated to register the land, as one has to prove claimed ownership, most of the time without any existing document. Some people succeeded to officially register some residential land plots as their private land, but this is still categorized as Agricultural Land. In these cases, the land is registered under the name of the current owner.

## 2.2.5 Age

The population of working age (adults between 19 and 60 years) comprises 54.1% of the whole population in the two valleys, 56.7% of the male population and 51.4% of the female population (Table 8).

**Table 8 – Age groups within the population of the two valleys**

| | Men | | Women | | Total | |
|---|---|---|---|---|---|---|
| | Num. | *%* | Num. | *%* | Num. | *%* |
| Children up to 6 years | 62 | *8.3%* | 67 | *9.4%* | 129 | *8.8%* |
| Between 7 and 18 years | 153 | *20.4%* | 131 | *18.3%* | 284 | *19.4%* |
| Between 19 and 60 years | 425 | *56.7%* | 367 | *51.4%* | 792 | *54.1%* |
| More than 60 years | 110 | *14.7%* | 149 | *20.9%* | 259 | *17.7%* |
| Total | 750 | *100.0%* | 714 | *100.0%* | 1464 | *100.0%* |

## 2.2.6 The Svan people

Historical, anthropological and linguistic studies that have been the source of the information presented in the following paragraphs are listed in Annex 1.

### A. Ethnic, Linguistic and Historical Overview of Svans

The Project is located in the Svaneti historical region (namely in Upper Svaneti, i.e. the upper valley of the Enguri River and tributaries), which is populated by the Svan People. Upper Svaneti is part of the administrative region of *Mengrelia – Upper Svaneti* (in Georgian *Samegrelo – Zemo Svaneti*). The Svaneti historical region also includes Lower Svaneti, which is the valley of the Tskhenistqali River in the administrative region of *Racha-Lechkhumi and Kvemo Svaneti*.

Svaneti is the historical land of the Svan people. According to the current scientific consensus based on available historical and anthropological studies (Biladze, 2014), Svans are considered as an ethnic sub-group within the broader Kartvelian (Georgian) ethnos.

Their language (Svan language) is part of the Kartvelian group of languages. This group includes Georgian and Svan (as well as Mengrelian and Laz), which are all distinct languages with a common ancestor (Proto-Kvartelian). Although similar in structure, the Svan and Georgian languages are not fully mutually understandable. The Svan language remains

unwritten, therefore primary education in Svaneti is in Georgian and Svan people are bilingual as a result. In Svaneti, the Svan language is used by local people in everyday interaction between Svans, while Georgian is used for any official communications and interaction with non-Svan Georgians.

Greek geographer Strabo documented the Svan people for the first time as early as the first century BC. Svaneti was part of several united Georgian political entities (when such entities existed), including the Kingdom of Colchis[8] in Antiquity, and the United Kingdom of Georgia in the Middle Ages between the 9th and the 15th century AD.

After the disintegration of the Kingdom of Georgia, Svaneti like other regions of Georgia became a semi-independent principality with shifting alliances to the other Georgian political entities that existed at the time[9]. Since 1858, Svaneti has been part of Georgia, first within the Russian Empire, then within the Soviet Union, and eventually within independent Georgia since 1991. During the Soviet period, Svaneti was not granted partial autonomy within the Georgian Soviet Socialist Republic, in contrast with Abkhazia, Southern Ossetia and Adjara.

## B. History of Settlement

Present day settlement in the Nenskra valley dates from the early 19th century. The valley was not inhabited before. The northernmost settlement, Sgurishi, was established only some 70 or so years ago. Settlements in the Nakra valley may have more ancient history, but these communities were forcibly resettled from their original remote settlements to the Naki village during the Soviet rule about 50 years ago. The recent character of settlement in the valleys is denoted by the absence of traditional Svan fortified towers.

## C. Culture and customs

Svans are orthodox Christian and the local orthodox clergy is attached to the Georgian Orthodox Church. The area was christianised around the 6th century. However, traditions, including complex codes of chivalry, date back from pre-Christian times and have been maintained since due to the physical isolation of the region (Upper Svaneti was not accessible for the 6 months of winter until relatively recently). Voell et al. (2014) state for example that traditional unwritten customs are present with regards to the Svan's "self-understanding of how things should be, how the extended family has to be organised, religious institutions and practices respected, and social life in the village organised". Religious holidays, often interweaving with key milestones in the agricultural calendar, were and still are strictly observed. Traditional dancing and music (the distinctive Svan polyphony[10]) are important features of the local traditional cultural heritage, which various popular folklore groups keep well alive.

Surveys conducted for this SIA have shown that the project footprint does not have tangible cultural heritage elements that are used for cultural, ceremonial or spiritual purposes (see section 8). In addition, the typical Svan fortified houses, which are one of the main tourism attractions of Upper Svaneti, are not found in either the Nenskra or Nakra valleys.

## D. Traditional Governance

Not unlike other mountainous regions of Georgia traditional governance involved elected community leaders (*Makhvshi*) calling general assemblies of the village (with both men and women attending) to discuss important matters of common interest. These assemblies were

[8] Current Western Georgia and Black Sea Region of Turkey.

[9] From the disintegration of the United Kingdom of Georgia further to Mongol invasions in the 15th century to its annexation by the Russian Empire in 1858.

[10] Generally similar to other Georgian polyphonies but with distinctive harmonies and different lyrics.

also called to consider cases of serious violations of traditional and religious rules (including blasphemy, theft, adultery, etc…). Traditional leaders could play a mediation role where families were in conflict over land or other matters. These traditional mechanisms continued to operate during Soviet rule as Svans had limited trust in Soviet police or justice.

Where a matter involved the whole Svan community, a congress of all Svan elders could be called. The last such congress took place in 1875 when the Svans decided to protest new taxation rules imposed by the government of the Russian Empire that required land and animal registration.

At present, while community mediation mechanisms similar to these (consultation of respected elders) may play a role in the resolution of some disputes, aggrieved individuals tend to resort to the national administrative and judiciary systems. The political, administrative and judiciary governance systems in Svaneti are no different from, and are fully integrated in the Georgian democratic governance system. Svans exert their rights and responsibilities as Georgian citizens by participating in political life like any other Georgians.

## E. Traditional Livelihoods

Before the Soviet period, agricultural land in Svaneti was privately owned, with pasture and forest held communally and managed by community elders, while the Church was also a significant landowner. Svans' traditional occupations included a combination of land cultivation (barley, oat and millet), cattle breeding, hunting, and artisanal activities. However, this way of life has evolved with time: farming has diminished and new income sources have appeared, including logging and formal employment in the public and private sectors. Nowadays, the socioeconomic surveys indicate that agriculture and livestock farming are largely used for home consumption, while the majority of households have multiple sources of income (only about 7% of households in the affected areas depend exclusively on subsistence farming). This multiple activity pattern is typical of mountainous regions in Georgia.

## F. Applicability of the Proposed Lenders' "Indigenous Peoples" Policy

The Consultants conducting the Supplementary E&S Studies have assessed whether the "Indigenous Peoples" policies of the potential Lenders apply to this Project. In addition to various social experts who have worked on the Supplementary E&S Studies, an anthropologist from the Institute of History and Ethnology of Iv. Javakhishvili State University of Tbilisi was engaged by the Project to study the Svan's ethnic identity, language, history, customs, traditions, way of living, and livelihoods. The study also reviewed the set of criteria used by the potential Lenders' policies. An additional review of the Supplementary E&S studies' findings was provided by an independent international social expert appointed as part of IPOE. The conclusions of the assessment are presented hereafter. Each characteristic required by the policies of the prospective Lenders is reviewed below to assess whether it is possessed or not by the Svans. The arguments grounding these conclusions are provided in Annex 4.

For the Lenders[11], the term "Indigenous Peoples" is used for operational purposes. For the ADB, the 2009 Safeguard Policy Statement the use of the term "Indigenous Peoples" refers in a generic sense to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees:

- 1: Self-identification as members of a distinct indigenous ethnic or cultural group and recognition of this identity by others;

[11] The definition of Indigenous Peoples used in this SIA is quoted from the EBRD and the ADB policies. Although slightly different in wording, policies used by other lenders involved in the Project (i.e. policies of the AIIB, KDB, EIB) are similar in substance and spirit.

- 2: Collective attachment to geographically distinct habitats, (traditional lands)[12] or ancestral territories in the project area and to the natural resources in these habitats and territories;
- 3: Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
- 4: A distinct language (or dialect for EBRD PR 7), often different from the official language (or dialect for EBRD PR 7) of the country or region.

For the EBRD, Performance Requirement 7 uses the term "Indigenous Peoples" in a technical sense to refer to a social and cultural group, distinct from dominant groups within national societies, possessing all of the above four characteristics (similar to the ADB policies above) in varying degrees and in addition the group must also possess the fifth characteristic below to some degree:

- 5: Descent from populations who have traditionally pursued non-wage (and often nomadic/transhumant) subsistence strategies and whose status was regulated by their own customs or traditions or by special laws or regulations.

**The first characteristic partially applies to the Svan group:**

- Svans are included in the official Georgian census as ethnic Georgian. Their way of life is akin to that of Georgians in other mountainous areas of Georgia;
- However, Svans – including people living in the Project area – do identify themselves as Svan (while they may also identify themselves as Georgian at the same time), are identified as such by others, and have kept specific ancient traditions and ethnographic features. Their specific cultural identity is recognised by themselves and by others, and as a result the first characteristic applies.

**The second characteristic also partially applies to Svans:**

- The traditional Svan way of life, which was predominantly based on subsistence farming and livestock grazing, has changed in recent times, and household incomes also include salaries, as well as revenues from logging and lumbering activities, particularly in the Project area;
- However, the traditional way of life remains prevalent and Svans have a strong cultural attachment to their region.

**The third characteristic does not apply to Svans:**

- Svans do attach importance and value to traditional practices, including a traditional dispute resolution system involving village elders;
- However :
  - Such systems can be found in other areas of Georgia and are not specific to Svaneti;
  - In the Project area, where elders cannot resolve the dispute, it is resolved through official Georgian institutions such as local authorities and/or justice.
  - Svaneti is fully integrated into the legal, socio-economic and political institutions of Georgia.

**The fourth characteristic applies to Svans:**

- With very few exceptions, Svans are bilingual: they speak both their own, unwritten Svan language, as well as Georgian, which is the official state language and is used for communication with other Georgians and in written communication.

[12] Traditional lands are included in the EBRD criteria, but not in ADB SPS criteria.

- However, Svan qualifies as a separate language and is different from Georgian. While studies by linguists indicate that Svan, Megrelian and Laz all belong to the same Kartvelian group of languages, Svan is believed to have differentiated as a separate language in the 2nd millenium BC.

**The fifth characteristic does not apply to Svans:**

- The Svans are descended from populations who have traditionally pursued non-wage subsistence strategies (although their contemporary subsistence strategies are diversified and include wages, as explained in the section on livelihoods in Annex 4),
- However, the Svan society has been linked to, and integrated into the rest of Georgia since the 9th century AD, from a legal, political, social, economic and administrative perspective, without specific laws or regulations.

In conclusion, although Svans do show to a certain degree some of the characteristics of "Indigenous Peoples", mainly in reason of the geographic isolation of Upper Svaneti, the affected Svan communities are not considered to meet the potential Lenders' definition of "Indigenous Peoples", and therefore the potential Lenders "Indigenous Peoples" policies are not triggered.

Vulnerability of a socio-cultural group is another key aspect of the 2009 ADB SPS application of the definition of Indigenous Peoples. Vulnerable social and cultural groups can be defined as social and cultural groups that experience a higher risk of poverty and social exclusion than the general population. This is not found to be the case for the Svans and the people living in the Project area. There is no available record that shows the Svans are a marginalized and vulnerable social and cultural group vis-à-vis other ethnic groups or sub-groups in Georgia. Also, livelihoods of the Svans in the Project area are generally similar to those found in other remote mountainous region of Georgia. The Svans have access to, and benefit from, the same modern commodities as the rest of Georgian population.

### 2.2.7 Education

All people in the study area - including the oldest women and men - attended school for at least one or two years. The distribution of educational levels by valley, age and gender is provided in Table 9 and Table 10. Half of the women between the ages of 16 and 20 have yet to complete secondary school, 45% have finished secondary school and 6% have continued on to vocational or higher education outside the region. In the 21 to 25 age bracket, only 12% did not finish secondary school, while a third have continued on to vocational or higher education.

With regard to the men; in the 16 to 20-year-old age bracket, 50% have yet to complete secondary school and 46% have finished. In the 21 to 25 age bracket, 4% did not complete secondary school, 75% complete secondary school, and 18% continue on for vocational and higher education

### Table 9 - Educational levels - women

| Ages (Women) | Elementary (1-2 class) | Incomplete Secondary | Finished secondary | Vocational | Higher | Under school Age | None (illiterate) |
|---|---|---|---|---|---|---|---|
| 6 - 10 | 17 | 16 | 0 | 0 | 0 | 8 | 1 |
| | *40%* | *38%* | *0%* | *0%* | *0%* | *19%* | *2%* |
| 11 - 15 | 7 | 49 | 0 | 0 | 0 | 0 | 0 |
| | *13%* | *88%* | *0%* | *0%* | *0%* | *0%* | *0%* |
| 16 - 20 | 0 | 28 | 25 | 2 | 1 | 0 | 0 |
| | *0%* | *50%* | *45%* | *4%* | *2%* | *0%* | *0%* |
| 21 - 25 | 0 | 6 | 31 | 5 | 10 | 0 | 0 |
| | *0%* | *12%* | *60%* | *10%* | *19%* | *0%* | *0%* |
| 26 - 30 | 0 | 1 | 23 | 4 | 17 | 0 | 0 |
| | *0%* | *2%* | *51%* | *9%* | *38%* | *0%* | *0%* |
| 31 - 40 | 0 | 3 | 45 | 11 | 45 | 0 | 0 |
| | *0%* | *3%* | *43%* | *11%* | *43%* | *0%* | *0%* |
| 41 - 50 | 0 | 0 | 36 | 27 | 16 | 0 | 2 |
| | *0%* | *0%* | *44%* | *33%* | *20%* | *0%* | *2%* |
| 51 - 60 | 1 | 2 | 31 | 17 | 11 | 0 | 0 |
| | *2%* | *3%* | *50%* | *27%* | *18%* | *0%* | *0%* |
| > 60 | 2 | 12 | 82 | 40 | 14 | 0 | 0 |
| | *1%* | *8%* | *55%* | *27%* | *9%* | *0%* | *0%* |

### Table 10 - Educational levels - men

| Ages (Men) | Elementary (1-2 class) | Incomplete Secondary | Finished secondary | Vocational | Higher | Under school Age | None (illiterate) |
|---|---|---|---|---|---|---|---|
| 6 - 10 | 27 | 24 | 0 | 0 | 0 | 9 | 1 |
| | *44%* | *39%* | *0%* | *0%* | *0%* | *15%* | *2%* |
| 11 - 15 | 4 | 40 | 2 | 0 | 0 | 0 | 1 |
| | *9%* | *85%* | *4%* | *0%* | *0%* | *0%* | *2%* |
| 16 - 20 | 0 | 34 | 31 | 1 | 0 | 1 | 1 |
| | *0%* | *50%* | *45.5%* | *1.5%* | *0%* | *1.5%* | *1.5%* |
| 21 - 25 | 0 | 3 | 52 | 1 | 12 | 0 | 1 |
| | *0%* | *4%* | *75%* | *1%* | *17%* | *0%* | *1%* |
| 26 - 30 | 0 | 0 | 42 | 1 | 11 | 9 | 0 |
| | *0%* | *0%* | *78%* | *2%* | *20%* | *17%* | *0%* |
| 31 - 40 | 0 | 3 | 82 | 1 | 31 | 0 | 0 |
| | *0%* | *3%* | *70%* | *1%* | *26%* | *0%* | *0%* |
| 41 - 50 | 1 | 1 | 52 | 10 | 20 | 0 | 0 |
| | *1%* | *1%* | *62%* | *12%* | *24%* | *0%* | *0%* |
| 51 - 60 | 0 | 1 | 45 | 17 | 15 | 0 | 0 |
| | *0%* | *1%* | *58%* | *22%* | *19%* | *0%* | *0%* |
| > 60 | 1 | 6 | 58 | 29 | 15 | 0 | 1 |
| | *1%* | *5%* | *53%* | *26%* | *14%* | *0%* | *1%* |

Nenskra Dam and Reservoir

Powerhouse and Switchyard

N

WGS 84 UTM 38 N

0 0.5 1 2 km

## Legend

- Road
- Project Infrastructure
- Village Boundary
- Buildings
- Agricultural Field
- Reservoir
- Forestry
- Settlement

Nenskra
Okrila
Tita
Sgurishi
Kari
Zeda Marghi
Kvemo Marghi
Devra
Chuberi
Lari Lari
Letsperi
Lekalmakhi
Kedani
Lakhani
Lukhi
Tobari
Darchi-Ormeleti
Enguri
Naki
Naki
Lakhamula
Khaishi

2927 m
2701 m
3584 m
3139 m
3257 m
2004 m
2064 m
1842 m
2203 m

SLR global environmental solutions

JSC Nenskra Hydro

NENSKRA HYDROPOWER PROJECT
Supplementary
Environmental & Social Studies
Volume 3 - Social Impact Assessment

**Map n° 2-1**
**Nenskra Settlement**

| Scale | Date |
|---|---|
| 1:60,000 @ A3 | FEBRUARY 2017 |

File n°901.6.2_ES Nenskra_Settlement_V06Feb2017
SOURCE: L_6768-B-GE-GE-GE-DW-003_003
L_6768-B-GE-PH-GE-DW-001_001
L_6768-B-UW-HR-GE-DW-001_001
L_6768-B-UW-TT-GE-DW-001_001

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap

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284000 286000 288000 290000

4778000 4776000 4774000 4772000 4770000

Transfer Tunnel

Nakra Intake

N

WGS 84 UTM 38 N

0 0.25 0.5 1 km

Lenkvashi

Anili

Naki

Kvitsani

Nakra

Latsomba

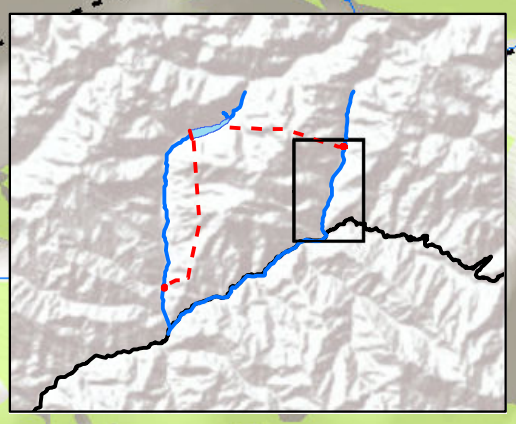
Shtikhiri

Lakhamula

Nakra

Enguri

Khetkhvashi



## Legend

- Road
- Project Infrastructure
- Rivers
- Village Boundary
- Buildings
- Agricultural Field
- Reservoir
- Settlement
- Forestry

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap

SLR global environmental solutions

JSC Nenskra Hydro

NENSKRA HYDROPOWER PROJECT
Supplementary
Environmental & Social Studies

Volume 2 - Project Definition

**Map n° 2-2**
**Nakra Settlement**

| Scale | Date |
|---|---|
| 1:25,000 @ A3 | FEBRUARY 2017 |

File n°901.6.2_ES Nakra_Settlement_V06Feb2017
SOURCE: L_6768-B-GE-GE-GE-DW-003_003
L_6768-B-GE-PH-GE-DW-001_001
L_6768-B-UW-HR-GE-DW-001_001
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## 2.3 Local economy

This section examines the composition of the regional economy, including major activities such as agriculture, livestock and logging, as well as more secondary activities such as the use of secondary forest products, beekeeping, fishing, hunting, and crafts. The section ends with an assessment of the importance of remittances in family budgets. The economy of the two valleys is essentially similar, though there are differences.

Traditionally, farming was the main activity in both valleys. However, the people's traditional way of life has evolved and most households also have additional income from logging for commercial sale and diverse other activities. Almost all families have several sources of income. Only 25 families (7% of 353 households) declared that they work only in agriculture. The vast majority of families engage in several remunerative activities. Logging was recognized as a key income source in the economy of the Nenskra and Nakra valleys by most informants. With regard to employment, 27% of households have at least one member permanently employed in the public service, and 11% have at least one member receiving a salary from a private company. Agriculture and livestock farming are largely for home consumption. Home production is important with production of grains and tubers, dairy products, herbs and vegetables, and secondary forest products.

People are largely self-reliant, doing much of their own construction and mechanical repair work. Also, there is a large amount neighbourly assistance in farming and other activities (e.g., house construction). Nonetheless, the population in the project area is still very dependent on the larger society for services and supplies.

The differences between the two valleys result largely from differences in topography. The slopes in the Nenskra valley provide more flat areas for agriculture than the mountains in the Nakra valley. Consequently, the population of the Nenskra valley has more plots of agricultural land of larger size than do the farmers in the Nakra valley. The people in Naki farm in their house plots for subsistence, but depend more on their animals because of the relative lack of arable land.

Almost all families have several sources of income (Table 11). Only 25 families (7% of 353 households) work only in agriculture. The vast majority of families engage in several remunerative activities. Nearly half of the families have at least one other activities (168 households or 47% of the 353 permanently resident families); over a quarter of the households engage in two other activities (100 HHs or 28%). And an appreciable number of families work in a range of activities: 42 families (12%) do three activities in addition to agriculture; 14 (4%) families engage in 4 activities, and four families (1%) do five different activities in addition to agriculture.

**Table 11 - Numbers of cash income sources per household**

| Area | Mean number of income sources, not including agriculture | Number of HH wholly dependent on subsistence farming | Number of HH with 1 source of income in addition to agriculture | Number of HH with 2 sources of income in addition to agriculture | Number of HH with 3 sources of income in addition to agriculture | Number Of HH with 4 sources of income in addition to agriculture | Number of HH with 5 sources of income in addition to agriculture |
|---|---|---|---|---|---|---|---|
| Project Area | 1.6 | 25 | 168 | 100 | 42 | 14 | 4 |
| Nakra | 1.5 | 8 | 42 | 22 | 11 | 2 | 0 |
| Nenskra | 1.7 | 17 | 126 | 78 | 31 | 12 | 4 |
| Nenskra Left Bank | 1.5 | 9 | 45 | 30 | 9 | 2 | 1 |
| Nenskra Right Bank | 1.7 | 8 | 81 | 48 | 22 | 10 | 3 |

The sources of income outside of agriculture are varied (Table 12). Almost two-thirds of the families (230 of 353 HHs or 65%) report receiving pensions or other government payments. Over a third of all the families in the two valleys (133 HHs or 38%) have at least one member employed either in public service (94 HHs) or by private companies (39 HHs). Participation in logging and lumbering is almost surely underreported (39 HHs or about 11% of the sample), due to illegal nature of most of the current logging activities as explained in section 2.3.4. Meanwhile other activities are important for only a small number of families: food processing and collection of secondary forest products employs 16 families (4.5%) and craft production only 4 families (1%) part time.

**Table 12 - Nature of households cash income sources**

| Area | | Permanent salary in the public service | salary in a private company | Pension/ all allowances | Regular remittance | Renting land | Logging | Lumbering | Secondary forest products | Processed food (jam, baked goods…) | Craftworks | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nakra | Num. | 30 | 6 | 54 | 2 | 1 | 0 | 0 | 6 | 1 | 1 | 0 |
| | *%* | *35%* | *7%* | *64%* | *2%* | *1%* | *0%* | *0%* | *7%* | *1%* | *1%* | *0%* |
| Nenskra | Num. | 64 | 33 | 176 | 18 | 3 | 23 | 16 | 3 | 6 | 3 | 10 |
| | *%* | *24%* | *12%* | *66%* | *7%* | *1%* | *9%* | *6%* | *1%* | *2%* | *1%* | *4%* |
| Nenskra Left Bank | Num. | 24 | 10 | 69 | 7 | 2 | 5 | 2 | 1 | 2 | 1 | 1 |
| | *%* | *25%* | *10%* | *72%* | *7%* | *2%* | *5%* | *2%* | *1%* | *2%* | *1%* | *1%* |
| Nenskra Right Bank | Num. | 40 | 23 | 107 | 11 | 1 | 18 | 14 | 2 | 4 | 2 | 9 |
| | *%* | *23%* | *13%* | *62%* | *6%* | *1%* | *10%* | *8%* | *1%* | *2%* | *1%* | *5%* |
| Project Area | Num. | 94 | 39 | 230 | 20 | 4 | 23 | 16 | 9 | 7 | 4 | 10 |
| | *%* | *27%* | *11%* | *65%* | *6%* | *1%* | *7%* | *5%* | *3%* | *2%* | *1%* | *3%* |

Of the 10 families who declared “other” sources of income, these other sources are:

- Two in auto part sales: 1 household in Kvemo Marghi (Nenskra right bank), 1 household in Lakhami (Nenskra right bank);
- Four hired drivers: 4 households in Nenskra right bank, 1 in Kari, 1 in Lakhami and 2 in Letsperi;
- One owner of a private company: 1 household in Lakhami, Nenskra right bank;
- Two shopkeepers: 2 households in Kari, Nenskra right bank; and,
- One shepherd: 1 household in Sgurishi, Nenskra right bank.

### 2.3.1 Employment

The employment rate in the Nakra valley than in the Nenskra valley is presented in the Table 13 below. The figures presented were collected during the households' surveys in September 2015, prior to any construction work undertaken by the Project. 27% of men of working age are employed in Nakra, while this rate is 13% in Nenskra. Women employment rate is 27% in Nakra and 20% in Nenskra. More people are employed as civil servant than by private companies.

As shown in Table 12 above, 65% of the households surveyed declared that at least one of their members was receiving retirement pension. The percentage of individuals older than 18 years who declared receiving retirement pensions is 16.5% (174 out of the 1,048 individuals older than 18 years old, see Table 8). Amongst individuals older than 60 years, this rate is 67.2% (174 out of the 259 individuals older than 60 years, see Table 8).

**Table 13 – Employment rates amongst individuals aged 18 and more**

| | | Individuals of working age* (A) | Employed as civil servant (B) | | Employed in a private company (C) | | Employment rate (=(B+C)/A) | |
|---|---|---|---|---|---|---|---|---|
| | | Num. | Num. | % | Num. | % | Num. | % |
| Men | Nakra | 98 | 23 | *23%* | 3 | *3%* | 26 | *27%* |
| | Nenskra | 381 | 30 | *8%* | 21 | *6%* | 51 | *13%* |
| | Total | 479 | 53 | *11%* | 24 | *5%* | 77 | *16%* |
| Women | Nakra | 71 | 16 | *23%* | 3 | *4%* | 19 | *27%* |
| | Nenskra | 306 | 44 | *14%* | 18 | *6%* | 62 | *20%* |
| | Total | 377 | 60 | *16%* | 21 | *6%* | 81 | *21%* |
| Men + Women | Nakra | 169 | 39 | *23%* | 6 | *4%* | 45 | *27%* |
| | Nenskra | 687 | 74 | *11%* | 39 | *6%* | 113 | *16%* |
| | Total | 856 | 113 | *13%* | 45 | *5%* | 158 | *18%* |

Source: Households' survey conducted as part of the socioeconomic baseline survey in September and October 2015.

* people are considered of working age when being 18 years old or more, up to 65 years old for men and 60 years old for women (which is the legal age for retirement in Georgia).

### 2.3.2 Agriculture

The crops cultivated in the Nenskra and Nakra valleys are mainly for households' consumption and not for sale. The major crops in both valleys are potatoes and corn, which almost all families plant (Table 14). Over four-fifths of all families also cultivate vegetables and fruit. Vegetables, which include tomatoes, peppers, chili peppers, beans, squash and flowers, are usually grown in a household garden, which is tended by the women of the family. Fruit trees are usually planted in the household compound, often along the property boundary or lining paths to the home. Nuts and grapes are only grown in the Nenskra valley; only one family in the Nakra valley has walnut trees and no one there grows grapes. Men typically cultivate the corn and beans; women tend the garden vegetables.

Finally, four-fifths of all families have hay fields, which are dedicated to fodder for the animals over the winter period. During the baseline surveys between September and December 2015, two hayfields were located at the Nenskra dam and reservoir site, five at the Nakra water intake site, and none at the powerhouse site.

**Table 14 - Agricultural cropping systems by Project sub-area**

| Area | Corn | Fruit | Potatoes | Vegetables | Hay | Beans | Walnut | Grape | Other Nuts | No Crop Gown | Unknown | No response | All HH surveyed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nakra | 63 | 57 | 80 | 59 | 68 | 36 | 1 | 0 | 0 | 1 | 1 | 1 | 85 |
| | *74.1%* | *67.1%* | *94.1%* | *69.4%* | *80.0%* | *42.4%* | *1.2%* | *0.0%* | *0.0%* | *1.2%* | *1.2%* | *1.2%* | *100%* |
| Nenskra | 232 | 228 | 231 | 229 | 215 | 87 | 103 | 11 | 2 | 4 | 2 | 0 | 268 |
| | *86.6%* | *85.1%* | *86.2%* | *85.4%* | *80.2%* | *32.5%* | *38.4%* | *4.1%* | *0.7%* | *1.5%* | *0.7%* | *0.0%* | *100%* |
| Nenskra Left Bank | 84 | 76 | 87 | 77 | 80 | 37 | 27 | 4 | 1 | 0 | 2 | 0 | 96 |
| | *87.5%* | *79.2%* | *90.6%* | *80.2%* | *83.3%* | *38.5%* | *28.1%* | *4.2%* | *1.0%* | *0.0%* | *2.1%* | *0.0%* | *100%* |
| Nenskra Right Bank | 148 | 152 | 144 | 152 | 135 | 50 | 76 | 7 | 1 | 4 | 0 | 0 | 172 |
| | *86.0%* | *88.4%* | *83.7%* | *88.4%* | *78.5%* | *29.1%* | *44.2%* | *4.1%* | *0.6%* | *2.3%* | *0.0%* | *0.0%* | *100%* |
| Project Area | 295 | 285 | 311 | 288 | 283 | 123 | 104 | 11 | 2 | 5 | 3 | 1 | 353 |
| | *83.6%* | *80.7%* | *88.1%* | *81.6%* | *80.2%* | *34.8%* | *29.5%* | *3.1%* | *0.6%* | *1.4%* | *0.8%* | *0.3%* | *100%* |

Farmers plant from mid-April through May depending upon conditions (snow), and harvest in August. Hay is bought in in August and September. The agricultural season is over by late September.

### 2.3.2.1 Production technology

Fields are usually prepared by tractor tilling. Almost two thirds of the households use tractors. About a tenth of these farmers (25 or 11%) own tractors; others borrow or rent (30 or 14%) tractors from relatives or neighbours.

Most farmers (154 or 70%) depend on the government Agricultural Voucher Plan (Table 15). The government program for tractor services, *Programa Agraria*, naturally has scheduling issues, as everyone needs the same work done at more or less the same time.

**Table 15 - Animal and mechanical traction for ploughing**

| Area | Tractor | | | | | Animal drawn plough | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total users: Num (%of surveyed HH) | Own: Num (% of users) | Borrow or rent: Num (% of users) | State Voucher: Num (% of users) | Other Num: (% of users) | Total users Num: (%of surveyed HH) | Own: Num (% of users) | Borrow or rent: Num (% of users) | State voucher: Num (% of users) |
| Project Area | 221 | 25 | 30 | 154 | 12 | 196 | 128 | 64 | 4 |
| | *63%* | *11%* | *14%* | *70%* | *5%* | *56%* | *65%* | *33%* | *2%* |
| Nenskra | 175 | 14 | 11 | 145 | 5 | 145 | 96 | 45 | 4 |
| | *65%* | *8%* | *6%* | *83%* | *3%* | *54%* | *66%* | *31%* | *3%* |
| Nenskra Left Bank | 57 | 5 | 3 | 46 | 3 | 52 | 29 | 19 | 4 |
| | *59%* | *9%* | *5%* | *81%* | *5%* | *54%* | *56%* | *37%* | *8%* |
| Nenskra Right Bank | 118 | 9 | 8 | 99 | 2 | 93 | 67 | 26 | 0 |
| | *69%* | *8%* | *7%* | *84%* | *2%* | *54%* | *72%* | *28%* | *0%* |
| Nakra | 46 | 11 | 19 | 9 | 7 | 51 | 32 | 19 | 0 |
| | *54%* | *24%* | *41%* | *20%* | *15%* | *60%* | *63%* | *37%* | *0%* |

Significantly more farmers in the Nakra valley, which is more isolated and generally less well served by government agencies, own tractors than do farmers in the Nenskra valley (24% vs. 8%). Associated mechanized equipment is very scarce in both valleys. Only one family has a seeder, and another family a hay baler. However, almost half of all families have an agricultural cart, whether motorized (23%) or animal-powered (24%, Table 16).

**Table 16 -Animal-drawn and mechanised agricultural carts, by Project sub-area**

| Area | Mechanised Cart | | | Animal-drawn Agricultural Cart | | |
|---|---|---|---|---|---|---|
| | total users Num. (% surveyed HH) | Own Num. (% users) | Borrow Num. (% users) | total users Num. (% surveyed HH) | Own Num. (% users) | Borrow Num. (% users) |
| Project Area | 80 | 42 | 28 | 84 | 63 | 21 |
| | *23%* | *53%* | *35%* | *24%* | *75%* | *25%* |
| Nenskra | 70 | 35 | 26 | 62 | 49 | 13 |
| | *26%* | *50%* | *37%* | *23%* | *79%* | *21%* |
| Nenskra Left Bank | 18 | 8 | 7 | 17 | 14 | 3 |
| | *19%* | *44%* | *39%* | *18%* | *82%* | *18%* |
| Nenskra Right Bank | 52 | 27 | 19 | 45 | 35 | 10 |
| | *30%* | *52%* | *37%* | *26%* | *78%* | *22%* |
| Nakra | 10 | 7 | 2 | 22 | 14 | 8 |
| | *12%* | *70%* | *20%* | *26%* | *64%* | *36%* |

Large vegetable gardens may be prepared by either tractor or animal traction. Smaller gardens may be prepared by cultivators or rototillers, which are relatively uncommon in the project area. Only 15 families use a hand cultivator: 11 families own mechanical cultivators (all but one in the Nenskra valley), and another four families borrow a cultivator from a relative or neighbour. Alternatively, people without mechanical equipment will hoe to open the fields.

Agricultural practices do not rely on individual or private irrigation schemes abstracting water from the Nenskra or Nakra Rivers. However, a few households living on the bank of the Nenskra River do pump water into their gardens during summer. One instance of such garden irrigation was documented in Kedani (lower left bank of the Nenskra valley, see Photo Sheet 2) but the practice is rare.



*Cows in Tita, Nenskra Valley (09/09/2015)*



*Pump used to water the garden during summer, Kedani (06/11/2015)*



*Sheep in Nakra valley (08/11/2015)*



*Harvesting hay along the Nenskra River (06/11/2015)*



*Cows in Nakra valley (08/11/2015)*

*Photo Sheet 2 - Agricultural practices*

### 2.3.2.2 Mutual assistance in farming

About a fifth of all families rely on assistance during the harvest (Table 17). These families rely on the additional labour for some five to 10 days or more, mostly during ploughing and harvest periods (Table 18). Almost all of this help comes from relatives and neighbours. Only a few families hire labour from outside their family; the wage rate varies between 20 to 50 GEL/day.

**Table 17 - Assistance in harvesting, by Project sub-area**

| Do you receive assistance to harvest your crops? | Yes Num. *(% total HH interviewed)* | Assistance received from: Relative Num. *(% HH receiving help)* | Neighbor Num. *(% HH receiving help)* | Hired Labour Num. *(% HH receiving help)* | Other Num. *(% HH receiving help)* |
|---|---|---|---|---|---|
| Project Area | 66 | 38 | 25 | 2 | 1 |
| | *19%* | *58%* | *38%* | *3%* | *2%* |
| Nenskra | 48 | 23 | 23 | 2 | 0 |
| | *9%* | *48%* | *48%* | *4%* | *0%* |
| Nenskra Left Bank | 18 | 8 | 9 | 1 | 0 |
| | *19%* | *44%* | *50%* | *6%* | *0%* |
| Nenskra Right Bank | 30 | 15 | 14 | 1 | 0 |
| | *17%* | *50%* | *47%* | *3%* | *0%* |
| Nakra | 18 | 15 | 2 | 0 | 1 |
| | *21%* | *83%* | *11%* | *0%* | *6%* |

**Table 18 - Average number of days farmers are assisted, by project Sub-area**

| Assistance in harvesting | Average number of days | Maximum | Minimum |
|---|---|---|---|
| Nakra | 4.4 | 30 | 1 |
| Nenskra | 9 | 30 | 1 |
| Nenskra Left Bank | 7.1 | 10 | 1 |
| Nenskra Right Bank | 9.7 | 30 | 2 |
| Project Area | 7.2 | 30 | 1 |

Four respondents declared that they paid a daily amount between 20 and 50 GEL for assistance in harvesting (see Table 19 below).

**Table 19 – Declared daily amounts paid**

| Valley / bank | Village | Average daily amount paid | Average number of days paid |
|---|---|---|---|
| Nenskra left bank | Kvemo Marghi | 20 GEL | 7 |
| Nenskra right bank | Kari | 50 GEL | 5 |
| Nenskra right bank | Lakhami | 35 GEL | 10 |
| Nenskra right bank | Lakhami | 50 GEL | 7 |

Most household (85%) also declared that they provide assistance to neighbours and relatives for other activities such as haying, ploughing, or house construction (Table 20).

**Table 20 – Type of help provided**

| | Helping neighbors Num. (% of interviewed HH) | Not helping neighbors Num. (% of interviewed HH) | Kind of help provided: Help with haying Num. (% of HH helping out) | Help with plowing Num. (% of HH helping out) | Help with harvesting Num. (% of HH helping out) | Lend tools Num. (% of HH helping out) | Help in house construction Num. (% of HH helping out) | Other Num. (% of HH helping out) |
|---|---|---|---|---|---|---|---|---|
| Project area | 301 | 52 | 265 | 235 | 228 | 254 | 249 | 2 |
| | *85%* | *15%* | *88%* | *78%* | *76%* | *84%* | *83%* | *1%* |
| Nenskra valley | 233 | 35 | 206 | 198 | 188 | 195 | 191 | 2 |
| | *87%* | *13%* | *88%* | *85%* | *81%* | *84%* | *82%* | *1%* |
| Nenskra Left Bank | 74 | 22 | 66 | 64 | 58 | 67 | 61 | 0 |
| | *77%* | *23%* | *89%* | *86%* | *78%* | *91%* | *82%* | *0%* |
| Nenskra Right Bank | 159 | 13 | 140 | 134 | 130 | 128 | 130 | 2 |
| | *92%* | *8%* | *88%* | *84%* | *82%* | *81%* | *82%* | *1%* |
| Nakra | 68 | 17 | 59 | 37 | 40 | 59 | 58 | 0 |
| | *80%* | *20%* | *87%* | *54%* | *59%* | *87%* | *85%* | *0%* |

### 2.3.2.3 Production and its disposition

Gardening within the family compound is very important. Almost all families (296 out of 353 or 84%) grow vegetables of various sorts in their home gardens. The gardens typically produce beans, tomatoes, cucumbers onion, garlic and different herbs (parsley, dill, tarragon). Most of this production is destined for family consumption (See Table 21).

Over four-fifths of the families (296 of 353) also have fruit trees, including cherry, apple, peach, and pear. This production is largely for home consumption. About a third of the families (116 of 353 families) have walnut trees. Typically, women sell the agricultural products, including corn and beans, usually in small amounts in order to buy other commodities needed, such as salt and corn meal.

**Table 21 – Mean households agricultural production by crop and Project sub-area**

| Area | Mean volume of corn produced (kg) | Mean% of corn eaten | Mean% of corn feed to the animals | Mean% of corn sold | Mean volume of fruit produced (kg) | Mean% of fruit eaten | Mean% of fruit feed to the animals | Mean% of fruit sold |
|---|---|---|---|---|---|---|---|---|
| Nakra | 218 | 82 | 39 | 0 | 452 | 90 | 34 | 0 |
| Nenskra | 542 | 64 | 58 | 43 | 1130 | 82 | 45 | 48 |
| Nenskra Left Bank | 597 | 72 | 52 | 38 | 1721 | 83 | 47 | 51 |
| Nenskra Right Bank | 511 | 60 | 60 | 50 | 833 | 82 | 44 | 46 |
| Project Area | 473 | 68 | 55 | 43 | 994 | 84 | 43 | 48 |
| Area | Mean volume of potatoes produced (kg) | Mean% of potatoes eaten | Mean% of potatoes feed to the animals | Mean% of potatoes sold | Mean volume of vegetables produced (kg) | Mean% of vegetables eaten | Mean% of vegetables feed to the animals | Mean% of vegetables sold |
| Nakra | 542 | 84 | 27 | 51 | 66 | 99 | 20 | 50 |
| Nenskra | 557 | 95 | 23 | 52 | 150 | 97 | 30 | 58 |
| Nenskra Left Bank | 877 | 94 | 25 | 50 | 131 | 96 | 0 | 56 |
| Nenskra Right Bank | 364 | 95 | 21 | 54 | 159 | 98 | 30 | 60 |
| Project Area | 553 | 92 | 25 | 52 | 132 | 98 | 28 | 57 |
| Area | Mean volume of beans produced (kg) | Mean% of bean eaten | Mean% of beans feed to the animals | Mean% of beans sold | Mean volume of Walnuts produced (kg) | Mean% of walnuts eaten | Mean% of walnuts feed to the animals | Mean% of walnuts sold |
| Nakra | 37 | 98 | 0 | 35 | 100 | 20 | 0 | 80 |
| Nenskra | 55 | 94 | 0 | 51 | 278 | 62 | 0 | 65 |
| Nenskra Left Bank | 61 | 91 | 0 | 68 | 304 | 71 | 0 | 60 |
| Nenskra Right Bank | 50 | 97 | 0 | 34 | 269 | 59 | 0 | 66 |
| Project Area | 50 | 95 | 0 | 48 | 276 | 62 | 0 | 65 |
| | Mean volume of grapes produced (kg) | Mean% of grape eaten | Mean% of grapes feed to the animals | Mean% of grapes sold | Mean volume of nuts harvested (kg) | Mean% of nuts eaten | Mean% of nuts feed to the animals | Mean% of nuts sold |
| Nakra | none | - | - | - | none | - | - | - |
| Nenskra | 677 | 100 | 0 | 0 | 100 | 100 | 0 | 0 |
| Nenskra Left Bank | 1350 | 100 | 0 | 0 | 150 | 100 | 0 | 0 |
| Nenskra Right Bank | 293 | 100 | 0 | 0 | 50 | 100 | 0 | 0 |
| Project Area | 677 | 100 | 0 | 0 | 100 | 100 | 0 | 0 |

## 2.3.3 Livestock and pastures activities

### 2.3.3.1 Livestock

The rural economy is a mix of agriculture and livestock. Eighty-six percent of the families in the Nenskra valley and 80% in the Nakra valley own cows (Table 22). Transport animals, such as horses, are less common in the Nenskra valley: 25% of the families in the Nenskra valley own horses compared to 56% of the families in the Nakra valley.

Half of the families keep poultry and 14% of families in Nakra valley and 27% in Nenskra valley raise pigs. Sheep, which used to be an important element in the local production system, are relatively rare today, and as a result women buy yarn in town rather than spin and dye their own wool as in the past. The average number of each kind of animal is shown in Table 23.

Women do milking, and make the cheese and butter which they may sell in Khaishi or Zugdidi. The women of the household also preserve cheese for the winter months by crumbling the cheese and immersing it in salted water.

**Table 22 – Households owning animals, by species and project sub-area**

| | HH without any animal | HH owning cow | HH owning horse | HH owning pig | HH owning Sheep | HH owning Poultry | All HH |
|---|---|---|---|---|---|---|---|
| Nakra | 12 | 68 | 48 | 12 | 6 | 48 | 85 |
| | *14%* | *80%* | *56%* | *14%* | *7%* | *56%* | *100%* |
| Nenskra | 32 | 232 | 64 | 70 | 1 | 141 | 268 |
| | *12%* | *87%* | *24%* | *26%* | *0%* | *53%* | *100%* |
| Nenskra Left Bank | 10 | 83 | 25 | 25 | 1 | 54 | 96 |
| | *10%* | *86%* | *26%* | *26%* | *1%* | *56%* | *100%* |
| Nenskra Right Bank | 22 | 149 | 39 | 45 | 0 | 87 | 172 |
| | *13%* | *87%* | *23%* | *26%* | *0%* | *51%* | *100%* |
| Project Area | 44 | 300 | 112 | 82 | 7 | 189 | 353 |
| | *12%* | *85%* | *32%* | *23%* | *2%* | *54%* | *100%* |

**Table 23 – Mean number of livestock own by households**

| | Cattle (average number owned) | Horse or donkey (average number owned) | Pigs (average number owned) | Sheep (average number owned) | Poultry (average number owned) |
|---|---|---|---|---|---|
| Both valleys | 3.9 | 0.4 | 0.8 | 0.1 | 5.6 |
| Nakra valley | 3.3 | 0.6 | 0.3 | 0.2 | 4.1 |
| Nenskra valley | 4.1 | 0.3 | 0.9 | 0.0 | 6.1 |
| Nenskra valley - left bank | 4.3 | 0.3 | 1.1 | 0.0 | 7.3 |
| Nenskra valley - right bank | 4.1 | 0.3 | 0.8 | 0.0 | 5.4 |

### 2.3.3.2 Pastures

In both Nakra and Nenskra valleys, there are two main categories of pastures:

- Pastures located around the villages, used as long as they are not covered by snow, and
- Remote pastures used during the summer season, from June or July to early October, located higher in the mountains. The routes to these pastures tend to follow the roads and paths along the tributaries to the Nenskra and Nakra rivers.

Each family usually keeps its livestock close to the village or in the barn during winter, feeding them with the hay collected during the summer. During spring, the hay grows in the high pastures areas, and the animals are kept in the hay field or pasture areas close to the villages. Sending the livestock higher in the mountains during the summer period allows the hay to grow in the hay field near the villages. It can then be collected and stored for the upcoming winter period. Summer highland pastures are shared between families from one or several communities. They are common pasture lands - not private, property. On the contrary, winter pastures, or pastures in the vicinity of the villages, are mostly private land.

During the Soviet period, local communities had to provide hay to the governmental authorities. They used the hay fields nearest their villages to provide hay to these authorities. To get hay for their own use, they collected hay higher up in the mountains. Roads were used to carry the hay down to the barns in the villages, thus allowing the animals to go up to the highland pasture areas in the summer. Only some of the old roads are still practicable today. Some interviewees stated that the number of livestock owned during Soviet period was generally higher, and has decreased over time as the roads became no longer passable.

Some interviewees also declared that nowadays, in some villages and for some families, hay fields located around the villages can usually provide enough hay for the winter season. They will collect hay in the mountains only if the hay in the vicinity of the villages is not sufficient.

However, direct field observation showed that the quality of the pasture areas is generally poor and overgrazing may occur in both valleys. Cattle are seen grazing in the forested areas and everywhere along the roads. Table 24 below shows the average use of summer pasture areas amongst the households, and Table 25 indicates the estimated number of animals taken in the summer pastures.

**Table 24 – Number of households taking their animals to the summer pastures**

| | HH without animals | Do not take any animal in the summer pastures | HH taking their cows into the summer pastures | HH taking their horses into the summer pastures | HH taking their sheep into the summer pastures | HH taking their pigs into the summer pastures |
|---|---|---|---|---|---|---|
| Nakra | 12 | 10 | 63 | 14 | 1 | 0 |
| | *14%* | *12%* | *74%* | *16%* | *1%* | *0%* |
| Nenskra | 32 | 72 | 164 | 18 | 0 | 2 |
| | *12%* | *27%* | *61%* | *7%* | *0%* | *1%* |
| Nenskra Left Bank | 10 | 35 | 51 | 8 | 0 | 0 |
| | *10%* | *36%* | *53%* | *8%* | *0%* | *0%* |
| Nenskra Right Bank | 22 | 37 | 113 | 10 | 0 | 2 |
| | *13%* | *22%* | *66%* | *6%* | *0%* | *1%* |
| Project Area | 44 | 82 | 227 | 32 | 1 | 2 |
| | *12%* | *23%* | *64%* | *9%* | *0%* | *1%* |

**Table 25 – Estimated number of animals taken in the summer pastures**

| | cows | horses | Sheep | pigs |
|---|---|---|---|---|
| Nakra | 268 | 16 | 4 | 0 |
| Nenskra | 926 | 25 | 0 | 13 |
| Nenskra Left Bank | 307 | 8 | 0 | 0 |
| Nenskra Right Bank | 619 | 17 | 0 | 13 |
| Project Area | 1194 | 41 | 4 | 13 |

Households usually send their livestock in their summer pasture during three months, from late June or early July to early October. Cows, horses and sheep all go together in these summer pastures. Table 26 below shows the average length of stay in the summer pastures areas.

**Table 26 – Average number of months animals stay in summer pasture areas**

| | |
|---|---|
| **Nakra** | **3.1** |
| Nenskra | 3.3 |
| Nenskra Left Bank | 3.0 |
| Nenskra Right Bank | 3.4 |
| Project Area | 3.2 |

Some households use only one summer pasture, whereas other use two or more pasture areas. The number of pastures used during the summer season is linked to the size of the pastures and the number of animals taken there. Table 27 below shows the repartition of households using one or several summer pasture areas.

**Table 27 – Number of summer pastures areas used**

| | Summer 2015 | | | Summer 2014 | | |
|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **1** | **2** | **3** |
| Project Area | 175 | 44 | 8 | 182 | 38 | 7 |
| | *77.1%* | *19.4%* | *3.5%* | *80.2%* | *16.7%* | *3.1%* |
| Nakra valley | 41 | 19 | 3 | 40 | 19 | 4 |
| | *65.1%* | *30.2%* | *4.8%* | *63.5%* | *30.2%* | *6.3%* |
| Nenskra valley | 134 | 25 | 5 | 142 | 19 | 3 |
| | *81.7%* | *15.2%* | *3.0%* | *86.6%* | *11.6%* | *1.8%* |
| Nenskra left bank | 46 | 4 | 1 | 48 | 3 | 0 |
| | *90.2%* | *7.8%* | *2.0%* | *94.1%* | *5.9%* | *0.0%* |
| Nenskra right bank | 88 | 21 | 4 | 94 | 16 | 3 |
| | *77.9%* | *18.6%* | *3.5%* | *83.2%* | *14.2%* | *2.7%* |

Most families join their herd with those of their neighbours or relatives and organize a rotation among members of the group to take care of the herds in the highland pastures areas (see Photo Sheet 3 and Photo Sheet 4). Food and other goods are brought regularly by trucks, and any cheese or milk is trucked out over the course of the summer.

Some of the households may hire herders to take their animals to the summer pastures. Forty-five of the respondents (20% of respondents taking their animals in the summer pastures) declared that the person pasturing the livestock is paid. The payments are presented in Table

28. Payments in the Nenskra valley are mostly in cash, whereas in Nakra valley, it consists mainly in sharing the milk from the cows.

**Table 28 – Payments for herding livestock in the summer pastures**

| | Up to 200 GEL / month | 300 to 500 GEL / month | 600 to 1000 GEL / month | In kind payment (milk) | no response | Total |
|---|---|---|---|---|---|---|
| Nakra | 0 | 1 | 0 | 6 | 1 | 8 |
| | *0%* | *13%* | *0%* | *75%* | *13%* | *100%* |
| Nenskra | 26 | 7 | 2 | 0 | 1 | 37 |
| | *70%* | *19%* | *5%* | *0%* | *3%* | *100%* |
| Nenskra Left Bank | 11 | 0 | 1 | 0 | 2 | 14 |
| | *79%* | *0%* | *7%* | *0%* | *14%* | *100%* |
| Nenskra Right Bank | 15 | 7 | 1 | 0 | 0 | 23 |
| | *65%* | *30%* | *4%* | *0%* | *0%* | *100%* |
| Project area | 26 | 8 | 2 | 6 | 2 | 45 |
| | *58%* | *18%* | *4%* | *13%* | *4%* | *100%* |

Rights of use for the common pastures areas are well defined. Therefore, most households use the same pasture areas each year. Amongst people taking their cows in the summer pastures, 78% of the respondents declared they used the same pasture last year and the year before that (Table 29). The following sections describe the situation and right of use of these summer pasture in the Nenskra and Nakra valleys.

**Table 29 – Households that used the same pasture in 2015 and 2014**

| | Same pasture as last year | Different pasture | Total |
|---|---|---|---|
| Nakra | 42 | 21 | 63 |
| | *67%* | *33%* | *100%* |
| Nenskra | 135 | 29 | 164 |
| | *82%* | *18%* | *100%* |
| Nenskra Left Bank | 46 | 5 | 51 |
| | *90%* | *10%* | *100%* |
| Nenskra Right Bank | 89 | 24 | 113 |
| | *79%* | *21%* | *100%* |
| Project Area | 177 | 50 | 227 |
| | *78%* | *22%* | *100%* |

## A. Summer pastures areas in the Nenskra valley

The pastures areas are traditionally distributed amongst the communities of the valley.

- Tobari and Lukhi families traditionally use pastures along the Darchi-Ormeleti River.
- Letsperi and Lakhani families traditionally use pastures along the Lakhami River.
- Families from Devra and Kari villages use pastures up the Devra River, on Ratiani Mountains, and in an area called Shaurula.
- Zemo Marghi and Kvemo Marghi use pasture areas up the Marghi River, east of these two hamlets.
- The pasture area called Zeda Tita, up the Tita River, can be used by people from Tita, LariLari, Lekalmakhe, Kedani, and also some families from Sgurishi.

- Families from Sgurishi use pastures located along the road following the riverbed up to the proposed reservoir, and up the tributaries on the right bank of the Nenskra River, named Okrili and Memuli.

However, nowadays, use of pasture areas depends not only on residency, but also on matrimonial links. A family having kinship ties in several hamlets can use traditional pastures areas attributed to another hamlet than the one in which it resides.

During Soviet period, some pasture areas located north of the proposed reservoir were used. Informants report that during this period, some roads and bridges allowed access to these areas. But these pastures are not used anymore, as the road going north to the reservoir has all but disappeared.

The areas used for summer pastures are located in three main areas:

- Northern pastures, starting north of Tita hamlet, and located along the Nenskra Riverbed and up its right bank tributaries (Okrili and Memuli);
- Western pastures, located on the right bank along and up the Nenskra tributaries, and
- Eastern pastures, located on the left bank along and up the Nenskra tributaries.

Table 30 below shows the distribution of households that declared using a pasture in one of these three main areas during summer 2015. In addition to the three main areas (East, West and North), two other areas are shown in this table. Column C shows the number of households that declared they used a pasture area on the left bank, near or within the site of the powerhouse (in Kedani hamlet, or uphill). Column E. shows the number of households that declared they used a pasture area located either upstream of the proposed Nenskra dam, in the dam's site associated infrastructures footprint, or up a tributary that can be accessed only by crossing the Project footprint. Columns C and E are thought counting the number of households that used a pasture possibly affected by the Project's infrastructures footprint, either because they are located inside the Project's footprint, or because the construction of Project's infrastructure will block access to the pastures areas.

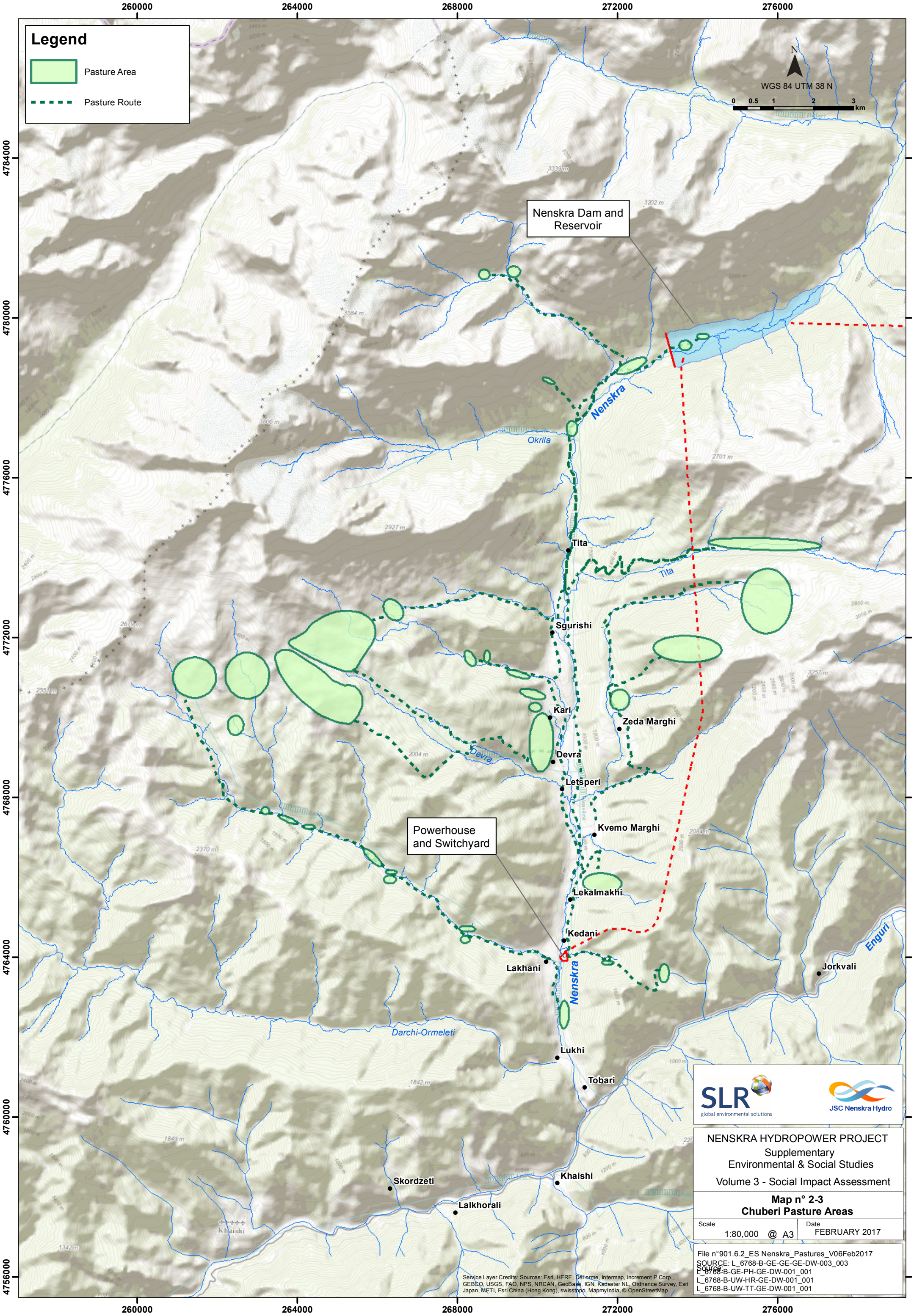
**Table 30 – Distribution of households by main pasture area used in the Nenskra valley**

| Number of households that declared using a pasture site located in one of the three main areas of the valley during summer 2015 | A. Pastures west of Nenskra river | B. Pastures east of Nenskra river | C. Southern pastures on the left bank, in the vicinity of the powerhouse site or in its footprint. | D. Northern pastures areas | E. Northern pastures, located in and upstream the Dam site |
|---|---|---|---|---|---|
| **Nenskra Valley** | **79** | **58** | **4** | **22** | **20** |
| **Nenskra Left Bank** | **8** | **43** | **1** | **0** | **0** |
| Zemo Marghi | 0 | 2 | 0 | 0 | 0 |
| Tobari | 3 | 0 | 0 | 0 | 0 |
| Tita | 0 | 0 | 0 | 0 | 0 |
| Kedani | 0 | 3 | 0 | 0 | 0 |
| Lekalmakhe | 1 | 7 | 1 | 0 | 0 |
| LariLari | 2 | 11 | 0 | 0 | 0 |
| Kvemo Marghi | 2 | 20 | 0 | 0 | 0 |
| **Nenskra Right Bank** | **71** | **15** | **3** | **22** | **20** |
| Sgurishi | 4 | 9 | 0 | 17 | 17 |
| Lukhi | 2 | 0 | 0 | 0 | 0 |
| Letsperi | 7 | 2 | 0 | 1 | 1 |
| Lakhami | 36 | 4 | 3 | 0 | 0 |
| Kari | 15 | 0 | 0 | 4 | 2 |
| Devra | 7 | 0 | 0 | 0 | 0 |

The situation of these pastures areas is presented in Map 2-3. Illustrative photos are provided in Photo Sheet 3.

The total area of the summer pastures of Chuberi village has been estimated to be about 695 ha. Pasture of Lukhi and Tobari were not included in this estimate, as they are not part of the Chuberi village, and as their pastures will not be affected by the Project.

As summer pasture areas are not registered, cadastral records are not available. Therefore, this estimate is based on identification of open grassland used as pastures, from interpretation of aerial pictures. As these areas are open grassland only, and as the cows are grazing not only on open grassland, but also in the forested areas, the estimated areas used to estimate the carrying capacity are likely to be underestimated.




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**Map n° 2-3**
**Chuberi Pasture Areas**

| Scale | Date |
|---|---|
| 1:80,000 @ A3 | FEBRUARY 2017 |

File n°901.6.2_ES Nenskra_Pastures_V06Feb2017
SOURCE: L_6768-B-GE-GE-GE-DW-003_003
Source: L_6768-B-GE-PH-GE-DW-001_001
L_6768-B-UW-HR-GE-DW-001_001
L_6768-B-UW-TT-GE-DW-001_001

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap

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*Photo Sheet 3 – Northern pastures areas (Nenskra valley)*



*Mashritchala pasture area in the reservoir's footprint (07/09/2015)*



*Field cabins in Zeda Tita pasture area (08/09/2015)*





*Field cabins in Memuli pasture area (08/09/2015)*

## B. Summer pastures areas in the Nakra valley

In the Nakra valley, three main areas are used for summer pasture areas:

- Area up the mountains on the left bank,
- Area up the mountains on the right bank,
- Area along the river, in the northern part of the valley.

As in the Nenskra Valley, traditional pasture rights are well known among people and depend on kinship ties:

- Families from the Nakra and Kvitsani hamlets can use any of these three areas;
- Families from Anili use either the northern or the eastern pastures;
- Families from Latsomba use the eastern pastures; and
- Families from Shtikhiri use pastures up the Lukhla River, on the southern right bank of the river that can be accessed either from the Nakra Valley, or from the Enguri Valley.

Table 31 below shows the distribution of households who use a pasture in one of these three main areas during summer 2015. The northern pastures (Column C) are all located either upstream the Project's infrastructure, or in the Nakra water intake site.

**Table 31 – Distribution of households by main pasture area used in the Nakra valley**

| **Number of households that declared using a pasture site located in one of the three main areas of the valley during summer 2015** | | | |
|---|---|---|---|
| | **A. Pastures West of Nakra river** | **B. Pastures East of Nakra river** | **C. Northern Pastures located in and upstream the Nakra water intake site.** |
| Anili | 0 | 1 | 1 |
| Nakra | 25 | 18 | 8 |
| Kvitsani | 4 | 8 | 3 |
| Latsomba | 0 | 6 | 0 |
| Shtikhiri | 1 | 0 | 0 |
| ***Nakra Valley*** | ***30*** | **33** | ***12*** |

The situation of these pastures areas is presented in Map 2-4, and some pictures are provided in Photo Sheet 4.

The total area of the summer pastures of Naki village has been estimated to be about 549 ha. Pastures of Shtikhiri were not included in this estimate, as they are not part of the Naki village, and as their pastures will not be affected by the Project.

As summer pasture areas are not registered, cadastral records are not available. Therefore, this estimate is based on identification of open grassland used as pastures, from interpretation of aerial pictures. As these areas are open grassland only, and as the cows are grazing not only on open grassland, but also in the forested areas, the estimated areas used to estimate the carrying capacity are likely to be underestimated.

## Legend

- Pasture Area
- Pasture Route

N

WGS 84 UTM 38 N

0 0.5 1 2 km

Nakra Intake

Lenkvashi

Anili

Kvitsani

Nakra

Latsomba

Nodashi

Shtikhiri

Dizi

Nakra

Enguri

Khumpreri

280000 282000 284000 286000 288000 290000 292000

4786000 4784000 4782000 4780000 4778000 4776000 4774000 4772000 4770000 4768000

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap

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**Map n° 2-4**
**Nakra Pastures**

| Scale | Date |
|---|---|
| 1:50,000 @ A3 | FEBRUARY 2017 |

File n°901.6.2_ES Nakra_Pastures_V06Feb2017
SOURCE: L_6768-B-GE-GE-GE-DW-003_003
L_6768-B-GE-PH-GE-DW-001_001
L_6768-B-UW-HR-GE-DW-001_001
L_6768-B-UW-TT-GE-DW-001_001

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*Photo Sheet 4 –Pastures areas (Nakra valley)*



*Pasture area at the weir site on the Nakra River*
*(06/09/2015)*





*Outside (left) and inside (right) views of field cabins, at the weir site on the Nakra River*
*(06/09/2015)*





*Views of two field cabins, located approximately 1,5 km north of the weir site on the Nakra River*
*(27/08/2015)*

## 2.3.4 Logging and sawmills

Logging was recognized as a key income source in the economy of the Nenskra and Nakra valleys by most informants. During several meetings with villagers in 2015 and 2016, locals confirmed that logging is the primary source of income for most families. People have logged without restriction since the disintegration of the Soviet system. Prior to the development of the Project, the Government initiated a program of large-scale licenses for logging in order to regain management of the forested area. While local people with permits are still allowed to cut 5 cubic metres per year for household use, locals effectively are not able to compete for the large-scale licenses, which go to commercial enterprises. The new license owners patrol their territory so that locals are not taking out 'their' logs. At the time of the field surveys, the Government had sent in officers to enforce the new system.

There was, therefore, an understandable reluctance on the part of the local population to speak openly about their involvement in the logging and sawmill industries, either in households' interviews or during thematic interviews or focus groups. Getting a reliable accurate statistical description of current logging practices was not possible; neither was producing an estimate of volumes of trees cut or level of incomes earned.

Verbal communications with the Ministry of Environment informed that there were no ongoing forestry license areas in the project area. According to the Ministry of Environment, 2 legal logging concessions were attributed in the Nenskra Valley, but they ended in March 2016, and they will not be renewed.

### 2.3.4.1 Logging

All households cut wood for domestic uses such as firewood and construction materials. Firewood is the primary heating material in the project areas, with a few people also using gas and some using electricity, which is free in this area. It is estimated that about half of the households in the two valleys also engage in commercial logging for the cash income necessary to buy outside products (e.g., corn meal, wheat flour). Logging is a seasonal activity, running from May to October. Almost 40% of the households in the two valleys (134 of 353 cases) report owning a chainsaw. People can borrow a chainsaw from a relative or neighbour, but borrowing a chainsaw is reportedly relatively uncommon (Table 32).

**Table 32 - Ownership of a Chainsaw**

| | HH owning a chainsaw<br>Num.<br>(% of interviewed HH) | HH Borrowing a chainsaw<br>Num.<br>(% of interviewed HH) | HH not using a chainsaw<br>Num.<br>(% of interviewed HH) | No response<br>Num.<br>(% of interviewed HH) |
|---|---|---|---|---|
| Project Area | 134 | 800% | 210 | 1 |
| | *38%* | *2%* | *59%* | *0%* |
| Nakra | 17 | 3 | 64 | 1 |
| | *20%* | *4%* | *75%* | *1%* |
| Nenskra | 117 | 500% | 146 | 0 |
| | *44%* | *2%* | *54%* | *0%* |
| Nenskra Left Bank | 38 | 100% | 57 | 0 |
| | *40%* | *1%* | *59%* | *0%* |
| Nenskra Right Bank | 79 | 400% | 89 | 0 |
| | *46%* | *2%* | *52%* | *0%* |

In Soviet times logging was strictly controlled. Each family had an area allocated for cutting, and all families had to take their logs to the central sawmill for processing. The State

maintained tree nurseries to replace the trees cut. Indeed, some of the forests now were Soviet nurseries as recently as 35 years ago. However, this practice has been discontinued.

Today, logging is relatively unsupervised. Logging is exclusively an activity of the men in the two valleys. Families have traditional areas for cutting. The organization of logging varies. Some men log as a group, either independently or in partnership with a sawmill. A few sawmills engage locals to cut trees for them, but in these cases the workers are usually related to the sawmill owner. It is possible for a traditional owner to allow others to cut trees on his traditional territory. In the new system, logged over areas can become pastures.

The species of tree cut depends on its ultimate use. Loggers cutting for domestic use will take mostly pine. Loggers cutting for the external sale will take either pine or hardwood, depending on market needs and conditions.

Logs are trucked out of the area to the sawmills. In the past, some loggers would sledge logs out during winter. Other loggers would use the river to float logs downstream when the river was high. However, these techniques are no longer in use because of the availability of trucks.

### 2.3.4.2 Sawmills

The number of sawmills seems has probably been underreported in the survey compared to the estimates of knowledgeable local informants (Table 33). Only 20 people declared that they own a sawmill, whereas knowledgeable informants estimated that there were more than 75 sawmills in the Nenskra Valley, and around 15 in the Nakra valley. Direct field observations in the communities in November 2015 allowed counting at least 7 medium or large sawmills in the Nakra valley and 32 in the Nenskra valley.

Most sawmills are relatively small, and are essentially for domestic use. Medium-sized mills can process about 10m$^3$ of timber on a good day with a staff of four labourers. But problems with machinery break-downs and the difficulty of obtaining replacement parts mean many actually average about 5 cubic metres per day. Large mills have better machinery and more staff, and can produce between 25 -30 cubic metres of timber, mostly planks, in a day. Some pictures the different types of sawmills are provided in Photo Sheet 5.

**Table 33 - Number of sawmills**

| | Own | Borrow | Rent | Do not use | No answer |
|---|---|---|---|---|---|
| ***PROJECT AREA*** | 20 (5.7%) | 5 (1.4%) | 2 (0.6%) | 325 (92.1%) | 1 (0.3%) |
| ***Nenskra Valley*** | 19 (7.1%) | 4 (1.5%) | 2 (0.7%) | 243 (90.7%) | 0 (0%) |
| ***Nakra Valley*** | 1 (1.2%) | 1 (1.2%) | 0 (0%) | 82 (96.5%) | 1 (1.2%) |

The first private sawmill opened in 1995 in Chuberi. Fourteen sawmills are legally registered there. There are legal problems in registering sawmills; in the two valleys, all land is officially registered as agricultural land, including the inhabited areas. Sawmills (which are commercial enterprises) are not considered agricultural activities and therefore they are not eligible for administrative recognition. Compounding these difficulties is the fact that the old land archives have been lost, although a notary maintains a copy of the files and will assist people to register their land for a fee. There are some 15 sawmills in Naki.



*Medium Sawmill in Nenskra valley (07/11/2015)*



*Large Sawmill, Nakra valley (08/11/2015)*



*Small domestic sawmill, Nakra valley (05/09/2015)*

*Photo Sheet 5 - Sawmills*

Whereas logging is largely an economic activity for local people, the sawmill workers generally come from other areas, especially villages in the flat areas around Zugdidi. Wages for hired labour vary from 20 to 30 GEL per day. Typically, workers live in a cabin next to the sawmill.

According to information collected during informal interviews with villagers, the extent of logging and the species of trees cuts depends on market demand. While loggers reportedly have always cut pine and some hardwood, the amount of hardwood cut has increased in recent years as transport has enabled the sawmills to sell timber not only in regional cities such as Zugdidi but also as far away as the capital, Tbilisi, and even to export to neighbouring countries such as Turkey and Azerbaijan. Reportedly, the sawmills sold locally and within the region until the year 2000, when the export market opened up and the amount of timber sold increased significantly.

## 2.3.5 Secondary forest products

Overall, about two thirds of all households collect some secondary forest products, mostly for their own use. Almost three-quarters of the families declared collecting firewood. About a third of all households collect berries. Much smaller percentages of the population seek wild herbs for medicinal and/or culinary purposes (Table 34). The secondary forest products are collected from the area surrounding the settlements. People do not venture far afield for these resources.

**Table 34 - Secondary forest products**

| | HH collecting secondary forest products<br>Num<br>(% of HH interviewed) | Kind of products collected<br>Num<br>(% of HH interviewed) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Berries | Firewood | Wild fruits | Culinary herbs | Medicinal herbs | Mushrooms |
| Project Area | 227 | 97 | 213 | 9 | 27 | 43 | 30 |
| | *68%* | *29%* | *63%* | *3%* | *8%* | *13%* | *9%* |
| Nakra | 37 | 25 | 33 | 4 | 2 | 13 | 11 |
| | *48%* | *32%* | *43%* | *5%* | *3%* | *17%* | *14%* |
| Nenskra | 190 | 72 | 180 | 5 | 25 | 30 | 19 |
| | *73%* | *28%* | *69%* | *2%* | *10%* | *12%* | *7%* |
| Nenskra Left Bank | 60 | 31 | 54 | 3 | 12 | 13 | 5 |
| | *68%* | *35%* | *61%* | *3%* | *14%* | *15%* | *6%* |
| Nenskra Right Bank | 130 | 41 | 126 | 2 | 13 | 17 | 14 |
| | *76%* | *24%* | *74%* | *1%* | *8%* | *10%* | *8%* |

## 2.3.6 Beekeeping

Ten percent of the families report keeping beehives in their house plots (Table 35). Reportedly, many bees died some 20 years ago because of an unidentified disease, and relatively few producers remain because beekeepers have to buy medicine to ensure the health of their hives. Beekeeping is done by the men. Much of the honey is used at home, but the families also sell honey in markets in the region.

The estimated volumes of honey produced per year range from a few kg to more than 300 kg. About one quarter of the beekeepers (8 HH) estimated that they produce on average more than 100 kg of honey (Table 36). The average price for 1 kg of honey is 12 GEL.

Seventeen (17) households (46% of beekeepers) declared they do not sell any of their honey production. 7 (19%) declared selling less than 60% of their production, and 11 (30%) reported that they sell 70% or more of their production. Five of them declared they sell the totality of their production.

Three families indicated that they are engaged in beekeeping on the project affected land (at the Powerhouse). Most of the other families engaged in beekeeping are located within 300 metres of the roads that will be used by the Project vehicles.

**Table 35 – Numbers of beekeepers by area**

| Does anyone in your family engage in beekeeping for home consumption or for sale of honey? | Yes | No | Total |
|---|---|---|---|
| | Num<br>% | Num<br>% | Num<br>% |
| *PROJECT AREA* | 37<br>*10%* | 316<br>*90%* | 353<br>*100%* |
| *Nakra valley* | 5<br>*6%* | 80<br>*94%* | 85<br>*100%* |
| *Nenskra valley* | 32<br>*12%* | 236<br>*88%* | 268<br>*100%* |
| Nenskra valley Right bank | 17<br>*10%* | 155<br>*90%* | 172<br>*100%* |
| Nenskra valley Left bank | 15<br>*16%* | 81<br>*84%* | 96<br>*100%* |

**Table 36 - Estimated volumes of honey produced**

| | ≤ 20 kg | ]20 - 50] kg | ]50 - 100] kg | ]100 - 300] kg | > 300 kg |
|---|---|---|---|---|---|
| | Num.<br>*% of beekeepers* | Num.<br>*% of beekeepers* | Num.<br>*% of beekeepers* | Num.<br>*% of beekeepers* | Num.<br>*% of beekeepers* |
| Project Area | 10<br>*28%* | 9<br>*25%* | 9<br>*25%* | 5<br>*14%* | 3<br>*8%* |
| Nakra | 2<br>*40%* | 1<br>*20%* | 2<br>*40%* | 0<br>*0%* | 0<br>*0%* |
| Nenskra | 8<br>*26%* | 8<br>*26%* | 7<br>*23%* | 5<br>*16%* | 3<br>*10%* |
| Nenskra Left Bank | 5<br>*36%* | 4<br>*29%* | 2<br>*14%* | 2<br>*14%* | 1<br>*7%* |
| Nenskra Right Bank | 3<br>*18%* | 4<br>*24%* | 5<br>*29%* | 3<br>*18%* | 2<br>*12%* |

## 2.3.7 Agricultural processing

Almost 90% of the families (306 out of 353 families) do some agricultural processing (Table 37), which is largely, but not entirely, women's work. Most families (292 or 83% of all families) preserve fruits or stew them (265 families or 75%). The next most important agricultural processing activities are cheese production (170 families or 48%) and making Svan salt (167

families or 49%)[13], followed by marinades (104 families or 30%), milling corn flour (107 families or 30%), making tomato sauce (112 families or 32%), jam (50 families or 14%), and sour milk (*matsoni*: 22 families or 6%). Meanwhile men distil vodka (64 families; 18%) and ferment wine (20 families; 6%).

**Table 37 - Agricultural products processing**

| Do you process agricultural products? If yes which ones? | Nakra | | Nenskra | | Nenskra Left Bank | | Nenskra Right Bank | | Project Area | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Num.* | *% HH interviewed* | *Num.* | *% HH interviewed* | *Num.* | *% HH interviewed* | *Num.* | *% HH interviewed* | *Num.* | *% HH interviewed* |
| Yes | 69 | *81%* | 237 | *88%* | 84 | *88%* | 153 | *89%* | 306 | *87%* |
| preserved fruits | 60 | *71%* | 232 | *87%* | 83 | *86%* | 149 | *87%* | 292 | *83%* |
| stewed fruits | 52 | *61%* | 213 | *79%* | 75 | *78%* | 138 | *80%* | 265 | *75%* |
| marinades | 34 | *40%* | 73 | *27%* | 25 | *26%* | 48 | *28%* | 107 | *30%* |
| Svan salt | 38 | *45%* | 129 | *48%* | 38 | *40%* | 91 | *53%* | 167 | *47%* |
| cheese | 30 | *35%* | 140 | *52%* | 39 | *41%* | 101 | *59%* | 170 | *48%* |
| cornflour | 23 | *27%* | 84 | *31%* | 25 | *26%* | 59 | *34%* | 107 | *30%* |
| preserved meals | 9 | *11%* | 64 | *24%* | 22 | *23%* | 42 | *24%* | 73 | *21%* |
| vodka | 4 | *5%* | 60 | *22%* | 14 | *15%* | 46 | *27%* | 64 | *18%* |
| tomato sauce | 2 | *2%* | 110 | *41%* | 27 | *28%* | 83 | *48%* | 112 | *32%* |
| jam | 3 | *4%* | 47 | *18%* | 10 | *10%* | 37 | *22%* | 50 | *14%* |
| Matsoni (sour milk) | 0 | *0%* | 22 | *8%* | 8 | *8%* | 14 | *8%* | 22 | *6%* |
| Tkemali (wild plum sauce) | 3 | *4%* | 5 | *2%* | 3 | *3%* | 2 | *1%* | 8 | *2%* |
| wine | 4 | *5%* | 16 | *6%* | 3 | *3%* | 13 | *8%* | 20 | *6%* |
| spices | 0 | *0%* | 1 | *0%* | 0 | *0%* | 1 | *1%* | 1 | *0%* |
| grape juice | 0 | *0%* | 2 | *1%* | 0 | *0%* | 2 | *1%* | 2 | *1%* |
| preserved tomatoes | 1 | *1%* | 0 | *0%* | 0 | *0%* | 0 | *0%* | 1 | *0%* |
| Churchkhela | 0 | *0%* | 0 | *0%* | 0 | *0%* | 0 | *0%* | 0 | *0%* |
| Dried Meat | 0 | *0%* | 1 | *0%* | 0 | *0%* | 1 | *1%* | 1 | *0%* |
| Dried fruits | 0 | *0%* | 2 | *1%* | 1 | *1%* | 1 | *1%* | 2 | *1%* |
| All HH interviewed | 85 | *100%* | 268 | *100%* | 96 | *100%* | 172 | *100%* | 353 | *100%* |

Some of this production is sold in regional markets when the families go to town. The main commodities are sour milk (200 litres on average sold over the course of the season), cheese (139 kg on average over the course of the season) and Svan salt (45kg on average sold on various occasions). Meanwhile the men sell wine and vodka (reportedly about 100 litres each in total on average).

## 2.3.8 Fishing

Fishing is not a commercial activity in the Nenskra and Nakra valleys. 38% (135 households) of the households interviewed declared that at least one of their members practice fishing. This activity is more common in the Nenskra valley than in the Nakra valley; with respectively 41% and 29% of the households declaring fishing practices (see Table 38 below).

[13] Women buy salt and add local herbs. Some of the production is sold in regional markets.

**Table 38 - Fishing**

| | Number of HH with at least one member fishing | *Percent of HH with at least one member fishing* |
|---|---|---|
| Nakra valley | 25 | *29%* |
| Nenskra valley | 110 | *41%* |
| Nenskra Left Bank | 36 | *38%* |
| Nenskra Right Bank | 74 | *43%* |
| Project Area | 135 | *38%* |

Almost all people fish with a line, with only four respondents said that they use fish nets; two use both techniques. This activity is practiced from spring to autumn, but not in winter. Only trout are caught, and they are consumed by the family or shared with friends.

The fishing areas are either the main rivers (Nenskra and Nakra) or their tributaries.

## 2.3.9 Hunting

As is the case for logging, investigations about hunting practices during the field surveys were undermined by the fact that hunting is illegal. Therefore responses presented below do not give an accurate statistical description of current hunting practices. Rather, they provide some insight into the types of hunting activities practiced today.

More than 95% of the respondents in the household survey declared that they do not hunt. Only 13 of the 353 households interviewed reported that they do hunt. These 13 households all declared that the animals they hunt are consumed solely within the family or with friends. Hunting is not a commercial activity. Of the 13 respondents that admitted to hunting, only one declared he has hunted in the proposed Nenskra reservoir area and only one declared he has hunted in the Nakra valley hunts upstream of the proposed Nakra water intake. All the others declared using areas up the mountains east and west of each river, downstream of the project's infrastructure (Nenskra dam or Nakra water intake). Not coincidentally, the areas used for hunting are near the summer pastures areas.

The animals hunted are mostly bears and wild birds in both valleys (Table 39). In the Nenskra valley, wolves as well as chamois and wild ox are also said to be hunted.

**Table 39 – Animals hunted**

| | Bear | Wolf | Wild goat | Game birds | Wild ox | Chamois | Fox |
|---|---|---|---|---|---|---|---|
| | Num. of hunters<br>% of hunters | Num. of hunters<br>% of hunters | Num. of hunters<br>% of hunters | Num. of hunters<br>% of hunters | Num. of hunters<br>% of hunters | Num. of hunters<br>% of hunters | Num. of hunters<br>% of hunters |
| Project area | 9 | 2 | 1 | 6 | 1 | 2 | 1 |
| | *69,2%* | *15,4%* | *7,7%* | *46,2%* | *7,7%* | *15,4%* | *7,7%* |
| Nakra valley | 4 | 0 | 1 | 4 | 0 | 0 | 0 |
| | *57,1%* | *0,0%* | *14,3%* | *57,1%* | *0,0%* | *0,0%* | *0,0%* |
| Nenskra valley | 5 | 2 | 0 | 2 | 1 | 2 | 1 |
| | *83,3%* | *33,3%* | *0,0%* | *33,3%* | *16,7%* | *33,3%* | *16,7%* |
| Nenskra Left Bank | 3 | 2 | 0 | 1 | 1 | 2 | 0 |
| | *100,0%* | *66,7%* | *0,0%* | *33,3%* | *33,3%* | *66,7%* | *0,0%* |
| Nenskra Right Bank | 2 | 0 | 0 | 1 | 0 | 0 | 1 |
| | *66,7%* | *0,0%* | *0,0%* | *33,3%* | *0,0%* | *0,0%* | *33,3%* |

## 2.3.10 Remittances

13 households (3.7%) declared they receive remittances periodically from relatives living elsewhere in Georgia or abroad (Table 40). The periodicity of remittance payments varies from once a year (5 cases), through two or three times a year (3 cases), and every 2 months (3 cases) to monthly (2 cases).

Remittances are usually sent through the banking system (11 of 13 cases), with personal intermediaries carrying the funds in only two instances. Amounts send range from 100 US$ to 1,000 €.

**Table 40 - Number of families receiving remittances**

| | Yes | No | No response | Total |
|---|---|---|---|---|
| Project area | 13 | 338 | 2 | 353 |
| | *3.7%* | *95.8%* | *0.6%* | *100%* |
| Nakra area | 2 | 83 | 0 | 85 |
| | *2.4%* | *97.6%* | *0.0%* | *100%* |
| Nenskra area | 11 | 255 | 2 | 268 |
| | *4.1%* | *95.1%* | *0.7%* | *100%* |
| Nenskra Left Bank | 5 | 91 | 0 | 96 |
| | *5.2%* | *94.8%* | *0.0%* | *100%* |
| Nenskra Right Bank | 6 | 164 | 2 | 172 |
| | *3.5%* | *95.3%* | *1.2%* | *100%* |

## 2.3.11 Tourism

Mestia and its surrounding is the most famous touristic destination in Svaneti. The Gamgebeli of Mestia Municipality declared that touristic activities, such as white water rafting, are neither officially organized nor registered. Therefore, statistics regarding touristic activities in the Nenskra and Nakra valley do not exist. The brochure available at the Mestia Tourism information centre lists 14 guesthouses in Nakra, and 14 in Chuberi. But none of the households interviewed in the two valleys declared tourism as a source of income.

In the Nenskra valley, informants declared that during the year preceding the interviews, about 80 to 100 tourists visited the Nenskra Valley. Most of them stayed in guesthouses where visitors rent rooms in private houses; a few people camped out in the area. In the last four years (since 2012) only two tourists have been seen by locals white-water rafting or kayaking in the Nenskra valley. This is probably underestimated; in 2015, SLR observed twice some kayak activities in the Nenskra River downstream of the powerhouse. (Figure 1 in May 2015 Figure 2 in October 2015). Most tourists who camp go to Tita to see the mountains surrounding an old Soviet-era tourist facility that is now in disuse and disrepair but that is near the reservoir area. Some of them hike up the Memuli River, in the Skhvandiri pasture. Some tourists also practice horse riding. The majority of tourists are said to be Russian, and only stay in Nenskra valley for only one night on the way to or from Mestia.

One hotel opened in Tita in 2013. It has welcomed five people in 2013 and about 20 to 30 in 2014, apart from project personnel. In 2015, every time tourists called to book a room, the hotel was fully booked for the project teams.

In the Nakra valley, all informants declared that they have not seen any tourists in the valley for years.

In both valleys, informants declared that tourism was much more developed during the Soviet period and before the closure of the borders with Abkhazia. Some informants declared that at that time, at some point of the year, about 100 tourists could visit each valley in one day.



*Figure 1 - Kayak camp immediately downstream the proposed powerhouse in the Nenskra valley May 2015*



*Figure 2 - Kayak activities downstream the proposed powerhouse in the Nenskra valley October 2015*

### 2.3.12 Mining

Official information (MoE, 2015) on mining concessions indicates that there was only one mining concession in the Project area, which was valid until February 2016. The current status is that there is no mining concession in the Project area. The now discontinued concession had not been developed and no activities in relation to the development of the mine are known to have occurred. The concession was not in the Project area, and was not in an area that would have been negatively impacted.

### 2.3.13 Summary

The economy in project area is essentially agricultural with a strong livestock component for domestic consumption and logging and lumbering for sale in order to buy other needed foodstuffs, articles and services. A number of families also have a member employed either in the civil service of, in the Nenskra valley, with private companies. Other uses of natural resources, such as secondary forest products, beekeeping, fishing, hunting and agricultural processing are much more limited in scope. Finally, a very few families receive remittances from relatives living elsewhere in Georgia or abroad.

## 2.4 Vulnerabilities and gender issues

### 2.4.1 Vulnerable Groups

#### A. Vulnerable households

Households are considered as vulnerable if they possess at least one of the following characteristics:

- Registered as poor in the local social services;
- Women-headed households;
- Elder-headed households (≥ 70 years old) without any other bread-winner in the household;
- Households headed by disabled people.

A total of 150 households are considered as vulnerable in Nakra and Nenskra valleys, as shown in Table 41 below, including 82 woman-headed households.

**Table 41 - Number of vulnerable households**

| | **Vulnerable households** | | **Households under the national poverty line** | | **Woman-headed households** | | **Elderly-headed households without other bread winner** | | **Disabled-headed households** | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Num | *% of HH* | Num | *% of HH* | Num | *% of HH* | Num | *% of HH* | Num | *% of HH* |
| Nakra | 41 | *46%* | 27 | *31%* | 12 | *14%* | 10 | *12%* | 1 | *1%* |
| Nenskra | 109 | *41%* | 51 | *19%* | 70 | *26%* | 13 | *5%* | 7 | *3%* |
| Project Area | 150 | *42%* | 78 | *22%* | 82 | *23%* | 23 | *7%* | 8 | *2%* |

Forty-three of the interviewed households declared that at least one of their members is receiving a refugee allowance. These refugees are internally displaced people that arrived in the Nenskra and Nakra valleys following the Abkhazian conflict in the early 1990s. They are Svan and have settled in the local communities, with whom they had kinship ties. Those who are affected by the land acquisition process (see Vol.9 LALRP) will benefit from livelihood

restoration packages, as is the case for any other affected vulnerable people. It is important to emphasise that the project will not contribute to any existing or potential vulnerabilities.

More than a fifth of all households in the project area (78 of 353 or 22%) report receiving Poverty allowance and being officially registered as being under the national poverty line (Table 42). This is above the national average, which was 11% in 2014 (National Statistics Office of Georgia, 2015), but below typical values for remote mountainous areas where poverty can be as high as 50% (ADB, 2014).

In Georgia, the poverty line is determined as a result of calculations including production, consumption, and cash income and assets valuation. These calculations are based on demographic census. The households with the lowest rating are officially registered as extremely poor and receive subsistence allowance. The estimations (rating calculations) are conducted by the Social Services Agency and the rating data is registered. Because of the way that the relative poverty is calculated there is no official poverty line expressed in GEL per day. However, when taking into account that in 2010 the percentage of the population living with less than 2 and 1.25 USD per day was 35.6% and 18% respectively (ADB, 2014), it can be estimated by extrapolation that the relative poverty line is probably in the order of 1 USD per day (2.5 GEL per day).

Seventy percent of officially 'poor' households are headed by men and 30% are headed by women. However, proportionately more of the women-headed households (21 of 82 or 25%) are poorer than male-headed households (55 of 271 or 20%).

There are 36 such families in the two valleys that declared having at least one disabled member, 70% are headed by a male (25 of the 36) and 30% are headed by a woman (11 of the 36).

Table 42 below summarizes the number of vulnerable households having at least of disable member, by gender of head of household, in the project areas.

**Table 42 - Number of poor households and severely vulnerable households**

| | Total number of HH having at least one disabled member | Number of woman headed HH under Poverty line | Number of man headed HH under Poverty line | Number of woman headed HH under poverty line having at least one disable member | Number of man headed HH under poverty line having at least one disable member |
|---|---|---|---|---|---|
| Project Area | 36 | 21 | 55 | 4 | 6 |
| Nakra | 3 | 2 | 23 | 0 | 2 |
| Nenskra | 33 | 19 | 32 | 4 | 4 |

The income sources of vulnerable households are less likely to be coming from salary in the public service (e.g. school teacher), logging or agriculture than the average, as shown in Table 43 below. They are also more dependent on State pension or allowances, and are less likely to receive regular remittances from family members.

**Table 43 – Income sources of vulnerable households**

| | | Permanent salary in the public service | salary in a private company | Pension/ all allowances | Regular remittance (money send by family member or relative on a regular basis) | Renting land | Agriculture | Logging | Lumbering | Secondary forest products | Processed food (jam, baked goods…) | Craftworks | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All HH | N | 94 | 39 | 230 | 20 | 4 | 114 | 23 | 16 | 9 | 7 | 4 | 10 |
| | *%* | *27%* | *11%* | *65%* | *6%* | *1%* | *32%* | *7%* | *5%* | *3%* | *2%* | *1%* | *3%* |
| Vulnerable HH | N | 18 | 13 | 131 | 7 | 3 | 36 | 5 | 4 | 6 | 1 | 2 | 2 |
| | *%* | *12%* | *9%* | *88%* | *5%* | *2%* | *24%* | *3%* | *3%* | *4%* | *1%* | *1%* | *1%* |
| Man headed vulnerable HH | N | 6 | 5 | 59 | 2 | 1 | 20 | 3 | 2 | 6 | 1 | 1 | 1 |
| | *%* | *9%* | *8%* | *91%* | *3%* | *2%* | *31%* | *5%* | *3%* | *9%* | *2%* | *2%* | *2%* |
| Woman headed vulnerable HH | N | 12 | 8 | 72 | 5 | 2 | 16 | 2 | 2 | 0 | 0 | 1 | 1 |
| | *%* | *15%* | *10%* | *88%* | *6%* | *2%* | *20%* | *2%* | *2%* | *0%* | *0%* | *1%* | *1%* |

Ownership of cows as well as use of summer pastures tend to be correlated to wealth, as shown in Table 44 and Table 45 below. Vulnerable households tend to own less cows, less horses, less pigs than average. They also declared less often during the socioeconomic surveys that they were taking their livestock in the summer pastures.

**Table 44 – Livestock ownership and use of the summer pastures by vulnerable households**

| | HH does not own any animal | | HH does not use summer pastures | | HH do use summer pastures | | Total | |
|---|---|---|---|---|---|---|---|---|
| | N | *%* | N | *%* | N | *%* | N | *%* |
| All HH | 44 | *12.5%* | 82 | *23.2%* | 227 | *64.3%* | 353 | *100%* |
| Vulnerable HH | 27 | *18%* | 43 | *29%* | 80 | *53%* | 150 | *100%* |
| Man headed vulnerable HH | 10 | *15%* | 17 | *25%* | 41 | *60%* | 68 | *100%* |
| Woman headed vulnerable HH | 17 | *21%%* | 26 | *32%%* | 39 | *47%* | 82 | *100%* |

**Table 45 - Types of livestock owned by vulnerable households**

| | Cattle | Horse or donkey | Pigs | Sheep | Poultry |
|---|---|---|---|---|---|
| All HH | 3.9 | 0.4 | 0.8 | 0.1 | 5.6 |
| Vulnerable HH | 2.6 | 0.2 | 0.5 | 0.0 | 4.1 |
| Man headed vulnerable HH | 2.7 | 0.3 | 0.7 | 0.0 | 3.2 |
| Woman headed vulnerable HH | 2.5 | 0.2 | 0.4 | 0.0 | 4.9 |

## 2.4.2 Vulnerable households affected by the Project

The vulnerable households described in the previous paragraphs will be directly affected by the Project land acquisition or disproportionally affected by the other impacts of the Project, because of their vulnerabilities.

### 2.4.2.1 Vulnerable households affected by land acquisition

The first impact is related to the Project land acquisition process, which will affect 29 vulnerable households, including 10 woman-headed households. The distribution of these vulnerable households by vulnerability criteria is presented in the Table 46 below. Their impacts and income sources declared during the interviews are then presented in Table 47.

- Thirteen vulnerable households (6 women-headed) are affected by the upgrading of the Nenskra road and will lose strips of non-productive land along the road, fences and 2 structure and some trees. The impact on their incomes and livelihoods is considered as not significant.
- Eleven vulnerable households (2 woman-headed) will temporarily lose access to a pasture area at the Nakra water intake site during the construction period. The impact on their incomes and livelihoods is considered as not significant.
- Five vulnerable households (2 woman-headed) will lose access to pasture areas at the Nenskra dam & reservoir site. The impact on their incomes and livelihoods is considered significant for the 4 vulnerable households (2 woman-headed) affected by temporary loss of pasture at the Dam construction camp during construction; and severe for one household affected by permanent loss of pasture in the Nenskra reservoir.

Forty-three of the interviewed households stated that at least one of their members receives a refugee allowance. These refugees are internally displaced people that arrived in the Nenskra and Nakra valleys following the Abkhazian conflict in the early 1990s. They are Svan and have settled in the local communities, with whom they had kinship ties. Five of these families are affected by the land acquisition process (see Vol.9 LALRP). There are also five households affected by the Project land acquisition that include at least one IDP through marriage. Therefore, in total there are 10 households affected by the Project land acquisition that include at least one IDP. Only those IDPs who are affected will benefit from livelihood restoration packages as is the case for any other affected vulnerable people. It is important to emphasise that the project will not contribute to any existing or potential vulnerabilities

These impacts are described, assessed and mitigated in the Vol. 9 Land Acquisition and Livelihood Restoration Plan.

**Table 46 - Vulnerable households affected by the land acquisition process**

| Vulnerability category | Number of affected households |
|---|---|
| Total vulnerable households | 29 |
| Total households receiving poverty allowance | 17 |
| Total woman headed households | 10 |
| Total elder-headed households without any other bread-winner in the household | 7 |
| Total disabled headed households[14] | 1 |

[14] Only one vulnerability criteria applies to this household, it is not woman-headed neither registered as poor.

**Table 47 – Sources of income and losses of the affected vulnerable households**

| Project component | Vulnerability category | Sources of income declared during interviews | | | | | | Structures affected | Crops affected | Trees lost (Num.) | Pasture area |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Salary | Pension | Farming | Ssocial allowances | Renting land | lumbering | | | | |
| Upgrading of Nenskra Road | Registered as poor | X | | X | | | | 1 fence | no | --- | no |
| | Woman headed & elder-headed without any other bread winner | | X | X | | | | 1 fence | no | --- | no |
| | Registered as poor & woman headed & elder-headed without any other bread-winner | | | X | X | | | 1 fence 1 wooden granary + 1 wooden hen coop | no | --- | no |
| | Registered as poor & woman headed | | X | X | X | | | --- | no | --- | no |
| | Registered as poor | | X | X | X | | | 1 fence | no | --- | no |
| | Registered as poor | | X | X | X | | | --- | no | 1 (walnut) | no |
| | Registered as poor | | X | X | X | | | --- | no | 3 (walnut) | no |
| | Registered as poor | | X | X | X | | | --- | no | 1 (walnut) | no |
| | Woman headed | X | X | X | | | | 2 fences | no | 8 (walnut) | no |
| | Registered as poor | X | | X | X | | | 3 fences | no | --- | no |
| | Woman headed & elder-headed without any other bread-winner | X | | X | | | | 1 fence | no | 9 (6 walnut) | no |
| | Woman headed | | X | X | | | | 2 fences | no | 0 | no |
| | Registered as poor | | | X | X | | | 2 fences | no | 13 (6 walnut) | no |
| Nenskra dam & reservoir | Woman headed | | | **X** | | | | --- | no | --- | yes |
| | Woman headed | | **X** | | | | | 1 wooden cabin (shared) | no | --- | yes |
| | Registered as poor | | | X | X | | | 1 wooden cabin + 1 fence (shared) | no | --- | yes |
| | Elder-headed without any other bread winner | | X | X | | | | 1 wooden cabin (shared) | no | --- | yes |
| | Disabled head of household | | X | | | | | 1 wooden cabin (shared) | no | --- | yes |
| Nakra weir and water intake | Registered as poor | | | **X** | | | | --- | no | --- | yes |
| | Registered as poor | X | | X | X | | | --- | no | --- | yes |
| | Registered as poor | X | X | X | | | | --- | no | --- | yes |
| | Registered as poor | | | X | X | | | --- | no | --- | yes |
| | Woman headed | | | **X** | | | | --- | no | --- | yes |
| | Registered as poor | | X | | | | | --- | no | --- | yes |

| Project component | Vulnerability category | Sources of income declared during interviews | | | | | | Structures affected | Crops affected | Trees lost (Num.) | Pasture area |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Salary | Pension | Farming | Social allowances | Renting land | lumbering | | | | |
| | Elder-headed without any other bread-winner | | | X | | | | --- | no | --- | yes |
| | Registered as poor +& woman-headed | | X | | X | | X | --- | no | --- | yes |
| | Registered as poor | X | | | | | | --- | no | --- | yes |
| | Registered as poor | | X | | | X | | --- | no | --- | yes |
| | Elder-headed without any other bread-winner (seasonal resident) | | x | | | | | --- | no | --- | yes |

The mitigation measures defined for the households affected by the land acquisition will be applied to these vulnerable households (see section 4.2 and Vol.9 LALRP). These measures are:

- Avoidance or at least minimization of physical and economic displacement, and
- Development and implementation of a Land Acquisition and Livelihood Restoration Plan in compliance with the Lenders policies.

In addition, the vulnerable households affected by land acquisition will receive an allowance for vulnerability, they will benefit from specific consultations activities in order to better understand impacts and mitigation opportunities specifically related to them. They will also receive specific assistance to benefit from activities implemented as part of the Community Investment Plan, which is a benefit sharing mechanism defined by the Project (see section 3.5 below and Vol.8 – ESMP).

### 2.4.2.2 Other potential impacts on vulnerable groups

Other vulnerable groups might be disproportionately impacted by the Project, because they will be more sensitive to the negative impacts or because their vulnerabilities will prevent them from benefiting equally from community development activities. These vulnerable groups are:

- Children,
- Elderly,
- Illiterate persons (6 individuals older than 10 in Nenskra and Nakra valleys identified during the socioeconomic surveys),
- Disabled persons (30 individuals identified during the socioeconomic surveys in Nenskra and Nakra valleys), and
- Women (notably in regards to employment opportunities and registration of customary lands inherited from families).

Regarding risks related to traffic management (see section 6.2) the children are a population that may be more at risk than the rest of the population. The mitigation measures include specific activities targeting children. For example, specific safety measure for schools will be included in the Traffic Management Plan. The awareness campaigns on traffic related risks will also include specific activities targeting children.

In order to ensure that the vulnerable groups can participate to the consultation and engagement activities conducted with the local communities, the following measures will be implemented.

- Disabled persons and elderly persons who may have difficulties to attend public meetings when they are not living in the centre of the villages. Before each public meeting, The Community Liaison Officers (CLOs) will contact them and organize series of specific ad-hoc meetings closer to their residences to explain them the Project impacts, mitigation s measures and environmental and social commitments.
- Children or illiterate persons might also have difficulties to understand the information conveyed during the consultation processes, because of the technical nature of the information or because they do not understand written information. JSCNH Social Team will develop specific information materials with the support of JSCNH Communication specialist. These materials will be design so that they can convey information in a non-technical and non-written manner (poster, pictures, videos or any other appropriate support). They will be made publicly available at the Project Public Information Centre in Chuberi.

To ensure that vulnerable people can equitably benefit from the opportunities offered by the project, the following measure have been defined.

- A non-discrimination and equal opportunity policy will be developed by the Project, through a Technical Cooperation programme to be designed and implemented for youth and gender inclusion,
- A target have been defined for the EPC contractor (see section 7.3.3) for the employment of women, both in terms of numbers and skills/decision making.
- Vulnerable people will also receive a specific attention during the implementation of the Community investment Programme. They will benefit from investment in community infrastructure, but the will also be specifically consulted to explain the possibilities offered by the Community Investment Programme (see Vol. 8 ESMP) at a household level and define how they can use these possibilities. In particular, in order to improve their living standards, they will be eligible to any activities offered by the CIP to improved their existing economic activities or develop new income generating activities.
- Vulnerable households that are not affected by the Project land acquisition will also benefit from this specific assistance.

## 2.4.3 Social organisation and women's position

### 2.4.3.1 Residence and women-headed households

The local communities are patri or neo-local with regard to residence. That is, the wife moves to husband's family's compound or the family builds a house in a new location.

Despite the theoretical residence pattern, a significant percentage of households are headed by women – 82 HHs (23% of the 353 permanent HHs: see

Table 48). The average size of women-headed households, however, is about the same – and often slightly smaller – than that of male-headed HHs once the fact that one spouse is not present is taken into account.

**Table 48 - Number of households headed by women and men, average family size of each**

| Community | Number | Number of Women | Number of Men | Average number of | Average number of | Average number of |
|---|---|---|---|---|---|---|

| | of HH | headed HH | headed HH | people per HH | people per woman headed HH | people per man headed HH |
|---|---|---|---|---|---|---|
| Project Area | 353 | 82 | 271 | 4.1 | 3.1 | 4.6 |
| Nakra | 85 | 10 | 65 | 3.5 | 2.5 | 3.7 |
| Nenskra | 268 | 72 | 196 | 4.2 | 3.2 | 4.3 |

All the woman-headed households are headed by widowed women. Hence, they women heads-of-household are poorer than married women, because they often lack social support. For example, during the women's focus group in Naki, the three housewives were asked how frequently that visited the regional cities of Zugdidi and Mestia. One lady, a married teacher who drove to the focus group meeting in her car, had been to Zugdidi three times and to Mestia once in the past three months. A second lady now lives with her husband in temporary quarters since their house burned down last year and who had lost her poverty allowance, had been to Mestia only once in the past year. And the third lady, who had lost both her husband and her son and who said she lacked the money necessary to see a doctor, had not been out of Naki in the last three years.

### 2.4.3.2 Inheritance and women rights

The local communities are patrilineal, that is, property downs the male line[15], with exceptions. The eldest male typically inherits the family farm, including the house, its furnishings and agricultural equipment. A father may, upon his death, provide a small plot to any female children; however, these plots are smaller than those provided to his sons. Traditionally, should a man die without sons, his property was inherited by his brother's or father's brother's family. Female relatives were not given any property, and the heirs were obliged to provide for them (Tuite, 2007).

However, women may traditionally inherit property under certain conditions. An unmarried woman without male siblings will inherit the family farm. And, a widow will inherit the property which will pass upon her death to her children, the eldest male if there is a son or an unmarried daughter if there is not. Unmarried adult daughters usually live with their parents, as do married brothers. In such instances, the brother will inherit the land or estate of the parents.

### 2.4.3.3 Women's occupations

Educated women work as teachers or nurses (Table 49). Those who work at home tend the house garden, make cheese, preserve fruits and vegetable and make a few craft goods (Svanish hats, socks). The women sell their products in the regional market. The proceeds from these sales typically go into a common family budget.

Women contribute to the household budget through a number of activities. Women milk the cows, and make the cheese and butter, some of which they may sell (see Section 2.3.7 above). They also put up fruit as conserves. They buy salt in regional centres and add wild herbs both for home consumption and for sale. And, they may knit Sveti caps and/or wool socks. There are fewer sheep kept today than in the past, due in part to the time-consuming tasks of shearing and spinning. Women today prefer to buy the yarns needed if they want to produce these goods. Women did mention that their men tend to bring friends home and they, the women, have to serve them food and refreshment without prior notice.

[15] As elsewhere in Svaneti, local people inherit land and property from father to sons (Koehler, Jan (2000)

### 2.4.3.4 Household equipment

Household possessions are relatively modern and widespread. All houses have electricity and running water. Almost all families in both valleys have a mobile phone and a television (Table 50 below). Local houses are also typically equipped with various electrical appliances, such as refrigerators (300 HH or 85%), washing machines (254 HHs or 72%) and microwave ovens (92 or 26%). However, most cooking is still done on wood stoves. Many families also have computers (149 HHs or 42%), as well as satellite antennae (150 or 42%). Other entertainment devices are relatively rare (radios: 17 HH or 5% of all families; music centres, 3 HH or 1%).

As for transport, 122 families (35%) own a car, but few in this mountainous area own a bicycle (43 or 12%) or a motor scooter (18 or 5%). As for lighting, about a third of the families still have a kerosene lantern (100 HH or 28%), but only one family has an electric generator.

There are some striking differences between the two valleys. For example, families in the Nenskra valley are more likely to have a satellite antennae or a microwave, neither of which is reported in the Nakra valley. LPG connections or gas cylinders are much less common in the Nakra valley than in the Nenskra valley (19% vs. 27% of the HHs, respectively). And various forms of transportation are less common (bicycles 7% vs 14% respectively; motor scooters, 1% vs. 6%, respectively). These differences for the most part reflect the topography and greater relative isolation of the Nakra valley.

### 2.4.3.5 Domestic violence

Women in the Project area who have been asked, have reported that domestic violence is not a concern, even in winter when families are snowed in. No case of wife abuse in either of the two valleys has ever been reported to the police.

**Table 49 – Men and women's occupations for individuals aged over 16**

| | Farmer | | Lumberman | | Housewife | | Civil servant | | Merchant or shopkeeper | | Employee | | Part-time /temporary employment | | Retired | | student | | Other | | No occupation | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F |
| Project Area | 231 | 66 | 78 | 5 | 7 | 173 | 58 | 70 | 1 | 6 | 6 | 2 | 10 | 3 | 59 | 112 | 16 | 16 | 11 | 10 | 87 | 64 | 557 | 527 |
| | *41%* | *13%* | *14%* | *1%* | *1%* | *33%* | *10%* | *13%* | *0%* | *1%* | *1%* | *0%* | *2%* | *1%* | *11%* | *21%* | *3%* | *3%* | *2%* | *2%* | *16%* | *12%* | *100%* | *100%* |
| Nakra | 48 | 10 | 0 | 0 | 0 | 31 | 26 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 28 | 4 | 4 | 2 | 1 | 21 | 7 | 121 | 101 |
| | *40%* | *10%* | *0%* | *0%* | *0%* | *31%* | *21%* | *20%* | *0%* | *0%* | *0%* | *0%* | *0%* | *0%* | *17%* | *28%* | *3%* | *4%* | *2%* | *1%* | *17%* | *7%* | *100%* | *100%* |
| Nenskra | 183 | 56 | 78 | 5 | 7 | 142 | 32 | 50 | 1 | 6 | 6 | 2 | 10 | 3 | 39 | 84 | 12 | 12 | 9 | 9 | 66 | 57 | 436 | 426 |
| | *42%* | *13%* | *18%* | *1%* | *2%* | *33%* | *7%* | *12%* | *0%* | *1%* | *1%* | *0%* | *2%* | *1%* | *9%* | *20%* | *3%* | *3%* | *2%* | *2%* | *15%* | *13%* | *100%* | *100%* |
| Nenskra Right Bank | 106 | 30 | 59 | 4 | 4 | 93 | 22 | 33 | 1 | 6 | 3 | 0 | 6 | 1 | 24 | 48 | 9 | 9 | 6 | 8 | 48 | 43 | 284 | 275 |
| | *37%* | *11%* | *21%* | *1%* | *1%* | *34%* | *8%* | *12%* | *0%* | *2%* | *1%* | *0%* | *2%* | *0%* | *8%* | *17%* | *3%* | *3%* | *2%* | *3%* | *17%* | *16%* | *100%* | *100%* |
| Nenskra Left Bank | 77 | 26 | 19 | 1 | 3 | 49 | 10 | 17 | 0 | 0 | 3 | 2 | 4 | 2 | 15 | 36 | 3 | 3 | 3 | 1 | 18 | 14 | 152 | 151 |
| | *51%* | *17%* | *13%* | *1%* | *2%* | *32%* | *7%* | *11%* | *0%* | *0%* | *2%* | *1%* | *3%* | *1%* | *10%* | *24%* | *2%* | *2%* | *2%* | *1%* | *12%* | *9%* | *100%* | *100%* |

## Table 50 - Household furnishings

| | Mobile phone/telephone | Television | Refrigerator | Washing machine | Satellite antenna | Computer | Car | Kerosene lantern | Electronic/Microwave oven | L.P.G Connection/ Gas Cylinder | Bicycle | Tractor | Motor cycle / scooter | Radio | Truck | Musical centre | Joiner's bench |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Project Area | 335 | 334 | 300 | 254 | 150 | 149 | 122 | 100 | 92 | 88 | 43 | 22 | 18 | 17 | 8 | 3 | 2 |
| | *95%* | *95%* | *85%* | *72%* | *42%* | *42%* | *35%* | *28%* | *26%* | *25%* | *12%* | *6%* | *5%* | *5%* | *2%* | *1%* | *1%* |
| Nenskra | 252 | 254 | 229 | 204 | 150 | 117 | 93 | 79 | 92 | 72 | 37 | 18 | 17 | 12 | 7 | 3 | 1 |
| | *94%* | *95%* | *85%* | *76%* | *56%* | *44%* | *35%* | *29%* | *34%* | *27%* | *14%* | *7%* | *6%* | *4%* | *3%* | *1%* | *0%* |
| Nenskra Right Bank | 163 | 161 | 147 | 136 | 103 | 76 | 62 | 45 | 71 | 47 | 24 | 13 | 13 | 8 | 6 | 2 | 1 |
| | *95%* | *94%* | *85%* | *79%* | *60%* | *44%* | *36%* | *26%* | *41%* | *27%* | *14%* | *8%* | *8%* | *5%* | *3%* | *1%* | *1%* |
| Nenskra Left Bank | 89 | 93 | 82 | 68 | 47 | 41 | 31 | 34 | 21 | 25 | 13 | 5 | 4 | 4 | 1 | 1 | 0 |
| | *93%* | *97%* | *85%* | *71%* | *49%* | *43%* | *32%* | *35%* | *22%* | *26%* | *14%* | *5%* | *4%* | *4%* | *1%* | *1%* | *0%* |
| Nakra | 83 | 80 | 71 | 50 | 0 | 32 | 29 | 21 | 0 | 16 | 6 | 4 | 1 | 5 | 1 | 0 | 1 |
| | *98%* | *94%* | *84%* | *59%* | *0%* | *38%* | *34%* | *25%* | *0%* | *19%* | *7%* | *5%* | *1%* | *6%* | *1%* | *0%* | *1%* |
| Male headed HH (Project Area) | 262 | 260 | 235 | 201 | 115 | 119 | 101 | 71 | 75 | 76 | 34 | 19 | 16 | 15 | 6 | 3 | 2 |
| | *97%* | *96%* | *87%* | *74%* | *43%* | *44%* | *37%* | *26%* | *28%* | *28%* | *13%* | *7%* | *6%* | *6%* | *2%* | *1%* | *1%* |
| Women Headed HH (Project Area) | 73 | 74 | 65 | 53 | 35 | 30 | 21 | 29 | 17 | 12 | 9 | 3 | 2 | 2 | 2 | 0 | 0 |
| | *89%* | *90%* | *79%* | *64%* | *42%* | *36%* | *25%* | *35%* | *20%* | *14%* | *11%* | *4%* | *2%* | *2%* | *2%* | *0%* | *0%* |
| HH under poverty line (Project area) | 57 | 59 | 41 | 37 | 22 | 18 | 7 | 14 | 5 | 7 | 5 | 2 | 1 | 1 | 0 | 0 | 2 |
| | *73%* | *75%* | *52%* | *47%* | *28%* | *23%* | *9%* | *17%* | *6%* | *9%* | *6%* | *2.5%* | *2%* | *1%* | *0%* | *0%* | *2.5%* |

## 2.5 Community infrastructure

Both the Nenskra and the Nakra River valleys are relatively isolated. As a result, public services other than schools are relatively wanting. There is no public transportation. The health clinics provide only the most basic services, described by the locals as 'first aid.' There are very few shops and no repair services in Chuberi and none in Naki. There are communal corn mills that are powered by streams, various churches and priests, dilapidated town halls, and basic recreational facilities in each community. This section details that community infrastructure.

### 2.5.1 Transport

#### A. Nenskra valley (Chuberi)

Privately owned minivans provide transport to and from Chuberi for those who do not own their own vehicle. A van goes every day to Zugdidi (a trip of about one hour); the fare one way is GEL 10. Another van goes to Mestia (a trip just under two hours); the fare is also GEL 10. And a van goes twice a week to Tbilisi (approximately an 8 hour trip); the fare one-way is GEL 25. Cargo is extra. If a group needs to go somewhere, they can charter a van.

#### B. Nakra valley (Naki)

There is no public transport in or out of Naki. People who do not own vehicles either hitch a ride with a neighbour who has a car or they walk down to the main highway (4 km distant) to catch one of the minivans that plies that route.

### 2.5.2 Traffic

#### A. Nenskra valley (Chuberi)

The head of Chuberi village estimates that before the project started, there were around 40 vehicles per day crossing the centre of Chuberi. Now that the project has started, she estimates that this number has raised to about 50 to 60 vehicles per day.

Vehicles used are minivans or minibuses, trucks, tractors, 4 WD vehicles, cars, and a few motorbikes (see Photo Sheet 6).

#### B. Nakra valley (Naki)

In Nakra valley, daily traffic consists solely of displacements of the inhabitants. The means of transport are the same as in Nenskra valley.



*Road and vehicles in the centre of Chuberi (06/11/2015)*



*Tractor in Nakra (08/11/2011)*



*Minibus in Nenskra valley (06/11/2015)*



*Six wheels drive truck in Nakra (08/11/2015)*

*Photo Sheet 6 – Roads and means of transport*

Nenskra Dam and Reservoir

Powerhouse and Switchyard

N

WGS 84 UTM 38 N

0 0.5 1 2 km

Nenskra

Okrila

Tita

Sgurishi

Kari

Zeda Marghi

Devra

Letsperi

Kvemo Marghi

Lekalmakhi

Kedani

Lakhani

Jorkvali

Kveda Ipari

Enguri

Darchi-Ormeleti

Lukhi

Tobari

Khaishi

Skordzeti

2701 m

3257 m

2084 m

2203 m

1842 m

2927 m

2004 m

3584 m

3139 m

## Legend

- Mineral Spring
- Shop
- Corn Mill
- Health Center
- Kindergarten
- School
- Police
- Project Infrastructure
- Road
- Reservoir

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**Map n° 2-5**
**Nenskra - Community Infrastructure**

Scale: 1:60,000 @ A3

Date: FEBRUARY 2017

File n°901.6.2_ES Nenskra_Community_Infrastructure_V06Feb2017
SOURCE: L_6768-B-GE-GE-GE-DW-003_003
L_6768-B-GE-PH-GE-DW-001_001
L_6768-B-UW-HR-GE-DW-001_001
L_6768-B-UW-TT-GE-DW-001_001

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284000 286000 288000 290000

4778000 4776000 4774000 4772000 4770000

N

WGS 84 UTM 38 N

0 0.25 0.5 1 km

Transfer Tunnel

Nakra Intake

Lenkvashi

Anili

Kvitsani

Nakra

Latsomba

Shtikhiri

Nakra

Enguri

Khorkhvashi

## Legend

- Mineral Spring
- Shop
- Corn Mill
- Health Center
- Kindergarten
- School
- Police
- Road
- Project Infrastructure
- Rivers
- Reservoir

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap

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Volume 3 - Social Impact Assessment

**Map n° 2-6**
**Nakra - Community Infrastructure**

| Scale | Date |
|---|---|
| 1:25,000 @ A3 | FEBRUARY 2017 |

File n°901.6.2_ES Nakra_Community_Infrastructure_V06Feb2017
SOURCE: L_6768-B-GE-GE-GE-DW-003_003
L_6768-B-GE-PH-GE-DW-001_001
L_6768-B-UW-HR-GE-DW-001_001
L_6768-B-UW-TT-GE-DW-001_001

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## 2.5.3 Schools

State schools are present in both valleys, and there is not any private school in the Nenskra and Nakra valleys. As elsewhere in Georgia, the Public School System is free and the courses are given in Georgian language. There is not any course in Svan language.

### A. Nenskra valley (Chuberi)

There are two schools in Chuberi, one in Letsperi and one in Kari, both on the right bank (see Map 2-5 page 72). Both schools are first to twelfth grade (primary and secondary schools). There are 98 students and 17 teachers (one full time) at Letsperi and 67 students and 15 teachers (one full time) at Kari. (In Georgia, teachers with topical specialties rotate among schools on a regular schedule, so there are many more teachers than there might otherwise be working at a school.) Students attending Kari come from LariLari, Sgurishi, Kari and Zemo Marghi. The students attending Letsperi come from the other communities.

In Letsperi, the school director estimated that around 10 or 15 years ago, the school had up to 250 pupils, but this number has decreased to less than 100 in year 2015, as shown in Table 51 below. The school director explained this decrease by the out-migration of the inhabitants of the valley. The sex ratio however was estimated to be almost similar, with slightly more boys than girls. In Kari, the number of pupils has been more stable over the last years, as shown in Table 52. There are 12 classes in both Letsperi and Kari schools.

**Table 51 – Number of pupils in Letsperi School**

| Year | Number of pupils | Number of boys | Number of girls |
|---|---|---|---|
| 2015-2016 | 98 | 50 | 48 |
| 2014-2015 | 103 | 53 | 50 |
| 2013-2014 | 117 | Not available | Not available |
| 2012-2013 | 134 | Not available | Not available |

**Table 52 – Number of pupils in Kari school**

| Year | Number of pupils | Number of boys | Number of girls |
|---|---|---|---|
| 2015-2016 | 67 | 31 | 36 |
| 2014-2015 | 64 | Not available | Not available |
| 2013-2014 | 61 | Not available | Not available |
| 2012-2013 | 65 | Not available | Not available |

The school buildings are tremendously dilapidated. In Kari, wooden floors are rotten, windows are broken. There is no sanitary facility for the students. In fact, the situation is so dire that not only did one (male) informant voluntary bring up the matter, but also the teachers were working to replace floors and generally rehabilitate the building (See Photo Sheet 7).

In the past year the Government has donated a minivan to each school so children do not have to walk long distances to school in winter. The minivan picks up children who live beyond, approximately, a 0.5 km radius of the school. Of course, there are winter days when snow prevents the minivan from operating. And, too, given the state of the road and the strapped local budget for schools, there is a question about how long the minivans will be able to operate.

The general population appreciates the quality and dedication of the teachers. Importantly, almost all of the teachers come from, and reside in, the project area.

*Photo Sheet 7 – Schools in the project area*



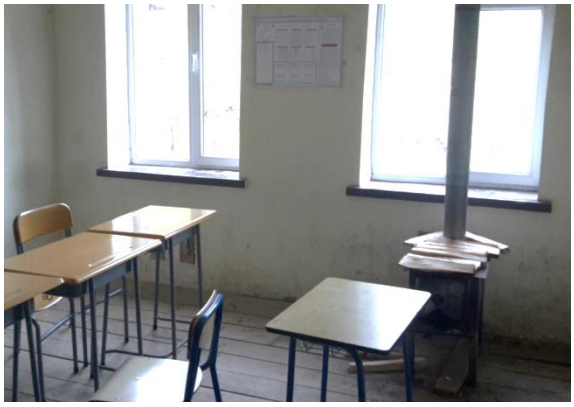
*Letsperi school (04/11/2015)*



*Classroom in Letsperi school (04/11/2015)*



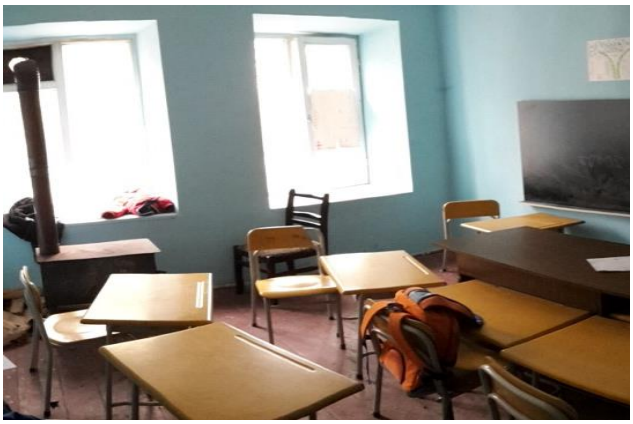
*Kari school (05/11/2015)*



*Classroom in Kari school (05/11/2015)*



*Nakra school (09/11/2015)*



*Classroom in Nakra school (09/11/2015)*

### B. Nakra valley (Naki)

There is one school in Naki, with 74 students and 2 teachers (one full time), covering grades one to twelve. As in Chuberi, teachers with a topical specialty rotate among schools and have specific hours at each school. There are 11 classes in Nakra School.

The local school building is dilapidated. However, the local community is building a new kinder garden and will develop a football field in the central area between the kinder garden and town hall.

Also as is the case at Chuberi, the government this year donated a minivan to transport children who live in outlying areas to school. In Naki, some children live 12 to 15 km from the school, so transport is a major consideration, especially in winter.

The villagers are proud of their school and their students. Educational levels are good, and in most years all students in Naki pass the end-of-year exams.

**Table 53 – Number of pupils in Nakra School**

| Year | Number of pupils | Number of boys | Number of girls |
|---|---|---|---|
| 2015-2016 | 74 | 32 | 42 |
| 2014-2015 | 76 | 34 | 42 |
| 2013-2014 | 78 | Not available | Not available |
| 2012-2013 | 80 | Not available | Not available |

## 2.5.4 Health and clinics

### A. Public health profile

No data were available at the local level on public health profile. According to one of the health workers of the Chuberi clinic, people come frequently for cold, rheumatisms, intoxications (food and/or alcohol), injuries caused by axes or chainsaw, and common viruses. Diarrhea is said to be frequent amongst children.

According to data from National Centre for Disease Control and Public Health of Georgia, the public health Profile of the Mestia Municipality corresponds to the general public health profile of the country with two noteworthy exceptions: (i) injuries and accidents and (ii) endocrine diseases.

The incidence of injuries and accidents is high in Mestia municipality compared to the regional and national levels: about 5,000 in Mestia for year 2010, against about 3,000 in Samegrelo-Zemo Svaneti region and a bit more than 1,000 at the country level. This might be attributed to the road conditions and to some of the economic activities practices, such as logging. This would corroborate the observations on injuries caused by axes or chainsaw made by the local health worker of Chuberi.

The prevalence of endocrine diseases for 2010 in Mestia Municipality is 4,904 which is more than twice the Samegrelo-Zemo Svaneti region index (2,180) and about 1.3 times the national index (3,377). The high level of endocrine diseases is conditioned by iodine deficiency, which used to be important due to lack of salt in the mountainous areas in the past.

The Mestia municipality is not a malariogenic zone. No local cases of malaria have been recorded in the Municipality during the last 30 years. At present, the National Centre of Disease Control and Public Health is implementing a program of identification of transmitters of malaria and mapping malariogenic zones. No transmitters of malaria have been recorded in the Mestia municipality so far.

## B. Clinics

*Nenskra valley (Chuberi)*

The present clinic has operated for six years. In the Soviet period there used to be a hospital with beds. That service collapsed after Independence, though comprehensive service, including transport, a laboratory, ultrasound and other services, remains the goal of the clinic staff.

The building now used as the clinic formerly was a private home in Letsperi. It has been acquired by Chuberi community with subscriptions from the villagers. The building is in the process of being refurbished. Half of the ground floor, one large room, serves as the administrative office and receiving and treatment area. On the first floor, one room has now been refurbished as a dental office. The other rooms, which will serve as a dispensary, laboratory and patient beds, are still under construction. The facility at present lacks both running water and heat.

The clinic has a nurse who comes three times a week from Zugdidi and two aides. The present staff is sufficient for the low level of services provided, but additional technical staff will be required if, for example, the clinic acquires ultrasound equipment.

The clinic is able to provide basic medical attention, but serious cases are taken by ambulance to Mestia for care. The dentist comes once a week. In addition, there is a family doctor who resides in Chuberi, who can assist the clinic staff when needed.

The health workers also visit in the villages of Chuberi, when people cannot go to the clinic. Consultations are free.

According to estimates given by one of the health workers, the average number of patients treated each month in the clinic is about 30 to 40 people, and rarely less than 20.

*Nakra valley (Naki)*

Naki health facility is closed, and opens only for vaccination campaigns. It is located in the centre of Nakra community (see Map 2-5 page 72).

For serious cases, the villagers call an ambulance in Mestia, some 55 km away, to come and transport the patient to the hospital there because there is no municipal transport. The ambulance is free-of-charge. If possible, the population prefers to go to Zugdidi or even Tbilisi for treatment.

*Photo Sheet 8 – Health infrastructures*



*Chuberi health facility (06/11/2015)*



*Part of this building is used as the Nakra medical facility (09/11/2015)*

### 2.5.5 Water supply

During the baseline survey, most informants reported that people do not take water directly from the rivers (neither the Nenskra nor the Nakra or their tributaries). However, this was the case about 10 to 15 years ago. Artisanal water supply systems are now used which comprise long plastic pipes that convey groundwater by gravity from nearby springs or seeps to individual houses and which function 24 hours a day, and throughout the year. Some pipes cross the roads, or run along the rivers (see Figure 3).

Only one house declared using a well as water supply. One household in the Nenskra valley was observed where the water supply system connected directly to the Nenskra River. However, in November 2015, the household switched to taking water from a nearby tributary, as they were concerned about the possible changes in the Nenskra River water quality caused by the works at the dam site.

During the summer people still occasionally fetch water for domestic purposes from the rivers using handheld receptacles. This only occurs during the summer season when some of the springs are temporarily dry or have a reduced flow. This is only the case for a few areas in the lower parts of the valleys, mostly near the rivers banks. This period lasts usually one month to one month and a half. Such was the case in August 2015, 2014 and also in 2013 in Lekalmakhe in the Nenskra Valley. Informants declared that the water from the river is not used as drinking water, but only for other domestic purposes. Fetching water in these cases is done manually by the household with handheld recipients.

Two mineral water springs exist near the Nakra and the Nenskra Rivers (see Map 2-5 page 72). They are used only occasionally by local people, for medicinal use. They are not connected to any water supply scheme.

The water quality of the water supply systems and of the mineral water springs have been analysed as part of the water quality baseline in the report Vol. 5 – Hydrological & Water quality Impact assessment. As explained further in Section 6.6, no impacts from the Project on potable and domestic water supply systems are anticipated.



*Figure 3 - Water supply systems in the villages (Chuberi 03/11/2015)*



*Figure 4 – Mineral water springs near the Nenskra River (left) and the Nakra River (right)*

## 2.5.6 Sanitation

The large majority (86%) of the households use latrines, and a minority (6.5%) uses flush toilets, while some 6.5% have both solutions (Table 54). However, there is no wastewater collection and treatment network and household wastewater from latrines and toilets are disposed of with septic tanks and soakaway.

**Table 54 – Sanitation solutions**

| | flush toilet only | latrine only | latrine + flush toilet | other | Total |
|---|---|---|---|---|---|
| Project Area | 22 | 304 | 23 | 4 | 353 |
| | *6.5%* | *86%* | *6.5%* | *1%* | *100%* |
| Nakra | 6 | 78 | 1 | 0 | 85 |
| | *7.1%* | *91.8%* | *1.1%* | *0%* | *100%* |
| Nenskra | 16 | 226 | 22 | 4 | 268 |
| | *6%* | *84.3%* | *8.2%* | *1.5%* | *100%* |
| Nenskra Left Bank | 8 | 75 | 11 | 2 | 96 |
| | *8.3%* | *78.1%* | *11.5%* | *2.1%* | *100%* |
| Nenskra Right Bank | 8 | 151 | 11 | 2 | 172 |
| N | *4.7%* | *87.8%* | *6.4%* | *1.1%* | *100%* |

## 2.5.7 Security, human rights and public order

### A. Human rights

Human rights issues for Georgia and project area are discussed in section 7.6.

There are no cases of forced labour, child labour or attempt to human rights documented in the Project area.

There is no data available on crimes or accidents at a local level.

### B. Public order

In Nenskra valley, local officials note that the traditional approach to dispute resolution through clan elders and religious leaders – and which is typical of all parts of Georgia in including Svaneti - is less effective, and less used, than in the past. Nonetheless, the preference is to settle issues privately.

In Nakra valley, disputes between residents are commonly resolved internally, that is to say the matter is referred to the elders or to religious leaders. When an agreement acceptable to both parties is reached, each litigant swears to abide by the agreement by kissing an icon. It is locally considered shameful to take a case to court.

### C. Police offices

*Nenskra valley (Chuberi)*

One officer in the Khaishi post comes whenever needed. On average, he comes to Chuberi, which is some 15 km distant, about three times every two months, for a maximum of 20 visits in a year. The visits are more frequent in the summer when there are tourists, and are often just to maintain contact with local officials.

There has been one case of murder in the past five years; the perpetrator was suffering from psychological problems and unbalanced, according to locals.

There is a border patrol (customs) unit in the Sgurishi hamlet in the north of the valley.

*Nakra valley (Naki)*

As is the case for Chuberi, one officer in the Khaishi post services Naki who will come for urgent matters when the village is accessible.

There is a border patrol (customs) unit at the north end of Naki. The four officers stationed here are responsible for the territory from Nakra north to the border.

## 2.5.8 Shops and repair services

### A. Nenskra valley (Chuberi)

On the left bank, there is a bakery and shop in Kvemo Marghi (Chuberi centre), and a kiosk. There was a kiosk in LariLari, but it has closed. There are no shops or kiosks in Lekalmakhe, Zemo Marghi and Tita. On the right bank, there is a shop and a kiosk in Letsperi, a small shop in Kari and three kiosks in Sgurishi, but no commercial enterprise in Devra, which is very close to, and effectively part of, Sgurishi. The shops and kiosks sell a very limited array of goods, mostly candies, soda and beer, and small amounts of basic commodities such as sugar and salt.

There are no weekly markets. However, vendors do come to Kvemo Marghi, the administrative centre of Chuberi, about three times a week with basic commodities that they sell out of the back of their minivans. The van(s) arrive in Chuberi centre, park in the central plaza fronting the small municipal building, open the back gate and are open for business. The merchants stay as long as there are sales, and then continue on their route. These itinerant merchants are a form of local market where demand is too weak for a weekly market, yet alone a shop. Otherwise, the people of Chuberi travel to Zugdidi or Mestia for provisions.

There are no repair shops in Chuberi. People make whatever repairs are needed themselves.

### B. Nakra valley (Naki)

There are no shops in Naki. There was a kiosk, but it is now closed for refurbishment. As in Chuberi, Naki residents either go to Zugdidi for their provisions or they buy from an itinerant merchant who comes once a week.

As in Chuberi, there are no repair shops.

*Photo Sheet 9 - Shops*



*Shop in Letsperi (06/11/2015)*



*Kiosk in Kvemo Marghi (06/11/2015)*



*Shop in Kari (05/11/2015)*

### 2.5.9 Corn mills

There are 7 corn mills in Chuberi Village, with one being out of order at the time of the fields studies (November 2015). There are 2 corn mills in Naki Village, one being also out of order. All these corn mills are powered by the flows of tributaries to the Nenskra and Nakra River, except one mill, which is located directly on the Nakra River. It was out of commission during the field studies in November 2015. The mill buildings sit over the stream, and a wooden channel of water is directed onto the fan blades under the mil house, thus turning the grindstone, which is in the mill.

The locations of the corn mills are shown in Figure 5 page 85.

In the Nenskra valley, one mill is adjacent to the main river (in Letsperi village), but is still powered by one of its tributaries. All the other mills are located directly on the tributaries.

A corn mill existed previously on the Nenskra River south of Letsperi community, but it was destroyed during a swelling of the River in 1978. It has not been rebuilt since that.

The corn mills are communal, every family can use them, and they are built and repaired by the communities.

*Photo Sheet 10 - Corn Mills*



*Corn mill in Sgurishi (03/11/2015)*



*Corn mill in Sgurishi (03/11/2015)*

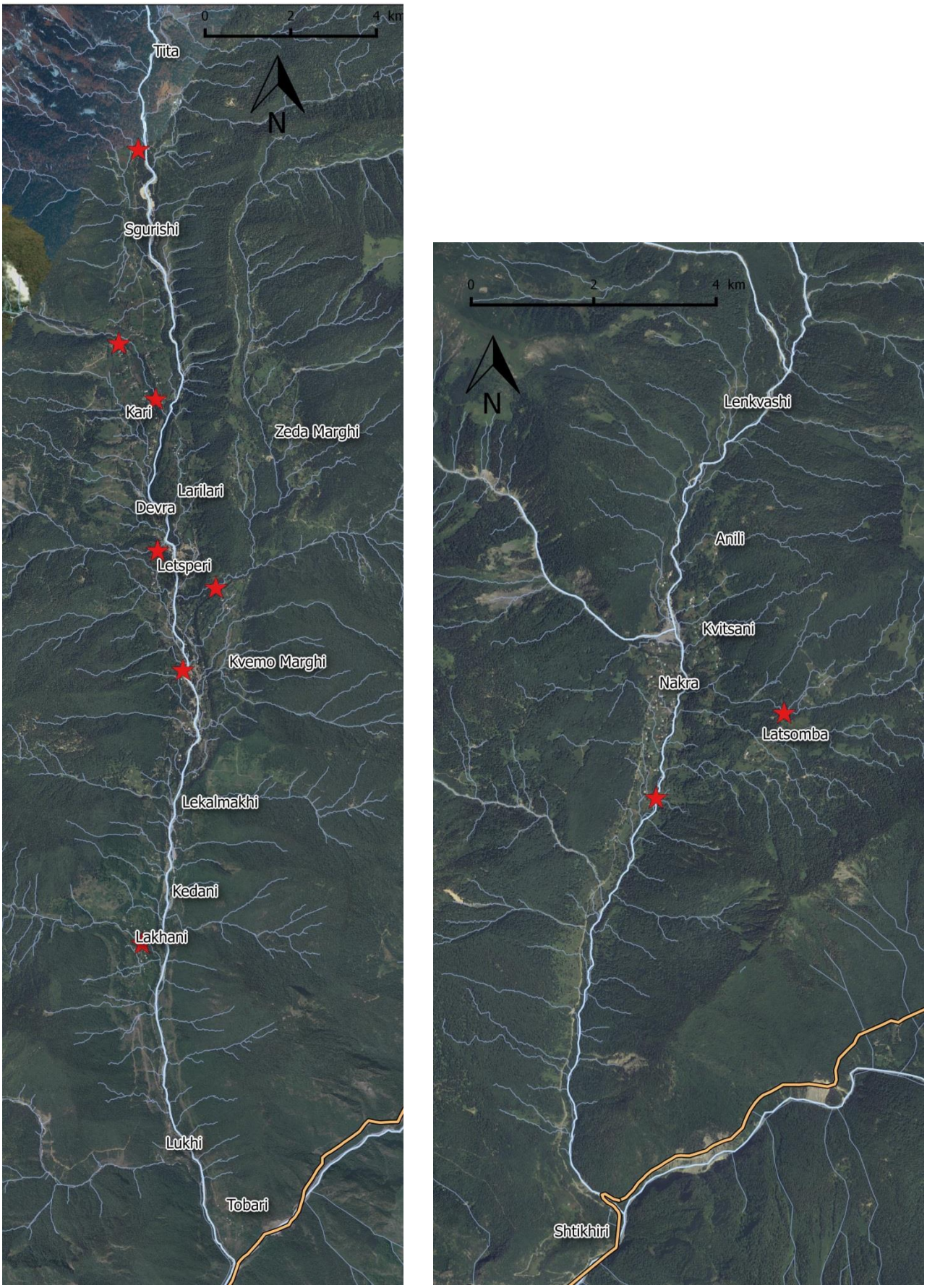


*Corn mill in Nakra (09/11/2015)*



*Corn mill in Naki (03/11/2015)*

*Figure 5 - Corn mills in Nenskra (left) and Nakra (right) valleys*



## 2.5.10 Town hall

The Chuberi town hall is located in Kvemo Marghi. It has four rooms, one of which is a shop, and is in fair condition.

The Naki town hall is in poor condition. The town hall also serves as a first-aid station and local library.

## 2.5.11 Churches

The population in both river valleys is overwhelmingly Orthodox Catholic (Table 55).

**Table 55 - Religious Affiliation**

| | Orthodox<br>Num.<br>(% of interviewed HH members) | Other<br>Num.<br>(% of interviewed HH members) | Total<br>Num.<br>(% of interviewed HH members) |
|---|---|---|---|
| Project Area | 1432 | 16 | 1448 |
| | *(99%)* | *(1%)* | *(100%)* |
| Nakra | 300 | 0 | 300 |
| | *(100%)* | *(0%)* | *(100%)* |
| Nenskra | 1132 | 16 | 1148 |
| | *(99%)* | *(1%)* | *(100%)* |
| Nenskra Left Bank | 391 | 4 | 395 |
| | *(99%)* | *(1%)* | *(100%)* |
| Nenskra Right Bank | 741 | 12 | 753 |
| | *(98%)* | *(2%)* | *(100%)* |

There are two operating churches in Chuberi, one in Lakhani and another in Letsperi. The priest in Letsperi also goes to Lakhani for services.

There are 10 churches in the small community of Naki. A twelfth church has been restored recently, and three operate, that is, have priests who serve the local population.

*Photo Sheet 11 – Churches*



*Church in Nenskra (09/09/2015)*



*Small church in Nakra (09/11/2015)*



*Church in Nakra – front (09/11/2015)*



*Church in Nakra – back (09/11/2015)*

### 2.5.12 Recreational facilities

In the Nenskra valley, there is one football field in Kvemo Marghi, the administrative centre of Chuberi.

In the Nakra valley the Naki village is building a new kindergarten and soccer field at the school ground. There is also a playground at the school, with an indoor volleyball court for the children's exercise periods during winter.

## 2.6 Perceptions and concerns about the Project

### 2.6.1 Women's concerns about the Project

As shown in Table 57 hereafter, the main concern expressed by women during the households' interviews was potential change in the micro-climate conditions, followed by dam safety. During meetings with women who work in the civil service in both Chuberi and Naki, they explained they consider dam safety to be a major issue. By dam safety, they mean the possibility that landslides might block the river and not be washed away by the river because of reduced flow. This concern is presumably greater in the Nakra River valley because some water from the Nakra River will be diverted to the Nenskra reservoir, so there will be less water flow in the Nakra to clear any blockage before the natural dam created by the landslide breaks sending a flood of water downstream. But the concern also arises in the Nenskra River valley because water from the reservoir will be channelled 15 km to the powerhouse, leaving less water in that section of the Nenskra River.

Other concerns raised by women in the village focus groups in September 2015 pertained more to gender-sensitive issues. Maternity is a major issue for women in both villages because there are no facilities in either valley and pregnant women must travel to Zugdidi or Mestia to deliver. Also, women cite difficulties with water supply in winter and the unreliability of electrical supply because the poles are old (the system was installed some 25 years ago) and fall down, interrupting supply.

### 2.6.2 Expressed concerns

During the household survey between September and November 2015, before JSCNH started sharing information on impact mitigations measures with communities, respondents were asked their opinion of the Project. The results are shown in Figure 6 below.

- Positive opinions were expressed by 24% of male respondents and 19% of female respondents that hoped that the Project will hire local people and help to improve local roads and social services.
- 10.5% of male respondents and 8.5% of the women declared they were opposed to the project.
- Half of male respondents and almost 60% of female respondents, although not declaring being opposed to the Project, expressed they were afraid of the Project's impacts, mainly related to natural hazards, community safety, climate change, or loss of water lines or land.
- 6% of male respondents and 3% of female respondents declared that they had a neutral opinion about the Project,
- Some respondents declared that they were lacking appropriate information to have an opinion (2.3% of male and 3.7% of female) and others did not provide any answer (7% of male and 7.5% of female)

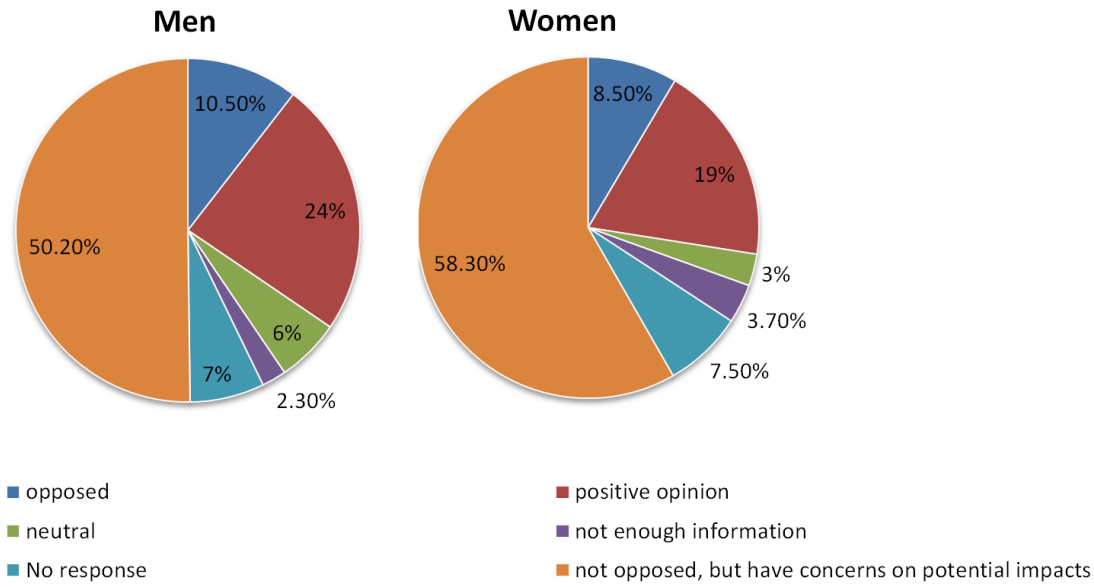



*Figure 6 – Opinions about the Nenskra Project in the Nenskra and Nakra valleys communities*

Respondents were also questioned specifically about their concerns. The fear that the Project could change the local climate was the most frequent issue raised by male and female respondent alike (more than 60%), as shown in Table 56 and Table 57. The second concern was dam safety, cited by almost half of male respondents and by 44% of female respondents. The third most frequent concern cited was loss of water line, and the fourth was loss of pasture and logging rights, followed by disturbance caused by trucks.

**Table 56 - Concerns expressed by men**

| | Change in climate of area | Dam safety | Loss of water line | Loss of pastures or logging rights | Trucks / traffic | Influx of workers/people | water will not be able to wash away the debris | village depopulation | No concern | No answer |
|---|---|---|---|---|---|---|---|---|---|---|
| Project area | 228 | 174 | 128 | 71 | 44 | 18 | 1 | 4 | 40 | 9 |
| | *65%* | *49%* | *36%* | *20%* | *12%* | *5%* | *0.3%* | *1.1%* | *11%* | *3%* |
| Nakra | 49 | 19 | 33 | 18 | 10 | 4 | 1 | 0 | 12 | 2 |
| | *58%* | *22%* | *39%* | *21%* | *12%* | *5%* | *1.2%* | *0%* | *14%* | *2%* |
| Nenskra | 179 | 85 | 95 | 53 | 34 | 14 | 0 | 4 | 28 | 7 |
| | *67%* | *32%* | *35%* | *20%* | *13%* | *5%* | *0%* | *1.5%* | *10%* | *3%* |
| Nenskra Left Bank | 59 | 34 | 31 | 11 | 11 | 2 | 0 | 1 | 11 | 5 |
| | *61%* | *35%* | *32%* | *11%* | *11%* | *2%* | *0%* | *1%* | *11%* | *5%* |
| Nenskra Right Bank | 120 | 103 | 64 | 42 | 23 | 12 | 0 | 3 | 17 | 2 |
| | *70%* | *60%* | *37%* | *24%* | *13%* | *7%* | *0%* | *1.7%* | *10%* | *1%* |

**Table 57 – Concerns expressed by women**

| | Change in climate of area | Dam safety | Loss of water line | Loss of pasture or logging rights | Trucks / traffic | Influx of workers/people | Village depopulation | No concern | No answer |
|---|---|---|---|---|---|---|---|---|---|
| Project area | 219 | 154 | 121 | 51 | 36 | 20 | 1 | 26 | 18 |
| | *62%* | *44%* | *34%* | *14%* | *10%* | *6%* | *0.3%* | *7%* | *5%* |
| Nakra | 37 | 12 | 22 | 11 | 5 | 1 | 0 | 4 | 4 |
| | *44%* | *14%* | *26%* | *13%* | *6%* | *1%* | *0%* | *5%* | *5%* |
| Nenskra | 182 | 92 | 99 | 40 | 31 | 19 | 1 | 22 | 14 |
| | *68%* | *34%* | *37%* | *15%* | *12%* | *7%* | *0.4%* | *8%* | *5%* |
| Nenskra Left Bank | 61 | 25 | 32 | 7 | 9 | 7 | 0 | 13 | 7 |
| | *64%* | *26%* | *33%* | *7%* | *9%* | *7%* | *0%* | *14%* | *7%* |
| Nenskra Right Bank | 121 | 68 | 67 | 33 | 22 | 12 | 1 | 9 | 7 |
| | *70%* | *40%* | *39%* | *19%* | *13%* | *7%* | *0.6%* | *5%* | *4%* |

## 2.6.3 Expectations

During the households' survey in September 2015, respondents were also asked what kind of development assistance would be beneficial and should be prioritized for the next 3 to 5 years. The most frequent responses from the respondents are presented in Table 58 below. Roads improvement is the most frequently item cited, followed by creation of employment for local residents, development of tourism and opening medical facilities. As a follow-up a needs assessment was undertaken with the participation of communities and authorities, and the assessment was used as a basis for establishing with the local authorities a Community Investment Programme – see section 3.5.

**Table 58 – Most frequent kinds of development assistance cited by respondents**

| Kind of development assistance cited | % of male respondents | % of female respondents |
|---|---|---|
| Development of roads | 37.8% | 34.6% |
| Creation of employment for local residents | 17.6% | 18.3% |
| Development of tourism | 16,9% | 10.2% |
| Opening medical facilities | 10.7% | 13.6% |
| Developing logging, lumbering and processing of wood | 8.10% | 6.10% |
| Supporting agriculture | 5.9% | 4.7% |
| Opening schools and training centres | 4.6% | 7.5% |
| Solving electricity problems | 7.2% | 3.4% |

In the two valleys, about only 10% of the respondents declared they would not be interested in participating in touristic activities if a tourism program was implemented.

As mentioned above, one of the main expectations of the local communities in the two valleys concerns employment opportunities. As shown in Table 59 and Table 60 below, 65% of male respondents and 76% of female respondents declared that at least one of the household members was interested by a job within the Project. The proportion of people waiting for employment opportunities appears to be more important in the Nenskra valley than in the Nakra Valley.

**Table 59 - Jobs expectations, women's view**

| | HH with at least one member wanting to be employed by the Project | Distribution of HH by number of HH members wanting to work on the Project | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| Project area | 267 | 149 | 82 | 24 | 12 |
| | *76%* | *42%* | *23%* | *7%* | *3%* |
| Nakra | 45 | 30 | 12 | 3 | 0 |
| | *53%* | *35%* | *14%* | *4%* | *0%* |
| Nenskra | 222 | 119 | 70 | 21 | 12 |
| | *83%* | *44%* | *26%* | *8%* | *4%* |
| Nenskra left bank | 76 | 38 | 28 | 6 | 4 |
| | *79%* | *40%* | *29%* | *6%* | *4%* |
| Nenskra right bank | 146 | 81 | 42 | 15 | 8 |
| | *85%* | *47%* | *24%* | *9%* | *5%* |

**Table 60 - Jobs expectations, men's views**

| | HH with at least one member wanting to be employed by the Project | Distribution of HH by number of HH members wanting to work on the Project | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| Project area | 231 | 165 | 43 | 17 | 4 | 1 | 1 |
| | *65%* | *46.7%* | *12.2%* | *4.8%* | *1.1%* | *0.3%* | *0.3%* |
| Nakra | 49 | 39 | 8 | 1 | --- | --- | 1 |
| | *58%* | *45.9%* | *9.4%* | *1.2%* | *---* | *---* | *1.2%* |
| Nenskra | 182 | 126 | 35 | 16 | 4 | 1 | --- |
| | *68%* | *47.0%* | *13.1%* | *6.0%* | *1.5%* | *0.4%* | *---* |
| Nenskra Left Bank | 59 | 42 | 13 | 3 | 1 | --- | --- |
| | *61%* | *43.8%* | *13.5%* | *3.1%* | *1.0%* | *---* | *---* |
| Nenskra Right Bank | 123 | 84 | 22 | 13 | 3 | 1 | --- |
| | *72%* | *48.8%* | *12.8%* | *7.6%* | *1.7%* | *0.6%* | *---* |

# 3 Positive impacts and benefit sharing

The biggest contribution the Project will make to Georgia is in the positive impact of the power production. Locally, in addition of employment, contracts, its supply chain, and payment of taxes, the voluntary Community Investment Program will offer an important additional avenue for enhancing positive impacts and socioeconomic benefits.

## 3.1 National electricity production

The contribution of the Nenskra HPP to the national grid is explained in Vol.2 "Project Definition" of the Supplementary E&S studies.

The existing Georgian power system is characterized by a low demand and high generation in summer, and high demand and low generation in winter. During winter, when less water is available for the hydropower plants, thermal power's share in total generation increases to 28% from less than 1% in summer. At present, Georgia imports power from neighbouring countries to meet this higher winter demand. The development of the Nenskra HPP, with a large regulation capacity, will therefore increase the country power generation capacity while reducing the dependency from (i) fossil fuel-fired power plants and from (ii) imported power form neighbouring countries (mostly from Russia, Turkey, Azerbaijan). The Project will guarantee energy during the winter season to meet higher domestic demand during that critical period. This is the largest positive impact the Project would bring to the country and the main justification for its construction and operation.

## 3.2 Employment opportunities and supply chain

The construction of the Nenskra dam, the powerhouse, the tunnels and the Nakra water intake will generate temporary employment opportunities (see Section 7.1 for details of labour needs). Construction phase employment is expected to peak at 1,100 workers over the 5 years period. Construction activities may take place 24 hours a day, seven days a week which will require two or three shifts during peak periods. Of the job opportunities, 25% will be for unskilled workers with fewer skilled technical and managerial roles. A key social effect will be the provision of an income source for workers and their families contributing to their wellbeing and enhancing their quality of life. Indirect socio-economic benefits will result from local workers earnings being spent on local goods and services. The professional competences gained by local employees, either during prior training implemented by the EPC Contractors or through on-the-job experience, will benefit future job prospects.

Any supplier, either for works, services or goods, would need to adhere to the established requirements for ensuring local workers are provided opportunities to be recruited and trained.

To maximum local benefits the Project will aim at maximising the percentage of local worker recruited:

The Project will aim at 100% of unskilled workers[16] recruited from the Nenskra and Nakra valleys (see Vol.2 "Project Definition"). If insufficient numbers of workers are available, the

[16] Unskilled occupations correspond to International Standard Classification of Occupation (ISCO-08) Skill Level 1 See International Labour Office – ISCO-08 "Volume I - International Standard Classification of Occupation – Structure, group definitions and correspondence tables"

recruitment will be extended to the nearest villages in the Mestia Municipality and the Svaneti region as secondary catchment areas.

The Project we aim at 50% of semi-skilled workers[17] recruited from Mestia Municipality if available, and 75% from Georgia.

The Project will aim at minimum 80% of all recruited workers (including skilled, semi-skilled and unskilled) are Georgian citizen.

During operation, fewer direct employment opportunities will be generated with the number of skilled jobs to monitor the Nenskra Dam, the powerhouse and the Nakra water intake operations estimated at approximately 50 to 100 positions, of which a small number could be offered to people residing in the two valleys.

## 3.3 Upgrading of main roads

As described in Vol. 2 "Project Definition" of the Supplementary E&S studies, the construction period require the upgrade of the existing public roads connecting the main road (to Mestia) to the powerhouse and the Nenskra worksites (Nenskra valley) and to the Nakra water intake worksite (Nakra valley). Overall, about 20 km of public road in the Nenskra valley, and about 9 km of public road in the Nakra valley, will be upgraded during the construction period. The upgrading work will include the rehabilitation of road surface, the drainage system and the protection against erosion. Existing bridges will also be strengthened, and new bridges will be built, to support the size and weight of the heavy trucks that will bring heavy loads to the main worksites.

The main public road in the Nenskra valley and the Nakra valley will also be used during the operation phase for maintenance of the dam, the powerhouse and the Nakra water intake. This will require occasional road maintenance works.

As highlighted in the paragraphs below on Community Investment Program, the Project could also fund the rehabilitation of some of the village roads. These internal roads are not planned to be used for construction or operation purposes, but the villagers have indicated these infrastructure as one of their priorities for the Project's support.

Overall, the conditions of the road network within the two valleys will be significantly improved as a result of the Project activities. This will, in turn, improve the link with lower Enguri valley, especially during the winter period, and access to medical help.

## 3.4 Tax

The tax system in Georgia provides a mechanism through which a form of monetary benefits sharing can be realized with local municipalities. The Project will be required to pay a yearly Property Tax to the Mestia Municipality based on 1% of the value of their assets. The Nenskra HPP will further be required to pay a Land tax in proportion of the land used for construction purpose and of land used permanently for the operation phase.

The calculation of these two taxes was yet to be done when the present report was completed. The tax amount paid annually by the Nenskra Project as part of the land and property tax regulation will however contribute significantly to the current annual budget of the Mestia Municipality. It will noticeably increase the resources made available for the development of communities living within the Mestia Municipality jurisdiction.

[17] Semi-skilled occupations correspond to ISCO Skill Level 2, and skilled occupations correspond ISCO Skill Level 3 and 4.

## 3.5 Community investment programme

The largest contribution the Project will make is the above described positive impacts (employment, supply chain, road upgrade, and payment of taxes). The Project recognizes however that it will induce greater benefits for Georgia as a whole. The Project recognizes also that this economic benefit at national level will be produced using the natural resources of the Nenskra and Nakra valleys and that communities have a right to share in that benefit – and that this is not compensation for negative impacts.

A Community Investment Programme (CIP) will be implemented, as a mean to ensure that the local population in the Nenskra and the Nakra valleys can have a share of the benefits created by the Project. It is a tool proposed by the Project Company to support the local communities to build community capacity, address development challenges and to take advantage of emerging opportunities. The CIP has the potential to implement programs (health, education, livelihoods) which can help women especially those classified as vulnerable.

This measure is referred later in this report as:

- [SOC 1] Community Investment Programme.

Participatory planning, implementation and monitoring will be the key criteria in community development projects. JSCNH initiated in December 2015 the first discussions on Community Investment with the Nenskra and Nakra valleys communities during public meetings held in Chuberi and Naki. Potential areas for community investment were then identified in 2016 through participatory assessment of community assets. JSCNH wanted to avoid traditional surveying of community "wants" which results in wish lists and the expectation that the Project Company is responsible for meeting these needs (IFC, 2010). Table 61 below is a summary of the local initiatives identified by the communities in 2016 as priority candidates for Project funding as part of the Community Investment Programme.

**Table 61 - Community investments identified as priority by communities in 2016**

| Sector | Investment assessed as needed and relevant by communities and specialist consultants | Valley / Location |
|---|---|---|
| Education | Rehabilitation of primary schools | Nenskra / Chuberi (Letsperi and Kari schools) |
| | | Nakra / Naki |
| | Upgrade of kindergartens | Nenskra / Chuberi (Lakhami kindergarten) |
| | Vocational training activities | Nenskra / Chuberi |
| Roads | Upgrade of roads within village which are not used for the Project construction or operation | Nenskra / Chuberi |
| | | Nakra / Naki |
| Public health | Upgrade of the Chuberi clinic | Nenskra / Chuberi |
| | Supply of medical diagnosis equipment | Nenskra / Chuberi |
| | Installation of a Medical incinerator | Nenskra / Chuberi |
| | Supply of new ambulances | Nenskra / Chuberi |
| | | Nakra / Naki |
| Water supply | Design and construction of a new water supply and distribution system | Nenskra / Chuberi |
| | | Nakra / Naki |
| Agriculture & livestock | Improvement of hay-land & pasture areas | Nenskra / Chuberi |
| | | Nakra / Naki |
| | Support to veterinary services | Nenskra / Chuberi |

| Sector | Investment assessed as needed and relevant by communities and specialist consultants | Valley / Location |
|---|---|---|
| | Development of greenhouse farms | Nenskra / Chuberi |
| | | Nakra / Naki |
| Tourism | Archaeological studies | Nenskra / Chuberi (Lakhami, Zemo Marghi, LariLari) |
| | | Nakra / Naki |
| | Construction of infrastructures around site-seeing | Nenskra / Chuberi (Lakhami, Zemo Marghi, LariLari) |
| | Enhancing the touristic value of the future Nenskra Reservoir | Nenskra / Chuberi |

Potential community investments listed in Table 61, which results from the 2016 participatory assessment are consistent with expectations documented in 2015 through the socio-economic surveys conducted at household level for the preparation of this Social Impact Assessment (see section 2.6.3).

The set of development priorities listed in Table 61 has been ranked by the communities according to their level of importance to local stakeholders. JSCNH will use this as a starting point and will further refine the investment options and prioritize shared areas of interest. This screening will be undertaken internally based on the input received from communities and Mestia Municipality before soliciting feedback from stakeholders. Screens that would be applied are:

- Level of priority for Chuberi and Nakra communities.
- Sustainability factors, i.e. viable handover strategy and clear set-up for the ownership, operation and maintenance arrangements to avoid creating dependency and to ensure that the initiative can become self-sustaining once JSCNH withdraws its support.
- Alignment with existing government or municipal plans for local developments.
- Benefits are spread equitably among beneficiaries.
- When possible, rehabilitate or complete existing infrastructure before investing in new construction.
- Avoid infrastructure investments to dominate the Community Investment portfolio and complete these investments with others that build capacity and productive skills.
- Cost-benefit analysis, i.e. the number of people benefiting from the option versus the cost for the Project Company.

JSCNH intends to support community investment initiatives during the construction period and the operation phase. The Company has created an internal unit to work directly with communities to design and implement the Community Investment initiatives (see Vol. 8 - ESMP).

The objective is to materialize the first investments by the end of 2017, i.e. during the Early Works period. For that purpose, a preliminary priority action plan was presented in November 2016 to the Gamgebeli of Mestia Municipality, the Representative of the Mestia Gamgebeli in Chuberi community and the member of Mestia Sakrebulo elected from the Nakra community. The intent is to select a small number of short-term projects which can be implemented quickly by the end of 2017 to demonstrate goodwill from the project Company and tangible benefits to communities (see Community Investment Strategy 2017-2022 in Annex 6 for more details).

As provisioned in the ESMP, an Advisory Committee was established in October 2017 as a key interface between the Project and the local communities in the implementation of this Community Investment. The CIP Advisory Committee has been established by the communities under the supervision and support of the Company. Its members are nominated by the local community residents. The membership of this committee is based on voluntary principle. Parameters established by JSCNH to decide how much to invest, where to invest and under what conditions have been discussed and validated in the CIP Advisory Committee. The Project will aim to have and maintain a gender balance in the CIP Advisory Committee throughout the CIP implementation

DISCLOSURE AUTHORIZED 

# 4 Land acquisition and involuntary resettlement

Land acquisition requirements are described in detail in report Vol. 2 – Project Definition and impacts are analysed in Vol. 9 – LALRP.

## 4.1 Land requirements

Project land requirements are as follows:

**Table 62 – Project land requirements**

| Components / sites | total land take area (ha) | permanent works area (ha) | temporary facilities area (ha)[l] |
|---|---|---|---|
| Dam site | 560 | 355.1 [a] | 204.9 [b] |
| Operator's village | 2.5 | 2.5 [c] | --- |
| Powerhouse site | 188.8 | 29.1 [d] | 159.7 [e] |
| Nakra Water intake | 36.7 | 0.9 [f] | 35.8 [g] |
| Nenskra road widening [h] | 4.5 | 4.2 | 0.3 |
| Nakra road widening [i] | TBD | TBD | TBD |
| 35 kV power supply service line [j] | 36.0 | 36.0 | 54.0 |
| 110 kV power supply service line [k] | 54.0 | 0.0 | 21.0 |
| Total | 882.5 | 427.8 | 454.7 |

[a] Includes dam (83 ha), reservoir (270 ha) and by-pass cattle track (2.1 ha)
[b] Includes construction camp, ancillary structures and disposal areas
[c] Includes, houses, recreational areas, workshops
[d] Includes powerhouse, GIS, structures, service road, valve chamber, penstock and surge shaft, 11 kV power supply service line between the powerhouse and the surge shaft)
[e] Includes construction camp and estimated spoil disposal areas (disposal areas to be defined by Q4 2017)
[f] Weir and transfer tunnel intake channel
[g] Includes construction camp and disposal areas
[h] Road widening inside residential areas of Chuberi village
[i] To be confirmed in Q4 2017
[j] Estimate – to be defined in Q4 2017 . Servitude between Nenskra powerhouse and dam, 18 km long, 20 m wide, includes 0.5 ha for pylons
[k] Estimate – to be defined in Q4 2017. Conservative approach taken here: Servitude between a new substation located in the Nenskra valley and Nenskra powerhouse, 12 to 18 km long, 30 m wide, includes 25m² for each pylon (every 100m) – 18km conservatively considered in this estimate.
[l] Includes quarry areas, borrow areas, disposal areas and access roads required during construction

All the land required for construction and operation activities will be subject to the Land Acquisition Process developed by the Project, whether it will be used for temporary or permanent use.

Upon completion of the construction works, land affected by temporary land use only will be rehabilitated as per the requirements described in Vol.8 ESMP.

As described in section 1.1.4, the 220 kV TL to evacuate the electricity produced by the Nenskra scheme is an associated facility that GSE will design, construct, install, commission, own, operate and maintain. The land requirements for the 220 kV TL are therefore not included in this assessment.

DISCLOSURE AUTHORIZED 

## 4.2 Land take impacts

The impacts of the land take for the components that were defined in October 2017 are summarised in Table 63.

There will not be any physical displacement caused by the Project.

A total of 89 households will be affected by loss of land, non-residential structures, trees and annual crops, out of which 29 are vulnerable, including 10 woman headed households.

In total, the affected households will lose 44.4ha of land, 14 wooden cabins, fences, 1,288 trees, 0.1 ha of maize and 0.1 ha of potatoes. 3 pasture areas will also be affected, namely *Kvemo Memuli* and *Mashritchala* at the Nenskra dam and reservoir site, and *Lagiri* at the Nakra water intake site.

The extent of these impacts on the affected people is presented in the following paragraphs for each Project's component. The location of the impacts is presented in Table 63 below.

It is not anticipated that any gender specific impact will be caused by the land acquisition process.

Table 63 – Summary of the Project land acquisition impacts

| Area/ facility [c] | Number of households affected | Number of vulnerable households | Number of woman headed HH | Type of land use [b] | Affected public infrastructure | Land lost by the affected HH | Structures lost | Trees lost | Annual crops lost |
|---|---|---|---|---|---|---|---|---|---|
| Nenskra dam and reservoir | 25 | 5 | 2 | F / P | --- | 131 | 13 wooden cabins, fence | -- | 0.1 ha of potatoes |
| Powerhouse site | 5 | --- | --- | A / F | --- | 33.4 | fences, 1 cattle shed, 1 unoccupied house | 1,118 | 0.01 ha of maize |
| Operators village | 1 | --- | --- | F | --- | 2.5 | -- | -- | -- |
| Nenskra road[c] | 35[a] | 14 | 6 | A | --- | 4.5 | 32 sections of fences + 2 wooden sheds | 170 | -- |
| Nakra weir & transfer tunnel intake | 27 | 11 | 2 | F / P | 1 bridge | 32.6 | 1 wooden fence, 1 stone wall, 1 wooden cabin | -- | -- |
| Total | 89[a] | 29[a] | 10 | A / F / P | 1 bridge | | | 1,288 | 0.1 ha of potatoes<br>0.01 ha of maize |

[a] 4 of the households affected by economic displacement are affected by the Nenskra road widening and one other project's component.

[b] A: Arable F: Forest P: Pasture R: Residential

[c] To be confirmed, as alternative alignments for the Nenskra road upgrading were being considered in October 2017 to minimise the impacts.

[e] The alignment of the 35 and 110 kV service lines, the design of the Nakra access road upgrading works, as well as the spoil disposal areas and the construction camp at the Powerhouse will be defined by June 2017 and consequently the impacts on households are not included here (see §4.2.2).

The proportions of lands used by local population affected by the land acquisition are indicated in Table 64 overleaf.

**Table 64 – Proportion of land use affected by land take**

| Village (valley) | Type of land use | Total area (ha) [a] | % of the type of land included in the land take area (permanent and temporary) | % of the type of land included in the permanent land take area |
|---|---|---|---|---|
| Chuberi (Nenskra valley) | Residential and built-up areas | 420 | 0.0% | 0.0% |
| | Arable land (cultivated or not) | 490 | 5.2% | 0.75% |
| | Pasture area | 695 | 2% | 0.8% |
| Naki ( Nakra valley) | Residential and built-up areas | 104 | 0.0% | 0.0% |
| | Arable land (cultivated or not) | 120 | 0.0% | 0.0% |
| | Pasture area | 549 | 1.1% | 0.16% |

[a] *Estimates based on aerial picture interpretation (pictures dated 2010).*

### 4.2.1 Economic displacement

There will not be any physical displacement caused by the Project.

Economic displacement will affect 86 households as shown in Table 63. Out of these 86 households, 4 will be affected at the same time by land acquisition for the Nenskra road and by one other component of the Project.

0.02 % of the land to be used by the Project is privately owned and registered. This represents 0.19 ha, distributed along the Nenskra road to be widened, between 11 households. These privately registered areas to be acquired range from 10 to 438 square metres.

The rest of land to be used by the Project is either customary owned (by individuals or communities) but not registered, or State Land. These last two categories are overlapping in some areas.

Eleven summer cabins will be temporarily affected by the Nenskra dam construction camp, 2 will be flooded in the Nenskra reservoir, and 1 will be permanently affected by the Nakra Water intake. Along the Nenskra road, some fences and 2 wooden sheds will be affected.

0.61 ha of annual crops (potatoes and maize) will be affected, mainly at the powerhouse, and 1,288 productive trees will be affected (producing hazelnuts, nuts, pears, apples, plum or sweet cherry), at the powerhouse and along the Nenskra road.

In the Nenskra valley, 1 pasture area (*Mashritchala*) will be inundated by the reservoir and permanently lost and one other (*Kvemo Memuli*) will be affected during the construction period. In the Nakra Valley, 1 pasture area (*Lagiri*) will be affected by the Nakra weir and water intake (2.5% permanently, 97.5% temporarily during construction).

Access to some pastures areas located outside the land take areas during construction may be impeded by the construction camp at the Nenskra dam site and the construction facilities at the Nakra water intake site. To avoid temporary loss of access to pastures during construction period in both valleys, the EPC Contractor will be required to maintain access to pastures which are located outside the worksites and potentially blocked by temporary facilities.

Logging is often undertaken nearby the pasture areas. However, the areas that will be affected by the project are already logged, especially the Nenskra reservoir. Therefore, this impact is considered of low magnitude.

The vulnerability of the people affected by the land acquisition is function of the dependency on subsistence farming activities, for which land is a prerequisite. As explained in details in vol. 9 – LALRP, the level of dependency to land-based activities, hence the vulnerability to land acquisition impacts varies from one household to another.

Land acquisition will affect 89 households, which is about one fifth of the households living in the Nenskra and Nakra valleys. Therefore it is considered to be a high impact.

The significance of land acquisition adverse impacts on livelihoods is summarised in the Table 65 below:

**Table 65 – Overview of the significance of the land acquisition impacts**

| | Project's component | Number of households | Number of individuals | Number of vulnerable households | Number of woman headed households |
|---|---|---|---|---|---|
| Total affected by land acquisition | All | 89 | 392 | 29 | 10 |
| Total affected by loss of non-productive assets, without loss of means of livelihood | Nenskra road upgrading + operator's village | 33 | 134 | 14 | 6 |
| Total economically displaced | Nenskra dam & reservoir, powerhouse, Nakra water intake | 56 | 258 | 16 | 4 |
| Total significantly affected | Nenskra dam & reservoir, powerhouse | 29 | 147 | 5 | 2 |
| Total severely affected | Nenskra reservoir, powerhouse. | 13 | 76 | 1 | 0 |

### 4.2.2 Impacts of infrastructures yet to be defined

The infrastructures yet to be defined at the time this SIA was being completed were the Nakra road, the electric service lines and the disposal areas at the Powerhouse.

- The impacts for the Nakra road upgrading and widening will be assessed when the technical design of the road will be defined in 2017.
- When this SIA was being completed, the alignment of the 35kv service line was not defined and the final alignment of the 110 kV electric service line was being finalized. The potential impacts caused by the 35 kV and the 110 kV electric service lines routes will be assessed when the technical design will be defined in 2017.
- The locations of the spoils disposal areas at the powerhouse were being investigated at the time of writing the SIA.

Any land or Right of Way acquisition for these facilities will follow the Lenders requirements and a supplement to the LALRP will be prepared, discussed with communities and agreed with the Lenders prior to any impacts or works happening on the ground.

### 4.2.3 Impacts during operation

During operation, some restriction on land use will be defined for safety reasons. These restrictions will be twofold: around the project infrastructures and near the Nenskra and Nakra riverbeds where flooding risks will be identified.

- Around the project infrastructure, this will be immediately downstream of the Nenskra dam and around as well as immediately downstream of the Powerhouse. These areas will be defined during the final design and will be known by June 2017. All these areas

will be covered by the land requirements already defined in the previous paragraphs. They will be considered as permanently acquired.

- Around the Nenskra and Nakra riverbeds, to identify the areas subject of flood risks, detailed flood studies will be undertaken. These studies will identify the areas (and households if any) potentially affected by land use restriction around the riverbeds for safety reasons. Consultations will be done during the implementation of this study and its results will be disclosed as part of the elaboration of an Emergency Preparedness Plan in 2017. These risks and their mitigation measures are described in section 6.7 below.

### 4.2.4 Mitigation strategy

The strategy to mitigate the impacts of the land acquisition process is described in details in the report Vol. 9 – LALRP. The Project will adjust the technical design of components not defined in January 2017to avoid or at least minimize any physical and economic displacement. The Project will apply the Georgian legislation for the land acquisition process, complemented by the Lenders Policies, as defined in LALRP. Livelihood restoration measures will be implemented for the affected people. The LALRP also includes a grievance mechanism and a monitoring program of the impacts on the affected households' livelihoods.

These measures are referred later in this report as:

These measures are referred later in this report as:

- [SOC 2] Avoid or at least minimize physical and economic displacement.
- [SOC 3] Develop, implement and monitor the LALRP (including a completion audit).
- [SOC 4] Compensation, Resettlement assistance and Livelihood Restoration.
- [SOC 5] The EPC Contractor will maintain access to pastures which are located outside the worksites and potentially blocked by temporary facilities
- [SOC 6] At the end of construction work, rehabilitation of areas used for temporary construction purposes into pasture land without compromising the objective to replace removed woodland with similar species of tree where practicable.

## 4.3 Impacts on public infrastructures

The Project has very limited direct impacts on public infrastructure. The land where the different Project components will be situated – both temporary and permanent - is mostly not occupied by public infrastructure. The few impacts are as follows:

- The seasonal dirt track used by four-wheel drive vehicles, people on foot and livestock and which follows the bottom of upper Nenskra valley – upstream of the future dam site - will be flooded. The track is used by local people and their livestock to access the pasture lands that are located in the area of the future reservoir. The track was also previously used to access other areas of pasture land further upstream, but stopped at the end of 1990s. To replace the track and loss of access, a new cattle track will be constructed higher up the slopes of the side of the valley above the reservoir water level;
- The bridge located at the Nakra diversion weir site will be affected during the construction period by the temporary facilities. The bridge is used by local people and their livestock to access pastures on the left side of the valley and upstream from the weir. As explained above, the EPC Contractor will be required to maintain access to pastures which are located outside the worksites and potentially blocked by temporary

facilities. The Nakra weir is also designed so that it can be used as a bridge during operation.

These measures are referred later in this report as:

- [SOC 7] Reservoir bypass – cattle track
- [SOC 8] Design of the Nakra weir as a bridge.
- [SOC 5] The EPC Contractor will maintain access to pastures which are located outside the worksites and potentially blocked by temporary facilities.

## 4.4 Interaction with forestry and mineral concessions

As described in the baseline section, there were two logging concessions and one mining concessions in the Nenskra valley. These concessions ended in February and March 2016. There were not renewed, and no new concession is planned in the Project area. Therefore, it is not anticipated that any impact will happen because of inundation of, or impaired access to, mineral resources and/or forest concessions. No mitigation measure is needed.

# 5 Interaction with non-land related activities

## 5.1 Ecosystem services

Ecosystem services (ES) are defined as the benefits that ecosystems provide to people, by:

- Supporting environmental resources that underpin basic human health and survival needs;
- Supporting economic and livelihood activities; and
- Providing cultural fulfilment.

A preliminary screening of impact on ecosystem services had been undertaken and is provided in Annex 6. The value of the Ecosystem services components have been established by considering (i) the Importance of the service for its beneficiaries and (ii) the way in which it can be replaced, or not, by alternatives in other places (or 'replaceability'). The key impacts identified in the screening are assessed in more detail in the following subsections.

## 5.2 Water uses

Water use is described in the baseline situation section (section 2.5.5.). The key findings of the baseline survey are as follows:

- People use groundwater from springs and seeps as their source of potable water, each household installs its own above ground flexible water pipe to convey water by gravity from the spring/seep to the house;
- There is no evidence of the use of agricultural irrigation systems in the project affected areas of the Nenskra and Nakra valleys;
- One household reported pumping water from the Nenskra River to water their gardens during the summer using a small mobile pump and pumping only a small amount of water;
- During the summer some people occasionally take river water for domestic purposes using hand held receptacles.

Therefore, the impact on agriculture practices and production anticipated from potential flow regime modification is considered low, during construction as well as during operation.

The risk of impacts on community health and safety linked to impacts on water resources are assessed in section 6.6.

## 5.3 Fishing

Fishing is mainly a recreational activity. Fish caught locally are not a significant source of protein for the community. Thirty-eight percent (135 households) of the households interviewed declared that at least one of their member's fish. Fishing activity is for domestic consumption only, none of the fish caught are sold.

Table 66 below shows the spatial distribution of these fishing areas in regards to Nenskra Dam and to the Nakra weir.

- In the Nenskra valley:
    - 7 (6.4%) of the fishermen fish in areas located upstream the dam or on the tributary just south of the dam (Mashritchala, in the reservoir, and Zeda Memuli, accessed by crossing the Kvemo Memuli pasture),
    - 94 (85.5%) of the fishermen fish in the Nenskra river downstream of the proposed Dam,
    - 17 (15.5%) of the fishermen fish on tributaries of the Nenskra river downstream of the Dam site.
- In the Nakra valley:
    - 3 (12%) of the fishermen fish in the Nakra river or its tributaries upstream of the proposed weir,
    - 21 (84%) of the fishermen fish in the Nakra river downstream of the proposed weir, and
    - 2 (8%) of the fishermen fish in Nakra river tributaries downstream of the proposed weir.

**Table 66 – Fishing areas**

| | Nenskra river (affected by land take) | Nenskra River (downstream dam) | Nenskra Tributaries (downstream Dam) | Nakra River and tributaries (upstream the weir) | Nakra River (downstream the weir) | Nakra Tributaries (downstream the weir) |
|---|---|---|---|---|---|---|
| Project Area | 7 | 94 | 17 | 3 | 21 | 2 |
| | *5.2%* | *69.6%* | *12.6%* | *2.2%* | *15.6%* | *1.5%* |
| Nakra Valley | - | - | - | 3 | 21 | 2 |
| | - | - | - | *12%* | *84%* | *8%* |
| Nenskra Valley | 7 | 94 | 17 | - | - | - |
| | *6.4%* | *85.5%* | *15.5%* | - | - | - |
| Nenskra Left Bank | 4 | 28 | 6 | - | - | - |
| | *11.1%* | *77.8%* | *16.7%* | - | - | - |
| Nenskra Right Bank | 3 | 66 | 11 | - | - | - |
| | *4.1%* | *89.2%* | *14.9%* | - | - | - |

Two types of impacts may happen: (i) loss of access to fishing points during construction and (ii) after construction and during operation, decrease in fish catch, as a consequence of the decrease in fish stock due to modification of river habitat and/or water quality. In addition, with regard to community health and safety, fishermen may be exposed to the risk of infrequent - but sudden - increase in river flow rate due to reservoir spillage or change in rate of turbining waters at the powerhouse.

### 5.3.1 Construction: loss of fishing points

Construction of infrastructure will block access to some of the places where some people now fish. As shown in Table 66 above:

- in the Nenskra valley, 7 households (2.8% of Chuberi's HH) declared that at least one member fishes in places that could be affected by the land take at the dam site and in the reservoir, and
- in the Nakra valley, 3 households (3.5% of Naki's HH) declared that at least one member fishes in places that could be affected by the land take at the water intake site.

With the project, the members of these households will no longer fish at their usual fishing locations. However, it will still be possible for them to fish in other places. The impact will be that households with members fishing will eat less fish than now, or that the affected fishermen would change their fishing practices. As fishing is a recreational activity, and given that fish are only for home consumption, there would unlikely be an impact on income or means of livelihood due to loss of access to existing fishing places.

### 5.3.2 Operation: decrease in fishes stock

As analysed in Vol. 4 "Biodiversity Impact Assessment", during operation, the stock of fishes downstream of the dam and upstream of the confluence with the Enguri River might decrease over time if not mitigation measure is implemented. As shown in Table 66 above, most of the fishermen are fishing directly on the main rivers in the two valleys (Nakra and Nenskra).

- In Chuberi community valley, 85.5% of fishermen (94 HH) work the Nenskra river downstream of the dam, and only 15.5% (17 HH) fish in its tributaries,
- In Naki community, 84% of fishermen (21 HH) are fishing in the Nakra River downstream of the Nakra water intake site, and only 8% (2 HH) fish in its tributaries.

As the stock of fishes available in the main rivers may decrease over time during operation without mitigation measures, fishermen that used to fish in the main rivers may tend to fish in the tributaries instead. This would increase the pressure on existing fish stocks in the tributaries. They may also abandon fishing. The impact would be that households with members fishing will eat less fish than now. It could result in marginal impact on nutrition, which would have an effect for poorer households.

### 5.3.3 Mitigation strategy

The mitigation strategy relating to the reduce catch of fish in either river is based on three sets of measures:

- Implementation of the mitigation strategy recommended by the 2015 ESIA and the river habitat impact assessment: construction and operation of a fish pass at the Nakra water intake; river management to support development of spawning areas; and adaptive management in the Nenskra River to water quality changes.
- Fish surveys will be undertaken as per the biodiversity mitigation measures. If there is a long-term decline in fish populations despite the River Habitat Management Plan, then considerations will be given to restock the river with fry and parr as recommend in the 2015 ESIA.
- As part of the Community Investment Programme, promote initiatives relating to fishery intensification such as fish farming.

These measures are referred later in this report as:

- [SOC 9] River habitat mitigation strategy
- [SOC 10] Fish monitoring
- [SOC 11] Promotion of fish farming initiatives as part of the agricultural component of the Community Investment Program.

## 5.4 Beekeeping

37 families reported keeping beehives in their house plot, 5 in the Nakra valley and 32 in the Nenskra valley (see Table 35 page 54). Some of the honey produced is sold. In either valley, beehives are kept in the houses plots. Beekeeping is not the main source of income for these families. The sources of income declared by the members of the households keeping beehives are shown in Table 67 below. 43% of the households that reported keeping beehives declared that at least one of their members is employed in the public service, 22% that at least one of their members has a salary in a private company and 40% have at least one member receiving a state pension.

**Table 67 – Sources of income declared by the members of the beekeeping households**

| | | Permanent salary in the public service | Salary in a private company | Pension | Agriculture | Logging | Lumbering |
|---|---|---|---|---|---|---|---|
| Nakra | number of households beekeeping | 3 | 2 | 3 | 4 | 0 | 0 |
| | *% of the beekeepers* | *60%* | *40%* | *60%* | *80%* | *0%* | *0%* |
| Nenskra | number of households beekeeping | 13 | 6 | 12 | 20 | 3 | 3 |
| | *% of the beekeepers* | *41%* | *19%* | *37%* | *63%* | *9%* | *9%* |
| Total | number of households beekeeping | 16 | 8 | 15 | 24 | 3 | 3 |
| | *% of the beekeepers* | *43%* | *22%* | *40%* | *65%* | *8%* | *8%* |

### 5.4.1 Construction

During construction, two types of impacts are possible: (i) the loss of foraging areas for bees due to vegetation clearing and (ii) disturbance due to construction activities and Project's traffic.

#### A. Loss of foraging areas due to vegetation clearing

The foraging area around a beehive usually extends for three kilometres, although bees have been observed foraging twice and three times this distance from the hive (Ribbands, 1951). The analysis below uses as the average foraging area a radius of 3 kilometres around the beehive.

- Nenskra dam site: The nearest beehives are located in Tita, i.e. 3 kilometres from the future Nenskra reservoir, where one household declared doing beekeeping. The next ones are in Sgurishi, about five kilometres away from the Project site. The average foraging areas will not be affected, therefore, there will not be any loss of foraging area during construction.
- Power house site:
    - Three households that will be affected by the Land Acquisition declared doing beekeeping. These three households will have to move their beehives during the construction period.
    - 21 households declared doing beekeeping within three kilometres of the Powerhouse site, seven of them declared they were not selling any of the

honey sold, 8 declared they were selling between 30 and 70% of it, while 5 declared they were selling between 70% and 100% of it.

The area that will be required at the Powerhouse site will be included in totality in the foraging range around the beehives of 13 of these families. It will only partially sit inside the average foraging range of the beehives of 7 of these families.

When the totality of the Powerhouse site sits within the foraging range around a beehive, it represents about 3% of the foraging area. Therefore, the area that will be lost for foraging is not significant and the impact on honey production from loss of foraging areas during construction of the Powerhouse will not be significant.

- Nakra water intake site: the nearest beehives are located in Nakra hamlet, more than 3 kilometres from the Nakra water intake site. In the Nenskra valley, all households declared they were not selling the honey produced. The average foraging areas will not be affected; therefore, there will not be any loss of foraging area during construction.
- Roads: all beehives are located at most with 500 meters from the roads that will be upgraded and used by the Project. However, the road upgrade will not cause vegetation clearing; therefore, there will not be any loss of foraging area during construction.

To conclude, during construction, at the Nenskra dam and reservoir site, at the Nakra water intake site, and along the roads that will be upgraded, the loss of forested areas due to vegetation clearing will not result in potential reduction of foraging areas, hence in reduction in honey production. At the Powerhouse site, the foraging areas of the beehives of 21 families might be slightly reduced by the vegetation clearing. The most conservative estimate is that 3% of the foraging area for the beehives of 13 families will be affected. The beehives of the remaining 8 families will be even less affected. Therefore, during construction, the impact of vegetation clearing on the beekeeping activities is considered as negligible.

### B. Disturbance due to construction activities and Project's traffic

Disturbance caused by heavy traffic and construction activities (dust and noise) may affect the bees, as noticed on similar projects. Construction activities and heavy traffic may physically disturb bees within 250-300 meters from construction areas due to sensitivity to dust and noise and vibration.

- Construction activities. As described above, no family has beehives within 300 meters from the Nenskra dam and reservoir site or the Nakra Water intake site. Only seven families have beehives located within 300 meters from the Powerhouse site.
- Roads. In the Nakra valley, all beehives sit within 200 meters from the road. In the Nenskra valley, 26 of the 29 families doing beekeeping are residing within 300 meters from the roads (Table 68). Therefore, almost all the beehives in the Nenskra Valley and all of them in the Nakra valley could be affected by disturbance from heavy traffic and roads upgrade works. Simple mitigation measures can prevent this kind of disturbance.

**Table 68 – Families beekeeping, by distance from the roads used by the Project**

| | < 100 m | [100 m – 200 m] | [200 m – 300 m] | [300 m – 400 m] | Total |
|---|---|---|---|---|---|
| Nenskra Valley | 10 | 4 | 12 | 3 | 29 |
| Nakra Valley | 3 | 2 | 0 | 0 | 5 |
| Total | 13 | 6 | 12 | 3 | 34* |

*The three households having beehives inside the Powerhouse site will have to move them. They are not included in this table. This is an impact linked to land requirement, and addressed in details in the Vol. 9 – LALRP.

### 5.4.2 Operation

During operation, there will not be any further impact on beekeeping activities.

### 5.4.3 Mitigation strategy

To mitigate the disturbance of beehives around the roads used by the Project, it will engage with beekeepers to notify them of the start of the construction activities and to identify and discuss solutions such as protection nets to protect the beehives and/or move them more than 300 meters away from the construction activities and the roads used by the Project. This consultation will be conducted in 2017, prior the start of the main construction activities. In addition, the Project will provide assistance during construction to carry the hives to remote locations if the beekeeper cannot afford doing it himself and technical support will be provided to improve the beekeeping activities in cooperation with Ministry of Agriculture as part of Community Investment Programme. This measure is referred later in this report as:

- [SOC 12] Information for beekeepers and beekeeping mitigation measures

## 5.5 Impact on remittances

Few households (4% of all households in the two valleys) receive periodic remittances from relatives living elsewhere in Georgia or abroad (see section 2.3.10). There is no reason why the development of the Nenskra HPP would affect the remittances received by families resident in the project area. There will not be an impact on remittances send periodically. No mitigation strategy is required for this aspect.

## 5.6 Crafts and artisan goods

There is no reason to believe that the production of crafts and other artisanal goods will be affected by the development the Nenskra HPP. No mitigation strategy is required.

## 5.7 Tourism

Tourism is not well developed in the Nenskra and Nakra valleys. It was not declared as a source of income by any of the households interviewed in the two valleys. Some touristic activities, such as kayaking or hiking, have been described by respondents in the Nenskra valley, whereas in the Nakra valley, respondent declared that touristic activities are almost non-existent.

Therefore, it is possible that touristic activities will be affected by positive as well as negative impacts, as explained in the paragraphs hereafter.

### 5.7.1 Construction

#### A. Road rehabilitation

The Project is going to improve the roads into the two valleys. Any damage caused by the EPC contractor's fleet of trucks and vehicle during construction will be repaired. Therefore, it is possible that greater accessibility of the villages would lead to an increase in touristic visits. This may increase levels of income in some households engaged in touristic activities, although marginally.

### B. Impeded access to the upper valleys

In the Nenskra valley, informants interviewed declared that some of the tourists coming to the valley are going to the upper valley. Some camp in the proposed reservoir area.



*Figure 7 - Camping activities in the reservoir area in August 2015*

Others are hiking up some tributaries, including the Memuli River, to enjoy the view of the Caucasus Mountains from the "*Skhvandiri*" pasture area. These activities should not be affected since the EPC Contractor will maintain the access to the "*Skhvandiri*" pasture area.

## 5.7.2 Operation

Adverse effects during operation may concern the Nenskra valley only. The Nakra water intake will actually be crossable by a drivable public road over the diversion weir, and this will be a positive impact for tourism activities.

### A. Nenskra dam and reservoir

The Nenskra dam and the reservoir will constitute a tourist attraction. The access road will be in much better state than now. Areas close to the dam, used for the construction camp during the construction period, will probably constitute a suitable place for camping after rehabilitation. Such industrial tourism could marginally increase income generation in the Nenskra valley.

### B. Alteration of river flow

Although this activity is rare, some tourists occasionally come to the Nenskra valley to do white-water kayaking. The river section used by the kayakers is between the proposed powerhouse and the confluence with the Enguri River. Vol. 5 "Downstream hydrology and water quality impact assessment" of the Supplementary Environmental and Social Studies shows that the monthly average flow downstream of the powerhouse will follow the same pattern as the current Nenskra river flow regime. The main difference will be from December to April, with a net contribution from the turbined waters. From May to October, which is the kayaking season, the flow pattern is roughly similar. It could actually benefit the kayaking activities through better regulated flow, the reservoir buffering most of the flood events.

The sudden release of water from the powerhouse will be progressive and should not constitute a new danger for kayakers. This is further discussed in Section 6 Health and Safety.

### 5.7.3 Mitigation strategy

The mitigation strategy proposed by the Nenskra HPP is actually an enhancement strategy; The Project will marginally affect the existing tourism activity in either river. It is likely to create a new tourist attraction with potential new source of income for the community if the relevant support is received to materialize this opportunity.

As part of the Community Investment Programme activities, the Project will sponsor the preparation and the implementation of Ecotourism development activities in order to encourage the development of local economic activities based on tourism. Currently, most tourists coming to Svaneti target the Mestia area and its immediate surroundings, or to Ushguli. Only a few tourists come into the Nenskra valley, and do not stay there for more than one or two days. The objective would be to increase the number of tourists coming in the Nenskra and Nakra valleys and the length of their stays, in order to develop local economic activities based on tourism.

This measure is referred later in this report as:

- [SOC 13] Ecotourism development activities

# 6 Health and safety

## 6.1 Introduction

This section is broken-down into 10 subsections corresponding to the health and safety topics that are relevant to the Project. These topics are as follows:

| | |
|---|---|
| Traffic and road safety | Flood risks |
| Construction site health and safety | Population influx health and safety risks |
| Production site health and safety | Social cohesion health and safety risks |
| Exposure to disease | Natural hazards and climate change |
| Health impacts from impacts on water resources | Emergency preparedness and response |

For each topic, the assessment address as appropriate construction and operation phases and community and occupational health and safety.

## 6.2 Traffic and road safety

### 6.2.1 Construction traffic

#### A. Concern

Construction traffic is described in detail in Vol. 2 – Project Definition. The key points are as follows:

- The types of vehicles comprise; light vehicles (<3.5 tonnes), heavy vehicles (>3.5 tonnes), tippers for transporting loose material, general mobile earthmoving and lifting equipment, and flatbed trucks for transporting heavy loads;
- The three main transport routes will be: (i) along the main road to Mestia, from Zugdidi to Khaishi, (ii) from Khaishi to Chuberi using the main road in the Nenskra valley to access the powerhouse and the dam, and (iii) from Khaishi to Nakra, using the main road to Mestia and then, the main road in the Nakra valley.
- The construction activities will generate additional traffic on public roads over the 4 years of main construction, the densest project traffic will be created from March 2018 to April 2020, and the increase in traffic can be summarised as follows:

Khaishi, on the road to Mestia – one truck every 46 minutes and one light vehicle (car, minibus or light truck) every 7 minutes.

Nenskra road downstream of the future bridge across the Nenskra River - one truck every 48 minutes and one light vehicle every 8 minutes.

Between that future bridge and the dam - one truck every 10 minutes and one light vehicle every 13 minutes,

Nakra village - one truck every day and one light vehicle every hour.

Although less relevant in terms of nuisance to local communities, there will also be movements of trucks within each work site using the service roads. Within the powerhouse area however, the transportation of tunnelling spoils and excavated materials from the tunnel or the powerhouse construction site would generate one trip of truck every 3 to 6 minutes if

daily traffic only is permitted. The route used by these trucks will depend on the location of the disposal areas for the powerhouse site. If the access road to the disposal areas partly uses the Nenskra public road, the Project traffic along this public road would be increased accordingly.

The upgrading works for the main road will also generate project traffic. This will however be before and after the peak construction period, i.e. end 2017 - early 2018 and end 2020 - early 2021. It will represent 8 trips of truck per day along the Nenskra road.

Construction traffic on the main access road in the Nenskra and Nakra valleys and the Khaishi - Zugdidi road could expose the local communities and other road users to an increased risk of road accident.

The roads will be improved by the Project, upgrading works started in 2015 during the early works period and roads will be further improved during the main construction work.

Without specific speed control measures, vehicles could be driven faster than the situation before the Project. The Project's heavy vehicles have braking distances longer than the vehicles used by the general public, and there may be project-induced traffic attracted by (i) better road state and (ii) business opportunities relating to the construction activities. The local population has probably not been exposed to such driving conditions due to the state of the roads. As for any new situations the changes of behaviour, in particular from children, will take some time and during this period required to adapt, accidents by collision could happen. Livestock could also be at risk given the free grazing practiced everywhere along the roads in both valleys.

Traffic existing before the Project is relatively limited (see section 2.5.2). Vehicles using local roads are mainly private light vehicles, some tractors and trucks or machinery used for logging (6 wheels drive).

Two types of vehicles movements will occur during construction:

- Day to day rotations of trucks and light vehicles for transport of equipment, materials and workforce.
- Exceptional convoys transporting heavy equipment from and to the sites.

Trucks used by the Projects will much heavier and larger than local ones. This justifies the need for road improvement. They will bring equipment to the construction site from the main road (Zugdidi-Mestia). They will also carry large amount of material for construction to the three main construction sites of the Project (dam site, powerhouse site and Nakra intake site) and between them.

## B. Mitigation

Any damage caused by the EPC contractor's fleet of trucks and vehicle during construction will be repaired.

The EPC contractor has developed a Traffic Management Plan. This Plan contains the following measures:

- Information of the administrative authorities of the itinerary used by the fleet of vehicle and machinery;
- Rehabilitation of local roads to avoid road damage due to intensification of traffic flows;
- No project-related traffic will be authorised in the villages from 20:00 to 08:00, except for rare occasions such as exceptional convoys that may circulate in the night time to avoid obstruction of local traffic;
- Traffic marshals hired by the Project will be affected at key locations in the villages, such as schools, medical centres, children playgrounds or kindergarten;

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- Project's traffic will be forbidden in the villages at time when pupils go to school or come back from school;
- To minimize the impacts on the environment (acoustic / vibration emissions and air pollution) and risks to population (personnel and workmen and residents), the following speed limits are defined:

Speed limit of 35 km/h within the worksites;

Speed limit of 30 km/h in villages or hamlets, from 100 m before the first house;

Speed limit of 50 km/h in towns;

Speed limit of 80 km/h on unpaved roads outside of towns, villages, hamlets and camps.

Dust suppression measures;

Implementation of a signage system;

- Avoidance of obstruction of local traffic due to the work activities:

Exceptional convoys that could affect the local traffic will be planned outside of rush hours and they will be escorted with banksman for the management of the traffic, to minimize the obstructions.

Heavy vehicles breakdown will be managed according to the Emergency Response Plan.

In addition, as defined in the EPC Contractors Health Management Plan, the following will be implemented:

- Use, possession, distribution or sale of illegal drugs, controlled substances (as per local regulations) and alcohol is totally prohibited for all Project workers, including drivers. Any person suspected by to be under the influence of alcohol or controlled substances will be immediately suspended from his position, pending the results of medical examination.
- Drivers will be trained to ensure these policies are known by all drivers. The implementation of these policies will be monitored.
- As the Project moves forward the Traffic Management Plan will be communicated to the head of local communities and will be disclosed in the villages of Chuberi, Naki and Khaishi to raise awareness on traffic-related risk during the construction period.
- Truck controls of covering loads will also be implemented to prevent loose rocks from trucks from falling off and hitting cars.

To further minimize potential incidents involving local communities' members, the following measures will be implemented:

- Define and implement specific safety measures around schools located near the roads used by the Project (e.g. in the centre of Chuberi village and in the centre of Naki village)
- Road safety awareness and information provided to school children;
- Development and deliverance of road safety awareness campaigns in the villages the Chuberi, Naki and Khaishi villages. This awareness campaigns will include specific activities targeting vulnerable groups such as elderly people and children;
- During these campaigns, the Project will provide notification of Grievance mechanism as well as emergency services details in the event of minor or major accidents with people, other vehicles or livestock;
- Provide advance public notification of the schedule of main vehicles convoys, frequency and road risks to road users.

- Best practice will be implemented, with clear speed limitations for trucks, driving rules to prevent traffic obstructions, traffic marshals at key locations, daily alcohol tests and speed monitoring (including remote monitoring with GPS tracking devices).

These measures are referred later in the report as:

- [SOC 14] Prepare and disclose publicly the Traffic Management Plan for the construction period
- [SOC 15] Specific safety measure for schools in the Traffic Management Plan
- [SOC 16] Local disclosure of the Traffic Management Plan and of the itineraries used
- [SOC 17] Announcement of heavy convoys to the local population
- [SOC 18] Awareness campaigns on traffic related risks, including school children

### 6.2.2 Operation traffic

During the operation phase, the project traffic along the access roads will be limited to that of the operating staff not accommodated in the Operators' Village. The staff numbers needed during operation will be significantly reduced compared to the construction phase. The measures put in place for road traffic management during construction will be continued during the operation.

## 6.3 Construction site health and safety

### 6.3.1 Generalities and communities potentially affected

#### A. Generalities

Health and safety hazards and their management related to construction sites are presented in the following subsections. It should be noted that the following are also included with construction site health and safety. However, they are addressed specifically under separate headings:

- Traffic and road safety (see section 6.2.1);
- Communicable diseases (see section 6.5.1);
- Natural hazards (see section 6.10.1), and
- Floods (see section 6.7.1).

In general the Project will manage the health and safety hazards through the implementation of the following measures:

- The Project Company will recruit a health and safety team that is responsible for the supervision of the EPC Contractor, including checking conformity of plans, procedures, drawings, and site work. The composition of the health and safety team is provided in Vol.8 ESMP.
- The EPC Contractor will establish an appropriate Environmental and Social Management System (ESMS) in alignment with OHSAS 18001.
- The EPC Contractor will address through its ESMP occupational and community health & safety in alignment with ILO recommendations, Good International Industry Practices (GIIP) and EBRD PR4. This plan shall include (but not limited to) the following topics:

Health and safety policy and commitment from management

Description of organization; human resources, definition of roles and responsibilities

Description of material resources including Personal Protective Equipment (PPE) to be used by workers

Health and safety procedures

Risk assessment

Pollution prevention and protection

Health and safety training

Monitoring of health and safety performance

Medical checks

- The Health and Safety management will be implemented in association with other specific plans which are referred to in relation to the specific hazards in the following subsections.

These measures are referred to later in this report as:

- [SOC 19] Workers Health and Safety Management
- [SOC 20] General construction health and safety management measures

### B. Communities potentially affected

The communities potentially affected by the construction work can be described as follows:

- Households situated along the access roads that will be used by construction traffic (see section 6.2.1);
- Households situated near the powerhouse construction site. The nearest residential area is the Lakhami hamlet located on the right bank of the Nenskra River – opposite the powerhouse – and the nearest houses are located approximately 150 metres from the powerhouse. There is also a private house located in the left bank of the Nenskra approximately 150 metres upstream from the powerhouse, and
- The Tita hotel which is situated near the site of the operator's village.

At the dam site and the Nakra diversion weir site there are no residential buildings near the work sites.

## 6.3.2 Hazardous materials

### A. Concern

Transport, storage and handling of hazardous materials represents a risk from both occupational and community health and safety perspectives.

The hazardous materials transported, stored and handled are expected to include (but not limited to) the following:

- Diesel fuel for construction vehicles and machinery;
- Explosives for tunnelling and localised road widening work and access road construction;
- Lubricating oils;
- Used oils;
- Small amounts of diverse paints, solvent & chemicals;
- Transformer oil, and
- Hazardous waste.

### B. Occupational health and safety management

In addition to the general measures listed in section 6.3.1, the EPC Contract has prepared and will implement a Hazardous Products and Hazardous Waste Management Plan. Specific measures related to the management of hazardous materials are as follows:

- Hazardous material will be transported to the site by licensed transport contractors in compliance with Georgian and EU transport regulations.
- Hazardous material storage facilities will be designed by the EPC Contractor in alignment with Georgian health and safety regulations and GIIP.
- The Project Company health and safety team will review and validate the design of facilities from a health and safety perspective, and check the conformity of facilities and transport during construction.
- The EPC Contractor has developed a hazardous products and hazardous waste management plan which includes transport, storage and handling of hazardous materials and which includes (but not limited to) provisions for the following:

Handling and storage conditions;

Emergency procedures in case of a spill;

Pollution control equipment to be installed at the storage sites: anti-pollution kits, extinguishers.

Training of employees in charge of handling chemical substances and hazardous materials.

Use of Personal Protective Equipment (PPRE) and emergency measures in case of an incident.

These measures are referred to later in this report as:

- [SOC 21] Occupational health and safety measures for hazardous materials during construction

### C. Community health and safety management

Communities potentially affected are described in section 6.3.1B.

The measures described above prevent spillage & leakage and measures for clean-up actions and consequently prevent the accidental exposure of communities to hazardous materials.

In addition, within the limit of the available space or the definition of the permanent works, worksites will be installed at a distance of at least: (a) 300 metres from sensitive urban community services and buildings, and (b) 150 metres from any private housing.

These measures are referred to later in this report as:

- [SOC 22] Safety distance for community health and safety.

## 6.3.3 Noise, dust and vibrations

### A. Concern

*Source of noise, dust and vibrations*

Dust, noise and vibration potentially affecting workers and communities may be caused by the following:

- Traffic (see section 6.2.1.)
- General construction work, and
- Blasting.

Vibrations from road or blasting that affects private houses that are structurally weakened may cause structural problems to be aggravated. Road traffic may cause increased noise and dust levels that affect communities.

Inappropriately managed general construction work may generate dust, noise and vibration at levels exceeding occupation health and safety threshold values and may extend beyond worksite boundaries affecting communities.

The blasting is carried out as part of the tunnelling work and for some localized road widening works and possibly for the construction new access roads. The blasting work in the area of the powerhouse and penstock may represent a risk to communities. Inappropriately managed blasting may cause rockfall that may cause damage to public or private property and may cause injury.

*Receptors*

The powerhouse is located on the left bank of the Nenskra River. The nearest residential area to the powerhouse is the Lakhami hamlet located on the right bank of the Nenskra River – opposite the powerhouse – and the nearest houses are located approximately 150 metres from the powerhouse. There is also a private house located in the left bank of the Nenskra approximately 150 metres upstream from the powerhouse.

A baseline noise monitoring campaign will be conducted in Q1/Q2 2017.

## B. Occupational health and safety management

In addition to the general measures listed in section 6.3.1, the specific measures related to the management of dust, noise and vibration are as follows:

- The EPC Contractor will design facilities and develop execution plans , procedures and monitoring programmes to ensure that workers are not exposed to levels of noise, dust and vibrations that exceed Georgian or EU Occupational Health and Safety limit values;
- The EPC Contractor will provide workers with adequate PPE;
- The EPC Contractor will develop and implement the following plans in compliance with Georgian health and safety regulations and GIIP:

Explosives Management – included in the hazardous products and hazardous waste management plan

Air and Dust Control Management Plan

Noise and Vibration Control Plan

- The Project Company Health and Safety Team will review and validate the plans, and
- The Project health and safety team will check compliance with requirements during the construction work.

These measures are referred to later in this report as:

- [SOC 23] Occupational health and safety measures for noise, dust and vibrations during construction.

## C. Community health and safety management

Communities potentially affected are described in section 6.3.1B.

The measures described above with regard to occupational health and safety also prevent or minimise community exposure to dust, noise and vibrations. In addition, measures specific to protecting the community are as follows:

*Road traffic*

Dust, noise and vibration from road traffic will be managed through the Traffic Management Plan (see section 6.2.1.).

- Definition and enforcement of speed limits in built up areas or near individual houses or hamlets along the road;
- Use of traffic calming devices – such as speed bumps (or speed humps) at the entry and exit of stretches of road with houses and hamlets;
- Use of dust suppression - such as water spraying – when persistent dust emissions occur;
- Speed monitoring for all projects vehicles with GPS devices,
- Maintaining road vehicles in good working order, and
- Maintaining roads in good condition.

In addition, the dilapidation survey (see below) will encompass the houses near the roads used by Project traffic.

*Worksites*

- Construction methods will be adapted and protection used in order that no adverse effects are incurred on people, properties and infrastructure.
- The EPC Contractor will inform the Project Company of any damage during the execution of the works affecting people or property - regardless of value of the prejudice. Damages will be compensated in compliance with the applicable Georgian regulation and in compliance with Lenders' requirements.
- To document the pre-construction state of buildings and houses located near worksites and roads used by the Project, a dilapidation survey has been conducted between October and December 2016. The survey results have been verified and signed by each household. The survey reports have been endorsed by a bailiff's sworn statement. A copy of the survey report will be provided to the building/structure owner or to the representative of the local community if the owner cannot be identified. The survey will document the following:

Any structure or building situated around the site with a distance specified in paragraph (a) to (c) above.

Housing existing before the start of the works, located within a minimum radius of 800 metres around the perimeter of the work area or within a minimum radius of 500 metres around the other worksites that are subject to blasting;

Housing and structures located within 100 meters distance from any non-asphalted road used by the Project.

- All heavy construction activities, such as blasting, will be announced in advance to the communities.
- Noise generating works (e.g. blasting, quarrying, drilling, hammering) inducing an increase of 3 dB or more in ambient noise levels at the nearest occupied off-Worksite receptor area will be carried out during normal working days, but prohibited at night between 6:00pm and 06:00am.
- Vibration monitoring will be carried out at the nearest residential building during works that could potentially cause vibration affecting the building - for example during blasting, quarrying, drilling and hammering. The monitoring will be carried out using a seismometer.

- A specific structural assessment of the buildings closest to the powerhouse will be carried out to ensure that they are structurally sound and will be able to resist the vibrations caused by the Project.
- Regular meetings will be organized to keep the communities up to date with safety issues and construction hazards in and around the worksites.

These measures are referred later in this report as:

- [SOC 24] Vibration monitoring at buildings nearest to worksite during works susceptible to generate offsite vibration effects
- [SOC 25] Structural assessment of buildings closest to the powerhouse worksite to verify structural integrity prior to the start of construction works
- [SOC 26] Community health and safety measures for noise, dust and vibration during construction.
- [SOC 27] Announcement of all construction activities to communities
- [SOC 28] Regular community meetings on Safety and Construction hazards
- [SOC 29] Dilapidation survey

### 6.3.4 Fire and explosion

#### A. Concern

The fire and explosion hazard is represented by the transport, storage and handling of combustible, inflammable or explosive material. The principal combustible material is diesel fuel and the principle explosive material is the explosive used for blasting. Both these materials will be transported to worksite by road and stored in dedicated facilities.

In the case of an accidental event workers and communities may be affected by the consequences of the fire and/or explosion causing damage to property and/or injury to people.

#### B. Occupational health and safety management

In addition to the general measures listed in section 6.3.1, the specific measures related to the management of fire and explosion risk are as follows:

- The Project Company has made a contractual requirement that the EPC Contractor implements measures to ensure that the fire and explosion risks are at acceptable levels in accordance with GIIP.
- The EPC Contractor will implement protection and prevention measures to control risks and these are expected include (but not limited to) the following:

Facilities will be designed in alignment with Georgian safety standards and GIIP;

A risk assessment will be carried out in alignment with GIIP;

Accidental event consequence calculation will be undertaken to confirm adequacy of safety distances;

Facilities will be equipped with high integrity safety prevention and protection systems;

Facilities will be equipped with emergency alarm systems;

Facilities will be equipped with human and material resources for emergency response – including mobile and fixed fire-fighting equipment, ambulances, medical facilities, and medical staff.

Emergency response to fire and explosion events will be included in the construction work's Emergency Preparedness Plan developed by the EPC Contractor, and

Regular emergency response exercises will be organised.

- Regular fire safety audits will be undertaken by the Owner's Engineer as part of the works supervision to ensure compliance with the items listed in the previous bullet point.

These measures are referred to later in this report as:

- [SOC 30] Occupational health and safety measures for fire and explosion during construction
- [SOC 31] Work supervision by the Owner's Engineer to include regular fire and safety audits.

### C. Community health and safety management

Communities potentially affected are described in section 6.3.1B.

The measures described above with regard to occupational health and safety minimise the likelihood and severity of accidental fire and explosions and consequently reduce the risk of consequences affecting communities.

In addition, within the limit of the available space or the definition of the permanent works, worksites will be installed at a distance of at least: (a) 300 metres from sensitive urban community services and buildings, and (b) 150 metres from any private housing.

These measures are referred to later in this report as:

- [SOC 22] Safety distance for community health and safety.

## 6.3.5 Other general worksite hazards

### A. Concern

Other general work site health and safety hazards are as follows:

- Electrical hazards: present in relation to (but not limited to) the temporary power supply service line, use of mobile power generators, electrical equipment at the powerhouse and switchyard.
- Mechanical hazards: present with (but not limited to) the use of fixed and mobile mechanical equipment for the construction of dam, buildings, infrastructure and mechanical hydraulic systems.
- Confined spaces: Workers involved in tunnelling will be working in confined spaces where there are risks of asphyxiation and rock falls.
- Deep and fast flowing water: there are risks associated with working on or near water such as the rivers or reservoirs for the workers constructing dams, weirs, other headworks facilities and tunnel outlet structures.
- Trips and falls: this is a general hazard that is present in general terms during construction work.
- Working at heights: this is a general hazard that is present in general terms during construction work.
- Extreme temperatures: the project area is subject to hot summer weather and extreme cold in the winter.

**B. Occupational health and safety management**

The general worksite hazards are managed through the general measures listed in section 6.3.1.

**C. Community health and safety management**

Members of the community who enter construction sites without authorization or appropriate induction, safety equipment or site knowledge will be exposed to the general hazards described above. This risk is managed through the establishment of site a perimeter fences to prevent unauthorised entry. The worksites will also be guarded by a licenced security contractor.

These measures are referred to later in this report as:

- [SOC 32] Control of access to construction worksites.

# 6.4 Health and safety during operations

## 6.4.1 Generalities

Health and safety hazards and their management related to the production facilities (dam, powerhouse and Nakra weir and water intake) are presented in the following paragraphs.

It should be noted that the following are also included with production health and safety. However, these are addressed specifically in more detail under separate headings:

- Traffic and road safety (see section 6.2.2);
- Natural hazards (see section 6.10.1), and
- Floods (see section 6.7.1).

In general the Project will manage the health and safety hazards through the implementation of the following measures:

- The production facilities will be designed and built in compliance with Georgian health and safety regulations and GIIP.
- The facilities will be operated and maintained in accordance with procedures developed in alignment with GIIP.
- The Project Company will establish and implement an appropriate Environmental and Social Management System (ESMS) in alignment with OHSAS 18001 for the operation of the scheme.
- The Project Company will develop and implement a Health and Safety Plan addressing the health and safety hazards at the site and which are expected to encompass the same type of hazards as those addressed in construction.
- The Project Company will undertake regular health and safety risk assessments, monitor the implementation of the Health and Safety Plan and provide health and safety trainings to its employees during operation.

These measures are referred to later in this report as:

- [SOC 33] General health and safety measures during production.

## 6.4.2 Hazardous materials

### A. Concern

Hazardous materials transported to and stored on the site are expected to include (but not limited to) the following:

- Diesel fuel for diverse diesel powered machinery such as cranes or small mobile back-up generators;
- Lubricating oils and hydraulic fluid;
- Used oils;
- Small amounts of diverse paints, solvent & chemicals;
- Hazardous waste.

### B. Occupational health and safety management

In addition to the general measures listed in section 6.4.1, the specific measures related to the management of hazardous materials are as follows:

- Hazardous material will be transported to the site by licensed transport contractors in compliance with Georgian and EU transport regulations.
- The site Health and Safety management (see section 6.4.1) will include management measures for chemicals and hazardous material, and be similar to that for construction (see section 6.3.2B), though adapted for smaller inventories and fewer materials.

These measures are referred to later in this report as:

- [SOC 34] Occupational health and safety measures for hazardous materials during operation.

### C. Community health and safety management

Communities potentially affected are described in section 6.3.1B.

The measures described above with regard to occupational health and safety also prevent spillage & leakage and measures for clean-up actions to prevent communities' accidental exposure to hazardous material. In addition, within the limit of the available space, facilities will be installed at a distance of at least: (a) 300 metres from sensitive urban community services and buildings, and (b) 200 metres from any private housing.

These measures are referred to later in this report as:

- [SOC 22] Safety distance for community health and safety.

## 6.4.3 Fire and explosion

### A. Concern

The fire and explosion hazard is represented by the transport, storage and handling of combustible and inflammable material. The principal combustible material is diesel fuel. This material will be transported to the site by road and stored in dedicated facilities.

In case of an accidental event workers and communities may be affected by the consequences of the fire and/or explosion causing damage to property and/or injury to people.

### B. Occupational health and safety management

In addition to the general measures listed in section 6.4.1, the specific measures related to the management of fire and explosion risk are as follows:

- The Project Company has made a contractual requirement that the EPC Contractor implements measures to ensure that the fire and explosion risks are at acceptable levels in accordance with GIIP.

This measure is referred to later in this report as:

- [SOC 35] Fire and explosion prevention in alignment with GIIP.

### C. Community health and safety management

Communities potentially affected are described in section 6.3.1B.

The measures described above with regard to occupational health and safety are also relevant in terms of community health and safety. This is because they comprise measures to minimise the likelihood and severity of accidental fire and explosions and consequently reduce the risk of consequences affecting communities.

In addition, within the limit of the available space or the definition of the permanent works, worksites will be installed at a distance of at least: (a) 300 metres from sensitive urban community services and buildings, and (b) 200 metres from any private housing.

These measures are referred to later in this report as:

- [SOC 22] Safety distance for community health and safety.

## 6.4.4 Noise

### A. Concern

*Sources of noise*

At the dam site the main sources of noise are expected to be from mobile machinery such as cranes, small mobile generators and compressors used for maintenance works, and equipment housed in machine rooms. These noise sources are of concern from an occupational health and safety perspective, but as the noise sources are situated far from any residential areas they are not a concern from a community health and safety perspective.

At the Nakra diversion weir and operators village there are no concerns about noise.

At the powerhouse, the noise sources (and the estimated noise levels at the source without mitigation measures) are expected to include the following:

- Turbines and generators (90 dB(A) for one unit– there are three Pelton turbines and generators);
- Transformers (80 dB(A));
- Aeration conduit (unknown noise level), and
- Tailrace channel (unknown noise level).

*Nature of the concerns*

The powerhouse noise sources are of concern from an occupational health and safety perspective as employees risk being exposed to noise levels that are above occupational threshold limit values.

The noise from the powerhouse is of concern from a community health and safety perspective and it needs to be ensured that the incremental increase in noise levels at the nearest receptor does not exceed the threshold values recommended by guidelines for Community Noise established by the World Health Organization, in order not to adversely affect the household.

## B. Occupational health and safety management

In addition to the general measures listed in section 6.4.1, the specific measures related to the management of noise are as follows:

- As far as technically practicable without exceeding excessive cost, turbines and generators will be equipped with noise shielding to reduce the noise levels in the powerhouse to levels that are in compliance with Georgian and IFC EHS guideline occupational noise levels;
- For work in noisy areas, operators will be provided with suitable high performance hearing protection devices;
- Operator health checks will include checking of hearing;
- Procedures will be prepared that make the use of hearing protection mandatory in areas with high noise;
- Regular equipment noise monitoring will be undertaken, and
- Equipment will be regularly inspected and maintained to ensure that noise levels are minimised.

These measures are referred to later in this report as:

- [SOC 36] Occupational health and safety for production noise measures.

## C. Community health and safety management

The powerhouse is located on the left bank of the Nenskra River. Noise measurements made by the Project in November 2016 at the site of the proposed powerhouse measured noise levels of 51 dB(A).

The nearest residential area to the powerhouse is the Lakhami hamlet located on the right bank of the Nenskra River – opposite the powerhouse – and the nearest houses are located approximately 150 metres from the powerhouse. Noise measurements made in November 2016 by the road close to the river measured levels of 71 dB(A), which is above the recommended IFC EHS guideline values for a residential area. The source of the baseline noise is principally the noise of the river with a small contribution from road traffic noise.

There is also a private house located in the left bank of the Nenskra approximately 150 metres upstream from the powerhouse.

A baseline noise monitoring campaign will be conducted in 2017.

The reduction in noise with distance from the source combined with the relatively high background noise from the river. Noise reduction solutions will be designed during the detailed design. This will ensure that the powerhouse operation does not generate noise levels in excess of threshold values recommended by the Georgian regulations or the guidelines for Community Noise established by the World Health Organization.

At this stage the general concept and expected noise abatement performance are as follows:

- The generators will be located in a concrete pit and the turbines embedded in concrete. This is expected to result in noise reduction and noise levels outside of the power plant building will be in the order of 58 dB(A);
- A noise barrier could be constructed around the transformers if required and noise levels at the outside of the noise barrier will be approximately 76 dB(A), and
- The aeration conduit could be equipped with a silencer if required, and noise levels at 150 metres will be reduced by as much as 50 dB(A).

Once the powerhouse is in operation, regular noise monitoring will be undertaken to confirm compliance with Georgian regulations or the guidelines for Community Noise established by the World Health Organization, whichever the stricter. This monitoring will be shared with representative of nearest community as part of the participative monitoring programme implemented by the Project.

These measures are referred to later in this report as:

- [SOC 37] Compliance with Georgian regulations or the guidelines for Community Noise established by the World Health Organization, whichever the stricter, at the nearest offsite noise receptor ensured through facilities design.
- [SOC 38] Community health and safety for production noise measures.
- [SOC 39] Participatory monitoring activities.

### 6.4.5 Other general production site hazards

#### A. Concern

Other general production site health and safety hazards are as follows:

- Electrical hazards: present in relation to (but not limited to) the electrical equipment at the dam site, powerhouse and switchyard.
- Mechanical hazards: present with (but not limited to) the use of fixed and mobile mechanical equipment at the dam and powerhouse.
- Confined spaces: Workers involved in inspection and maintenance may need to enter tunnels, inspection galleries within the dam structure, where there are risks of asphyxiation and rock falls.
- Deep and fast flowing water: there are risks associated with working on or near water such as the rivers or reservoirs for the operating staff and maintenance workers.
- Trips, falls: this is a general hazard that is present in many areas of the production sites.
- Working at heights: this is a general hazard that is present in many areas of the production sites.
- Extreme temperatures: the project area is subject to hot summer weather and extreme cold in the winter.
- Noise; noise is present in many areas of the production sites, in particular the powerhouse.
- Dust and vibration: dust and vibrations may be generated during maintenance works involving civil engineering.

#### B. Occupational health and safety management

The general worksite hazards are managed through the general measures listed in in section 6.4.1.

#### C. Community health and safety management

Members of the community who enter production sites without authorization or appropriate induction, safety equipment or site knowledge will be exposed to the general hazards described above. This risk is managed through the establishment of site perimeter fences to prevent unauthorised entry. The production sites will also be guarded by a licenced security contractor.

### 6.4.6 Other general production site hazards

#### A. Concern

Other general production site health and safety hazards are as follows:

- Electrical hazards: present in relation to (but not limited to) the electrical equipment at the dam site, powerhouse and switchyard.
- Mechanical hazards: present with (but not limited to) the use of fixed and mobile mechanical equipment at the dam and powerhouse.
- Confined spaces: Workers involved in inspection and maintenance may need to enter tunnels, inspection galleries within the dam structure, where there are risks of asphyxiation and rock falls.
- Deep and fast flowing water: there are risks associated with working on or near water such as the rivers or reservoirs for the operating staff and maintenance workers.
- Trips, falls: this is a general hazard that is present in many areas of the production sites.
- Working at heights: this is a general hazard that is present in many areas of the production sites.
- Extreme temperatures: the project area is subject to hot summer weather and extreme cold in the winter.
- Dust and vibration: dust and vibrations may be generated during maintenance works involving civil engineering.

#### B. Occupational health and safety management

The general worksite hazards are managed through the general measures listed in in section 6.4.1.

#### C. Community health and safety management

Members of the community who enter production sites without authorization or appropriate induction, safety equipment or site knowledge will be exposed to the general hazards described above. This risk is managed through the establishment of site a perimeter fences to prevent unauthorised entry. The production sites will also be guarded by a licenced security contractor.

## 6.5 Exposure to disease

### 6.5.1 Communicable diseases

#### A. Concern

About 1,100 workers will be employed during the construction phase. Part of the workforce is expected to come from outside the Project area – though from within Georgia. The arrival of these temporary workers may increase the incidence of communicable diseases - including STI/HIV.

As the workers are expected to be predominantly Georgian, the risk that they bring previously unknown transmittable diseases to the valleys is low.

The HIV epidemic remains a significant public health concern in Georgia. Since the detection of the first case of HIV in 1989, the rate of new HIV diagnoses in the country has been increasing steadily and reached 12.7 per 100,000 in 2014 (UNAIDS 2015). The estimated prevalence rate

at a national level for adults aged 15 to 49 is 0.4% (UNAIDS 2015). The latest available evidence indicates that the HIV epidemic in Georgia is largely concentrated among key affected populations (such as people who inject drugs and sex workers). Despite this, there is a high potential for the rapid spread of the HIV epidemic and the low prevalence is actually a factor in the low level of awareness about the disease among the Georgian population. Stigma against, and fear of discrimination among, people living with HIV has led many to conceal their HIV-positive status (Stvilia *& alii* 2005). Some studies shown that the prevalence values are underestimated, and that the registered numbers of HIV/AIDS cases in the country do not reflect the actual spread of the infection (Kvitsinadze *& alii*, 2010). Given the sensitivity of this epidemic, the risk that Project workers increase the risk of transmission of HIV-AIDS is considered as low moderate.

**B. Management**

In order to prevent an increase in the prevalence of communicable diseases (including STIs/HIV/AIDS) in the communities and within the Project's workers, the Project will organize awareness raising campaigns on health issues for settlements close to camps and its associated facilities (via posters, leaflets, through health clinics, community meetings).

These awareness campaigns will be organized in cooperation with the local Health Authorities. As existing prevalence rates of transmissible diseases are not available at the local level, it will also be proposed to the Health authorities to collaborate in order to set up precise community health baseline in the two valleys and to monitor changes.

These measures will be completed by some measures included in the Environmental and Social Specifications of the EPC contract. Mitigations measures on workers' health and safety in these Environmental and Social Specifications include:

- Health screening for all personnel, including sub-contractors;
- Health awareness training for workers including sexually transmitted diseases and HIV/AIDS at induction and then periodically throughout their employment;
- Availability of condoms from the first aid and medical installation at the construction sites and construction camps, without charge.

The Project will monitor the implementation of these measures by the contractors during construction and operation.

The more local workforce will be employed for the Project region, the less any employed outsiders will contribute to an increase of the prevalence of transmittable diseases. Local employments targets mentioned in section 7.2 will help to prevent any risk of increased transmission of transmissible diseases.

These measures are referred later in this report as:

- [SOC 40] Local employments targets
- [SOC 41] Cooperation with Health authorities
- [SOC 42] Community awareness campaigns on health issues
- [SOC 43] Monitoring of implementation of workers' health specification by contractors

## 6.5.2 Waterborne diseases

The water temperature, the important annual variations of water level and the shape of the reservoir with no dendritic areas where water could stay steady and not renewed for a long period will limit significantly the risk of proliferation of parasites or their larvae that are the

cause of waterborne diseases. Consequently, no issues related to waterborne diseases are expected.

# 6.6 Health risks of impacts on water resources

## 6.6.1 Impacts on water resources during construction

### A. Concern

River water quality may be modified as a result of construction works by the following:

- Earthworks in the Nenskra and Nakra riverbeds causing increased sediment loading;
- Tunnelling works and the discharge of drained water with high sediment loading;
- Presence of sulphur containing rock in tunnelling waste material and which is deposited in spoil dumps. If this were to be the case, it could result in acid rock drainage and heavy metal leaching causing a change of river water pH and increased concentration of some heavy metals in the river water;
- Accidental spills and leaks from the storage and handling of hazardous materials such as fuel, oil, lubricating oil, transformer oil.

No impacts on groundwater availability are expected and impacts on groundwater quality would only occur in the event of accidental spill of hazardous materials.

It is unlikely that community health will be affected by changes to river water quality or accidental pollution of groundwater. Potable and domestic water used by all households originates from seeps and springs that are located away from the river on higher ground. Only a very small number of households use river water and only for domestic purposes and only during the summer months when some springs and seeps are temporarily dry. A detailed description of community water supply and water use is described in section 2.5.5.

### B. Management

The Construction ESMP include measures to (i) prevent and minimise modifications to river water quality and (ii) prevent accidental spill and leaks of hazardous materials and protect soil and groundwater resources.

In addition the Project Company will monitor the quality of the potable water springs and seeps and mineral water springs in the Nenskra and Nakra valleys. The monitoring will complement the monitoring of the Nenskra and Nakra rivers quality defined in Vol. 5 – Hydrology and water quality impact assessment.

The monitoring of the quality of water springs used by the local population for their water supply and of the mineral water springs will be done on a quarterly basis during the construction, each 6 month during the first 5 years after impoundment of the reservoir and annually after that.

The water springs to be monitored will be chosen with the local communities (10 in the Nenskra valley and 5 in the Nakra valley). Water monitoring results shall be shared with the communities as part of the Participatory Monitoring (see Vol. 8 – ESMP). The criteria that will be monitored are the same as those used during the Water quality baseline undertaken in October-November 2015 (See Baseline section of report Vol. 5):

- Total Organic Carbons;
- Metals - aluminium, antimony, arsenic, beryllium, boron, cadmium, calcium, chromium, copper, mercury, lead, magnesium, molybnium, nickel, selenium, iron and zinc;

- Inorganics - ammonium, and fluorides;
- Other analysis – chlorides, nitrites, nitrate, sulphates, and
- Total Alkalinity, Biological Oxygen Demand, Chemical Oxygen Demand, Total Coliforms.

It is not anticipated that the Project will affect the availability of the water springs used by the communities for their water supply systems. However, in case of a change of availability of the spring water, the Project Grievance Mechanism will be applied. If the Project is effectively affecting a water spring, a solution will be determined on an *ad-hoc* basis, and if necessary the Project Company will provide an alternative source of water.

This measure is referred later in this report as:

- [SOC 44] Technical measures to avoid impacts on water quality
- [SOC 45] Monitoring of water springs and mineral water quality
- [SOC 46] Disclosure of water monitoring results to local communities
- [SOC 47] Provide an alternative source of household potable water if springs and seems used by a household are affected by the Project.

The possibility of improving the existing water supply systems through the implementation of the Community Investment Programme is discussed in section 3.5 Community Investment.

## 6.6.2 Operation

### A. Concern

The impacts on water quality are described in detail in Vol. 5 – Hydrology and water quality impact assessment. Between the Nenskra dam and the powerhouse, a noticeable change in the river water quality can be expected during the first few years after reservoir filling. The degree of change decreases with distance from the dam. This is because of the effects of dilution from the inflow from the tributaries. After 3 years, the river water quality should be back to normal conditions. Downstream of the Nakra water intake, the expected change is with respect to sediment loading – the river will have a lower solid material transport capacity.

It is unlikely that community health will be affected by the changes to river water quality. As mentioned in Section 2.5.5.potable and domestic water used by all households originates from seeps and springs that are located away from the river on higher ground. Only a very small number of households use river water and only for domestic purposes and only during the summer months when some springs and seeps are temporarily dry.

The mineral water spring located near the rivers in the Nenskra and the Nakra valley are likely to be part of aquifers distinct from the Rivers. They are located a few meters higher than the Rivers levels. Modifications in the water level and/or quality in the Nakra and Nenskra Rivers are unlikely to affect them. The mineral water springs are used only occasionally by the community. Nobody uses them as an exclusive source of drinking water.

### B. Management

The mitigation strategy implemented during the construction phase and described in section 6.6.1 and will be continued during operation.

# 6.7 Flood risks

## 6.7.1 Dam failure

### A. Concern

The physical presence of the Nenskra dam and the potential for dam failure represents a risk for downstream communities. In the very unlikely event of a dam failure, a flood wave of 20 metres in height and a flow rate of 179,000 $m^3/s$ would reach the Nenskra powerhouse area and then flow into the Enguri reservoir effectively flooding the whole Nenskra valley and causing catastrophic consequences.

### B. Management

The dam has been designed and will be constructed and operated so that the likelihood of dam failure is extremely remote. The Project Company has made a commitment that the risk of dam failure will be within the tolerable limits defined by GIIP – such as the Australian Commission on Large Dams (ANCOLD). A detailed description of dam failure modes and mitigation measures is provided in Vol. 6 – Natural hazards and dam safety. These measures include:

- A dam failure risk assessment will be conducted in alignment with the International Commission on Large Dams (ICOLD) methodologies;
- The dam is designed to withstand the Maximum Credible Earthquake without failing and to evacuate safely the Probable Maximum Flood, both events have a return period in excess of 10,000 years;
- Natural hazard studies have been undertaken to evaluate the risk of natural hazard events triggering a series of events that could lead to dam failure. Natural hazard events are not expect to directly cause dam failure, though events such as avalanche and debris may affect the dam features such as the spillway and bottom outlet – which are safety features – and consequently safeguards have been defined to monitor the risk of such events, protect structures and plan emergency actions to be taken in the event that a dangerous situation is detected.
- The coffer dam is likewise designed to withstand seismic and flood events. However, the coffer dam is only 10 metres in height and the volume of water retained significantly smaller that the main reservoir.
- An Emergency Preparedness Plan has been prepared which identifies which communities are exposed to the risk of dam failure and defines the warning, evacuation and other actions to be taken in the event of an emergency situation.

## 6.7.2 Reservoir overflow via spillway

### A. Concern

Situations where there is sudden and possibly unexpected discharge from the spillway are listed below. These situations would cause a sudden increase in water flow rate and water depth in the Nenskra River downstream from the dam putting people and livestock in the riverbed or on the river banks at that time in danger of drowning.

- In normal year during the summer months when the reservoir is full, if a turbine becomes unavailable the reservoir inflow could be higher than outflow and consequently there would be an overflow of reservoir water via the spillway.

- In wet years (2 years out of 10) during the summer months when the reservoir is full, the reservoir inflow can be higher than the maximum outflow (maximum turbining rate) and consequently there would be an overflow of reservoir water via the spillway.
- In the event of a naturally occurring hazardous event such as a large landslide, avalanche or rockmass collapse and which impacts the reservoir – when the reservoir is full or nearly full – an impulse wave may be created that overflows via the spillway.
- During a flood event when the reservoir is full the inflow in excess of the outflow (turbining rate) will overflow via the spillway. This situation will be much the same as for a flood event without the dam. However, if turbines are unavailable the flood water flow rate will be higher than the case without the dam because of the Nakra diversion – and so flood events will be of a greater magnitude than the situation before the dam was built, and there may be an increased risk of flooding.

A detailed description of reservoir discharges via the spillway is provided in Vol. 5 - Assessment of impacts on hydrology and water quality.

## B. Management

- The Nakra transfer tunnel inlet is equipped with a remotely operated gate so that during flood events the Nakra diversion can be closed stopping the inflow into the Nenskra reservoir and reducing reservoir spillage flow rates to those of the natural flood conditions without the Project;
- Operating procedures will be developed in order that reservoir water level is monitored and turbining flow rates adapted so that rate of spillage increases gradually, and that a spillage of water with a rapid change in flow rate in the Nenskra is avoided;
- Turbines will be designed to allow water flow through injectors and deflectors when not in operation to minimize or avoid spillage at the reservoir;
- The area around the spillway plunge pool will be fenced to prevent the public accessing this area;
- Installation of warning signs and siren systems and conduct appropriate drills to test effectiveness at various distances from the powerhouse;
- Hydrological study two years before impoundment of the reservoir, to define the areas likely at risk to be flooded and the areas affected by the rapid rise of water level (between the dam and the powerhouse);
- Once identified, any new construction in these areas will be prohibited and flood protection works in these areas established;
- Warning signs will be erected along the Nenskra River to inform the public of the danger;
- Regular drilling exercises will be conducted with the participation of community representatives and of local authorities;
- Alarm system will be implemented to warm any flood event (to be integrated into the Emergency Preparedness Plan, see section 6.11);
- Awareness programmes will be implemented to ensure that local people know of the risk of sudden changes in flow rate, and regarding the above measures.

These measures are referred later in this report as:

- [SOC 48] Adjustment of the operating procedures
- [SOC 49] Restriction of access around and downstream the Project infrastructure
- [SOC 50] Alarm and warning signage

- [SOC 51] Additional flood studies & flood protection measures
- [SOC 52] Regular communication and awareness campaigns on dam safety
- [SOC 53] Development and implementation of participatory monitoring to ensure transparency and reactivity in case of problems related to flow variations

## 6.7.3 Powerhouse discharges

### A. Concern

The Nenskra River flow downstream from the powerhouse is subject to sudden increases in flow due to spillage from the reservoir described in section 6.7.2. In addition, there will be hourly variations in the rate of turbining resulting in sudden changes in the Nenskra River flow rate and water level downstream from the powerhouse. These situations would cause a sudden increase in water flow rate and water depth in the Nenskra River downstream putting any people and livestock who are in the riverbed or on the river banks at that time in danger of drowning. The variation in flow rate and water depth will be regular and continuous throughout the year.

A detailed description of reservoir discharges from the powerhouse is provided in Vol. 5 - Assessment of impacts on hydrology and water quality.

### B. Management

To mitigate the risks of floods and rapid variation of flow rate and water level downstream from the powerhouse, the following measures will be implemented.

- Access will be restricted in the immediate vicinity of the powerhouse and the tailrace;
- Installation of warning signs and siren systems and conduct of appropriate drills to test effectiveness at various distances downstream from the powerhouse;
- Hydrological study two years before impoundment of the reservoir, to define the areas likely at risk to be flooded and the areas affected by the rapid rise of water level (downstream of the powerhouse);
- Once identified, any new construction in these areas will be prohibited and flood protection works in these areas established;
- Warning signs will be erected along the Nenskra River to inform the public of the danger
- Alarm system will be implemented to warm any flood event (to be integrated into the Emergency Preparedness Plan, see section 6.11), and
- Awareness programmes will be implemented to ensure that local people know of the risk of sudden changes in flow rate, and regarding the above measures.

These measures are referred later in this report as:

[SOC 48] Adjustment of the operating procedures

[SOC 49] Restriction of access around and downstream the Project infrastructure

[SOC 50] Alarm and warning signage

[SOC 51] Additional flood studies & flood protection measures

[SOC 52] Regular communication and awareness campaigns on dam safety

[SOC 53] Development and implementation of participatory monitoring to ensure transparency and reactivity in case of problems related to flow variations

### 6.7.4 Dam bottom outlet gate operation

#### A. Concern

The Nenskra dam is equipped with a bottom outlet gate which is normally maintained closed. The gate is only opened in very rare emergency situations when there is a need to lower the reservoir water level - which may occur for example following a seismic event or if an extreme flood event is expected.

When the gate is fully open it will allow a flow rate of 317$m^3$/s – the equivalent to a 10,000-year return flood event - to flow through the bottom outlet into the Nenskra River and this could cause downstream flooding. Consequently the opening of the gate will be subject to strict operating rules and procedures and a warning is given to the local population that the gate will be opened. On the rare occasions that the gate is operated it shall not be opened to its maximum capacity - but to an extent that allows the reservoir water level to be lowered without causing downstream flooding.

Nevertheless there is a risk that the gate may be accidentally opened due to human error or control system malfunction, or that the gate is opened too much allowing a high flow rate of water from the reservoir to be discharged.

#### B. Management

To mitigate the risks the following measures will be implemented.

- Strict, robust gate operation rules will be established and procedures for controlled operation of the gate will be developed;
- The correct functioning of the gate will be checked annually, the gate will be opened a small amount and then closed again;
- Control systems will include an independent safety backup system;
- Gate will be equipped with a mechanical system for staged opening, with repeated actions required by the operator at each stage.

These measures are referred to later in this report as:

- [SOC 54] Bottom outlet gate operation safeguards

The Project Company has made a commitment that flood modelling of the bottom outlet gate opening will be undertaken and used in the preparation of EPP and communicated to local communities. This measure is referred later in this report as:

- [SOC 55] Bottom outlet gate operation and malfunction flood study.

Measures to inform and protect local communities from this operation and malfunction of the bottom outlet gate are included with those for dam failure, reservoir overflow via the spillway and powerhouse discharges described above.

## 6.8 Project induced in-migration health & safety risks

#### A. Concern

Large construction projects can attract new in-migrants. Depending on how it is managed and the baseline conditions, project-induced in-migration can have an adverse or a beneficial impact on local communities and the Project's performance. Potential new migrant stakeholder groups for this Project include:

- Returning family, extended family members and former residents – seeking improved living conditions and employment or opportunities to provide goods and services to the Project or local population.
- Camp followers - who are entrepreneurs arriving to capture business opportunities associated with the construction labour of the Project.

Project-induced in-migration has not been significant in projects of similar scale in Georgia. The importance of influx usually depends on several factors (IFC, 2009) depending on the Project characteristics as well as socioeconomics conditions of the area:

- The number of unskilled jobs offered locally by the Project;
- Accommodation strategy of Project's workforce;
- Accessibility of the Project area and its possible enhancement by the Project;
- Perceived opportunities to speculate on compensation during the Project's land acquisition process;
- Proximity with international borders and existence of transnational migrations;
- Level to employment in the area without the Project;
- Existing local patterns of migration, and
- Proximity with important urban centres.

Table 69 below describes the assessment of each of the above factors, the likelihood and potential magnitude of influx in the Project's area.

**Table 69 - Assessment of risks and magnitude of Project related in-migration**

| Factors | Description of situation | Risk / Magnitude of influx |
|---|---|---|
| Number of unskilled jobs offered by the Project (jobs seekers moving to projects hoping to be hired are almost exclusively unskilled workers) | To ensure maximum local benefits are achieved through the construction phase, the Project will aim at hiring 100% of unskilled workers from the local area (the Nenskra and Nakra valleys) if available. If not available, recruitment will be extended to the nearest villages in the Mestia Municipality and the Svaneti region. This will minimize employment opportunities for outsiders.<br>Scale of job-seeker influx depends on perceived employment opportunities. | Low risk / Low magnitude |
| Accommodation of workforce<br>(no accommodation means higher in-migration) | All people employed that are not residing in the Valley will be living in construction camps.<br>Opportunities of businesses development to provide services to workers such as food or rooms will be limited. | Low risk / low magnitude |
| Accessibility of Project area<br>(New accessibility means high in-migration) | The Project's area is already accessible. Both valleys are connected to the main road Zugdidi Mestia.<br>The Project will upgrade existing road, but will not create new ones. Conditions of driving will be improved, but accessibility of the valley will not change. | Low risk / low magnitude |
| Perceived opportunities of speculation<br>(high perceived opportunities means high in-migration) | In Nenskra and Nakra valleys, all communities are living there since several generations (see section 2.2.2 page 20). Traditional ownership or use of land is well known and recognized. There is not any possibility that newcomers can claim right to compensation.<br>Few opportunities for potential migrants as local people are being prioritised for skills development and employment and this may deter potential in-migrants | No risk |

**Table 69 - Assessment of risks and magnitude of Project related in-migration**

| Factors | Description of situation | Risk / Magnitude of influx |
|---|---|---|
| Proximity with international borders<br>(proximity means potential higher risk of in-migration) | The Project area is close to the Russian Border. But crossing the border is a challenge given the slopes, and controls are strict. There is one border guard patrol in each valley.<br>Abkhazian border is also near from the Project, but is closed and strictly controlled. | No risk |
| Level of employment in the area<br>(high level means less in-migration) | For a rural area, there is a relatively high level of employment in both valleys: 28% of households have at least one member permanently employed in public service, and 11% in a private company (see Table 12 page 31). Despite the lack of primary data, one can estimate that the number of existing unformal jobs in local logging activities may also be important. | Low risk / low magnitude |
| Existing patterns of migration<br>(tendencies to mobility means high risk of in-migration) | Existing migrations pattern are rural – urban migration. People are usually moving mostly from rural areas to urban centres. | Very low risk / Very low magnitude |
| Proximity with urban centres (close means less risk of in-migration) | The area is relatively close to Zugdidi, the region's main city (~100,000 people). It is 1.5 to 2 hours' drive from the Nenskra valley when the road is in good condition. There is a daily mini-van going to Zugdidi from Nenskra valley (see section 2.5.1 page 70).<br>Mestia is the closest city, 1 hour drive from Nenskra valley, but it is relatively small (less than 5,000 people). | Medium risk / Medium magnitude |

Source: SLR, adapted from IFC 2009: "Projects and People: A Handbook for Addressing Project-Induced In-Migration"

The probability of project-induced in-migration is low, and the possible magnitude of such influx would unlikely be significant.

Based on documentation collected on a wide array of Projects worldwide, the IFC (IFC, 2009) recommends that a Project's related in-migration could range between 3 to 10 times the number of people employed by the Project. Given the fact that such influx is not very common in Georgia, and as the risk is very low, potential in-migration should not exceed the amount of unskilled workers, a few hundred people.

However, in the event of such influx happens, and given the conditions of public utilities, specifically health facilities, education, transports, water utilities, in the two valleys and the local demography, it may have high impacts on the local communities. For example, an influx of 300 people in the Nenskra Valley would represent one third of the existing population of Chuberi village. Similarly, an influx of 50 people in the Nakra valley would represent 17% of the existing population.

Although if the predicted risk of in-migration is low, implications associated with Project's related in-migration could be serious if that risk would materialize:

- Various types of anti-social behaviour (e.g. public drunkenness),
- Pressure on social services, especially health facilities.
- Increase in sexually transmitted diseases,
- Local inflation.

### B. Management

Job-seeker influx will be monitored and be anticipated in the support offered by the Project to the community social infrastructures.

- The Project will develop and implement a monitoring system together with the local authorities to record data on in-migration;
- As part of the Community Investment Programme, the Project will work with the local authorities to define needs and obtain funding for the rehabilitation and support the existing heath facilities in the two valleys. A Memorandum of Understanding will be developed and agreed to define the responsibilities of each party (Project and local health authority).
- Local prices will be monitored in the Nenskra and Nakra valleys to detect any inflation

These measures are referred later in this report as:

- [SOC 56] Monitoring system to document in-migration.
- [SOC 57] Memorandum of Understanding with the local health authorities
- [SOC 58] Monitoring of local prices

## 6.9 Social cohesion & health & safety risks

### A. Potential impact

The Project potentially could cause some local social tension or social fractures due to actual or perceived treatment by or benefits from the Project to one community or stakeholder group over another. This may include in-migrants in search of economic opportunities and subsequent perceived or actual wage differences within or between Client employees and contractors.

Disruption to communities might also be triggered by Project's staff or contractors, which may include petty crimes such as theft, antisocial behaviour (exploitative sexual behaviour, alcohol use, etc.).

### B. Management

To avoid any misunderstanding regarding perceived treatment by or benefits from the Project to one community or stakeholder group over another, a communication strategy is defined and implemented. This is the SEP (Vol. 7). Community Liaison Officers and Social Manager will undertake regular community consultation. Employment opportunities will be disclosed as part of the Recruitment strategy (see Section 7 below).

The first measure to minimize the risk of disturbance of the local communities from the Project's employees is to maximize the use of local workers. This is done through local employment target defined in the EPC contract (see section 7.2 page 141).

To mitigate any risk of anti-social behaviour from the Project employees coming from other part of Georgia, and from expatriate employees, the Project will develop and implement a workers' Code of Conduct. All workers will be trained on this Code of Conduct, and respect of this code will be monitored.

- The Project's workers' Code of Conduct will include the following measures in order to mitigate the risks of anti-social behaviour:

Respect for local residents and local customs.

Zero tolerance of bribery or requesting gifts from settlements. Any 'gifts' to be immediately reported.

No hunting, fishing or unauthorized natural resources collecting activity;

Zero tolerance of illegal activities by construction personnel including: involvement in prostitution; illegal sale or purchase of alcohol; sale, purchase or consumption of drugs; illegal gambling or fighting.

No purchase of goods or services at the camp gate.

An alcohol and drugs policy (both in and out of work hours).

Rules on access to, and use of camp entertainment facilities.

Description of disciplinary measures for infringement of the code and camp rules.

- To mitigate the risks to community safety induced by the presence of the Project employees, the Code of Conduct will also include the following measures:

No use of camp vehicles for non-work business. No use of personal vehicles for work business.

No access to camps by unauthorized personnel.

Limits on hours of movement and use of security passes by all workers.

Country-wide road speed limits (preferably 10% lower than those legally imposed).

- All workers will be provided awareness training with regard to the Project's Code of Conduct, and which will include information on local customs and beliefs.
- A Contractor Management Plan will be developed as the mechanism for ensuring contract compliance which includes compliance with the Code of Conduct policy measures and safety requirements mirrored by the Construction contractor.

In addition, 3 construction camps will be constructed at the 3 construction sites (Nenskra dam site, powerhouse site and Nakra water intake site), in order to provide workforce accommodation on site to minimize contact with local communities while working. These construction camps will include recreational facilities to minimize contact with local communities while leisure time. For the operation phase, the Operator's village will be located near the hamlet of Tita, 5 kilometres south of the dam site. This area is not in a densely inhabited area, and is about 7 kilometres away from the centre of Chuberi village.

Stakeholder engagement efforts will also be continued throughout construction and operation, until the closure of the Project (see report Vol.7 – SEP) to ensure that all potentially affected stakeholders know how to contact the company and to file grievances in accordance with the Project's Grievance Management System.

These measures are referred later in this report as:

- [SOC 59] Effective implementation and monitoring of the SEP
- [SOC 40] Local employments targets
- [SOC 60] Code of Conduct for the Project employees.
- [SOC 61] Accommodation of employees in Construction camps.
- [SOC 62] Communication of the Grievance Mechanism.

# 6.10 Natural hazards and climate change

## 6.10.1 Natural hazards

### A. Concern

The Project is located in a mountainous region with the presence of natural hazards including avalanches, landslides, rockfalls and landslides. The area is in a seismic zone.

The risk of naturally occurring hazardous events that could trigger dam failure or cause damage to structures and facilities and cause a chain of events putting local communities in danger has been assessed. The principal concern is that of a natural hazard causing dam failure which would flood the Nenskra valley. A detailed description of natural hazards and dam failure modes is provided in Vol. 6 – Natural hazards and dam safety.

### B. Management

The Project has undertaken a natural hazard risk assessment studies which have been used in the design of Project structures and facilities. The Project Company will design structures and facilities taking into account natural hazard risks and will implement monitoring programmes and warning systems and design protective structures. These measures are referred later in this report as:

- [SOC 63] Technical solutions to manage natural hazard risks

## 6.10.2 Reservoir triggered seismicity

### A. Potential impact

There is general scientific consensus that there is a relationship between creation of some large dam-reservoirs and a detectable change the frequency of seismic events. There is concern among the local communities that the Nenskra reservoir will cause seismic events that could damage their homes and trigger landslide or avalanche events that could put their health and safety in danger. In compliance with the recommendations of the International Commission on Large Dams (ICOLD), the possibility of Reservoir Triggered Seismicity (RTS) has been studied by the Project. The study has concluded that RTS of a magnitude of less than 4.5 on the Moment Magnitude Scale (equivalent to approximately 4.5 on the Richter Scale) could occur. Seismicity of this magnitude can be felt by people, but does not cause damage to buildings.

### B. Management

The measures to minimise the risk of RTS affecting health and safety of local communities are as follows:

- RTS is most likely during the reservoir filling and consequently reservoir filling will be undertaken at a rate lower than 12 metres water depth increase per week.
- Seismic activity will be monitored during reservoir filling, and filling rate slowed or stopped if an increase in seismicity is detected.
- During operation seismic activity will continue to be monitored.
- Additional studies regarding slope stability will be carried out to establish the risk that RTS will trigger naturally occurring hazardous events such as landslide, rockfall, or rockmass collapse.

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These measures are referred later in this report as:

- [SOC 64] Reservoir Triggered Seismicity mitigation

## 6.10.3 Regional climate change and microclimate change

### A. Potential impact

Local communities have expressed concern that the physical presence of the Nenskra reservoir in combination with the existing Enguri reservoir and the Khudoni HPP Project could cause microclimate changes resulting in increased frequency of avalanches and landslides – which could affect communities. Consequently, an assessment of impacts on microclimate resulting from the cumulative effects of the 3 reservoirs has been undertaken and is included in Vol. 10 Cumulative Impact Assessment. The assessment concludes that the Nenskra Project will cause only very localised changes in microclimate around the reservoir and which will probably not be discernible from changes due to regional climate change.

There is also concern that regional climate change from global warming will also have an effect on prevalence of events such as landslides and avalanches and extreme floods that could impact the Project structures – possibly resulting in dam failure, and impacting local communities.

### B. Management

- With respect to microclimate changes, although no detectable microclimate changes are expected, avalanche and landslide monitoring systems will be designed and put in place with warning systems in the reservoir area to mitigate the risk of such events impacting the dam.
- With regard to effect of climate change on natural hazards, the Project Company will undertake a climate change risk assessment in alignment with good international industry practice.

## 6.10.4 Flooding in the Nakra valley initiated by mudflow/debris events

### A. Potential impact

There is an existing baseline situation issue with respect to mudflow and debris flow events on lateral tributaries of the Nakra River causing temporary blockage of the river, representing a flood risk. The diversion of the Nakra River to the Nenskra reservoir could increase the risk of flooding because of the reduced sediment transport capacity of the Nakra caused by the Project. This issue is described in details in Vol. 5 – Hydrology and water quality impact assessment.

### B. Management

To minimise the risk of flooding of the Naki village, as a result of solid material transported by the Lekverari and the Laknashura torrent a study will be carried out to determine the mist suitable actions to be implemented. Vol. 5 – Hydrology and water quality impact assessment includes a monitoring program to detect any changes in the riverbed with annual visual surveys and topographical surveys.

This measures are referred later in this report as:

- [SOC 65] Study for the definition of the Nakra river and tributaries sediment management

## 6.11 Emergency preparedness and response

In order to manage accidental events such as dam failure, emergency opening of the bottom outlet or any kind of malfunction of the dam or powerhouse, the Project has prepared a Preliminary Emergency Preparedness Plan (EPP), which is provided as an annex to Vol. 8 - ESMP. The Plan identifies potential emergency conditions and specified actions to reduce property damage and loss of life, including actions that the Project Company should take to mitigate problems at the dam and issue warnings to emergency management authorities or teams. The preliminary EPP will be developed into a final EPP in 2017 and will be made available to communities in Q1 2018.

The EPP identifies and determines the Project Company responses to emergency situations, which include the following: (i) dam failure; or (ii) unexpected discharge at the dam causing a high unexpected flow in the Nenskra; or (iii) conditions indicating a potential increase in the likelihood of a dam failure or unexpected discharge. More details are given in Volume 8 - ESMP of the components that will constitute the EEP, including:

- The engagement of all entities, jurisdictions, and individuals that should be consulted in the preparation and finalisation of the EPP.
- A detailed dam failure analysis to develop dam failure hydrograph and to estimate routing dam break flows downstream and the preparation of inundation maps.
- The identification of response actions to be taken by dam personnel in response to potential emergencies or significant changes in releases or outflows from dams during floods.
- Early Warning Systems, communication systems, both internal (between persons at the dam) and external (between dam personnel and outside entities or persons) to be activated in case of dam failure hazard.
- Responsibilities, notification flowcharts and contact information.
- Testing of Early Warning Systems and Exercises.
- As and if required by the local emergency management authorities, develop evacuation and shelter-in-place training materials for people in the Nenskra valley living immediately downstream of the dam and who would be inundated within a short time frame.
- Emergency Event Reporting.
- Annual Public Awareness Campaigns
- Community representatives, local and key relevant state authorities to take part in some drilling exercises- to build their understanding and capacity on emergency response management and also to train them about their role in an emergency situation.

These measures are referred later in this report as:

- [SOC 66] Finalisation of Emergency Preparedness Plan .
- [SOC 67] Implementation of Early Warning Systems, Training and Exercise
- [SOC 68] Regular annual Public Awareness Campaigns on Emergency Preparedness Planning

# 7 Labour & working conditions

## 7.1 Human resources

### 7.1.1 Human resources for construction

The Table below provides an estimate of the number of workers recruited for the duration of the construction work (see Vol. 2 – Project definition).

**Table 70 – Estimated number of workers employed for construction**

| Construction site | Number of workers | | | Total |
|---|---|---|---|---|
| | Management | Skilled & semi-skilled[18] | Unskilled[19] | |
| Dam Site | 24 | 380 | 208 | **612** |
| Powerhouse area | 16 | 220 | 104 | **340** |
| Nakra Intake | 8 | 130 | 52 | **190** |
| **Total** | **48** | **730** | **364** | **1,142** |

During the Early Works period, the number of workers will be between 50 (first year) to 100 people (second year).

### 7.1.2 Human resources for operation

The number of workers employed during operation is significantly less than that during the construction period. Hydropower schemes typically require a staff of 50-100 on site.

## 7.2 Recruitment strategy, principles and policy

### 7.2.1 Recruitment strategy

#### A. Construction

The overarching strategy with regard to the recruitment of the construction workers is as follows:

- The EPC Contractor will be responsible for recruiting the construction workforce in alignment with Project Company policies and procedures. The Project Company will prepare recruitment and procurement requirements in alignment with Lender labour policies and the EPC Contractor will prepare and implement a local recruitment and procurement plan (see section 7.3).
- Georgian nationals will always be given priority over expatriates, who will only be used where their particular skills and experience cannot be supplied by Georgian nationals.

[18] Semi-skilled occupations correspond to International Standard Classification of Occupation (ISCO-08) Skill Level 2, and skilled occupations correspond ISCO Skill Level 3 and 4.
See International Labour Office – ISCO-08 "Volume I - International Standard Classification of Occupation – Structure, group definitions and correspondence tables"
[19] Unskilled occupations correspond to International Standard Classification of Occupation (ISCO-08) Skill Level 1

- To maximum local benefits the Project will aim at maximising the percentage of local worker recruited.

The Project will aim at 100% of unskilled workers recruited from the Nenskra and Nakra valleys (see Vol.2 “Project Definition”), and this will be managed through a Local Recruitment and Procurement Plan. If insufficient numbers of workers are available locally, the recruitment will be extended to the nearest villages in the Mestia Municipality and the Svaneti region as secondary catchment areas.

The Project we aim at 50% of semi-skilled workers recruited from Mestia Municipality if available, and 75% from Georgia.

- The Project will aim at minimum 80% of all recruited workers (including skilled, semi-skilled and unskilled) are Georgian citizen.

**B. Operation**

Most jobs are expected to be skilled positions. As for the construction, Georgian nationals will always be given priority over expatriates, who will only be used where their particular skills and experience cannot be supplied by Georgian nationals.

Unskilled labour positions would be limited to operator’s village maintenance. Direct employment opportunities for local people during the operation phase would be limited to 10-20 positions maximum.

## 7.2.2 Training strategy

In addition to setting targets, the Project Company intends to provide training for local unskilled employees. The objectives of the trainings will be to raise skill levels of employees to maximize the number of local workers employed during operation. Regular employee standards reviews will be conducted to ensure that this strategy achieves its objective.

This measure is referred to later in this report as:

- [SOC 69] Develop and implement a training policy for all employees, including local unskilled workers, in order to raise their skill levels.

## 7.2.3 Human resources policy and principles

The Project Company will develop a Human Resources (HR) policy, which includes a clear commitment to comply with (i) Georgian labour laws, (ii) EBRD’s PR2 labour and working conditions, and (iii) ADB’s SPS. The policy will be alignment with the recommendations of the International Labor Organization (ILO).

Key elements of the document include commitments with regard to the following:

- Meet or exceed all Georgian labour legislation, employment and safety laws and international standards as well as Lenders requirements (notably EBRD PR2)and core ILO conventions;
- Maintain principles of non-discrimination and equal opportunity;
- Ensure fair remuneration and work conditions for all employees;
- Ensure that there is no use of forced, compulsory or child labour;
- Implement policies and practices designed to eliminate harassment and unfair discrimination in all aspects of its activities;
- Ensure the all staff, including security personnel, are provided with appropriate cultural and human rights training;

- Provide a safe and healthy work environment for all employees.
- Establishment of employee grievance resolution mechanism
- Ensure worker engagement
- Allow workers organizations
- Provisions for a demobilization plan
- Ensure establishment of disciplinary procedures
- Allow for collective agreement
- Ensure equal pay for equal work
- Gender equality
- Establish an effective grievance mechanism for workers including contractors' workforce
- Establish measures to prevent bullying and harassment, including sexual harassment
- Establish rules with respect to overtime, working hours, flexible working / work-life balance, wages, benefits, and conditions of work and accommodation.

The HR policy will be available to employees in Georgian.

The Project Company will establish labour management principles (i) that will comply with national and international labour laws and Lenders requirements, and (ii) commit to maximize beneficial impacts and minimize negative impacts through implementation of a recruitment policy and specific anti-discrimination and grievance management procedures.

The Project Company will implement the Project HR policy and labour management principles with respect to the recruitment of the HPP scheme's operation staff. With regard to the recruitment of construction workers, the Project Company will make it a contractual requirement that the EPC Contractor adheres to the Project's HR Policy and labour management principles and will audit the EPC Contractor to check compliance with the requirement. This measure is referred to later in this report as:

- [SOC 70] Develop and implement (including by contractors) a HR policy and labour management plan in alignment with national, Lenders and ILO requirements.

This plan will include measures to:
(i) ensure that the existing Contractor Control Management Plan/Procedure for all contractors and subcontractors are in line with EBRD's PR 2 and national labour requirements and that it is implemented accordingly;
(ii) monitor contractor implementation and performance against labour and OHS requirements as established in the Supply Chain and Contractor Management Plan and in the Labour Management Plan
(iii) to ensure policies and procedures are in line with international standards and continuous improvement is achieved at all facilities, by establishing a human resources management system in line with SA 8000 in the Company

## 7.3 Labour management

### 7.3.1 Processes, procedures and local recruitment & procurement plan

The Project Company will develop processes and procedures with respect to the aspects of labour management discussed in the following subsections. The processes will be in alignment

with national, Lender and ILO labour requirements and will include preparation and implementation of a local recruitment and procurement plan.

The Project Company will prepare and implement the processes or procedures with respect to the recruitment of the HPP scheme's operation staff.

With regard to the recruitment of construction workers, the Project Company will make it a contractual requirement that the EPC Contractor develops and implements its' own procedures and including a local recruitment and procurement plan, covering these same aspects and in alignment with the Project's HR Policy and labour management principles. As described in the Vol. 7 – stakeholder Engagement Plan, this local recruitment and procurement plan will be explained to the local communities during the disclosure of the E&S reports, between March and June 2017. To implement a transparent equitable recruitment policy based on skills, skills inventories have been conducted in Chuberi and Naki villages.

The Project Company will audit quarterly the EPC Contractor during the construction to check compliance with the requirement. The Project Company will ensure local employment KPIs/targets are achieved by its Contractors through effective monitoring of the contractors, and skill surveys, vocational training, and skill development programmes.

This measure is referred to later in this report as:

- [SOC 71] Development and implementation of labour management processes a local recruitment and procurement plan.

### 7.3.2 Fair and transparent hiring process

A process will be developed to ensure that recruitment and hiring practices are fair and transparent, and that that they take into consideration local conditions and expectations to the greatest extent possible.

### 7.3.3 Non-discrimination and equal opportunities

Company's employment decisions will be compliant with the principles of equal opportunities and fair treatment. No discrimination shall be made with respect to employment, promotion, training, compensations, dismissal, wage and retirement on the basis of race, religion, language, ethnic identity, sexual orientation, faith, civil, social or economic status, disability, political opinion, participation in and membership in unions, pregnancy or military service.

The Project Company is committed to working with the EBRD and the Government of Georgia to identify opportunities to increase women's participation in the Project. In order to promote women's employment, targets will be established with the EPC Contractor to ensure women comprise at least 15% of staff across operations (ie, skilled, semi-skilled and unskilled levels). The job opportunities that could be proposed to women during the construction period will be communicated to the local communities. The project will monitor the number of positions offered to local community members and to women, throughout construction and operation.

These measures are referred later in this report as:

- [SOC 72] Recruitment strategy
- [SOC 73] Women employment targets
- [SOC 74] Monitoring of local jobs and women employment
- [SOC 75] Gender / youth inclusion program

### 7.3.4 Recruitment process

In alignment with the local recruitment and procurement plan, recruitment will be carried out and include a systematic medical examination of each employee, covering the candidate's general condition and his or her hearing and visual capacities. To avoid any discrimination, the tests relating to infection risks (tuberculosis, parasites, STDs - including HIV/AIDS) - will be performed on a voluntary and anonymous basis after the candidate has been recruited.

The precise procedures to be put in place will be defined before the start of construction works and coordinated between the Project Company, the EPC Contractor and the national administrations concerned. These procedures will include all aspects related to recruitment (criteria), including gender empowerment and equal access to job opportunities, responsibilities and organisation, the contract conditions, the minimum salaries to be respected, and the corresponding complaints and monitoring procedures.

### 7.3.5 Employment Contract

Each employee shall expect to receive and sign an Employment Contract, which enables the company to complete required social security applications with the Ministry of Labour. Such agreements vary in terms and clauses affected by job grade and benefit level. Key elements of the policy include:

- Work methods and working hours (including procedures on overtime);
- Medical examinations;
- Safety and security;
- Termination;
- Confidentiality.

### 7.3.6 Respectful workplace policy

A respectful workplace policy will be established and which defines "*harassment*" in the workplace to be "*comment or conduct that is known, or ought reasonably to be known, to be unwelcome or offensive to a reasonable person. Harassment may be a series of events or a single incident*". Any such behaviour shall be forbidden, as is retaliation or reprisal against any employee who files a complaint alleging harassment. The consideration of harassment explicitly covers "sexual" and "personal" harassment and provides examples of conduct considered unacceptable. The policy shall confirm that any complaint will respect confidentiality to the extent possible within the investigation process and further outlines how reporting and investigation should be conducted.

A discipline procedure will be applied to employees convinced of harassment practices, following the steps below:

- Investigation: Before disciplinary action is taken an investigation shall be undertaken. The employee against whom an allegation of harassment practices has been made shall be advised of the nature of the allegations made against him/her and will be given the opportunity to state his/her case before any decision is made to take disciplinary action.
- Informal notification: the employee's manager will first take an informal action by verbal communication to the concerned employee. The Manager will inform the concerned employee about the consequences of it behaviour and the actions the company can take if the problem persists.

- Formal interview: If the matter has not been resolved by informal action or is sufficiently serious, the manager will interview the employee, who will then be given a first written warning specifying the problem, setting standards for improvement within a specified timescale and the consequence of not meeting the standards of improvement.
- Final written warning: If after first warning, violation of company's Respectful workplace policy and /or harassment practices persist, the matter will be referred to the CEO, who will interview the employee and may issue a final written warning, again specifying the problem, a timescale improvement and the consequences of not improving.
- Termination of employment: If these attempts fail to stop harassment practices, then the CEO may dismiss the employee with applicable notice period.

### 7.3.7 Employee grievance procedure

The Company will provide a grievance mechanism for all direct and contractor employees (and their organisations, where they exist) and will provide them with information on the channels for internal communication and for raising grievances. The workers grievance mechanism will be developed for situations in which an employee believes that the fair and consistent application of a policy affecting him or her has not been followed and that employee has been unable to resolve the issue within a particular work area or group.

The Company will inform the workers (including contractors' workers) of the grievance mechanism at the time of hiring in their local language, and make it easily accessible to them. The mechanism will involve an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides feedback to those concerned, without any retribution. The mechanism will not impede access to other judicial or administrative remedies that might be available under law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.

An anonymous grievance mechanism will also be established to encourage concerns to be raised freely.

Employee grievances will be registered and tracked by the HR management at all facilities. Effective resolution of the employee grievances will also be monitored during employee standard audits (see section 7.7). Key performance indicators (metrics) for such tasks as addressing worker grievances will be established and checked (for example, how long it takes to resolve a problem and if the same complaint is received repeatedly). A feedback mechanism and procedure regarding complaints will be established (for example, how long it takes to provide a response to a complainant, which channel will be used). Complainants will be consulted about the functioning of the grievance mechanism and their input solicited for improvements.

### 7.3.8 Workers accommodation camps

The Project will ensure that the workers/contractors accommodation to be used for the Project meets the requirements defined in the "IFC/EBRD Workers' Accommodation: Processes and Standards" guidance note.

### 7.3.9 Safety committee

The Project will ensure that a Safety Committee is formed and that representatives of the workers will be part of the committee.

Safety Committee meetings will be held at least once a month or when requested by the Workers' Representatives. The number of the Workers' Representatives and the composition of the Committee will be defined in the Health Management Plan.

Workers' safety delegates, workers' safety and health committees, and joint safety and health committees or, as appropriate, other workers' representatives should:

- Be given adequate information on safety and health matters, enabled to examine factors affecting safety and health, and encouraged to propose measures on the subject;
- Be consulted when major new safety and health measures are envisaged and before they are carried out, and seek to obtain the support of the workers for such measures;
- Be consulted in planning alterations of work processes, work content or organization of work, which may have safety or health implications for the workers;
- Be given protection from dismissal and other measures prejudicial to them while exercising their functions in the field of occupational safety and health as workers' representatives or as members of safety and health committees;
- Be able to contribute to the decision-making process at the level of the undertaking regarding matters of safety and health;
- Have access to all parts of the workplace and be able to communicate with the workers on safety and health matters during working hours at the workplace;
- Be free to contact labour inspectors;
- Be able to contribute to negotiations in the undertaking on occupational safety and health matters;
- Have reasonable time during paid working hours to exercise their safety and health functions and to receive training related to these functions;
- Have recourse to specialists to advice on particular safety and health problems.

These measures are referred later in this report as:

- [SOC 76] Workers' safety committee

### 7.3.10 Worker organisations and collective bargaining

The Project Company and EPC Contractor will develop and implement policies with the objective to ensure the following:

- The Project will not seek to prevent by any means whatsoever the formation of worker organisations or any other legally-established worker group(s);
- The Project Company and its contractors will comply with Georgian Labour Law and ILO convention concerning relations with authorised labour organisations and workers representatives;
- In the case of a stoppage of work or strike, the Project Company - or the EPC Contractor as appropriate - will ensure that relevant managers, contractors, and other parties including Lenders are informed promptly so that appropriate engagement and action can be undertaken to resolve the issue;
- In the event of stoppage or strike, the Project Company or EPC Contractor as appropriate - will arrange meetings with designated labour/worker representatives to determine the cause and to discuss and agree on resolutions; and

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The relevant requirements of the Labour Law and ILO conventions (C87 and C98) will be exercised, including using legal mediation and other means of arbitration.

The right to negotiate collectively at different levels (including sector and enterprise) is recognised under Georgian Labour Law. In collective bargaining, workers will be represented by worker organisations or, if there is no organisation, by representatives elected from a meeting of employees. If, in the future, there are multiple worker organisations that are relevant to collective bargaining negotiations, the organisations are required to form a single negotiating body with participation relative to the proportion of workers that they represent.

Collective agreements will be negotiated by the Project Company (or EPC Contractor as appropriate) and all major contractors working at Project sites, will be registered, and will be renegotiated as required, with an adequate period of notice given to Unions or workers representatives, as required by the Georgian Labour Law and ILO convention, before the formal renegotiation process starts.

The Project Company will ensure unions can conduct their activities without interference, including providing paid time off for union/worker representatives to carry out their duties at all facilities. It will monitor and report all labour complaints and management responses related to the issues of freedom of association and discrimination including those complaints raised by unionised/un-unionised workers or by the trade unions that are not recognised or competent for the purposes of collective bargaining. There will be regular employee rights audits including EPC contractor and all subcontractor personnel.

### 7.3.11 Management of construction demobilisation phase

To mitigate the negative impacts of the decrease of jobs offered by the project at the end of the construction period, the Project will develop and implement a workers' demobilisation plan prior to demobilisation of the workforce. This plan will define how many people will be demobilized, when and what will be proposed.

The project will provide all employees with severance and notice pay as stipulated in the law and collective agreements. Outstanding payments, social security benefits and pension contribution shares (if applicable) shall be paid (i) to the employee before or on the date of termination of employment (ii) to the benefit of the employee as applicable or (iii) according to the payment plan stipulated in the collective agreement. In case of payment made to the benefit of the employee, an evidence of such payment shall be provided to the employee. The company will closely monitor compliance of Contractors during the demobilization phase to ensure employee rights are protected.

The Community Investment Programme will also support and promote local initiatives to develop available and alternative income sources to mitigate the risk of dependency on the Project. These measures are referred later in this report as:

[SOC 77] Workers demobilisation plan

### 7.3.12 Minimisation and management of workers from outside the region

The strategy to mitigate project-induced in-migration during the construction phase is two-fold: (i) minimize all potential factors possibly leading to project-induced in-migration and (ii) minimize all potential impacts that would be caused by Project-related in-migration.

The following measures will be implemented:

- Maximize the local content of the workforce and consequently, local employment targets have been established (see section 7.2.1);
- Job opportunities shall be communicated locally;
- The EPC Contractor will be required to establish decentralised recruitment centres in Chuberi, Naki and Mestia for the recruitment of the construction workforce in alignment with the Project recruitment strategy;
- The EPC Contractor will organise social awareness training for expatriate employees and employees recruited from other parts of Georgia;
- All workers coming from other parts of Georgia will be accommodated in the accommodation camp during construction and in the operators' village during operation, to minimize the risks of disturbance to the local communities. Recreational activities within the camps will be considered to encourage workers stay in the camps.

### 7.3.13 Workers employed by contractors

The majority of workers employed by the Project will be recruited by the EPC Contractor for the construction work. Consequently, in order that the EPC Contractor and its' subcontractors are compliant with the Project labour management objectives, the following will be implemented:

- The Project Company will make it a contractual requirement that the EPC Contractor adhere to the Project recruitment strategy, HR policy and labour management principles (see section 7.2).
- The EPC Contractor will be contractually required to establish and implement its own labour management processes, plans and procedures in alignment with the Project HR policy and principles and labour management processes (see section 7.3) and that these will also be applicable to all subcontractors.
- Compliance verification will be undertaken on regular basis to assess the EPC Contractor's (and subcontractor's) performance against Project labour requirements, Georgian Law, and international standards. Compliance verification may be conducted directly by the Project Company or externally by third parties hired by the Project Company for this function.

## 7.4 Indirect job opportunities

Any Project-related in-migration as well as the presence of workers coming from other regions of Georgia will increase the demand for services and goods in the Nenskra and Nakra valleys. Therefore, new business opportunities and indirect job opportunities could be developed as an indirect impact of the Project. This impact will be positive. It cannot be quantified, but it will be low during construction, and very low or negligible during operation.

The Community Investment Programme is a tool to support the local communities to build community capacity, address development challenges and to take advantage of emerging opportunities. It could be used by the local people to take advantage of the opportunities offered by new business opportunities and/or indirect job opportunities.

This indirect impact could also be enhanced by using as much as possible local supply for food or services, wherever and whenever possible.

These measures are referred to later in this report as:

- [SOC 71] Development and implementation of labour management processes a local recruitment and procurement plan.

## 7.5 Procurement and supply chain management

Procurement will be managed through the implementation of the local recruitment and procurement plan (see section 7.3.1). The Project is committed to maximising the use of the local supply chain for foods and services.

The management of the supply chain will also be through the implementation of the local recruitment and procurement plan. All suppliers to the Project will be expected to comply with the Georgian labour standards, with the applicable standards of the ILO and Lender labour policies and procedures.

Supplier standards will include the following:

- Supplier Standards for Employment: As a minimum, the Project suppliers are required to maintain and implement policies to comply with Georgian laws and regulations, and prohibit the employment of forced, bonded or child labour, with a process for assuring compliance.
- Supplier Standards for Human Rights: As a minimum, the Project suppliers are required to maintain and implement policies that respect basic human rights and dignity, without distinction on any basis, including the rights to life, liberty, and security of person, freedom from slavery and cruelty, and equal protection under applicable Georgian and International laws and constitutions and a process to assure compliance. Risk assessments and regular monitoring will be undertaken to ensure that there is no child labour or forced labour.
- Supplier Standards for Health and Safety: As a minimum, the Georgian suppliers are required to maintain compliance with all Health, Safety and Environment (HSE) requirements of the Project and to demonstrate strong organisational commitment to responsible HSE management and the elimination of workplace injuries and illnesses, with a process for obtaining assurance on compliance with those policies, both internally and externally, by regular audits, reviews and reports.
- Supplier Standards for Community Relations: As a minimum, the Project suppliers are required to demonstrate organisational commitment to responsible and productive community relationships.

Suppliers will commit to this standard by maintaining business relationships that will have a positive and enduring effect on the local communities and neighbours affected by the Project's operations.

The Project Company requires that all suppliers pay specific attention to the management of their subcontractors. All subcontractors must be approved in writing by the Procurement team, and must meet the strict HSE and quality requirements of the contract. Subcontractors failing to comply with the Project safety requirements will be prevented from future works on the Project and its associated businesses if they cannot meet the requirements set out above after being requested to bring their procedures into compliance.

These measures are referred to later in this report as:

- [SOC 71] Development and implementation of labour management processes a local recruitment and procurement plan.
- [SOC 78] Monitoring of the Supply Chain

# 7.6 Security & human rights

## 7.6.1 Risk assessment

### A. Identification of security risks

Security risks can result from political, economic, civil or social factors. The primary level of risk is political.

The Project is situated near the administrative boundary line with the breakaway region of Abkhazia. Abkhazia broke away from Georgia during the 1992-93 war and a ceasefire was established in 1994. Hostilities broke out again in 2008 and the ceasefire that was established at the end of the 5-day South Ossetia war also encompassed Abkhazia. Also in 2008 Georgia passed a resolution declaring Abkhazia a Russian-occupied territory. Since 2008 the situation is considered as a "frozen conflict" i.e. a situation in which active armed conflict has been brought to an end, but no peace treaty or other political framework resolves the conflict to the satisfaction of the combatants. Therefore, legally the conflict can start again at any moment, creating an environment of insecurity and instability.

The dam site and powerhouse are situated 7 and 14 kilometres respectively east of the Abkhazia-Georgia boundary line, which is orientated in a southwest-northeast direction. However, the boundary line in that area follows the top of a mountain ridge that delineates the Nenskra valley and there are no roads from the Nenskra valley to the boundary line – though there is a footpath. Georgian border guards are permanently present in the Nenskra valley. Local people have reported - during informal interviews conducted during the social survey work - that they keep away from the boundary line. It is understood that there was no armed combat in the Nenskra or Nakra valleys during the different hostilities related to the Abkhazia break away - and the presence of unexploded ordinance or antipersonnel mines are not risks that have been expressed by local people.

To conclude, the principal security risk to which the Project is exposed is of national and probably international concern. These types of regional security conflicts will be managed by state security forces and the Project will follow the government's instructions. To prevent these risks and to ensure the security situation, the project will establish and maintain close cooperation with the competent authorities.

### B. Potential for violence

In addition to the potential for violence related to the closeness of the Abkhazia boundary line discussed above, there is potential for small minor acts of violence related to protests by local people with the risk of escalation leading to involvement of local police.

The Project has assessed and examined patterns of violence in its areas operations. During the period 2015-2016 local people have blocked roads in the Project area on a number of occasions to protest against changes in laws on logging. Also there have been incidents of Project access road being blocked as a protest against the Project. The blocking of the roads on 20 May 2016 during a protest against the project led to the detention by police of 8 people - who were later released. There is concern that people arrested or detained by police may be mistreated (see (C) below) and few civil society organisations raised concerns with regards to state security forces' approach.

### C. Human rights records

Georgia has strengthened ties with the European Union through the signature and ratification of the European Union Association Agreement. The signing of the agreement represents a

commitment by Georgia to progress on human rights. The Council of Europe's Commissioner on Human Rights (Council of Europe, 2016) has raised concern on the issues listed below.

- The need to enhance public trust in the justice system and to promote equality and minority rights and to strengthen the independence and impartiality of the judiciary;
- Ill-treatment of prisoners and other detained persons by public officials, and
- Shortcomings in the process of clarifying the fate of missing persons and ensuring accountability for the perpetrators of illegal acts, mainly related to the August 2008 armed conflict.

There are reports on the arbitrary detentions in 2009 by Russian and de facto authorities of Georgian citizens along the administrative boundary line with the country's occupied territories of Abkhazia. This is particularly relevant in the Gali region of Abkhazia, which is close to the town of Zugdidi. The Gali region is the only part of Abkhazia which has authorised the return of Georgians who had fled to other parts of Georgia during the 1992-93 conflict (US Department of State, 2015).

With regard to forced labour and child labour, Georgian law prohibits forced or compulsory labour and there were no reports of such practices occurring. There are laws and policies to protect children from exploitation in the workplace and that with high unemployment resulting in a large pool of adult workers willing to work for low wages and child labour is uncommon, although it can occur in various regions of Georgia during the crop period in the agriculture sector (US Department of State, 2015). The Georgian Labour Code states that children aged 14-16 are allowed to perform the "light work". However, the Code does not specify what could be considered a "light work", for how many hours and under what conditions it may be undertaken. The Project Company will conduct regular audit to check that no minor are employed (see section 7.7).

Consequently the human rights risks that are relevant to the Project are as follows:

- Risk that Project personnel – including contractors and subcontractors – may be arbitrarily detained by Russian and de facto authorities of Georgian citizens if they inadvertently cross into Abkhazia or approach too close to the administrative boundary;
- Risk that during any protest against the project by local people there may be arrests made by local police and possibly mistreatment of those arrested during detention.
- Risks due to unexpected labour disputes which could cause disruption of work and/or public unrest leading to local police intervention and possibly mistreatments.

## D. Rule of law

The rule of law involves risk on security-related incidents with human rights implications by public security forces. As the Project has been confronted with this potential of violence in the past, (see B & C above), the Project's Social team responsible of the Grievance mechanism is aware of these relevant issues and will be trained to record credible allegation. The project will also support the local communities in their efforts of keeping a permanent watch and monitoring investigation to ensure respect of human rights. Employees of the Project involved on on-the-ground operation will be trained and encouraged to raise population awareness and disseminating knowledge of instruments for the protection of human rights

Although the European Union has raised issues regarding the Georgian justice system, it is in relation to equality and minority rights and these issues are not expected to be relevant to the Project.

However, there are a number of regions – including the Svaneti – where there are reports of difficulties for people wishing to register land. The root cause of the problem is that land

reform has been partially implemented and there are cases of "overlapping registration" causing hundreds of pending cases in common courts (US Department of State, 2015).

NGOs have also reported several cases in which groups claimed the former government improperly used eminent domain or coercion to seize property at unfairly low prices (US Department of State, 2015).

Consequently the risk related to the rule of law is that acquisition of project land by the government may be at unfairly low prices and the assistance provided to project affected people to register their land may be slowed and rendered difficult due to land reform processes. These risks are managed by the Project through the LALRP.

### E. Conflict analysis

In addition to the "frozen conflict" situation between Georgia and the Russian-occupied territory of Abkhazia (see (A) above), the main local social conflict that is independent of the Project but which has bearing on the Project is that of logging. In 2015 social tensions developed in the Project area between the Government and the local population. People have logged without restriction since the disintegration of the Soviet system. However, the Government has implemented a programme of large-scale licenses for logging companies in order to regain management of the forested area. The new license owners patrol their territory to prevent illegal logging. At the time of the field surveys, Government had sent in officers to enforce the new system. As a result of this a number of incidents occurred with local people blocking roads as protest.

### F. Equipment transfers

The Project is expected to engage the services of a private security provider to guard the facilities during construction and operation. All facilities will be fenced and entry and exist will be controlled by the security, who will also patrol the perimeter of the fenced off areas. The security staff will not be equipped with firearms.

## 7.6.2 Public security management

The presence and actions by the public security providers in the Project area are expected to be as follows:

- Physical presence of government border guards along the Nenskra and Nakra valley. The guards make regular patrols along the valleys and each valley has a guard post.
- The baseline situation is that there is no permanent police presence in the Nenskra or Nakra valleys. The single officer based in Khaishi travels to the valleys when needed and this is approximately 20 times a year. This situation is expected to continue and no permanent increase in the number of local police in the Project area is expected.
- Traffic police will probably be making speed checks on vehicles using the Zugdidi-Mestia road which will be used by Project traffic.

However, in the event of demonstrations in the Nenskra or Nakra valley by local people protesting against the project, such as blocking of roads, it can be expected that local police force - probably from Zugdidi - will intervene as necessary, as they have done in the past. If incidents with human rights were to be reported, the Project's Grievance mechanism would record credible allegation, and the Project would take appropriate measures to support and monitor investigation.

In order to manage the interactions between the Project Company and the public security providers the Project Company is committed to adhering to the Voluntary Principles for Security and Human Rights. To this end it will liaise regularly with public security providers to

ensure that they are informed about the Project and the Project Company's policy on human rights, in particular that force should be used only when strictly necessary and to an extent proportional to the threat and that the rights of individuals should not be violated while exercising the right to exercise freedom of association and peaceful assembly as recognized by the Universal Declaration of Human Rights. In cases where physical force is used by public security, such incidents should be reported to the appropriate authorities.

In the event of a national security situation the Project will follow instructions given by the public security providers.

These measures are referred to later in this report as:

- [SOC 79] Cooperation with Local Police forces

### 7.6.3 Management of private security

A private security provider for the construction phase will be engaged by the EPC Contractor. When construction is completed, a smaller security force will be required and the Project Company will either engage a new security provider or extend the services of the service provider contracted for the construction. The main role of the security provider will be to guard the facilities – which will be fenced – and to control all people and vehicles entering and leaving the controlled areas. The management of the private security provider engaged to guard the facilities during construction and operation will follow the recommendations of the Voluntary Principles for Security and Human Rights. To ensure that private security providers adheres to the Voluntary Principles on Security and Human Rights, the Project Company has made a commitment to include this as a contractual requirement in the agreement with the EPC Contractor. This measure is referred to later in this report as:

- [SOC 80] Adherence to the Voluntary Principles on Security and Human Rights – including contractors and their subcontractors

To mitigate the risks on the communities' members' security and human rights arising from the presence of security personnel, the following measures will be implemented:

- The security guards will not be armed;
- The Project will ensure that security guards are trained with regard to the Project's goals to establish good relationships with local stakeholders;
- Implement and provide training in the Code of Conduct specific to security personnel, which outlines appropriate conduct, engagement and appropriate use of force, ensure that security personnel receive and remain up to date on human rights and cultural sensitivity, as well as the Voluntary Principles on Security and Human Rights[20];
- Ongoing monitoring of security personnel, and audits of the application of the Voluntary Principles on Security and Human Rights;
- Management of stakeholders complaints through the Project's Grievance mechanism in case of Human Rights violations, and cooperation to respond to and remediate adverse impacts which have been identified as being caused by or contributed to by the company's actions.
- Coordination with local police forces, to ensure that there no impact on local people security and human rights;

[20] The Voluntary Principles on Security and Human Rights is a collaborative effort by governments, major multinational extractive companies, and NGOs to provide guidance to companies on tangible steps that they can take to minimize the risk of human rights abuses in communities located near their working sites. http://www.voluntaryprinciples.org/wp-content/uploads/2013/03/voluntary_principles_english.pdf

- Consultation with Georgian Police authorities and local communities about company security arrangements and dialogue around the VPI, implementation, and experience.
- Implementation of security staffing practices as per arrangements that will be defined with local police forces, including regular reporting.

These measures are referred to later in this report as:

- [SOC 81] Specific training and monitoring of the security personnel on human rights

### 7.6.4 Mitigation measures regarding Security & human rights risks

Following the risks described in the paragraphs above, before implementation of any mitigation measure, the risks on community security and human rights are considered as moderate.

The Project Company acknowledges the security and human rights risks described in the previous paragraphs. These risks will be mitigated by the implementation of the measures defined above. To further mitigate these risks, JSCNH will recruit a Security and Human Right advisor who will:

- Conduct a detailed security and human rights risks assessment in compliance with the Voluntary Principles on Security and Human Rights;
- Ensure that security and human rights audits are conducted before recruitment of private security providers;
- Define the specific training and monitoring of the security personnel on human rights;
- Define the procedure to cooperate with local police forces;
- Train the Social team of JSCNH to integrate reported cases of Human Rights violations into the Project grievance mechanism.

A Security and Human Rights Management Plan will be prepared by JSCNH. This Plan will cover the construction and operation phase.

These measures are referred to later in this report as:

- [SOC 82] Recruitment of a Security and Human Right advisor
- [SOC 83] Preparation and implementation of a Security and Human Rights Management Plan for construction and operation, in line with the Voluntary Principles on Security and Human Rights.

After implementation of the mitigation measures, the risks on community security and human rights are considered as low.

## 7.7 Labour Audits

The Project Company shall undertake regular Employee Rights/Standards Audits for all workforce including contractor personnel to ensure compliance with national legislations and ILO standards. These audits will be done on quarterly basis during constructions and on annual during operations. This will cover contractor and subcontractor employees.

This measure is referred to later in this report as: [SOC 84] Labour audits.

# 8 Cultural heritage

This section on Cultural Heritage is based on the 2015 ESIA approved by the Georgian authorities.

## 8.1 Material Cultural Heritage

### 8.1.1 Baseline

The UNESCO World Heritage Site that is closest to the Project is the village of Chazhashi, in the Mestia district. The village has been listed as a World Heritage Site since 1996[21] and the site occupies an area of 1.06 hectares, with a surrounding buffer zone of 19.16 hectares. The site has been listed because it is a medieval-type village with typical Svan tower-houses and is located in an exceptional example of mountain scenery. The village of Chazhashi still has more than 200 tower-houses. However, the village is situated at a geodesic distance of 70 kilometres to the east of the Nenskra Project.

It should also be taken into consideration that no Svan tower-houses exist in the Nenskra and Nakra valleys, and the Chuberi and Naki villages are not categorized as medieval-type villages.

There are no other sites in the Upper Svaneti that are candidate World Heritage Sites.

Archaeological surveys conducted in Svaneti found that artefacts from the Late Bronze Age are widespread near all settlement in Svaneti (Kvitsiani & Jibladze 2015, see Figure 8 hereafter). Artefacts from the Stone Age have also been found.

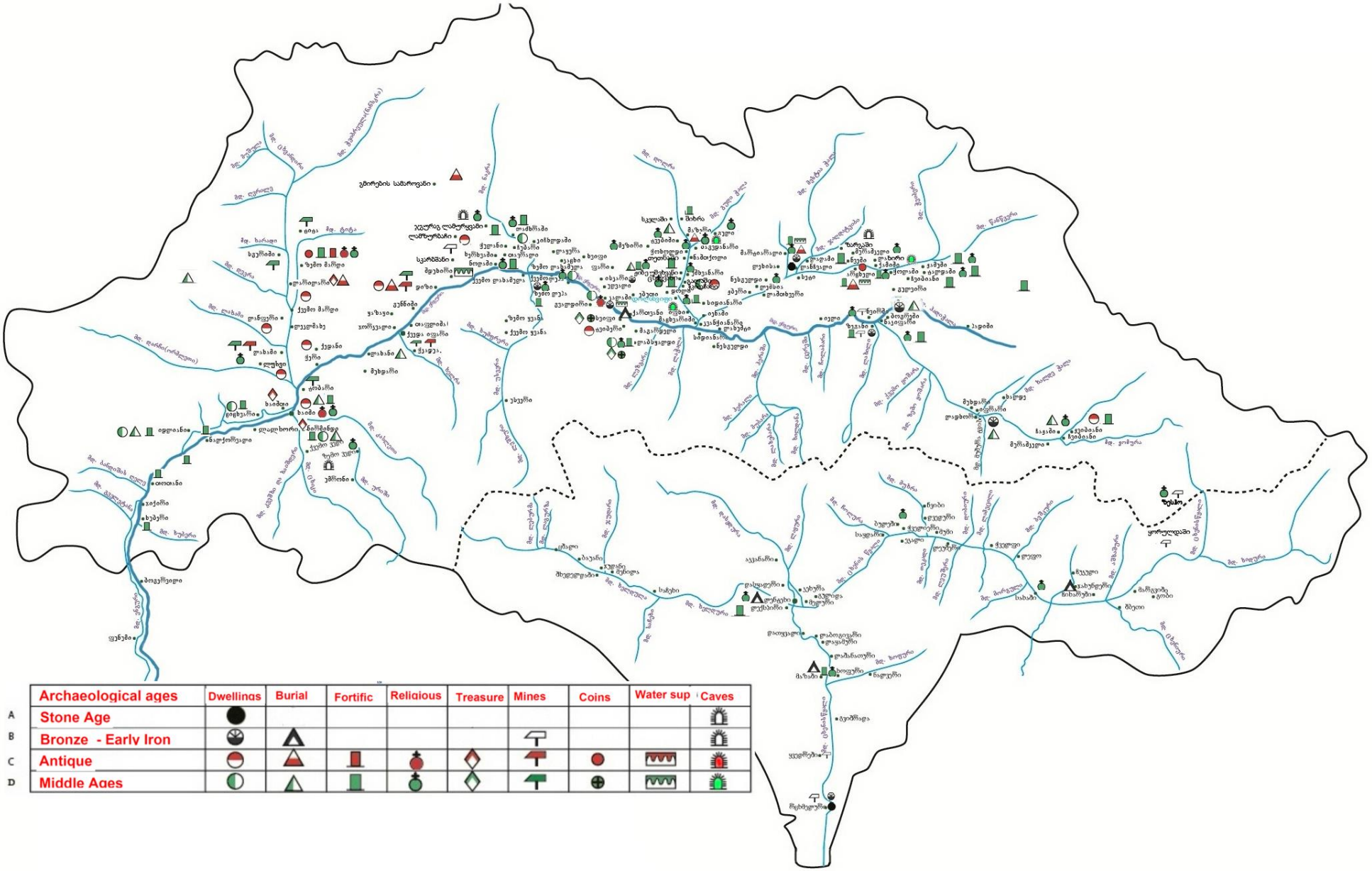
In Chuberi and Naki, archaeological surveys have found the following:

- Remnants of the ancient metallurgical complex and mining sites in Lakhami in Chuberi village. The Furnaces of antique period are spread over the large territory of several hectares. This complex is supposed to be an ancient metallurgical centre for producing copper and iron.
- Remnants of a Roman watchtower and a metallurgical complex in Zemo Marghi in Chuberi village. Ancient metal coins are found there in large amounts and it is supposed that this was one of the important centre for producing coins.
- Ancient “Short bridge” with the remnants of watchtower and burial site near LariLari in Chuberi village
- Remnants of antique dwelling sites, iron and copper mines and underground tunnel in Naki village.

Old churches are also present in Chuberi and Naki, such as the Church of Saint George in Chuberi, and the Mtavarangelozi church dating from the 9th century in Lakhami.

[21] Source: Unesco, http://whc.unesco.org/en/list/709/

*Figure 8 – Map of archaeological findings in Svaneti*
*Source: Kvitsiani & Jibladze 2015*



## 8.1.2 Impacts

### A. Construction

Two private cemeteries have been identified inside the Powerhouse site:

- One private cemetery counting four graves belongs to one household located 500 meters north of the Powerhouse. These graves will not be affected by the Project, as they are not located on a land plot that will be affected, as access to these graves will not be impaired for their owners.
- The other cemetery, counting 9 old graves, belongs to a households living in the centre of Chuberi village. These graves are located on a land plot which will be acquired by the Project for the construction of the Powerhouse facilities. This impact is analysed and mitigated in the report Vol. 9 – LALRP. The head of this household declared that he would accept to move these graves, providing that reasonable compensation is paid. The displacement of the graves will be made in compliance with the Georgian sanitary code. The religious authorities will be informed and consulted on the approach to be followed for the displacement of the graves.

No other cemetery or grave has been identified anywhere else inside the Project footprints or near its infrastructure.

Based on information from O. Lortkiphanidze Archaeological Centre, and review of archaeological surveys undertaken in the valleys to date, the 2015 Georgian ESIA has identified the cultural heritage sites in the Project area. No historical, architectural or archaeological sites have been identified in the project areas. All sites are outside of the immediate project area, not threatened by construction activities or reservoir impoundment.

However, as the Svaneti region has a rich historical background, and as archaeological artefacts have been found in the two valleys, it may be possible that some artefacts may be accidentally found during the construction period. Therefore, the impact on material cultural heritage is considered as low.

### B. Operation

During operation, after impoundment of the Nenskra reservoir, any cultural heritage site located downstream of the Nenskra dam in flood prone area will, with the presence of Nenskra and thanks to its flood routing capacity, be less exposed to the consequences of natural floods.

## 8.1.3 Mitigation Measures

The EPC Contractor has prepared as part of the Construction ESMP a Chance Find Procedure to protect any historical or archaeological artefact that could be discovered by accident during ground works. This Chance Find Procedure complies with the Georgian Law on “Cultural Heritage Protection” (2007).

This measure is referred later in the report as:

- [SOC 85] Chance Find Procedure

The Community Investment Programme (see Section 3.5) will also propose archaeological studies.

# 8.2 Intangible Cultural Heritage

## 8.2.1 Baseline

"Intangible cultural heritage" is defined by the UNESCO[22] as the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity. Intangible cultural heritage is manifested notably in oral traditions and expressions (including language), performing arts; social practices, rituals and festive events; knowledge and practices concerning nature and the universe; traditional craftsmanship.

The National Agency for Cultural Heritage Preservation of Georgia is the Georgian agency in charge of identification and development of intangible cultural heritage. An initial inventory conducted in Zemo Svaneti has identified 174 intangible cultural heritage elements[23] in 2014, including:

- the ancient Svan musical instrument – "*Chuniri*";
- tradition of cutting on the wood;
- technology of producing Svan hats;
- *Khachapuri* with millet;
- Svan salt;
- and local women's dancing.

Georgian polyphonic singing was inscribed in 2008 on the Representative List of the Intangible Cultural Heritage of Humanity of the UNESCO. Complex polyphony, which is common in Svaneti, is recognized as an important element of this intangible cultural heritage. Svan culture survives most wonderfully in its songs and dances. Svaneti boasts arguably the most archaic three-part polyphonic singing. Most of their songs are connected to round dances, are performed very loud and are full of dissonant chords[24]. Songs accompanied by a harp or a three-string violin are also frequently heard in Svaneti.

Many rituals and ceremonies are specific to Svaneti, such as the Lamproba festival in the early spring. Rituals and ceremonies often comprise songs. In early 2016, the National Agency for the Cultural Heritage Preservation of Georgia has granted the 'Svan Zari funeral ritual' the status of intangible cultural heritage. Zari is a very important component that gives integrity to the funeral procession. Zari is the only song that should not be taught at home. Rather, it is better to practice somewhere outside of the house, by the river or in the forest.

## 8.2.2 Impacts

Intangible cultural heritage is generally without a fixed location or discrete boundaries; embedded in traditional residential and economic patterns; widely shared and resilient but also subject to loss under conditions of rapid social change; and sensitive to changing socio-

[22] UNESCO, Art.2 of the Convention for the Safeguarding of the Intangible Cultural Heritage, 32nd session, 29 September to 17 October 2003
[23] Source : National Agency for Cultural Heritage Preservation of Georgia, http://www.heritagesites.ge/
[24] Jordania, J. (2015). "Choral Singing in Human Culture and Evolution", Lambert Academic Publishers, Chapter "Traditional Polyphony in Svaneti", Pg. 120-123

economic situations and to outside cultural influence. Communal knowledge and belief systems (p.ex. oral history and rituals) are often embodied within the tangible manifestations of a culture (p.ex. a cemetery or a church), so direct impacts to physical objects or places may also have impacts on intangible cultural values.

As described in the previous section 8.1 on material cultural heritage, there is not any known material cultural heritage element located inside the project footprints, except 9 private old graves that will be displaced as part of the LALRP implementation (see Vol.9 LALRP). Therefore, it is not anticipated that any of the Project activities could have any direct impact on the local intangible cultural heritage. The project construction and operation in itself will not affect any local social practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith. In the same way, the Project will not affect the transmission of these local social practices, representations, expressions, knowledge, skills.

The project might to some extent induce social change and outside cultural influence. During the construction period, and to a lesser extent during the operation, a number of employees coming from other parts of Georgia or from abroad will be present in the Nenskra and Nakra valley (see section 7.1 above). This could create social encounters and possibly social tensions between villagers and outsiders.

However, as described in the section 2.2.6, the local communities in the Nenskra and Nakra valleys are an integral part of the Georgian culture and nation. As in other parts of Georgia, the local communities are opened to the cultural trends and to mass media. As shown in Table 50 page 69, 95% of the households own a television, and 42% own a satellite antenna.

The local communities are sensitive to the respect of their traditions, customs and beliefs. Any impacts on these elements would be unlikely, and mostly during the construction period, when workers will be present in the two valleys. During operation, the number of outsiders will be limited to the operator's employees, as described in section 7.1. The impact on intangible cultural heritage is considered as low.

### 8.2.3 Mitigation measures

During the construction period, potential impact on intangible cultural heritage will be mitigated by the measures defined above for (i) the minimisation of risk of project-related in-migration (section 6.8), and (ii) the impacts on the social cohesion of the local communities (section 6.9). The EPC Contractor will organise social awareness training for expatriate employees and employees recruited from other parts of Georgia. The following measures will also be implemented:

- [SOC 40] Local employments targets
- [SOC 56] Monitoring system to document in-migration.
- [SOC 59] Effective implementation and monitoring of the SEP
- [SOC 60] Code of Conduct for the Project employees.
- [SOC 61] Accommodation of employees in Construction camps.
- [SOC 62] Communication of the Grievance Mechanism.

In addition, and going beyond mitigation measures, the Community Investment Programme developed by JSCNH will include initiatives supporting the preservation of the local intangible cultural heritage. This measure is referred later in this report as:

- [SOC 86] CIP includes a support to the preservation of local intangible cultural heritage and promotion of historical and cultural heritage of Svans.

These mitigation measures will also be implemented during operation, except in-migration monitoring.

After implementation of the above mitigation measures, the residual impact on intangible cultural heritage is considers as negligible.

# 9 Synthesis of impacts, significance and commitments

Table 71 presents the synthesis of all impacts, as well as mitigation, compensation, safety and improvement measures (JSCNH commitments) identified as part of the Social Impact Assessment. The summary table refer to the measures marked [SOC] throughout this report. The [SOC] measures are not necessarily listed in the sequential order of their number.

Some of the measures are also proposed in other Supplementary E&S studies. They are all translated into implementable terms (management action, schedules, responsibilities) in Volume 8 “Environmental and Social Management Plan” of the Supplementary Environmental and Social Studies. For the sake of tracking and consistency, the summary table next page identifies which management plan of the ESMP addresses the commitment made in the present report.

DISCLOSURE AUTHORIZED

## Table 71 - Summary of impacts and commitments

| Social Value | Impact Producing Factor | Phase | | | | Assessment of significance without mitigation or compensation<br>High Hi - Moderate M - Low Lo<br>[+] positive, [-] negative<br>Likelihood, Magnitude, Extent, Duration | Commitments<br>Key Mitigation, Compensation or Management measures | Predicted residual impact | Management Action where the mitigation or compensation measure is addressed in the ESMP |
|---|---|---|---|---|---|---|---|---|---|
| | | Early Works | Main construction | Reservoir Filling | Operation | | | | |
| Benefit sharing | The previous natural resources of the area (the water flow and hydropower potential) have been "captured" for economic benefit and that the people living in the area have a right to share in that benefit. | □ | □ | □ | ■ | Lo [+] The Project induces benefits for Georgia as a whole, but no direct benefits for the local population. | • [SOC 1] Community Investment Programme. | M [+] | Community Investment Programme: DEVF1., DEVF2., DEVF3. |
| • Economic displacement | Loss of Crops, structures, trees and land | ■ | ■ | ■ | □ | M [-] Certain, Permanent.<br>80 households affected, 1,024 fruits and nuts trees; 1 hay fields and 1 potato fields, 1 unoccupied houses + ancillary structures; 14 summer cabins; ~ 40 wooden fences | • [SOC 2] Avoid or at least minimize physical and economic displacement<br>• [SOC 3] Develop, implement and monitor the LALRP (including a completion audit).<br>• [SOC 4] Compensation, Resettlement assistance and Livelihood Restoration. | Lo [-] | Land Acquisition & Livelihood Restoration Plan: LALRP1., LALRP3. |
| | Loss of pasture areas or impaired access to pastures areas because of project footprint, reservoir inundation or construction activities. | □ | ■ | ■ | □ | Lo [-] Nenskra dam site : ~15 ha of pasture area permanently lost and access to ~6.5 ha impaired during construction (20 families affected)<br>Nakra Water intake : ~6 ha of pasture area permanently lost and access to ~53 ha impaired during construction (10 families affected)<br>Permanent loss of pasture area: Negative impact, certain, permanent.<br>Temporary loss of pasture areas: Negative impact, certain, during construction. | • [SOC 2] Avoid or at least minimize physical and economic displacement<br>• [SOC 3] Develop, implement and monitor the LALRP (including a completion audit).<br>• [SOC 4] Compensation, Resettlement assistance and Livelihood Restoration.<br>• [SOC 5] The EPC Contractor will maintain access to pastures which are located outside the worksites and potentially blocked by temporary facilities<br>• [SOC 6] At the end of construction work, rehabilitation of areas used for temporary construction purposes into pasture land without compromising the objective to replace removed woodland with similar species of tree where practicable. | Lo [-] | Land Acquisition & Livelihood Restoration Plan: LALRP1., LALRP3.<br>Restoration of Access to Pastures: PAST1. |
| | Loss of logging areas or access to logging areas because of project footprint, reservoir inundation or construction activities. | □ | ■ | ■ | □ | Lo [-] Unlicensed Commercial Logging is illegal. Unformal commercial logging is often undertaken nearby the pasture areas. However, the areas that will be affected by the project are already logged. Therefore, this impact is considered of low magnitude.<br>Reservoir + powerhouse area: Negative impact, | • [SOC 2] Avoid or at least minimize physical and economic displacement<br>• [SOC 3] Develop, implement and monitor the LALRP (including a completion audit).<br>• [SOC 4] Compensation, Resettlement assistance and Livelihood Restoration.<br>• [SOC 5] The EPC Contractor will maintain access to | Not significant | Land Acquisition & Livelihood Restoration Plan: LALRP3. |

| Social Value | Impact Producing Factor | Phase | | | | Assessment of significance without mitigation or compensation<br>High Hi - Moderate M - Low Lo<br>[+] positive, [-] negative<br>Likelihood, Magnitude, Extent, Duration | Commitments<br>Key Mitigation, Compensation or Management measures | Predicted residual impact | Management Action where the mitigation or compensation measure is addressed in the ESMP |
|---|---|---|---|---|---|---|---|---|---|
| | | Early Works | Main construction | Reservoir Filling | Operation | | | | |
| | | | | | | certain, permanent.<br>Other areas: Negative impact, certain, during construction. | pastures which are located outside the worksites and potentially blocked by temporary facilities | | |
| | Access to the upper part of the Nenskra Valley | □ | ■ | ■ | ■ | Lo [-] Certain, low, permanent<br>The Nenskra dam and its reservoir will block access to the upper part of the Nenskra valley and watershed since no road is planned along either banks of the reservoir. | • [SOC 7] Reservoir bypass – cattle track | | Environmental Surveillance of Construction Works: SURV1. |
| Public infrastructure | Construction of the project components, including reservoir, could lead to loss of infrastructures e.g. roads and bridges, public buildings and utilities, irrigation or aquaculture facilities, small business and industry. | □ | ■ | □ | □ | Lo [-] Certain, low, one bridge, permanent.<br>The only public infrastructure located in the Project's footprint is the bridge located at the Nakra weir site. This bridge will be affected by the weir's construction. | • [SOC 7] Reservoir bypass – cattle track<br>[SOC 8] Design of the Nakra weir as a bridge | None | Environmental Surveillance of Construction Works: SURV1. |
| | Improvement of existing bridges and roads | □ | ■ | □ | □ | Lo [+] certain, low positive, long term<br>2 new bridges will be constructed and existing one will be rehabilitated as part of the Nenskra road improvement activities.<br>Main roads in Nenskra and Nakra Valley will be rehabilitated. | • none | Lo [+] | Environmental Surveillance of Construction Works: SURV1. |
| Impact on Other activities | Water rights conflicts downstream. | □ | □ | ■ | ■ | Lo [-] Very unlikely, long-term negative impact of low magnitude<br>There are very few uses of the water from the river.<br>There is not permanent irrigation system.<br>All existing water-powered corn mills are located on tributaries of the Nenskra and Nakra river, except one broken corn mill (no longer used) located on the Nakra river in Naki village. The use of these corn mills will not be affected. | • none | Not significant | |
| | Decline in fisheries downstream of dam due to submersion of river stretches, disruption of migration routes and river hydrology, and water quality changes. | □ | □ | ■ | ■ | Lo [-] Likely long-term negative impact of low magnitude.<br>Fishing is a not an economic activity for the local population. | • [SOC 9] River habitat mitigation strategy<br>• [SOC 10] Fish monitoring<br>• [SOC 11] Promotion of fish farming initiatives as part of the agricultural component of the | Not significant | Wildlife Conservation: WILD3.<br>Community Investment |

| Social Value | Impact Producing Factor | Phase | | | | Assessment of significance without mitigation or compensation<br>High Hi - Moderate M - Low Lo | | Commitments | Predicted residual impact | Management Action where the mitigation or compensation measure is addressed in the ESMP |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Early Works | Main construction | Reservoir Filling | Operation | [+] positive, [-] negative<br>Likelihood, Magnitude, Extent, Duration | | Key Mitigation, Compensation or Management measures | | |
| | | | | | | | During operation, the stock of fishes downstream of the dam and upstream of the confluence with the Enguri River is likely to decrease over time. In Chuberi community valley, 95 households declared they have at least one member usually fishing downstream of the proposed dam. In Naki community, 21 households declared it for fishing downstream of the weir. | Community Investment Program. | | Programme: DEVF2., DEVF3. |
| | Beekeeping | ■ | ■ | □ | □ | Lo | [-] Likely, short term (during construction), low magnitude.<br>Dust and noise from the traffic during construction could disturb the bees.<br>34 households would be potentially affected | • [SOC 12] Information for beekeepers and beekeeping mitigation measures | Not significant | Community Investment Programme: DEVF2 |
| Interaction with natural resources concessionaries | Inundation of, or impaired access to, mineral resources | □ | ■ | ■ | ■ | N/A | No impact: There was only 1 mining concession in the Project affected area. This concession was valid until February 2016 and was not renewed | • none | none | |
| | Inundation of, or impaired access to, forest concessions | □ | ■ | ■ | ■ | N/A | No impact: 2 forestry concessions were existing in the Nenskra Valley; they both expired in March 2016, and were not renewed. | • none | none | |
| Tourism | Construction activities, inundation and turbined waters can destroy natural features in the river (e.g. waterfalls and rapids that may be important locations for tourism and recreation, picnic and viewpoints) or alter what is part of an adventure tourism resource, with kayaking or sport fishery. | □ | ■ | ■ | ■ | Lo | [-] likely, long term<br>Tourism is not well developed in the Nenskra and Nakra valleys. It was not declared as a source of income by any of the households interviewed in the two valleys. Some touristic activities have been described by respondents in the Nenskra valley, whereas in the Nakra valley, respondent declared that touristic activities are almost non-existent. Scarce Kayaking and white-water rafting activities existing in Nenskra Valley may not be feasible after construction. Negative impact of low magnitude, long-term, localized in Nenskra valley. | • [SOC 13] Ecotourism development activities | Lo [+] | Community Investment Programme: DEVF2., DEVF3. |

| Social Value | Impact Producing Factor | Phase | | | | Assessment of significance without mitigation or compensation<br>High Hi - Moderate M - Low Lo<br>[+] positive, [-] negative<br>Likelihood, Magnitude, Extent, Duration | Commitments<br>Key Mitigation, Compensation or Management measures | Predicted residual impact | Management Action where the mitigation or compensation measure is addressed in the ESMP |
|---|---|---|---|---|---|---|---|---|---|
| | | Early Works | Main construction | Reservoir Filling | Operation | | | | |
| | Creation of an impressive dam could lead to the development of visitor facilities and recreational sites associated with the dam. The reservoir may also provide opportunities for boating, water sports, and picnic areas during the summer period. | | | ■ | ■ | Lo [+] Likely positive impact, long-term, for the local people that would develop touristic activities | • [SOC 13] Ecotourism development activities | Lo [+] | Community Investment Programme: DEVF2., DEVF3. |
| Community health | Relationships with project employees producing social unrest | ■ | ■ | ■ | ■ | Lo [-] Uncertain, low, mainly during construction.<br>1,000 employees will be present on the construction sites at peak during the construction.<br>During operation, the workforce will be lower than 100 employees, mostly skilled | • [SOC 59] Effective implementation and monitoring of the SEP<br>• [SOC 40] Local employments targets<br>• [SOC 60] Code of Conduct for the Project employees.<br>• [SOC 61] Accommodation of employees in Construction camps.<br>• [SOC 62] Communication of the Grievance Mechanism. | Negligible | Environmental Surveillance of Construction Works: SURV2.<br>Stakeholder Engagement Plan: PUB4. |
| | Loss of safe drinking water sources in case of degraded water quality (suspended solids or contamination with oils) during construction or poor quality, anoxic water being released downstream the dam during operation. | □ | ■ | ■ | ■ | Lo [-] unlikely, low, long-term intermittent<br>River from the water is only used temporary by few households if their water springs dry during the summer period. | • [SOC 44] Technical measures to avoid impacts on water quality<br>• [SOC 45] Monitoring of water springs and mineral water quality<br>[SOC 46] Disclosure of water monitoring results to local communities<br>• [SOC 46] Disclosure of water monitoring results to local communities<br>• [SOC 47] Provide an alternative source of household potable water if springs and seems used by a household are affected by the Project. | None | Environmental Surveillance of Construction Works: SURV1.<br>Environmental Monitoring: MON1. |
| | Presence of Project workforce could increase transmitted diseases (including STDs). | □ | ■ | □ | □ | M [-] likely, low, during construction.<br>1,000 employees will be present on the construction sites at peak during the construction. | • [SOC 40] Local employments targets<br>[SOC 41] Cooperation with Health authorities<br>• [SOC 42] Community awareness campaigns on health issues<br>• [SOC 43] Monitoring of implementation of workers' health specification by contractors | Lo [-] | Environmental Surveillance of Construction Works: SURV2.<br>Environmental Monitoring: MON4. |
| | Micro-climate change around the | □ | □ | ■ | ■ | Lo [-] highly unlikely that any impact on community health will happen: micro-climate change will be | • None | none | |

| Social Value | Impact Producing Factor | Phase | | | | Assessment of significance without mitigation or compensation<br>High Hi - Moderate M - Low Lo | Commitments | Predicted residual impact | Management Action where the mitigation or compensation measure is addressed in the ESMP |
|---|---|---|---|---|---|---|---|---|---|
| | | Early Works | Main construction | Reservoir Filling | Operation | [+] positive, [-] negative<br>Likelihood, Magnitude, Extent, Duration | Key Mitigation, Compensation or Management measures | | |
| | reservoir | | | | | localized around the Nenskra reservoir, which in not inhabited. Changes will hardly be noticeable | | | |
| | Increased incidence of waterborne or water-related diseases | ☐ | ☐ | ■ | ■ | Lo [-] Highly unlikely, low magnitude, limited to the surrounding of the reservoir, which are not inhabited.<br>There is not any know waterborne disease in the two valleys. Any increase of these diseases prevalence rate is unlikely to happen. | • None | none | |
| | Working sites - Noise and vibration around working sites, including roads | ☐ | ■ | ☐ | ☐ | M [-] Likely, localized, during construction | • [SOC 24] Vibration monitoring at buildings nearest to worksite during works susceptible to generate offsite vibration effects<br>[SOC 25] Structural assessment of buildings closest to the powerhouse worksite to verify structural integrity prior to the start of construction works<br>[SOC 26] Community health and safety measures for noise, dust and vibration during construction.<br>• | Lo [-] | Environmental Surveillance of Construction Works: SURV2. |
| | Noise from the powerhouse during operation | ☐ | ☐ | ☐ | ■ | M [-] Likely | • [SOC 37] Compliance with Georgian regulations or the guidelines for Community Noise established by the World Health Organization, whichever the stricter, at the nearest offsite noise receptor ensured through facilities design.<br>[SOC 38] Community health and safety for production noise measures.<br>• [SOC 39] Participatory monitoring activities. | Lo [-] | Environmental Monitoring: MON4. |
| | Community security and human rights | ☐ | ■ | ☐ | ■ | M [-] Likely<br>Private security management: localized at the entrance of the working sites, during construction and operation. Security guards could threaten local people and attempt to their security or to their human rights.<br>Public security management: Local police forces, or border guards could intervene, potentially during any protest against the project by local people, or public unrest caused by unexpected labour disputes. | • [SOC 79] Cooperation with Local Police forces<br>• [SOC 80] Adherence to the Voluntary Principles on Security and Human Rights – including contractors and their subcontractors<br>• [SOC 81] Specific training and monitoring of the security personnel on human rights<br>• [SOC 82] Recruitment of a Security and Human Right advisor<br>• [SOC 83] Preparation and implementation of a Security and Human Rights Management Plan for construction and operation, in line with the | Lo [-] | Environmental Surveillance of Construction Works: SURV2 Environmental and Social Management System : ESMS1 & ESMS2 |

| Social Value | Impact Producing Factor | Phase | | | | Assessment of significance without mitigation or compensation<br>High Hi - Moderate M - Low Lo<br>[+] positive, [-] negative<br>Likelihood, Magnitude, Extent, Duration | Commitments<br>Key Mitigation, Compensation or Management measures | Predicted residual impact | Management Action where the mitigation or compensation measure is addressed in the ESMP |
|---|---|---|---|---|---|---|---|---|---|
| | | Early Works | Main construction | Reservoir Filling | Operation | | | | |
| | | | | | | | Voluntary Principles on Security and Human Rights. | | |
| | Social Cohesion | □ | ■ | □ | □ | Lo [-] uncertain, during construction<br>Potential local conflict or social fractures due to actual or perceived treatment by or benefits from the Project to one community or stakeholder group over another. Disruption to communities might be triggered by Project's staff or contractors. | • [SOC 40] Local employments targets<br>• [SOC 60] Code of Conduct for the Project employees.<br>• [SOC 59] Effective implementation and monitoring of the SEP<br>• | negligible | Environmental Surveillance of Construction Works: SURV2.<br>Environmental Monitoring: MON6. |
| Community Safety | Traffic related risks | □ | ■ | □ | □ | M [-] Certain, along the roads used by the Project, during construction<br>Heavy traffic will increase during construction | • [SOC 14] Prepare and disclose publicly the Traffic Management Plan for the construction period<br>• [SOC 15] Specific safety measure for schools in the Traffic Management Plan<br>• [SOC 16] Local disclosure of the Traffic Management Plan and of the itineraries used<br>• [SOC 17] Announcement of heavy convoys to the local population<br>• [SOC 18] Awareness campaigns on traffic related risks, including school children | Lo [-] | Environmental Surveillance of Construction Works: SURV2. |
| | Community Safety – Physical disturbance and safety risks around Working sites | ■ | ■ | □ | □ | M [-] likely, in the worksites<br>Injuries or fatalities could occur, as working sites are inherently dangerous. | • [SOC 22] Safety distance for community health and safety.<br>• [SOC 27] Announcement of all construction activities to communities<br>• [SOC 28] Regular community meetings on Safety and Construction hazards<br>• [SOC 29] Dilapidation survey<br>• [SOC 32] Control of access to construction worksites.<br>• [SOC 49] Restriction of access around and downstream the Project infrastructure | Lo [-] | Environmental Surveillance of Construction Works: SURV2.<br>Stakeholder Engagement Plan: PUB2. |
| | Natural hazards and dam safety | □ | ■ | ■ | ■ | Hi [-] unlikely.<br>Very important risks, which will unlikely be realized, but which damages could be very important. | • [SOC 48] Adjustment of the operating procedures<br>• [SOC 49] Restriction of access around and downstream the Project infrastructure<br>• [SOC 50] Alarm and warning signage<br>• [SOC 51] Additional flood studies & flood protection | Communities are not exposed to risks that exceed tolerable | Environmental Surveillance of Construction Works: SURV2.<br>Emergency |

| Social Value | Impact Producing Factor | Phase | | | | Assessment of significance without mitigation or compensation<br>High Hi - Moderate M - Low Lo<br>[+] positive, [-] negative<br>Likelihood, Magnitude, Extent, Duration | Commitments<br>Key Mitigation, Compensation or Management measures | Predicted residual impact | Management Action where the mitigation or compensation measure is addressed in the ESMP |
|---|---|---|---|---|---|---|---|---|---|
| | | Early Works | Main construction | Reservoir Filling | Operation | | | | |
| | | | | | | | measures<br>• [SOC 52] Regular communication and awareness campaigns on dam safety<br>• [SOC 63] Technical solutions<br>• [SOC 64] Reservoir Triggered Seismicity mitigation<br>• [SOC 65] Study for the definition of the Nakra river and tributaries sediment management<br>• [SOC 66] Finalisation of Emergency Preparedness Plan .<br>• [SOC 67] Implementation of Early Warning Systems, Training and Exercise<br>• [SOC 68] Regular annual Public Awareness Campaigns on Emergency Preparedness Planning<br>• | limits as defined by Good International Practice. | Preparedness Plan: EPP1., EPP2., EPP3.<br>Downstream Flood Protection Plan: DOWN1., DOWN2. |
| Employment | Development of the Nenskra HPP will provide opportunities for employment for the local communities, unskilled, semi-skilled and skilled. | ■ | ■ | ■ | ■ | M [+] Certain.<br>During the construction phase, large numbers (several hundreds) of job opportunities will be available for low skilled workers, but far fewer (under one hundred for skilled workers) during the operational phase. | • [SOC 40] Local employments targets<br>• [SOC 72] Recruitment strategy<br>• [SOC 74] Monitoring of local jobs and women employment | Hi [+] | Environmental Surveillance of Construction Works: SURV2. |
| | Women Employment | □ | ■ | □ | □ | Lo [-] likely, during construction<br>Women will have fewer chances to be employed. | • [SOC 73] Women employment targets<br>• [SOC 74] Monitoring of local jobs and women employment | Lo [+] | Environmental Surveillance of Construction Works: SURV2. |
| | Indirect employment and business opportunities | □ | ■ | | ■ | Lo [+] Likely, low magnitude during construction and very low magnitude during operation<br>Presence of workers will increase local demand for services and goods, creating indirect business and job opportunities | • [SOC 1] Community Investment Programme.<br>• [SOC 78] Monitoring of the Supply Chain | Lo [+] | Community Investment Programme: DEFV2.<br>Environmental Surveillance of Construction Works: SURV2. |
| | Project-induced in-migration during | □ | ■ | □ | □ | Hi [-] Project in-migration is unlikely and should be | • [SOC 40] Local employments targets | Lo [-] | Environmental |

| Social Value | Impact Producing Factor | Phase | | | | Assessment of significance without mitigation or compensation<br>High Hi - Moderate M - Low Lo<br>[+] positive, [-] negative<br>Likelihood, Magnitude, Extent, Duration | Commitments<br>Key Mitigation, Compensation or Management measures | Predicted residual impact | Management Action where the mitigation or compensation measure is addressed in the ESMP |
|---|---|---|---|---|---|---|---|---|---|
| | | Early Works | Main construction | Reservoir Filling | Operation | | | | |
| | construction that could put pressure on infrastructure and services (e.g. sanitation, health) and could increase demand and prices for local food and services. | | | | | limited, during construction. Significant in-migration of job seekers is unlikely to happen, as this is not happening on similar projects in the region.<br>About 1000 workers at peak will be present on site during the main construction period. A number of these workers will come from the local communities and from Nenskra and Nakra valleys. However, if half of the jobs are allocated to local people, the number of newcomers could represent about half the size of the existing population in Nenskra valley.<br>Negative impact, certain, localized in Nenskra and Nakra valleys, temporary (during construction) and reversible. | • [SOC 72] Recruitment strategy<br>• [SOC 56] Monitoring system to document in-migration.<br>• [SOC 57] Memorandum of Understanding with the local health authorities<br>• [SOC 58] Monitoring of local prices | | Surveillance of Construction Works: SURV2.<br>Environmental Monitoring: MON6. |
| | Demobilization of workers | □ | □ | □ | ■ | Hi [-] Certain, major, about 900 workers will be demobilized in both valleys | • [SOC 77] Workers demobilisation plan<br>• [SOC 1] Community Investment Programme.<br>• [SOC 69] Develop and implement a training policy for all employees, including local unskilled workers, in order to raise their skill levels. | M [-] | Community Investment Programme: DEFV2.<br>Environmental Surveillance of Construction Works: SURV2. |
| | Workers' Health and Safety | ■ | ■ | ■ | ■ | M [-] likely, moderate, will concern all workers during construction and then operation<br>Health related risks, as heavy activities will be conducted (blasting tunnelling).<br>Unlikely low risk of non-respect of Labour rights, and used of child or forced labour | • [SOC 19] Workers Health and Safety Management [SOC 20] General construction health and safety management measures<br>• [SOC 21] Occupational health and safety measures for hazardous materials during construction<br>• [SOC 23] Occupational health and safety measures for noise, dust and vibrations during construction.<br>• [SOC 30] Occupational health and safety measures for fire and explosion during construction<br>• [SOC 33] General health and safety measures during production.<br>• [SOC 34] Occupational health and safety measures for hazardous materials during operation. | Lo [-] | Environmental Surveillance of Construction Works: SURV2. |

| Social Value | Impact Producing Factor | Phase | | | | Assessment of significance without mitigation or compensation<br>High Hi - Moderate M - Low Lo<br>[+] positive, [-] negative<br>Likelihood, Magnitude, Extent, Duration | Commitments<br>Key Mitigation, Compensation or Management measures | Predicted residual impact | Management Action where the mitigation or compensation measure is addressed in the ESMP |
|---|---|---|---|---|---|---|---|---|---|
| | | Early Works | Main construction | Reservoir Filling | Operation | | | | |
| | | | | | | | • [SOC 35] Fire and explosion prevention in alignment with GIIP.<br>• [SOC 36] Occupational health and safety for production noise measures.<br>• [SOC 42] Community awareness campaigns on health issues<br>• [SOC 43] Monitoring of implementation of workers' health specification by contractors<br>• [SOC 76] Workers' safety committee<br>• [SOC 78] Monitoring of the Supply Chain<br>• [SOC 84] Labour audits | | |
| Cultural heritage | Material Cultural Heritage :Loss of archaeological, historical or cultural monuments within reservoir or worksites | ■ | ■ | ■ | | Lo [-] Unlikely, low magnitude, but permanent.<br>No historical or archaeological sites have been identified in the Project's sites. No churches or chapels are located near the Project's infrastructures. However, as the Svaneti region has a rich historical background, and as archaeological artefacts have been found in the two valleys (remains of metallurgical production), it may be possible that some artefacts may be accidentally found during ground works.<br>Unlikely negative impact, probably of low magnitude, but would be permanent. | • [SOC 85] Chance Find Procedure | None | Environmental Surveillance of Construction Works: SURV2. |
| | Intangible Cultural Heritage. | ■ | ■ | ■ | ■ | Lo [-] Unlikely, but permanent.<br>The local communities in the Nenskra and Nakra valleys are an integral part of the Georgian culture and nation.<br>The local communities are sensitive to the respect of their traditions, customs and beliefs.<br>The project could induce social changes, and will induce the presence of outsiders in the valleys. | • [SOC 40] Local employments targets<br>• [SOC 56] Monitoring system to document in-migration.<br>• [SOC 59] Effective implementation and monitoring of the SEP<br>• [SOC 60] Code of Conduct for the Project employees.<br>• [SOC 61] Accommodation of employees in Construction camps.<br>• [SOC 62] Communication of the Grievance Mechanism.<br>• [SOC 86] CIP includes a support to the preservation | Negligible | Environmental Surveillance of Construction Works: SURV2.<br>Environmental Monitoring: MON6.<br>Community Investment Programme: CIP2 |

| Social Value | Impact Producing Factor | Phase | | | | Assessment of significance without mitigation or compensation<br>High Hi - Moderate M - Low Lo<br>[+] positive, [-] negative<br>Likelihood, Magnitude, Extent, Duration | | Commitments<br>Key Mitigation, Compensation or Management measures | Predicted residual impact | Management Action where the mitigation or compensation measure is addressed in the ESMP |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Early Works | Main construction | Reservoir Filling | Operation | | | | | |
| | | | | | | | | of local intangible cultural heritage | | |
| Indigenous people | Presence of indigenous people would require, amongst others, Free, Prior and Informed Consent during negotiations with affected communities. | □ | ■ | □ | □ | N/A | The affected population is not classified as Indigenous People as per the Lenders criteria. | • None | None | N/A |
| Vulnerable groups | Disproportionate impacts on the poor, women, children and other vulnerable groups caused by the project activities e.g. involuntary resettlement, loss of assets, Health issues, Risk of sexual exploitation and violence, Loss of cultural lands sites and connection to place. | ■ | ■ | ■ | □ | M | [-] likely, low.<br>Some vulnerable households will be affected by the land take process (this is addressed in the Vol. 9 – LALRP)<br>Children will be more vulnerable to traffic related safety risks. | • [SOC 2] Avoid or at least minimize physical and economic displacement.<br>• [SOC 3] Develop, implement and monitor the LALRP (including a completion audit).<br>• [SOC 4] Compensation, Resettlement assistance and Livelihood Restoration.<br>• [SOC 14] Prepare and disclose publicly the Traffic Management Plan for the construction period<br>• [SOC 15] Specific safety measure for schools in the Traffic Management Plan<br>• [SOC 18] Awareness campaigns on traffic related risks, including school children | Lo [-] | Environmental Surveillance of Construction Works: SURV2.<br>Land Acquisition and Livelihood Restoration Plan: LALRP3. |

# Annexes

# Annex 1. References

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# Annex 2. Breakdown of number of households interviewed per village

## Breakdown of number of households interviewed per village

| Location | A. Total Number of Residential Compounds Identified on aerial pictures | B. HH analyzed (= permanent HH interviewed) (% of Total HH) | C. Total Of HH not included in the Analysis | Reasons to for exclusion of Households (HH) of the Sample analyzed | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Refused to be interviewed (% of Not Analyzed; Col. C) | Uninhabited-Under Construction or Abandoned (% of Not Analyzed; Col. C) | 'Not Eligible' (Competent) (% of Not Analyzed; Col. C) | HH Resident Seasonally Only and not present at the time of the survey (% of Not Analyzed; Col. C) | HH Resident Seasonally Only, present at the time of the survey and interviewed but not analyzed (% of Not Analyzed; Col. C) |
| **PROJECT AREA** | | | | | | | | |
| Nenskra Valley | 313 (100%) | 268 (86%) | 45 (14%) | 2 (5%) | 22 (48%) | 0 (0%) | 19(42%) | 2 (5%) |
| Nenskra Right Bank | 198 (100%) | 172 (87%) | 27 (13%) | 2 (7%) | 12 (44.5%) | 0 (0%) | 12 (44.5%) | 1 (4%) |
| Nenskra Left Bank | 115 (100%) | 96 (83.5%) | 19 (14.8%) | 0 (0%) | 10 (59%) | 0 (0%) | 8 (35.5%) | 1 (5.5%) |
| Nakra valley | **112 (100%)** | **85 (81%)** | **27 (19%)** | **0 (0%)** | **5 (18.5%)** | **2 (7.5%)** | **14 (52%)** | **6 (22%)** |
| **Total** | **425 (100%)** | **353 (80%)** | **73 (20%)** | **2 (3%)** | **27 (36%)** | **2 (3%)** | **34 (47%)** | **8 (11%)** |
| **PROJECT SUB-AREAS** | | | | | | | | |
| ***Nenskra, Right Bank*** | | | | | | | | |
| Sgurishi | 44 | 35 | 9 | 0 | 5 | 0 | 4 | |
| Kari | 50 | 40 | 10 | 2 | 3 | 0 | 5 | |
| Devra | 13 | 12 | 1 | 0 | 1 | 0 | 0 | |
| Letsperi | 31 | 29 | 2 | 0 | 2 | 0 | 0 | |
| Lakhami | 50 | 47 | 3 | 0 | 1 | 0 | 2 | 1 |
| Lukhi | 10 | 9 | 1 | 0 | 0 | 0 | 1 | |
| Subtotal | 198 (100%) | 172 (87%) | 27 (13%) | 2 (7%) | 12 (44.5%) | 0 (0%) | 12 (44.5%) | 1 (4%) |
| ***Nenskra, Left Bank*** | | | | | | | | |
| Tita | 3 | 2 | 1 | 0 | 0 | 0 | 1 | |
| Zemo Marghi | 21 | 15 | 6 | 0 | 5 | 0 | 1 | |
| LariLari | 22 | 20 | 2 | 0 | 1 | 0 | 1 | |
| Kvemo Marghi | 47 | 43 | 4 | 0 | 2 | 0 | 1 | 1 |
| Lekalmakhe | 12 | 8 | 4 | 0 | 2 | 0 | 2 | |
| Kedani | 3 | 3 | 0 | 0 | 0 | 0 | 0 | |
| Tobari | 7 | 5 | 2 | 0 | 0 | 0 | 2 | |
| Subtotal | 115 (100%) | 96 (83.5%) | 19 (14.8%) | 0 (0%) | 10 (53%) | 0 (0%) | 8 (42%) | 1 (5%) |

| Location | A. Total Number of Residential Compounds Identified on aerial pictures | B. HH analyzed (= permanent HH interviewed) (% of Total HH) | C. Total Of HH not included in the Analysis | Reasons to for exclusion of Households (HH) of the Sample analyzed | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Refused to be interviewed (% of Not Analyzed; Col. C) | Uninhabited-Under Construction or Abandoned (% of Not Analyzed; Col. C) | 'Not Eligible' (Competent) (% of Not Analyzed; Col. C) | HH Resident Seasonally Only and not present at the time of the survey (% of Not Analyzed; Col. C) | HH Resident Seasonally Only, present at the time of the survey and interviewed but not analyzed (% of Not Analyzed; Col. C) |
| ***Nakra Valley*** | | | | | | | | |
| Lenkvashi[25] | 4 | 0 | 4 | 0 | 0 | 0 | 4 | |
| Nakra (Naki) | 71 | 55 | 16 | 0 | 2 | 2 | 8 | 4 |
| Anil | 5 | 4 | 1 | 0 | 0 | 0 | 1 | |
| Kvitsani | 18 | 15 | 3 | 0 | 3 | 0 | 0 | |
| Latsomba | 10 | 7 | 3 | 0 | 0 | 0 | 1 | 2 |
| Shtikhiri | 4 | 4 | 0 | 0 | 0 | 0 | 0 | |
| Subtotal | 112 (100%) | 85 (81%) | 27 (19%) | 0 (0%) | 5 (18.5%) | 2 (7.5%) | 14 (52%) | 6 (22%) |

[25] The hamlet of Lenkvashi was devastated by a landslide several years back. A number of residences were destroyed in the catastrophe, and all permanent residents have relocated elsewhere. A few families whose primary residence is outside the project area and who residence in Lenkvashi was not affected still return for the summer season, however.

# Annex 3. Socioeconomic questionnaire

Questionnaire ID_____

# Nenskra Hydropower Project

**Complementary socioeconomic studies**
**Socioeconomic questionnaire**
**All households**

| | | | |
|---|---|---|---|
| 1 | Enumerator Name: | Code: | GPS #: |
| 2 | Date: *(YYYY/MM/DD)* | | |
| 3 | Village*: | ID: | |
| 4 | Family ID number:* | | |
| 5 | Family member interviewed: | | ID HH Roster |
| 6 | Family members present: | | ID HH Roster |
| 7 | HH head phone number +name: | | |
| 8 | Spouse or relative phone number + name: | | |
| 9 | Coordinates of Household's house: 9a _ _ ° _ _ ' _ _ . _ _ " 9b _ _ ° _ _ ' _ _ . _ _ " | | |
| 10 | Notes: …… …… …… …… …… …… …… …… …… …… …… …… …… …… …… …… …… …… …… | | |

** Household and interview number is: village number + family number. This unique ID number will appear on each set of interviews carried out with each family.*

| *Reception* | | *Checked:* | | *Data entry* | |
|---|---|---|---|---|---|
| *Id:* | *Date:* | *Id:* | *Id:* | *Date:* | *Id:* |

Questionnaire ID_____

## A. Information on family members

| ID N° | **A.1 Name** | **A.2 Last Name** | **A.3 Relationship to Head of Household (HOH)** | **A.4 Residency** *(Enter code)* | **A.5 Marital status** *(Enter code)* | **A.6 Gender** *(Circle applicable)* | **A.7 Age** (Enter) | **A.8 Education** *(Enter code)* | **A.9 Nationality / Ethnic Group** *(Enter code)* | **A.10 Religion** *(Enter code)* | **A.11 Languages** *(Circle all applicable)* | **A.12 Occupation – Primary** *(Enter code) (One Answer)* | **A.13 Occupation –secondary** *(Enter code) (Several codes available)* | **A.14 Social Assistance or allowances** *(Enter code) (Several codes available, separate with comas)* | **A.15 Vulnerability** *(Enter code) (Several codes available, separate with comas)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | | | Head of HH | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 2. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 3. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 4. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 5. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 6. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 7. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 8. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 9. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 10. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| | **A.3**<br>1. HOH<br>2. Spouse<br>3. Child<br>4. Parent<br>5. In-law<br>6. Grandchild<br>7. Step-Child<br>8. Nieces /nephews<br>9. Other relative<br>10. Renter<br><br>99. Unknown<br>77. No answer | | **A.4**<br>1. Resident (permanent)<br>2. Resident (seasonal)<br>3. Permanent emigrant, but not student<br>4. Labor migrant (comes back and forth)<br>5. Student<br><br>99. Unknown<br>77. No answer | | 1. Never married<br>2. Currently married<br>3. Separated / divorced<br>4. Widowed<br>5. Others<br><br>99. Unknown<br>77. No answer | 1. Male<br>2. Female | **A.8**<br>1. Elementary (1-2 class)<br>2. Incomplete Secondary<br>3. Finished secondary<br>4. Vocational<br>5. Higher<br>6. Under school Age<br>7. None (illiterate)<br><br>99. Unknown<br>77. No answer | | 1. Georgian<br>2. Armenian<br>3. Azeri<br>4. Russian<br>5. Other<br><br>99. Unknown<br>77. No answer | 1. Orthodox<br>2. Muslim<br>3. Catholic<br>4. Other<br>5. None<br><br>99. Unknown<br>77. No answer | 1. Georgian<br>2. Svan<br>3. Russian<br>4. Other | 1. Farmer<br>2. Lumberman<br>3. Housewife<br>4. Civil servant<br>5. Merchant/ shopkeeper<br>6. Employee<br>7. Part-time / temporary employment<br>8. Retired<br>9. student<br>10.Other<br>11.No occ.<br><br>99. Unknown<br>77. No answer | 1. Farmer<br>2. Lumberman<br>3. Housewife<br>4. Civil servant<br>5. Merchant/ shopkeeper<br>6. Employee<br>7. Part-time / temporary employment<br>8. Retired<br>9. student<br>10.Other<br>11.No occ.<br><br>99. Unknown<br>77. No answer | 1. Poverty line<br>2. Medicine policy<br>3. Pensioner<br>4. Refugee<br>5. No assistance<br><br>99. Unknown<br>77. No answer | 1. Handicapped (mobility)<br>2. Handicapped (learning capacity)<br>3. Blind<br>4. Deaf<br>5. Age (elderly)<br>6. Woman headed household<br><br>99. Unknown<br>77. No answer |

**B.** FAMILY HISTORY IN AREA

**B.1 When did your family move to this valley?**

| | | | |
|---|---|---|---|
| 1 | Always been here | 1 | → **C.1** |
| 2 | A couple of hundred years ago | 2 | → **B.2** |
| 3 | In the last hundred years or so | 3 | |
| 4 | Between 90 and 10 years ago | 4 | |
| 5 | Less than 10 year | 5 | |
| 6 | Not known | 77 | |
| 7 | No answer | 99 | |

**B.2 What area did your family came from?**

**B.3 Do you still have family in the area you moved from?**

| | |
|---|---|
| Yes | 1 |
| No | 2 |
| No response | 77 |
| Unknown | 99 |

**C. Income source of each family member**

*ask only for adults)* *(1=yes, 2=no, 77=no response, 99= unknown)*

| ID N° | **C.1** **Permanent salary in the public service** | **C.2** **salary in a private company** | **C.3** **Pension/ all allowances** | **C.4** **Regular remittance** (money send by family member or relative on a regular basis) | **C.5** **Renting land** | **C.6** **Agriculture** | **C.7** **Logging** | **C.8** **Lumbering** | **C.9** **Secondary forest products** | **C.10** **Processed food (jam, baked goods…)** | **C.11** **Craftworks** | **C.12** **Other (Specify)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | |
| 9. | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | |

| **D. REAL ESTATE OF THE HOUSEHOLD *(leave blank if no reply or unknown)*** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **D.1 Land plots / fields** | | | | | | | | | |
| | **D.1.1** *(1 – residential; 2 – commercial, 3 – agricultural ;)* | | | | | | | **D.1.2 Area (ha)** | **D.1.3 owner** |
| Land plot 1 | 1 | | | 2 | | | 3 | | |
| Land Plot 2 | 1 | | | 2 | | | 3 | | |
| Land Plot 3 | 1 | | | 2 | | | 3 | | |
| Land Plot 4 | 1 | | | 2 | | | 3 | | |
| Land Plot 5 | 1 | | | 2 | | | 3 | | |
| Land Plot 6 | 1 | | | 2 | | | 3 | | |
| **D.2 Buildings** | | | | | | | | | |
| | **D.2.1 Function** (1 – residential ; 2 – auxiliary ; 3 – Barn ; 4- Garage, 5 – Commercial; 6 – Other, specify) | | | | | | **D.2.2 How many floors?** | **D.2.3 How many rooms?** | **D.2.4 Materials** (1 – brick ; 2- concrete ; 3 – wooden; 4- Other) |
| Building 1 | 1 | 2 | 3 | 4 | 5 | 6 | | | |
| Building 2 | 1 | 2 | 3 | 4 | 5 | 6 | | | |
| Building 3 | 1 | 2 | 3 | 4 | 5 | 6 | | | |
| Building 4 | 1 | 2 | 3 | 4 | 5 | 6 | | | |
| Building 5 | 1 | 2 | 3 | 4 | 5 | 6 | | | |
| Building 6 | 1 | 2 | 3 | 4 | 5 | 6 | | | |

| | | | |
|---|---|---|---|
| **E. AGRICULTURE** | | | |
| **E.1 AGRICULTURAL PRODUCTION** | | | |
| **E.1.1 What crops do you grow?** | | | |
| 1 | Corn | | 1 |
| 2 | Fruit | | 2 |
| 3 | Potatoes | | 3 |
| 4 | Vegetables | | 4 |
| 5 | Hay | | 5 |
| 6 | No Crop Grown | | 6 |
| 7 | No answer/Unknown | | 99 |
| 8 | Other (please specify) | | |
| **E.1.2 Do you receive assistance to harvest your crops?** | | | |
| Yes | | 1 | → **E.1.3** |
| No | | 2 | → **E.1.6** |
| No response | | 77 | |
| Unknown | | 99 | |
| **E.1.3 If yes, who?** *(several answers)* | | | |
| Relative | | 1 | |
| Neighbor | | 2 | |
| Hired labor | | 3 | |
| Other | | 4 | |
| **E.1.4 If so, for how many days? *(enter number of days)*** | | | |
| **E.1.5 Daily rate? *(Enter amount)*** | | | |
| **E.1.6 How much of each crop *(bags or weight—use local measures)* do you harvest** *(Please consider last 3 years on average)* | | | |
| | | **Quantity** | **Unit** |
| 1 | Corn | | |
| 2 | Fruit | | |
| 3 | Potatoes | | |
| 4 | Vegetables | | |
| 5 | Hay | | |
| 6 | Other (please specify) | | |
| 7 | No answer/Unknown | 99 | |
| **E.1.7 How much of each crop do you eat? Indicate percentage** | | | |
| 1 | Corn | | % |
| 2 | Fruit | | % |
| 3 | Potatoes | | % |
| 4 | Vegetables | | % |
| 5 | Hay | | % |
| 6 | Other (please specify) | | % |
| 7 | No answer/Unknown | 99 | |
| **E.1.8 How much do you feed to the animals? Indicate percentage** | | | |
| 1 | Corn | | % |
| 2 | Fruit | | % |
| 3 | Potatoes | | % |
| 4 | Vegetables | | % |
| 5 | Hay | | % |
| 6 | Other (please specify) | | % |
| 7 | No answer/Unknown | 99 | |

| | | | |
|---|---|---|---|
| **E.1.9 How much do you sell? Indicate percentage** | | | |
| 1 | Corn | | % |
| 2 | Fruit | | % |
| 3 | Potatoes | | % |
| 4 | Vegetables | | % |
| 5 | Hay | | % |
| 6 | Other (please specify) | | % |
| 7 | No answer/Unknown | 99 | |

**E.2 AGRICULTURAL PROCESSING**

**E.2.1 Do you process any fruit, vegetables, nuts or animal products? specify, for example jam, canned products, svanish salt, corn flour, cheese**

| | | |
|---|---|---|
| Yes | 1 | **→E.2.2** |
| No | 2 | **→ E.3** |
| No response | 77 | |
| Unknown | 99 | |

| | **E.2.2 If so, What?** | **E.2.3 By Whom?** *Refer to HH roster ID* | **E.2.4 How much is produced?** | | **E.2.5** How much is sold? | |
|---|---|---|---|---|---|---|
| | | | Quantity | Unit | Quantity | Unit |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |

**E.2.6 Do you process honey?**

| | | |
|---|---|---|
| Yes | 1 | **→E.2.7** |
| No | 2 | **→ E.3** |
| No response | 77 | |
| Unknown | 99 | |

| | | |
|---|---|---|
| **E.2.7 Who does this work?** *Refer to HH roster ID* | | |
| **E.2.8 How much honey is produced?** | Quantity | Unit |
| | | |
| **E.2.9 How much honey is sold?** | Quantity | Unit |
| | | |

**E.3 AGRICULTURAL EQUIPMENT**

**E.3.1 How many of the following items do you use?**

| | | **E.3.2 Do you use it?** ***(1= yes, 2=No, 77= No response, 99= unknown)*** | | | | **E.3.3 If you use it, how do you access it?** ***(1=Own, 2=Borrow, 3=Rent, 4=other, 77= No response, 99= unknown)*** *(several answers)* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Horse or Oxen drawn plow | 1 | 2 | 77 | 99 | 1 | 2 | 3 | 4 | 77 | 99 |
| 2 | Hand cultivator | 1 | 2 | 77 | 99 | 1 | 2 | 3 | 4 | 77 | 99 |
| 3 | Tractor | 1 | 2 | 77 | 99 | 1 | 2 | 3 | 4 | 77 | 99 |
| 4 | Seeder | 1 | 2 | 77 | 99 | 1 | 2 | 3 | 4 | 77 | 99 |
| 5 | Cultivator | 1 | 2 | 77 | 99 | 1 | 2 | 3 | 4 | 77 | 99 |
| 6 | Baler (hay) | 1 | 2 | 77 | 99 | 1 | 2 | 3 | 4 | 77 | 99 |
| 7 | Sawmill () | 1 | 2 | 77 | 99 | 1 | 2 | 3 | 4 | 77 | 99 |
| 8 | Ag cart (motorized) | 1 | 2 | 77 | 99 | 1 | 2 | 3 | 4 | 77 | 99 |
| 9 | Ag cart (horse-drawn) | 1 | 2 | 77 | 99 | 1 | 2 | 3 | 4 | 77 | 99 |
| 10 | Chain Saw | 1 | 2 | 77 | 99 | 1 | 2 | 3 | 4 | 77 | 99 |
| 11 | Other (specify: ……) | 1 | 2 | 77 | 99 | 1 | 2 | 3 | 4 | 77 | 99 |
| 12 | Other (specify: ……) | 1 | 2 | 77 | 99 | 1 | 2 | 3 | 4 | 77 | 99 |

**F. LIVESTOCK/PASTURE**

**F.1 Livestock assets**

**F.1.1 Please indicate the number of the livestock you own?**

*(Indicate 0 if none, 77 – no answer and 99 unknown)*

| | **LIVESTOCK** | Quantity |
|---|---|---|
| 1. | Cow, Ox and buffalo | |
| 2. | Horse or donkey | |
| 3. | Pigs | |
| 4. | Sheep | |
| 5. | Poultry | |

**F.2 PASTURE**

**F.2.1 Which animals do you pasture in the highlands during the summer?**

| | | |
|---|---|---|
| 1 | Cows, ox & buffalo | 1 |
| 2 | Horse or donkey | 2 |
| 3 | Sheep | 3 |
| 4 | Other, specify…….. | |

**F.2.2 How long do the animals stay there?** *Enter No. months*

| | | |
|---|---|---|
| 1 | Cows, ox & buffalo | |
| 2 | Horse or donkey | |
| 3 | Sheep | |
| 4 | Other, specify…….. | |

*(The following questions will be used with the map of the project area, to determine if pastures and transhumance routes used by the family are affected by the Project.)*

| **F.2.3 Do you always go to the same pasture, or are there several pastures where you go?** | |
|---|---|
| same pasture | 1 |
| several pasture | 2 |
| no response | 77 |
| unknown | 99 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **F.2.4** | **What pasture did you go to last year?** | | | | | |
| | | | | | | **Code** |
| 1 | Name of location | | | | | |
| 2 | Name of location | | | | | |
| 3 | Name of location | | | | | |
| 4 | Name of location | | | | | |
| **F.2.5** | **And the year before that?** | | | | | |
| 1 | Name of location | | | | | |
| 2 | Name of location | | | | | |
| 3 | Name of location | | | | | |
| 4 | Name of location | | | | | |
| **F.2.6** | **Do you have to cross the flooded area to reach the pasture?** *(use maps)* | | | | | |
| | | *Located in the affected area (use the maps 1- fully 2-partially 3= No 77= No response, 99= unknown)* | | | | |
| 1 | Name of location | 1 | 2 | 3 | 77 | 99 |
| 2 | Name of location | 1 | 2 | 3 | 77 | 99 |
| 3 | Name of location | 1 | 2 | 3 | 77 | 99 |
| 4 | Name of location | 1 | 2 | 3 | 77 | 99 |
| **F.2.7** | **Are there any alternative routes to access the pasture that do not cross the affected area (dam territory) partially of fully?** *(use maps)* | | | | | |
| | | ***1=Yes 2= No, 77= No response, 99= unknown)*** | | | | |
| 1 | Name of location | 1 | 2 | 77 | 99 | |
| 2 | Name of location | 1 | 2 | 77 | 99 | |
| 3 | Name of location | 1 | 2 | 77 | 99 | |
| 4 | Name of location | 1 | 2 | 77 | 99 | |
| **F.2.8** | **Who takes the animals there?** *(Indicate HH member ID from HH roster, if non family member, specify)* | | | | | |
| **F.2.9** | **Do you pay this person?** | | | | | |
| Yes | | | | | | 1 |
| No | | | | | | 2 |
| No response | | | | | | 77 |
| Unknown | | | | | | 99 |
| **F.2.10** | **If so, how much?** *(Enter amount* | | | | | |
| **G.** | **LOGGING/LUMBERING (SAWMILLS)** | | | | | |
| **G.1** | LOGGING | | | | | |
| **G.1.1** | **Do you log?** | | | | | |
| Yes | | 1 | | | | **→ G.1.2** |
| No | | 2 | | | | **→ G.2** |
| No response | | 77 | | | | |
| Unknown | | 99 | | | | |
| **G.1.2** | **What months do you log trees in the forest? (several answers)** | | | | | |
| January | | 1 | July | | | 7 |
| February | | 2 | August | | | 8 |
| March | | 3 | September | | | 9 |
| April | | 4 | October | | | 10 |
| May | | 5 | November | | | 11 |
| June | | 6 | December | | | 12 |
| **G.1.3** | **How many days do you work in the forest?** | | | | | day |
| **G.1.4** | **Where do you sell the logs?** | | | | | |
| **G.2** | **LUMBERING (SAWMILL)** | | | | | |
| **G.2.1** | **Do you own a sawmill?** | | | | | |
| Yes | | 1 | | | | |
| No | | 2 | | | | |
| No response | | 77 | | | | |
| Unknown | | 99 | | | | |

| H. CRAFTS/ARTESANRY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **H.1 Does anyone in your family engage in the following for home consumption or for sale (note who and for what purpose)** | | | | | | | | | | | |
| | | ***1=Yes 2= No, 77= No response, 99= unknown)*** | | | | **H.2 Who is engaged?** *Refer to HH roster ID* | **H.3 For what purpose?** *(1=Sale, 2=Family consumption, 3=share with friend, 77=no response, 99=unknown)* | | | | |
| 1 | Fruit/vegetable preserving | 1 | 2 | 77 | 99 | | 1 | 2 | 3 | 77 | 99 |
| 2 | Honey | 1 | 2 | 77 | 99 | | 1 | 2 | 3 | 77 | 99 |
| 3 | Embroidery | 1 | 2 | 77 | 99 | | 1 | 2 | 3 | 77 | 99 |
| 4 | Secondary forest products | 1 | 2 | 77 | 99 | | 1 | 2 | 3 | 77 | 99 |

| I. SECONDARY FOREST PRODUCTS | | |
|---|---|---|
| **I.1 Do you or anyone in your family from time to time collect/harvest/use any of the following from the forest?** | | |
| Yes | 1 | **→ I.2** |
| No | 2 | **→ J.1** |
| No response | 77 | |
| Unknown | 99 | |

| | **I.2 Product** | **I.3 Quantity Used at Home** | | **I.4 Quantity for Sale** | | **I.5 Who collects?** *Refer to HH roster ID* |
|---|---|---|---|---|---|---|
| | | **Quantity** | **Unit** | **Quantity** | **Unit** | |
| 1 | Berries | | | | | |
| 2 | Firewood | | | | | |
| 3 | Wild fruit | | | | | |
| 4 | Culinary herbs (specify) | | | | | |
| 5 | Medicinal herbs (specify) | | | | | |
| 6 | Mushroom (specify) | | | | | |
| 7 | Tree parts (bark, leaves, wood and seeds; pinecones and pine nuts) | | | | | |
| 8 | Other (specify) | | | | | |

| J. LABOR EXCHANGES | | | | | |
|---|---|---|---|---|---|
| **J.1 How do you help out your neighbors from time to time?** | | | | | |
| | | **Yes** | **No** | **No Response** | **Unknown** |
| 1 | Help with haying | 1 | 2 | 77 | 99 |
| 2 | Help with plowing | 1 | 2 | 77 | 99 |
| 3 | Help with harvesting | 1 | 2 | 77 | 99 |
| 4 | Lend tools | 1 | 2 | 77 | 99 |
| 5 | Help in house construction | 1 | 2 | 77 | 99 |
| 6 | Other, please specify | 1 | 2 | 77 | 99 |
| 7 | Not helping neighbors | 0 | | | |

| **K. CREDIT AND ITS STRUCTURE** *(ask only for adults members of household)* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **K.1 Do you or anyone in your family have a savings account?** | | | | | | | | |
| Yes | | | | 1 | | | | |
| No | | | | 2 | | | | |
| No response | | | | 77 | | | | |
| Unknown | | | | 99 | | | | |
| ID N° | **K.2 Do you have a bank loan?** *(Yes = 1 ; No = 2 ; no response =77, unknown=99)* | | | | **K.3 Do you have any private loan?** *(Yes = 1 ; No = 2 ; no response =77, unknown=99)* | | | |
| 1. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 2. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 3. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 4. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 5. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 6. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 7. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 8. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 9. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 10. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |

| **L.** REMITTANCES | | |
|---|---|---|
| **L.1 Does any adult child or relative send you money from abroad?** | | |
| Yes | 1 | **→ L.2** |
| No | 2 | **→ M.1** |
| No response | 77 | |
| Unknown | 99 | |
| **L.2 Who?** | | |
| **L.3 Frequency?** | | |
| **L.4 Amount?** | | |
| **L.5 How are the funds sent?** | | |
| Via bank | 1 | |
| Private person | 2 | |
| Other (specify) | | |

| **M.** DOMESTIC WATER SUPPLY | |
|---|---|
| **M.1What is your domestic water source?** | |
| Source crossing the main road of the village | 1 |
| source that is not crossing the main village road | 2 |
| Well | 3 |
| River | 4 |
| River Spring | 5 |
| Other | 6 |
| **M.2 Is your residential house located on the main road of the village to the dam?** | |
| Yes | 1 |
| No | 2 |
| No response | 77 |
| Unknown | 99 |

| **N.** SANITATION | |
|---|---|
| **N.1 What type of toilets do you have?** | |
| latrine | 1 |
| flush toilet | 2 |
| others | 3 |

| | |
|---|---|
| No response | 77 |
| Unknown | 99 |

| **O.** HOUSEHOLD FURNISHING | | |
|---|---|---|
| **O.1 How many of these items do you possess?** *(put in the number in front of each item – with 0 for none and 99 for unknown and 77 for not answered.)* | | |
| 1 | Radio | |
| 2 | Bicycle | |
| 3 | Television | |
| 4 | L.P.G Connection/ Gas Cylinder | |
| 5 | Computer | |
| 6 | Refrigerator | |
| 7 | Mobile phone/telephone | |
| 8 | Washing machine | |
| 9 | Motor cycle / scooter | |
| 10 | Car | |
| 11 | Air conditioner | |
| 12 | Kerosene lantern | |
| 13 | Other, specify:…….. | |

| **P. HUNTING** | | |
|---|---|---|
| **P.1 Do you or anyone in your family go hunting?** | | |
| Yes | 1 | **→ P.2** |
| No | 2 | **→ Q.1** |
| No response | 77 | |
| Unknown | 99 | |

| **P.2 When? (Several answers)** | |
|---|---|
| Spring | 1 |
| Summer | 2 |
| Autumn | 3 |
| Winter | 4 |

**P.3 Where are your favorite hunting sites?** *(see map provided to be used with this questionnaire)*

| | | *Located in the affected area (use the maps 1- fully 2-partially 3= No 77= No response, 99= unknown)* | | | | |
|---|---|---|---|---|---|---|
| 1 | Name of location | 1 | 2 | 3 | 77 | 99 |
| 2 | Name of location | 1 | 2 | 3 | 77 | 99 |
| 3 | Name of location | 1 | 2 | 3 | 77 | 99 |
| 4 | Name of location | 1 | 2 | 3 | 77 | 99 |

| **P.4 For what animals? (Several answers)** | |
|---|---|
| Bear | 1 |
| Wolf | 2 |
| Lynx | 3 |
| Deer | 4 |
| Wild goat | 5 |
| Poultry | 6 |
| Other, specify:…….. | |
| **P.5 What do you do with them? (Several answers)** | |
| Sale | 1 |
| Family Consumption | 2 |
| Share with Friends | 3 |
| No Response | 77 |
| Unknown | 99 |

| **Q. FISHING** |
|---|

| **Q.1 Do you or anyone in your family go fishing?** | | |
|---|---|---|
| Yes | 1 | → **Q.2** |
| No | 2 | → **R.1** |
| No response | 77 | |
| Unknown | 99 | |

**Q.2 Where are your favorite fishing holes/sites?**

| | | *Located in the affected area (use the maps 1- fully 2-partially 3= No 77= No response, 99= unknown)* | | | | |
|---|---|---|---|---|---|---|
| 1 | Name of location | 1 | 2 | 3 | 77 | 99 |
| 2 | Name of location | 1 | 2 | 3 | 77 | 99 |
| 3 | Name of location | 1 | 2 | 3 | 77 | 99 |
| 4 | Name of location | 1 | 2 | 3 | 77 | 99 |

| **Q.3 When do you fish?** | |
|---|---|
| Spring | 1 |
| Summer | 2 |
| Autumn | 3 |
| Winter | 4 |

**Q.4 Chat species of fish do you catch?**

| | | |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |

| **Q.5 What do you do with them?** | |
|---|---|
| Sale | 1 |
| Family Consumption | 2 |
| Share with Friends | 3 |
| No Response | 77 |
| Unknown | 99 |

**Q.6 How do you fish?**

| | | |
|---|---|---|
| 1 | Angling | 1 |
| 2 | Fishing Net | 2 |
| 3 | Other Specify | |
| 4 | No answer | 4 |

## R. WILDLIFE

| **R.1 Have you seen following animals in the last 2 years in the valley you are living in? *(Nenskra or Nakra)*** | | |
|---|---|---|
| Lynx | 1 | → **R.3** |
| Bear | 2 | |
| Wolf | 3 | |
| None | 4 | → **R.2** |

| **R.2 If not, when was the last year you have seen one or more of these three animals in the valley you are living in?** *(Nenskra or Nakra) (Enter a year)* | |
|---|---|
| Lynx | |
| Bear | |
| Wolf | |

| **R.3 Have any of your domestic animals (e.g. cow, sheep, chicken) injured or taken by a bear or a lynx or a wolf in the last 2 years?** | |
|---|---|
| No | 0 |
| Yes, lynx | 1 |
| Yes, bear | 2 |
| Yes, wolf | 3 |
| Don't know which animal | 99 |
| No Response | 77 |

**R.4 Do you or another member of your family go sometimes beyond Tita village? (for Nenskra valley)**

| | | | |
|---|---|---|---|
| Yes | | 1 | → **R.5** |
| No | | 2 | → **R.6** |
| No response | | 77 | |
| Unknown | | 99 | |
| **R.5 If so, how far?** | | | |
| 1 | less than 5 km | 1 | |
| 2 | between 5 and 10 km | 2 | |
| 3 | more than 10 km | 3 | |
| 4 | no response | 77 | |
| 5 | unknown | 99 | |

| | | | |
|---|---|---|---|
| **R.6 Do you or another member of your family go sometimes north of Nakra? (for Nakra valley)** | | | |
| Yes | | 1 | → **R.7** |
| No | | 2 | → **S.1** |
| No response | | 77 | |
| Unknown | | 99 | |
| **R.7 If so, how far?** | | | |
| 1 | less than 5 km | 1 | |
| 2 | between 5 and 10 km | 2 | |
| 3 | more than 10 km | 3 | |
| 4 | no response | 77 | |
| 5 | unknown | 99 | |

**S.** KNOWLEDGE OF PROJECT

**S.1 What have you heard about the Nenskra project?**

……
……
……
……

**S.2 Where did you hear this?**

| | |
|---|---|
| Family | 1 |
| Friends in the village | 2 |
| Radio (note station) | 3 |
| TV (note station) | 4 |
| Newspaper (note paper) | 5 |
| Not known | 77 |
| No answer | 99 |

**S.3 What do you think about the Nenskra project?** *Record the answers from woman and man separately*

**S.4** ***S. 3.1 Response from the man ::*** ……
……
……
……

***S. 3.2 Response from the woman :*** ……
……
……
……

**S.5 What are your concerns about the Nenskra project?** *Record the answers from woman and man separately*

***S.4.1 Response from the man :***

| | |
|---|---|
| Influx of workers/people | 1 |

| | |
|---|---|
| Change in nature of area | 2 |
| Trucks / traffic | 3 |
| Loss of water line | 4 |
| Dam safety | 5 |
| Loss of pastures or logging rights | 6 |
| No concern | 7 |
| No answer | 99 |
| Other (specify) …… | |

| ***S.4.2 Response from the woman*** | |
|---|---|
| Influx of workers/people | 1 |
| Change in nature of area | 2 |
| Trucks / traffic | 3 |
| Loss of water line | 4 |
| Dam safety | 5 |
| Loss of pastures or logging rights | 6 |
| No concern | 7 |
| No answer | 99 |
| Other (specify) …… | |

**T.** LOCAL DEVELOPMENT OPPORTUNITIES

*The following questions should be asked to man and woman, to get distinct answers.*

***T. M Response from the man :***

**T.1 In your opinion, what other sort of initiative might best serve this area economically?**

……
……
……
……

**T.2 What kind of development assistance would be beneficial and should be prioritized for the next 3 to 5 years?**

……
……
……
……

**T.3 If local officials were to institute a tourism program in this area, would you possibly be interested in working as:**

| | |
|---|---|
| Bed-and-breakfast | 1 |
| Hiking guide | 2 |
| Horse-back trail guide | 3 |
| Fishing guide | 4 |
| Not interested | 5 |
| No answer (unknown | 99 |
| Other (specify) …… | |

***T. F Response from the woman***

**T.4 In your opinion, what other sort of initiative might best serve this area economically?**

……
……
……

……

**T.5 What kind of development assistance would be beneficial and should be prioritized for the next 3 to 5 years?**

……

……

……

……

**T.6 If local officials were to institute a tourism program in this area, would you possibly be interested in working as:**

| | | |
|---|---|---|
| Bed-and-breakfast | 1 | |
| Hiking guide | 2 | |
| Horse-back trail guide | 3 | |
| Fishing guide | 4 | |
| Not interested | 5 | |
| No answer /unknown | 99 | |
| Other (specify) …… | | |
| ***T. F Response from the man*** | | |
| **T.7** Are any members of your family willing to be employed in scopes of the project? | | |
| Yes | 1 | |
| No | 2 | |
| No response | 77 | |
| Unknown | 99 | |
| **T.8** Who? | | |
| *Refer to HH roster ID* | | |
| ***T. F Response from the woman*** | | |
| **T.9** Are any members of your family willing to be employed in scopes of the project? | | |
| Yes | 1 | → **T.8** |
| No | 2 | → **Complete the Interview** |
| No response | 77 | |
| Unknown | 99 | |
| **T.10** Who? | | |
| *Refer to HH roster ID* | | |

**Thank you for cooperation!**

კითხვარის ID_____

# ნენსკრას ჰიდროელექტროსადგურის პროექტი

## დამატებითი სოციოეკონომიკური კვლევები
## სოციო ეკონომიკური კითხვარი
## ყველა შინამეურნეობისათვის

| | | | |
|---|---|---|---|
| 1 | ინტერვიუერი: | კოდი: | GPS #: |
| 2 | ინტერვიუს ჩატარების თარიღი: *(წელი/თვე/რიცხვი)* | | |
| 3 | სოფელი*: | ID: | |
| 4 | ოჯახის საიდენტიფიკაციო ნომერი:* | | |
| 5 | გამოკითხული წევრი ოჯახიდან: | | ID შმ სიიდან: |
| 6 | ვინ ესწრებოდა ინტერვიუს ოჯახის წევრებიდან: | | ID შმ სიიდან: |
| 7 | ოჯახის უფროსის საკონტაქტო ტელეფონის ნომერი და სახელი: | | |
| 8 | მეუღლის ან ნათესავის საკონტაქტო ტელეფონის ნომერი და სახელი: | | |
| 9 | ოჯახის საცხოვრებელი სახლის კოორდინატები: 9a __ ° __ ‘ __.__ ”<br>9b __ ° __ ‘ __.__ ” | | |
| 10 | შენიშვნები:<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>..... | | |

** შინამეურნეობის და ინტერვიუს ნომერი არის სოფლის ნომერს + შინამეურნეების ნომერი. აღნიშნული უნიკალური ნომერი დატალინი იქნება ყოველ შინამეურნეებასთან შევსებულ ყველა კითხვარზე.*

| *მიღებულია:* | | *შემოწმებულია:* | | *შეყვანილია:* | |
|---|---|---|---|---|---|
| *Id:* | *თარიღი:* | *Id:* | *თარიღი:* | *Id:* | *თარიღი:* |

კითხვარის ID_____

## A. ინფორმაცია ოჯახის წევრების შესახებ

| ID N° | **A.1 სახელი** | **A.2 გვარი** | **A.3 კავშირი მმ უფროსთან** | **A.4 რეზიდენტობა** *(ჩაწერეთ კოდი)* | **A.5 ოჯახური მდგომარეობა** *(ჩაწერეთ კოდი)* | **A.6 სქესი** *(შეეხა ზეთ)* | **A.7 ასაკი** *(ჩაწერეთ)* | **A.8 განათლება** *(ჩაწერეთ კოდი)* | **A.9 ეროვნება** *(ჩაწერეთ კოდი)* | **A.10 რელიგია** *(ჩაწერეთ კოდი)* | **A.11 ენა** *(შეეხა ზეთ ყველა შესაბამისი)* | **A.12 საქმიანობა - ძირითადი** *(ჩაწერეთ კოდი)* | **A.13 საქმიანობა - მეორადი** *(ჩაწერეთ კოდი)* | **A.14 სოციალური შეწყვრა** *(ჩაწერეთ კოდი, რამდენიმე)* | **A.15 მოწყვლადი ჯგუფი** *(ჩაწერეთ კოდი რამდენიმე)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | | | უფროსი | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 2. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 3. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 4. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 5. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 6. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 7. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 8. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 9. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| 10. | | | | | | 1 2 | | | | | 1 2 3 4 | | | | |
| | **A.3**<br>1. შმ უფროსი<br>2. მეუღლე<br>3. შვილი<br>4. მშობელი<br>5. მეუღლის ნათესავები<br>6. შვილიშვილი<br>7. გერი<br>8. დისშვილი/ძმისშვილი<br>9. სხვა ნათესავი<br>10. მდგმური<br><br>99. უცნობია<br>77. არ არის პასუხი | | **A.4**<br>1. მაცხოვრებელი (მუდმივად)<br>2. მაცხოვრებელი (სეზონურად)<br>3. მიდმივად ემიგრირებული (არასტუდენტი)<br>4. მუშა მიგრანტი (მიდის და ბრუნდება)<br>5. სტუდენტი<br><br>99. უცნობია<br>77. არ არის პასუხი | 1. არასოდეს ყოფილა დაქორწინებული<br>2. ამჟამად იმყოფება ქორწინებაში<br>3. გაშორებული/ცხოვრობს ცალკე<br>4. ქვრივი<br>5. სხვა<br><br>99. უცნობია<br>77. არ არის პასუხი | 1. მამრობითი<br>2. მდედრობითი | **A.8**<br>1. დაწყებითი (1-2 კლასი)<br>2. არასრული საშუალო<br>3. სრული საშუალო<br>4. საშუალო პროფესიული<br>5. უმაღლესი<br>6. არასასკოლლო ასაკის<br>7. განათლების გარეშე<br><br>99. უცნობია<br>77. არ არის პასუხი | 1. ქართველი<br>2. სომეხი<br>3. აზერბაიჯანელი<br>4. რუსი<br>5. სხვა<br>99. უცნობია<br>77. არ არის პასუხი | 1. მართლმადიდებელი<br>2. მუსულმანი<br>3. კათოლიკე<br>4. სხვა<br>5. არცერთი<br><br>99. უცნობია<br>77. არ არის პასუხი | 1. ქართული<br>2. სვანური<br>3. რუსული<br>4. სხვა | 1. ფერმერი<br>2. მეტყევე<br>3. დიასახლისი<br>4. საჯარო მოხელე<br>5. ვაჭარი/გამყიდველი<br>6. დამსაქმებელი<br>7. დროებითი/ნახევარგანაკვეთიანი სამსახური<br>8. პენსიონერი<br>9. სტუდენტი<br>10.სხვა<br>11.დასაქმების გარეშე<br>99. უცნობია<br>77. არ არის პასუხი | 1. ფერმერი<br>2. მეტყევე<br>3. დიასახლისი<br>4. საჯარო მოხელე<br>5. ვაჭარი/გამყიდველი<br>6. დამსაქმებელი<br>7. დროებითი/ნახევარგანაკვეთიანი სამსახური<br>8. პენსიონერი<br>9. სტუდენტი<br>10.სხვა<br>11.დასაქმების გარეშე<br>99. უცნობია<br>77. არ არის პასუხი | 1. სიღარიბის ზღვარი<br>2. სამედიცინო პოლისი<br>3. პენსიონერი<br>4. დევნილი<br>5. დახმარების/შემწეობის გარეშე<br>99. უცნობია<br>77. არ არის პასუხი | 1. უნარშეზღუდული (გადაადგილების პრობლემა)<br>2. უნარშეზღუდული (სწავლის უნარების შეზღუდვა)<br>3. ბრმა<br>4. ყრუ<br>5. ასაკოვანი (მოხუცი)<br>6. ოჯახები, რომლებსაც ქალები უძღვებიან<br>99. უცნობია<br>77. არ არის პასუხი |

კითხვარის ID_____

## B. ოჯახის ისტორია საცხოვრებელ გარემოში

**B.1 როდის გადმოსახლდა თქვენი ოჯახი ამ ხეობაში?**

| | | | |
|---|---|---|---|
| 1 | ყოველთვის აქ იყო | 1 | → **B.2** |
| 2 | რამდენიმე ასეული წლის მანძილზე | 2 | → **C.1** |
| 3 | უკანასკნელი 100 წლის მანძილზე | 3 | |
| 4 | 10-30 წლის წინ | 4 | |
| 5 | 10 წელზე ნაკლებია | 5 | |
| 6 | არ არის პასუხი | 77 | |
| 7 | უცნობია | 99 | |

| | |
|---|---|
| **B.2 საიდან მოდის თქვენი ოჯახი?** | |
| **B.3 ჯერ კიდევ გყავთ თუ არა ოჯახი/ნათესავები იქ, საიდანაც გადმოხვედით?** | |
| დიახ | 1 |
| არა | 2 |
| არ არის პასუხი | 77 |
| უცნობია | 99 |

## C. ოჯახის თითოეული წევრის შემოსავალი

*(ჰკითხეთ მხოლოდ ოჯახის ზრდასრულ წევრებს) (1=დიახ, 2=არა, 77=არ არის პასუხი, 99= უცნობია)*

| ID N° | **C.1** მუდმივი ხელფასი საჯარო სამსახურში | **C.2** უდმივი ხელფასი კერძო კომპანიაში | **C.3** პენსია /შემწეობები/ დახმარებები | **C.4** რეგულარული დახმარება (ოჯახის წევრის ან ნათესავის მიერ ფულადი გზავნილები) | **C.5** მიწის გაქირავება | **C.6** სოფლის მეურნეობა | **C.7** ხე ტყის დამუშვება | **C.8** ხე-ტყის ჭრა | **C.9** ტყის მეორადი პროდუქტი | **C.10** დამუშავებული პროდუქტები (გამომხვარი, დაკონსერვებული პროდუქტები) | **C.11** ხელნაკეთი ნივთები | **C.12** სხვა (დააკონკრეტეთ) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | |
| 9. | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | |

კითხვარის ID_____

**D. შინამეურნეობის უძრავი ქონება *(უარის ან ინფორმაციის არ ქონის შემთხვევაში გამოტოვეთ)***

**D.1 მიწის ნაკვეთი**

| | **D.1.1 კატეგორია** *(1 – საცხოვრებელი ; 2 – კომერციული, 3 – სასოფლო-სამეურნეო ;)* | | | **D.1.2 ფართობი (ჰა)** | **D.1.3 მფლობელი/მემკვიდრე (კოდი შმ სიიდან)** |
|---|---|---|---|---|---|
| ნაკვეთი 1 | 1 | 2 | 3 | | |
| ნაკვეთი 2 | 1 | 2 | 3 | | |
| ნაკვეთი 3 | 1 | 2 | 3 | | |
| ნაკვეთი 4 | 1 | 2 | 3 | | |
| ნაკვეთი 5 | 1 | 2 | 3 | | |
| ნაკვეთი 6 | 1 | 2 | 3 | | |

**D.2 შენობები**

| | **D.2.1 დანიშნულება** (1 – საცხოვრებელი ; 2 – დამხმარე ; 3 – ბეღელი/ფარდული ; 4- გარაჟი, 5 – კომერციული; 6 – სხვა, დააკონკრეტეთ) | | | | | | **D.2.2 სართულების რაოდენობა** | **D.2.3 ოთახების რაოდენობა** | **D.2.4 გამოყენებული მასალა (1 – აგური ; 2- ბეტონი ; 3 – ხე, 4 - სხვა)** |
|---|---|---|---|---|---|---|---|---|---|
| შენობა 1 | 1 | 2 | 3 | 4 | 5 | 6 | | | |
| შენობა 2 | 1 | 2 | 3 | 4 | 5 | 6 | | | |
| შენობა 3 | 1 | 2 | 3 | 4 | 5 | 6 | | | |
| შენობა 4 | 1 | 2 | 3 | 4 | 5 | 6 | | | |
| შენობა 5 | 1 | 2 | 3 | 4 | 5 | 6 | | | |
| შენობა 6 | 1 | 2 | 3 | 4 | 5 | 6 | | | |

კითხვარის ID_____

| | | | |
|---|---|---|---|
| **E. სოფლის მეურნეობა** | | | |
| **E.1 სასოფლო სამეურნეო კულტურების მოყვანა** | | | |
| **E.1.1 რომელი კულტურები მოგყავთ?** | | | |
| 1 | სიმინდი | 1 | |
| 2 | ხილი | 2 | |
| 3 | კარტოფილი | 3 | |
| 4 | ბოსტნეული | 4 | |
| 5 | თივა | 5 | |
| 6 | არაფერი | 6 | |
| 7 | არ არის პასუხი/უცნობია | 99 | |
| 8 | სხვა *(დააკონკრეტეთ)* | | |
| **E.1.2 გეხმარებათ თუ არა ვინმე მოსავლის აღებაში?** | | | |
| დიახ | | 1 | → **E.1.3** |
| არა | | 2 | → **E.1.6** |
| არ არის პასუხი | | 77 | |
| უცნობია | | 99 | |
| **E.1.3 ვინ გეხმარებათ მოსავლის აღებაში?** *(რამდენიმე პასუხი)* | | | |
| ნათესავი | | 1 | |
| მეზობელი | | 2 | |
| დაქირავებული პირი | | 3 | |
| სხვა | | 4 | |
| **E.1.4 რამდენი დღის განმავლობაში გეხმარებათ? (მიუთითეთ დღეების რაოდენობა)** | | | |
| **E.1.5 რამდენის შეადგენს დღიური ანაზღაურება? (ჩაწერეთ თანხა)** | | | |

**E.1.6 რა რაოდენობის მოსავალს იღებთ? (მიუთითეთ ტომრები ან წონა - გამოიყენეთ ადგილობრივი საზომი ერთეული)** *(იგულისხმეთ უკანასკნელი 3 წლის მანძილზე აღებული მოსავალი - საშუალოდ)*

| | | რაოდენობა | ერთეული |
|---|---|---|---|
| 1 | სიმინდი | | |
| 2 | ხილი | | |
| 3 | კარტოფილი | | |
| 4 | ბოსტნეული | | |
| 5 | თივა | | |
| 6 | არ არის პასუხი/უცნობია | 99 | |
| 7 | სხვა *(დააკონკრეტეთ)* | | |

**E.1.7 მოსავლის რა ნაწილს/პროცენტს იყენებთ ოჯახში საკვებად?** *(მიუთითეთ პროცენტი)*

| | | | |
|---|---|---|---|
| 1 | სიმინდი | | % |
| 2 | ხილი | | % |
| 3 | კარტოფილი | | % |
| 4 | ბოსტნეული | | % |
| 5 | თივა | | % |
| 6 | სხვა *(დააკონკრეტეთ)* | | % |
| 7 | არ არის პასუხი/უცნობია | 99 | |

**E.1.8 მოსავლის რა ნაწილს/პროცენტს იყენებთ პირუტყვების გამოსაკვებად?** *(მიუთითეთ პროცენტი)*

| | | | |
|---|---|---|---|
| 1 | სიმინდი | | % |
| 2 | ხილი | | % |
| 3 | კარტოფილი | | % |
| 4 | ბოსტნეული | | % |
| 5 | თივა | | % |
| 6 | სხვა *(დააკონკრეტეთ)* | | % |
| 7 | არ არის პასუხი/უცნობია | 99 | |

**E.1.9 მოსავლის რა ნაწილს ყიდით? (მიუთითეთ ტომრები ან წონა - გამოიყენეთ**

| | | | |
|---|---|---|---|
| | ადგილობრივი საზომი ერთეული) | | |
| 1 | სიმინდი | | % |
| 2 | ხილი | | % |
| 3 | კარტოფილი | | % |
| 4 | ბოსტნეული | | % |
| 5 | თივა | | % |
| 6 | სხვა *(დააკონკრეტეთ)* | | % |
| 7 | არ არის პასუხი/უცნობია | 99 | |

**E.2 სასოფლო სამეურნეო კულტურების დამუშავებ/წარმოება**

**E.2.1 ამუშავებთ თუ არა ხილს, ბოსტნეულს, თხილს ან ცხოველურ პროდუქტებს, მაგალითად მურაბებს, მწნილებს, ყველს, მჭადის ფქვილს, სვანურ მარილს, ა.შ.?**

| | | |
|---|---|---|
| დიახ | 1 | →E.2.2 |
| არა | 2 | → E.3 |
| არ არის პასუხი | 77 | |
| უცნობია | 99 | |

| | **E.2.2 თუ კი, რომელს?** | **E.2.3 ვინ?** *(კოდი შმ სიიდან)* | **E.2.4 რა რაოდენობას გადაამუშავებთ?** *(მიუთითეთ რაოდენობა და ერთეული)* | | **E.2.5 რა რაოდენობას ყიდით?** *(მიუთითეთ რაოდენობა და ერთეული)* | |
|---|---|---|---|---|---|---|
| | | | **რაოდენობა** | **ერთეული** | **რაოდენობა** | **ერთეული** |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |

**E.2.6 აწარმოებთ თუ არა თაფლს?**

| | | |
|---|---|---|
| დიახ | 1 | →E.2.7 |
| არა | 2 | → E.3 |
| არ არის პასუხი | 77 | |
| უცნობია | 99 | |

**E.2.7 ოჯახის რომელი წევრი აწარმოებს თაფლს?** *(კოდი შმ სიიდან)*

| | **რაოდენობა** | **ერთეული** |
|---|---|---|
| **E.2.8 რა რაოდენობის თაფლს აწარმოებთ?** | | |
| **E.2.9 რა რაოდენობის თაფლს ყიდით?** | **რაოდენობა** | **ერთეული** |
| | | |

**E.3 სასოფლო სამეურნეო დანადგარები/ტექნიკა**

კითხვარის ID_____

| E.3.1 ქვემოთ ჩამოთვლილთაგან რამდენ მათგანს იყენებთ? | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | E.3.2 იყენებთ თუ არა? *(დიახ = 1 ; არა = 2 ; არ არის პასუხი = 77, უცნობია=99)* | | | | E.3.3 თუ იყენებთ, ეს ნივთი არის... *(1=საკუთარი, 2=ნათხოვარი, 3=დაქირავებული, 4=სხვა, 77= არ არის პასუხი, 99= უცნობია)(რამდენიმე პასუხი)* | | | | | |
| 1 | ცხენით ან რქიანი პირუტყვით მართული გუთანი | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | ხელის კულტივატორი | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | ტრაქტორი | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 |
| 4 | სათესი | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 |
| 5 | კულტივატორი | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 |
| 6 | თივის საპრესი | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | ხე ტყის სახერხი დაზგა | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 |
| 8 | საზიდი (ძრავზე მომუშავე) | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 |
| 9 | საზიდი (ცხენზე მიბმული) | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 |
| 10 | ხის საჭრელი ინსტრუმენტი | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 |
| 11 | სხვა (დააკონკრეტეთ: .....) | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 |
| 12 | სხვა (დააკონკრეტეთ: .....) | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 |

## F. პირუტყვი/საქონელი

### F.1 პირუტყვი

**F.1.1 რა რაოდენობის ქვემოთ ჩამოთვლილ პირუტყვს ფლობთ?**

*(ჩაწერეთ 0 თუ საქონელი არ ყავთ, 77 - არ არის პასუხი და 99 თუ უცნობია)*

| | საქონელი | რაოდენობა |
|---|---|---|
| 1. | ძროხა, ხარი, კამეჩი | |
| 2. | ცხენი ან ვირი | |
| 3. | ღორი | |
| 4. | ცხვარი | |
| 5. | ფრინველი | |

### F.2 საძოვრები

| F.2.1 რომელ პირუტყვს უშვებთ საზაფხულო იალაღებზე? | | |
|---|---|---|
| 1 | ძროხა, ხარი, კამეჩი | 1 |
| 2 | ცხვარი | 2 |
| 3 | ცხენი/ვირი | 3 |
| 4 | სხვა, დააკონკრეტეთ..... | 4 |

| F.2.2 რამდენ ხანს რჩება პირუტყვი იალაღებზე? *მიუთითეთ თვეების რაოდენობა* | | |
|---|---|---|
| 1 | ძროხა, ხარი, კამეჩი | |
| 2 | ცხვარი | |
| 3 | ცხენი/ვირი | |
| 4 | სხვა, დააკონკრეტეთ..... | |

*(შემდეგი კითხვები დასვით რუქების გამოყენებით, რათა დადგინდეს რამდენად ხვდება ოჯახის მიერ იალაღებზე მისასვლელი ან პირუტყვის გადარეკვის გზა პროექტის ზემოქმედების ქვეშ)*

| F.2.3 ყოველთვის ერთსა და იმავე საძოვრებზე უშვებთ საქონელს თუ რამდენიმეს იყენებთ? | |
|---|---|
| ერთი და იგივე | 1 |
| რამდენიმე | 2 |
| არ არის პასუხი | 77 |
| უცნობია | 99 |

**F.2.4 რომელი საძოვარი გამოიყენეთ შარშან?**

| | | | კოდი |
|---|---|---|---|
| 1 | ადგილის დასახელება | | |
| 2 | ადგილის დასახელება | | |
| 3 | ადგილის დასახელება | | |
| 4 | ადგილის დასახელება | | |
| **F.2.5** | **რომელი საძოვარი გამოიყენეთ 2 წლის წინ?** | | |
| 1 | ადგილის დასახელება | | |
| 2 | ადგილის დასახელება | | |
| 3 | ადგილის დასახელება | | |
| 4 | ადგილის დასახელება | | |

**F.2.6 უნდა გაიაროთ თუ არა შეტბორვის ზონა, რათა მოხვდეთ თქვენს მიერ დასახელებულ საძოვარზე?** *(გამოიყენეთ რუქა)*

| | | არის თუ არა პროექტის ზემოქმედების ქვეშ *(იხილეთ რუქები, 1=დიახ, სრულად, 2=დიახ, ნაწილობრივ, 3= არა, 77= არ არის პასუხი, 99=უცნობია)* | | | | |
|---|---|---|---|---|---|---|
| 1 | ადგილის დასახელება | 1 | 2 | 3 | 77 | 99 |
| 2 | ადგილის დასახელება | 1 | 2 | 3 | 77 | 99 |
| 3 | ადგილის დასახელება | 1 | 2 | 3 | 77 | 99 |
| 4 | ადგილის დასახელება | 1 | 2 | 3 | 77 | 99 |

**F.2.7 თქვენს მიერ დასახელებულ საძოვრებამდე არსებობს თუ არა ალტერნატიული მისასვლელი გზები, რომლებიც არ კვეთს (სრულად ან ნაწილობრივ) შეტბორვის ზონას?** *(გამოიყენეთ რუქა)*

| | | *1=დიახ, 2= არა, 77= არ არის პასუხი, 99=უცნობია)* | | | |
|---|---|---|---|---|---|
| 1 | ადგილის დასახელება | 1 | 2 | 77 | 99 |
| 2 | ადგილის დასახელება | 1 | 2 | 77 | 99 |
| 3 | ადგილის დასახელება | 1 | 2 | 77 | 99 |
| 4 | ადგილის დასახელება | 1 | 2 | 77 | 99 |

| | |
|---|---|
| **F.2.8 ვის მიყავს პირუტყვი საძოვრებამდე?** *(კოდი შმ სიიდან, იმ შემთხვევაში თუ პირუტყვი მიყავს არა ოჯახის წევრს, მიუთითეთ სიტყვიერად)* | |
| **F.2.9 უხდით თუ არა ამ ადამიანს?** | |
| დიახ | 1 |
| არა | 2 |
| არ არის პასუხი | 77 |
| უცნობია | 99 |
| **F.2.10 რამდენს?** *(ჩაწერეთ თანხა)* | |

| | | | |
|---|---|---|---|
| **G. ხე-ტყის მოჭრა/დამუშავება (ხის საჭრელი დანადგარები)** | | | |
| **G.1** ხე-ტყის ჭრა | | | |
| **G.1.1 ჭრით თუ არა ხეს ?** | | | |
| დიახ | | 1 | **→ G.1.2** |
| არა | | 2 | **→ G.2** |
| არ არის პასუხი | | 77 | |
| უცნობია | | 99 | |
| **G.1.2 რომელ თვეებში ჭრით ხე-ტყეს ტყეში?** *(რამდენიმე პასუხი)* | | | |
| იანვარი | 1 | ივლისი | 7 |
| თებერვალი | 2 | აგვისტო | 8 |
| მარტი | 3 | სექტემბერი | 9 |
| აპრილი | 4 | ოქტომბერი | 10 |
| მაისი | 5 | ნოემბერი | 11 |
| ივნისი | 6 | დეკემბერი | 12 |
| **G.1.3 რამდენ დღეს მუშაობთ ტყეში?** | | | დღე |
| **G.1.4 სად ყიდით მოჭრილ ხეებს?** | | | |

| G.2 ხე-ტყის დამუშავება (ხის საჭრელი დანადგარები) | |
|---|---|
| **G.2.1 ფლობთ თუ არა ხის საჭრელ დაზგას?** | |
| დიახ | 1 |
| არა | 2 |
| არ არის პასუხი | 77 |
| უცნობია | 99 |

**H. ხელსაქმე/სახელოსნო წარმოება**

**H.1 არის თუ არა ვინმე თქვენ ოჯახში ჩართული, საკუთარი მოხმარებისათვის ან რეალიზაციის მიზნით, შემდეგი ტიპის საქმიანობაში?** (შენიშვნა: მიუთითეთ ვინ და რა მიზნით)

| | | *(1=დიახ, 2=არა; 77= არ არის პასუხი, 99=უცნობია)* | | | | **H.2 ვინ?** *(კოდი შმ სიიდან)* | **H.3 რა მიზნით?** (1=გაყიდვა, 2=ოჯახში მოხმარება, 3=მეგობრისთვის გაზიარება, 77= არ არის პასუხი, 99=უცნობია) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ხილის/ბოსტნეულის შენახვა | 1 | 2 | 77 | 99 | | 1 | 2 | 3 | 77 | 99 |
| 2 | თაფლი | 1 | 2 | 77 | 99 | | 1 | 2 | 3 | 77 | 99 |
| 3 | ქარგვა | 1 | 2 | 77 | 99 | | 1 | 2 | 3 | 77 | 99 |
| 4 | ტყის მეორადი პროდუქტები | 1 | 2 | 77 | 99 | | 1 | 2 | 3 | 77 | 99 |

**I. ტყის მეორადი პროდუქტები**

**I.1 თქვენი ან თქვენი ოჯახის რომელიმე წვერი დროდადრო აგროვებთ/მოგყავთ ან იყენებთ ტყის მეორად პროდუქტებს?**

| | | |
|---|---|---|
| დიახ | 1 | **→ I.2** |
| არა | 2 | **→ J.1** |
| არ არის პასუხი | 77 | |
| უცნობია | 99 | |

| | **I.2 პროდუქტი** | **I.3 ოჯახში მოხმარებული რაოდენობა** | **I.4 გასაყიდი რაოდენობა** | **I.5 ვინ აგროვებს?** *(კოდი შმ სიიდან)* |
|---|---|---|---|---|
| 1 | კენკრა | | | |
| 2 | შეშა | | | |
| 3 | ველური ხილი | | | |
| 4 | კულინარიული მცენარეები *(დააკონკრეტეთ)* | | | |
| 5 | სამკურნალო მცენარეები *(დააკონკრეტეთ)* | | | |
| 6 | სოკო *(დააკონკრეტეთ)* | | | |
| 7 | ხის ნაწილები (ხის ქერქი, ნაფოტი, ფოთლები, გირჩი, გირჩის გული, ა.შ.) | | | |
| 8 | სხვა *(დააკონკრეტეთ)* | | | |

**J. შრომის განაწილება**

**M.1 როგორ ეხმარებით მეზობლები ერთმანეთს დროდადრო?**

| | დიახ | არა | არ არის პასუხი | უცნობია |
|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1 | ვეხმარები თიბვაში | 1 | 2 | 77 | 99 |
| 2 | ვეხმარები ხვნაში | 1 | 2 | 77 | 99 |
| 3 | ვეხმარები მოსავლის აღებაში | 1 | 2 | 77 | 99 |
| 4 | უსასყიდლოდ ვაძლევ სასოფლო სამეურნეო იარაღებს | 1 | 2 | 77 | 99 |
| 5 | ვეხმარები სახლის აშენებაში | 1 | 2 | 77 | 99 |
| 6 | სხვა *(დააკონკრეტეთ)* | 1 | 2 | 77 | 99 |
| 7 | არ ვეხმარებით ერთმანეთს | 0 | | | |

| **K. კრედიტი და მისი სტრუქტურა** *(ჰკითხეთ მხოლოდ ოჯახის ზრდასრულ წევრებს)* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ID N° | **K.1 გაქვთ თუ არა კრედიტი ბანკში?** *(დიახ = 1, არა = 2, არ არის პასუხი = 77, უცნობია=99)* | | | | **K.2 გაქვთ თუ არა სესხი კერძო პირისგან?** *(დიახ = 1, არა = 2, არ არის პასუხი = 77, უცნობია=99)* | | | |
| 1. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 2. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 3. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 4. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 5. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 6. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 7. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 8. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 9. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |
| 10. | 1 | 2 | 77 | 99 | 1 | 2 | 77 | 99 |

| **L. დახმარებები/ფულადი გზავნილები** | |
|---|---|
| **L.1 გიგზავნით თუ არა თქვენი ოჯახის წევრი ფულს საზღვარგარეთიდან?** | |
| დიახ | 1 |
| არა | 2 |
| არ არის პასუხი | 77 |
| უცნობია | 99 |
| **L.2 ვინ?** | |
| **L.3 რა სიხშირით?** | |
| **L.4 რა რაოდენობას?** | |
| **L.5 რა გზით/როგორ?** | |
| ბანკის მეშვეობით | 1 |
| კერძო პირს ატანს | 2 |
| სხვა (*დააკონკრეტეთ)* | |

| **M. სახლის წყლის მომარაგება** | |
|---|---|
| **M.1რა არის თქვენი ოჯახისათვის ძირითადი წყალმომარაგების წყარო?** | |
| წყარო რომელიც კვეთს სოფლის მთავარ გზას | 1 |
| წყარო რომელიც არ კვეთს სოფლის მთავარ გზას | 2 |
| **M.2 მდებარეობს თუ არა თქვენი საცხოვრებელი სახლი სოფლის მთავარ გზაზე, რომელის მიდის დამბამდე?** | |
| დიახ | 1 |
| არა | 2 |
| არ არის პასუხი | 77 |
| უცნობია | 99 |

| **N. კანალიზაცია** | |
|---|---|
| **N.1 რა სახის ტუალეტი გაქვთ?** | |
| ჩეჩმა | 1 |

| | |
|---|---|
| ჩასარეცხი ტუალეტი | 2 |
| სხვა | 3 |
| არ არის პასუხი | 77 |
| უცნობია | 99 |

| O. საოჯახო ნივთები | | |
|---|---|---|
| **O.1 ქვემო ჩამოთვლილი ნივთებიდან რამდენს ფლობთ?** *(ყოველი ნივთის გასწვრივ დაწერეთ რაოდენობა - 0 - არ ქონის შემთხვევაში, 99 იმ შემთხვევაში თუ რაოდენობა უცნობია და 77 (უარი) პასუხის არ ქონის შემთხვევაში)* | | |
| 1 | რადიო | |
| 2 | ველოსიპედი | |
| 3 | ტელევიზორი | |
| 4 | გაზის ბალონი | |
| 5 | კომპიუტერი | |
| 6 | მაცივარი | |
| 7 | მობილური ტელეფონი/ტელეფონი | |
| 8 | სარეცხის მანქანა | |
| 9 | მოტოციკლეტი/სკუტერი | |
| 10 | მანქანა | |
| 11 | კონდინციონერი | |
| 12 | ნავთის ლამფა | |
| 13 | სხვა დააკონკრეტეთ:..... | |

| P. ნადირობა | | |
|---|---|---|
| **P.1 თქვენ ან თქვენი ოჯახის რომელიმე წევრი ნადირობთ?** | | |
| დიახ | 1 | → P.2 |
| არა | 2 | → Q.1 |
| არ არის პასუხი | 77 | |
| უცნობია | 99 | |
| **P.2 როდის?** *(რამდენიმე პასუხი)* | | |
| გაზაფხული | 1 | |
| ზაფხული | 2 | |
| შემოდგომა | 3 | |
| ზამთარი | 4 | |

**P.3 რომელია თქვენი რჩეული სანადირო ადგილები?** *(იხილეთ რუქები)*

| | | არის თუ არა პროექტის ზემოქმედების ქვეშ/შეტბორვის ზონაში? *(იხილეთ რუქები, 1=დიახ, სრულად, 2=დიახ, ნაწილობრივ, 3= არა, 77= არ არის პასუხი, 99=უცნობია)* | | | | |
|---|---|---|---|---|---|---|
| 1 | ადგილის დასახელება | 1 | 2 | 3 | 77 | 99 |
| 2 | ადგილის დასახელება | 1 | 2 | 3 | 77 | 99 |
| 3 | ადგილის დასახელება | 1 | 2 | 3 | 77 | 99 |
| 4 | ადგილის დასახელება | 1 | 2 | 3 | 77 | 99 |

| **P.4 რაზე ნადირობთ?** *(რამდენიმე პასუხი)* | |
|---|---|
| დათვი | 1 |
| მგელი | 2 |

| | |
|---|---|
| ფოცხვერი | 3 |
| ირემი | 4 |
| ველური თხა | 5 |
| ფრინველი | 6 |
| სხვა (დააკონკრეტეთ) | |
| **P.5 რისთვის ნადირობთ?** *(რამდენიმე პასუხი)* | |
| გასაყიდად | 1 |
| ოჯახში ვიყენებთ | 2 |
| მეგობრებს ვუზიარებ | 3 |
| არ არის პასუხი | 77 |
| უცნობია | 99 |

| **Q. თევზაობა** | | | | | | |
|---|---|---|---|---|---|---|
| **Q.1 თქვენ ან თქვენი ოჯახის რომელიმე წევრი თევზაობთ?** | | | | | | |
| დიახ | | | | | 1 | → Q.2 |
| არა | | | | | 2 | → R.1 |
| არ არის პასუხი | | | | | 77 | |
| უცნობია | | | | | 99 | |
| **Q.2 რომელია თქვენი რჩეული სათევზაო ადგილები?** | | | | | | |
| | | **არის თუ არა პროექტის ზემოქმედების ქვეშ/შეტბორვის ზონაში?** *(იხილეთ რუქები, 1=დიახ, სრულად, 2=დიახ, ნაწილობრივ, 3= არა, 77= არ არის პასუხი, 99=უცნობია)* | | | | |
| 1 | ადგილის დასახელება | 1 | 2 | 3 | 77 | 99 |
| 2 | ადგილის დასახელება | 1 | 2 | 3 | 77 | 99 |
| 3 | ადგილის დასახელება | 1 | 2 | 3 | 77 | 99 |
| 4 | ადგილის დასახელება | 1 | 2 | 3 | 77 | 99 |

| **Q.3 როდის თევზაობთ?** | |
|---|---|
| გაზაფხული | 1 |
| ზაფხული | 2 |
| შემოდგომა | 3 |
| ზამთარი | 4 |

| **Q.4 თევზის რომელ სახეობას იჭერთ?** | | |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |

| **Q.5 რისთვის იჭერთ თევზს?** | |
|---|---|
| გასაყიდად | 1 |
| ოჯახში ვიყენებთ | 2 |
| მეგობრებს ვუზიარებ | 3 |
| არ არის პასუხი | 77 |
| უცნობია | 99 |

| **Q.6 როგორ თევზაობთ?** | | |
|---|---|---|
| 1 | ანკესით | 1 |
| 2 | ბადით | 2 |
| 3 | სხვა *(დააკონკრეტეთ)* | 3 |
| 4 | არ არის პასუხი | 4 |

| **R. გარეული ცხოველები** | |
|---|---|
| **R.1 უკანასკნელი 2 წლის მანძილზე შეგიმჩნევიათ თუ არა ქვემოთ ჩამოთვლილი ცხოველები თქვენს საცხოვრებელ ადგილას (ნენსკრას ან ნაკრას ხეობაში) ?** | |

| | | |
|---|---|---|
| ფოცხვერი | 1 | |
| დათვი | 2 | → R.3 |
| მგელი | 3 | |
| არცერთი | 4 | → R.2 |
| **R.2 თუ არა, შეგიძლიათ გაიხსენოთ უკანასკნელად როდის შენიშნეთ ჩამოთვლილი სამი ცხოველიდან რომელიმე ერთი თქვენს საცხოვრებელ ადგილას (ნენსკრა ან ნაკრა)** *(მიუთითეთ წელი)* | | |
| ფოცხვერი | | |
| დათვი | | |
| მგელი | | |
| **R.3 ყოფილა თუ არა შემთხვევა, როდესაც თქვენი შინაური ცხოველი (ძროხა, ცხვარი, ქათამი) დააზიანა ან მოიტაცა დათვმა, ფოცხვერმა ან მგელმა უკანასკნელი 2 წლის მანძილზე?** | | |
| არა | 0 | |
| დიახ, ფოცხვერმა | 1 | |
| დიახ, დათვმა | 2 | |
| დიახ, მგელმა | 3 | |
| არ ვიცი რომელმა ცხოველმა | 99 | |
| არ არის პასუხი | 77 | |
| **R.4 თქვენ ან თქვენი ოჯახის რომელიმე წევრი მიდის თუ არა ხანდახან სოფელ ტიტას მიღმა? (ნენსკრას ველი)** | | |
| დიახ | 1 | → R.5 |
| არა | 2 | → R.6 |
| არ არის პასუხი | 77 | |
| უცნობია | 99 | |
| **R.5 თუ კი, რამდენად შორს?** | | |
| 1 5 კმ-ზე ნაკლები | 1 | |
| 2 5-10 კმ | 2 | |
| 3 10 კმ-ზე მეტი | 3 | |
| 4 არ არის პასუხი | 77 | |
| 5 უცნობია | 99 | |
| **R.6 თქვენ ან თქვენი ოჯახის რომელიმე წევრი მიდის თუ არა ხანდახან ნაკრას ჩრდილოეთით? (ნანკრას ველი)** | | |
| დიახ | 1 | → R.7 |
| არა | 2 | → S.1 |
| არ არის პასუხი | 77 | |
| უცნობია | 99 | |
| **R.7 თუ კი, რამდენად შორს?** | | |
| 1 5 კმ-ზე ნაკლები | 1 | |
| 2 5-10 კმ | 2 | |
| 3 10 კმ-ზე მეტი | 3 | |
| 4 არ არის პასუხი | 77 | |
| 5 უცნობია | 99 | |

| **S. ინფორმაცია პროექტის შესახებ** |
|---|
| **S.1 რა გსმენიათ ნენსკრას ჰიდროელექტროსადგურის პროექტის შესახებ?** |
| ……<br>…… |

……
……

**S.2 საიდან გაიგეთ მის შესახებ?**

| | |
|---|---|
| ოჯახი | 1 |
| მეგობრები სოფელში | 2 |
| რადიო (მიუთითეთ სადგური) | 3 |
| ტელევიზია (მიუთითეთ არხი) | 4 |
| გაზეთი (მიუთითეთ) | 5 |
| არ არის პასუხი | 77 |
| უცნობია | 99 |

**S.3 რას ფიქრობთ ნენსკრას პროექტის შესახებ?** *ცალცალკე ჩაიწერეთ ქალისა და კაცის პასუხები.*

***S. 3.1 კაცის***

***პასუხი :*** ……
……
……

***S. 3.2 ქალის***

***პასუხი :*** ……
……
……
……

**S.4 რა გაწუხებთ ნენსკრას პროექტის ფარგლებში?** *ცალცალკე ჩაიწერეთ ქალისა და კაცის პასუხები.*

***S.4.1 კაცის პასუხი:***

| | |
|---|---|
| ხალხის/მუშების შემოდინება | 1 |
| ბუნების ცვლილება | 2 |
| სატვირთო მანქანები/მოძრაობა | 3 |
| წყლის დაკარგვა | 4 |
| წყალსაცავის უსაფრთხოება | 5 |
| საძოვრების ან ხე-ტყის დამუშავების უფლების დაკარგვა | 6 |
| არაფერი მაწუხებს | 7 |
| არ არის პასუხი | 99 |
| სხვა (დააკონკრეტეთ): …… | |

***S.4.2 ქალის პასუხი:***

| | |
|---|---|
| ხალხის/მუშების შემოდინება | 1 |
| ბუნების ცვლილება | 2 |
| სატვირთო მანქანები/მოძრაობა | 3 |
| წყლის დაკარგვა | 4 |
| წყალსაცავის უსაფრთხოება | 5 |
| საძოვრების ან ხე-ტყის დამუშავების უფლების დაკარგვა | 6 |
| არაფერი მაწუხებს | 7 |
| არ არის პასუხი | 99 |
| სხვა (დააკონკრეტეთ): …… | |

**T. ადგილობრივი განვითარების შესაძლებლობები**

*შემდეგი შეკითხვა ქალსა და კაცს ჰკითხეთ ცალცალკე, რათა მივიღოთ განსხვავებული პასუხები*

***T. M კაცის პასუხი***

**T.1 თქვენი აზრით, სხვა რა ტიპის ინიციატივები/რომელი სფეროს/დარგის განვითარება დაეხმარება ამ**

ადგილს ეკონომიკურად?

.....
.....
.....
.....

**T.2** რა სახის დახმარება იქნება სასარგებლო განვითარებისათვის და რა უნდა იყოს პრიორიტეტად არჩეული უახლოესი 3 -5 წლის მანძილზე?

.....
.....
.....
.....

**T.3** იმ შემთხვევაში, თუ ადგილობრივი ხელისუფლების წარმომადგენლები განახორციელებენ ტურისტულ პროგრამებს, იქნებოდით თუ არა დაინტერესებული გემუშვათ შემდეგი მიმართულებებით:

| | |
|---|---|
| ღამის გასათევი და საუზმე | 1 |
| ლაშქრობის გიდი | 2 |
| საცხენოსნო გზის გიდი | 3 |
| მეთევზეობის გიდი | 4 |
| არ ვარ დაინტერესებული | 5 |
| არ არის პასუხი/უცნობია | 99 |
| სხვა (დააკონკრეტეთ): ..... | |

*T. F ქალის პასუხი*

**T.4** თქვენი აზრით, სხვა რა ტიპის ინიციატივები/რომელი სფეროს/დარგის განვითარება დაეხმარება ამ ადგილს ეკონომიკურად?

.....
.....
.....
.....

**T.5** რა სახის დახმარება იქნება სასარგებლო განვითარებისათვის და რა უნდა იყოს პრიორიტეტად არჩეული უახლოესი 3 -5 წლის მანძილზე?

.....
.....
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.....

**T.6** იმ შემთხვევაში, თუ ადგილობრივი ხელისუფლების წარმომადგენლები განახორციელებენ ტურისტულ პროგრამებს, იქნებოდით თუ არა დაინტერესებული გემუშვათ შემდეგი მიმართულებებით:

| | | |
|---|---|---|
| ღამის გასათევი და საუზმე | 1 | |
| ლაშქრობის გიდი | 2 | |
| საცხენოსნო გზის გიდი | 3 | |
| მეთევზეობის გიდი | 4 | |
| არ ვარ დაინტერესებული | 5 | |
| არ არის პასუხი/უცნობია | 99 | |
| სხვა (დააკონკრეტეთ): ..... | | |
| **T.7** თქვენი ოჯახის რომელიმე წევრს ხომ არ სურს დასაქმდეს ნენსკრას ჰიდროელექტროსადგურის პროექტის ფარგლებში? | | |
| დიახ | 1 | → **T.8** |
| არა | 2 | → **დაასრულეთ** |

| | | |
|---|---|---|
| არ არის პასუხი | 77 | ინტერვიუ |
| უცნობია | 99 | |
| **T.8** რომელ წევრს სურს დასაქმება ნენსკრას ჰიდროელექტროსადგურის პროექტის ფარგლებში? | | |
| *მიუთითეთ კოდები შმ სიიდან* | | |

მადლობა თანამშრომლობისათვის!

# Annex 4. The Svan People

Through the Supplementary E&S Studies, the Consultants have assessed whether the "Indigenous Peoples" policies of the potential Lenders apply. In addition to various social experts who have worked on the Supplementary E&S Studies, an anthropologist from the Institute of History and Ethnology of Iv. Javakhishvili State University of Tbilisi was engaged by the Project to study the Svan's ethnic identity, language, history, customs, traditions, way of living, and livelihoods. The study also reviewed the set of characteristics from the potential Lenders' policies. An additional review of E&S studies' findings was provided by an independent international social expert appointed as part of IPOE.

Based on available social due diligence conducted for this Project, it is concluded that the respective "Indigenous Peoples" policies of the Asian Development Bank (ADB) and European Bank for Reconstruction and Development (EBRD), are not triggered in the context of this Project.

The documents and academic references used for this assessment are listed in Annex 1.

Based on available anthropological studies, the Svans are an ethnic sub-group of Georgians (Kartvelians or Karts) who are predominantly concentrated in the northwestern mountainous part of Georgia, but who also live dispersed throughout Georgia. Together with other Kartvelian ethnic sub-groups such as Mingrelians and Lazes, and ethnographical groups such as Imeretians, Tushs, Khevsurians, and Kakhetians, the Svans form the Georgian nation and the state. Like other ethnic sub-groups in Georgia, the Svans self-identify as such, and also identify as Georgians.

Georgians are considered to comprise a unique polymorphous ethnos: Georgians created three Georgian alphabets (Asomtavruli, Nuskhuri, Mkhedruli), maintained several Kartvelian languages (Georgian, Svan, Mengrelian, Laz), and exhibit both the self-identification as part of a particular group and the Georgian ethnos.

The Svans are descended from populations who have traditionally pursued non-wage subsistence strategies. However, the Svan society has been linked to, and integrated into the rest of Georgia since the 9th century AD, from a legal, political, social, economic and administrative perspective, without specific laws or regulations.

**Svan Language**

With very few exceptions, Svans are bilingual: they speak their own, formally unwritten Svan language, as well as Georgian, which is the official state language and is used for communication with other Georgians and in written communication. Georgian is the only Kartvelian language that is formally written and taught, and is the literary language used by all Georgians.

The Svan, Mingrelian and Laz languages belong to a family of Georgian (Kartvelian) languages, of which Georgian is a part. The Svans believe that the Svan language has retained lexical units from the proto- or the Old Georgian language. The Svans and Mingrelians frequently posit they speak the variations of the same old Georgian language. However, Svan qualifies as a separate language and is different from Georgian. While studies by linguists indicate that Svan, Megrelian and Laz all belong to the same Kartvelian group of languages, Svan is believed to have differentiated as a separate language in the 2$^{nd}$ millenium BC.

**Svans are not a national minority**

While, there is no official administrative definition of "ethnic minorities" in Georgia, there are some "national minorities" recognized by the administrative census. The official demographic

census integrates Svans into Georgians[26] The Tbilisi Regional Office of the European Center for Minority Issues does not consider Svans as a separate ethnic group or a national minority. The Framework Convention of the Council of Europe for the Protection of National Minorities was ratified by the Parliament of Georgia in 2005, and entered into force on 1 April 2006. This Framework is the only mechanism for the recognition of National Minorities in Georgia. According to the Resolution of the Parliament of Georgia adopted in October 2005, a national minority is defined as a group, the members of which a) are Georgian citizens; b) differ from the dominant part of the population in terms of language, culture and ethnic identity; c) have been living on the territory of Georgia for a long time; and d) live in compact settlements on the Georgian territory. The following groups are defined as national minorities:[27] Azeris, Armenians, Russians, Yezidis, Kurds, Greeks, Kists, Ukrainians, Assyrians, and Jews.

Administratively, Svans are included in the official Georgian census as ethnic Georgian and are not considered a national minority. The Georgian state recognizes the Svans as an integral part of the Georgian ethnos and modern Georgia. The Svans are fully incorporated into the legal, political, social, economic and administrative systems of Georgia. Being a component of the Georgian society, they do not maintain customary economic, social or political institutions distinct from those of the Georgian society. The Svans enjoy all rights that the 1995 Constitution of Georgia bestows on all citizens of the country. There are Svans who are members of the Government of Georgia, Svans are subject to and adhere to Georgian laws. There are no specific laws or regulations applying to Svans.

**Livelihoods**

The Svans have been historically attached to the territories of the Upper and Lower Svaneti, and their social, economic and cultural systems have evolved in this environment. The tribes from which the Svans are descended moved eastward to the Svaneti region from the western Georgia between the 8th and 1st century BC, and Svans have a strong cultural attachment to their region.

As described in section 2.3 of this SIA, the traditional Svan way of life, which was predominantly based on subsistence farming and livestock grazing, has changed in recent times, and household incomes also include salaries, as well as revenues from logging and lumbering activities, particularly in the Project area. At present, household incomes include salaries from both public and private sector jobs and national assistance schemes, while very few household reportedly depend exclusively on subsistence farming. Svan are involved on dominant sectors of society (i.e. tourism) and are active participants in waged activities. Only 25 families (7% of 353 households) work only in agriculture (section 2.3 of this SIA). The majority of families engage in several remunerative activities. Logging was recognized as a key income source in the economy of the Nenskra and Nakra valleys by most informants. During several meetings with villagers in 2015 and 2016, locals confirmed that logging is the primary source of income for most families. With regard to employment, over a third of all the families in the two valleys (133 HHs or 38%) have at least one member employed either in public service or by private companies. Two-thirds of the families are receiving pensions or other government payments. Agriculture and livestock farming are largely for home consumption.

In terms of education, all Svans living in the Nenskra and Nakra valleys receive the same national education as rest of the Georgia.

In terms of religious identity, Svans are hardly distinguishable from other Georgians: They adhere to the Georgian Orthodox faith along with other Georgians, together contributing to about 83% of Georgian Orthodox Christians in the country's population, based on 2014 census.

[26] Totadze, 1999, p. 37; Number and Composition of USSR Population, 1985, p. 184; Bruk, 1981, p. 210.
[27] Wheatley, J. (2006). Implementing the Framework Convention for the Protection of National Minorities in Georgia: A Feasibility Study. ECMI Working paper #28.

The Svaneti region has always been fully integrated into the overall legal, socio-economic and political institutions of Georgia.

Svans do attach importance and value to traditional practices, including a traditional dispute resolution system involving village elders. However, these traditions and customs are also an integral part of the Georgian cultural heritage. Similar dispute resolution systems can be found in other areas of Georgia, and are not specific to Svaneti.[28] In the Project area, where elders cannot resolve the dispute, it is resolved through official Georgian institutions such as local authorities and/or justice.

**Svan Identity and Vulnerability Criteria**

Vulnerability of a socio-cultural group is a key aspect of the 2009 ADB SPS application of the definition of Indigenous Peoples. Vulnerable social and cultural groups can be defined as social and cultural groups that experience a higher risk of poverty and social exclusion than the general population. This is not found to be the case for the Svans and the people living in the Project area. First, Svans are historically recognized to have played an important role in the formation of the Georgian nation and Georgian statehood together with other Kartvelian tribes; and as such there is no available evidence to trace marginalization to possessing the Svan identity. There is no available record that shows the Svans are a marginalized and vulnerable social and cultural group vis-à-vis other ethnic groups or sub-groups in Georgia.

Second, the Svans also have access to, and benefit from, the same modern commodities as the rest of Georgian population.

- As for poverty and economic vulnerabilities,[29] more than a fifth of all households in the project area (22%) report receiving poverty allowance and being officially registered as poor. This is above the national average of 11% based on the 2014 figures of the National Statistics Office of Georgia (2015a), but below the average for rural areas of 25% based on 2010 figures from ADB (2014a). The typical values for remote mountainous areas can be as high as 50% (ADB, 2014a). Therefore, regarding the official national poverty line, the project area is considered to be in line with the average situation in rural areas in Georgia.
- Based on the 2016 figures from the National Statistics Office of Georgia, the percentage of individuals receiving pensions and social packages in 2016 in Samegrelo-Zemo Svaneti is comparable to other regions such as Imereti or Guria, and lower than in Racha-Lechkhumi and Kvemo Svaneti region, as shown in table 1 below.

**Table 1 - Percentage of persons receiving pension and social packages**

| Area | Percentage of Persons Receiving Pension and Social Packages |
|---|---|
| Georgia (total) | 24% |
| Tbilisi | 22% |
| Abkhazia Autonomous Region | No figure available |
| Adjara Autonomous Region | 20% |
| Guria | 28% |
| Imereti | 29% |

[28] The local council of elders is functional not only in Svaneti, but also in other mountainous areas, like Tusheti, Tianeti, Khevsureti etc. There could be variations in details and forms, but the main common principle is that it is an informal pre-litigation mechanism for the conflict resolution. The council of elders was reported to be still functional in Nakra community, but not functional or not as well-structured in Chuberi community.

[29] For a more detailed discussion, please refer to section 2.4, p. 60.

| Area | Percentage of Persons Receiving Pension and Social Packages |
|---|---|
| Kakheti | 25% |
| Mtskheta-Mtianeti | 24% |
| *Racha-Lechkhumi and Kvemo Svaneti* | *38%* |
| ***Samegrelo-Zemo Svaneti*** | ***29%*** |
| Samtskhe-Javakheti | 22% |
| Kvemo Kartli | 19% |
| Shida Kartli | 23% |

- Available data on poverty trends illustrate the fact that the Svans in the project area do not experience a higher risk of poverty and social exclusion than the general rural population.

**Potential impacts on Svan culture and customs**

Even if the Lenders policies on Indigenous Peoples are not triggered by the Project, the impacts on local cultural heritage have been assessed (see section 8). Compensation and livelihood restoration mechanisms compliant with the Lenders' policies on Involuntary Resettlement have been defined, along with the measures (see section 6) required to ensure the health and safety of the communities in the Project Area.

Traditional socio-cultural and belief practices are subject to loss under conditions of rapid social change; and are sensitive to changing socio-economic situations and to outside cultural influence. Communal knowledge and belief systems (p.ex. oral history and rituals) are often embodied within the tangible manifestations of a culture (p.ex. a cemetery or a church), so direct impacts to physical objects or places may also have impacts on intangible cultural values. There is not any known material cultural heritage element (archaeological artifact or living cultural heritage elements) located inside the project footprint. The project construction and operation in itself will not affect any local social practices, representations, expressions, knowledge, skills – nor the instruments, objects, artefacts and cultural spaces associated therewith. In the same way, the Project will not affect the transmission of these local social practices, representations, expressions, knowledge, skills.

Therefore, it is not anticipated that any of the Project activities could have any direct impact on the local intangible cultural heritage. The Project will however support the preservation of local intangible cultural heritage. Enhancement and promotion of local cultural activities is also planned (see section 8).

The project may potentially to some extent induce social change and outside cultural influence, as would any project of this magnitude located in a similar remote area.

During the construction period, and to a lesser extent during the operational phase, a number of employees coming from other parts of Georgia or from abroad will be present in the Nenskra and Nakra valleys. However, mitigation measures have been defined to minimize the amount of people coming from outside the valleys during construction and to manage and minimize the potential negative effects (see sections 6.8 and 6.9 for more details). In addition, a Community Investment Program will be implemented by the Project (see section 3.5). This Program is a means to ensure that the local population in the Nenskra and the Nakra valleys can have a share of the benefits created by the Project. It is a tool proposed by the Project Company to support the local communities to build community capacity, address development challenges and to take advantage of emerging opportunities.

Land acquisition for the project will not have any impact on land-use for cultural, ceremonial, or spiritual purposes, which determine the identity of the affected Svans communities. The land that will be used by the Project is used for economic activities (farming, livestock farming, see Vol. 9. LALRP of the Supplementary E&S Studies).

# Annex 5. Screening of impacts on ecosystem services

Ecosystem services (ES) are defined as the benefits that ecosystems provide to people, by:

- Supporting environmental resources that underpin basic human health and survival needs;
- Supporting economic and livelihood activities; and
- Providing cultural fulfilment.

Ecosystem services have been addressed as part of the ESIA in the assessment of the impacts related to socioeconomics, biodiversity, water, and natural hazards. This annex therefore provides a synthesis of the Ecosystem services in the Project area, identifies which Ecosystem services are affected by the Project and provides links to other parts of the E&S supplementary studies where the impact are addressed.

The value of the Ecosystem services components have been established by considering (i) the Importance of the service for its beneficiaries and (ii) the way in which it can be replaced, or not, by alternatives in other places (or 'replaceability'). The matrix for defining the value of Ecosystem services is presented in  below.

**Table 72 - Criteria used to define the value of ecosystem services**

| | | Replaceability of the service | | |
|---|---|---|---|---|
| | | High (lots of geographic locations possible) | Moderate (a few geographic locations possible) | Low (a few to no other possible geographic location) |
| Importance to beneficiaries of the ecosystem service | Minor | Low | Low | Medium |
| | Moderate | Low | Medium | High |
| | High | Medium | High | Critical |
| | Essential | High | Critical | Critical |

**Table 73 - Screening of ecosystem services affected by the Project**

| Service / Beneficiaries | Description | Importance to Beneficiaries | Replaceability | Value (Importance x Replaceability | Significance of residual Impact (with mitigation measures) |
|---|---|---|---|---|---|
| *Provisioning services* | | | | | |
| Game meat / local communities | Hunting of some species is illegal, though it does occur. Less than 10% of the households interviewed during the social baseline survey reported that they hunt. They all declared that the animals they hunt are consumed solely within the family or with friends. Hunting is thus not a commercial activity but only a recreational one. | Minor<br>Hunting is not a subsistence activity in the area. People do not rely on game meat for food or additional income. Game meat does not represent a significant source of protein or financial supports for households. | High<br>Alternatives to game meat that are used in the area as sources of proteins are livestock and wild caught fish. | Low | Negligible |
| Wild plants, nuts, mushrooms, fruits, honey / local communities | Half of the population of the social study area collects berries, mushrooms and culinary herbs in the surroundings forests.<br>Honey is not collected in the forest. 10% of people within the study area keep beehives. | Minor<br>There is some harvesting in the project affected areas although it does not represent a significant source of income or food for households. | High<br>Many alternative areas outside the project affected areas are available. Wild plants and fruits are not restricted to particular habitats or forest however land clearance of the reservoir area will reduce their availability. In addition, alternatives to wild plants and fruits collection exist, such as fruit and vegetables tree cultivation. | Low | Negligible |

**Table 73 - Screening of ecosystem services affected by the Project**

| Service / Beneficiaries | Description | Importance to Beneficiaries | Replaceability | Value (Importance x Replaceability | Significance of residual Impact (with mitigation measures) |
|---|---|---|---|---|---|
| | | | | | |
| Cultivated Crops / local communities | Agriculture is the primary livelihood activity practiced by households. It is primarily a subsistence activity, providing food for household consumption and surplus sold for additional income.<br>About 80% of people in the social study area cultivate crops, mainly represented by potatoes, beans and corn crops, vegetables. and fruit. | Essential<br>Cultivated crops are a major livelihood resource for local communities. However, only a few households affected. | Low<br>Alternatives geographical locations for cultivation are limited because of the topography. Crops are cultivated along the watercourses, in flat areas. There are alternative options for purchasing food in the surrounding villages. However purchasing fruit and vegetables is more costly than home production. The replaceability of cultivated land is therefore considered to be low. | Critical | Negligible |
| Livestock farming / local communities | The Project land take will result in loss of some areas of pasture land or access to the pasture land. Although this is a small percentage of total pasture land some households are significantly affected | Essential<br>Livestock farming is an essential source of subsistence and income to local communities. | Low<br>The area offers other productive pasture. However, local people affected by loss of pasture land are not able to use alternative pasture land used by other households | Critical | Minor - Moderate |

**Table 73 - Screening of ecosystem services affected by the Project**

| Service / Beneficiaries | Description | Importance to Beneficiaries | Replaceability | Value (Importance x Replaceability | Significance of residual Impact (with mitigation measures) |
|---|---|---|---|---|---|
| Wild-caught fish / local communities | 38% of the households interviewed during the social survey declared that at least one of their members do practice fishing. People fish mostly for pleasure and to be able to serve special meals to guests. Only one species, *salmo fario*, is present within the Nenskra and the Nakra rivers basins. | Minor<br>Fishing is not a subsistence activity in the area. People do not rely on wild caught fish for food or additional income. Wild caught fish does not represent a significant source of protein or financial supports for households. | Moderate<br>Availability and health of fish population is closely linked to surface water quality. Alternatives to wild caught fish that could be used in the area as sources of proteins are livestock and game meat. Considering that only one species is present in the study area and the abundance of steams in the area, the replaceability is estimated to be moderate. | Low | Minor |
| Freshwater for potable, agricultural and industrial use / local communities and project workers | Households in the area do not take water (drinking water, domestic and agricultural use) directly in the rivers but operate running water systems connected to springs or small tributary rivers uphill. The project will use the Nenskra and Nakra rivers only, will not modify tributaries – but river flow will be modified and water quality modified for the first 2 – 3 years following reservoir filling | Essential<br>Freshwater is essential to both local communities and project operations.<br>Water quality in particular may influence the health and availability of fish for human consumption. | High<br>Surface water resources in the area are abundant. Sue to this abundance, water access is not a significant issue in the area.<br>The main alternative to surface water is use of groundwater through boreholes and traditional wells. Two already exists in Nenskra and Nakra valleys. | High | Negligible |

**Table 73 - Screening of ecosystem services affected by the Project**

| Service / Beneficiaries | Description | Importance to Beneficiaries | Replaceability | Value (Importance x Replaceability | Significance of residual Impact (with mitigation measures) |
|---|---|---|---|---|---|
| Timber and wood products / local communities | Timber and wood are used by local communities for housing and infrastructure construction and to develop tools used in agricultural and domestic activities. Illegal logging is used as a large scale commercial use in the area, even if it is not officially reported, as logging activity is regulated and controlled | Essential<br>Wood and timber are essential to households' activities and incomes. | Moderate<br>Forest areas are abundant within the study area. However, valuable timbers resources in the immediate vicinity of villages have been already cleared. Due to this human pressure, timber resources are increasingly scarce around human settlements. Alternatives to wood as a construction material are modern construction equipment. These are more expensive for household. Alternative to wood as a commercial activity and income are agricultural activities. However, both are used as complementary activities. | Critical | Minor |
| Non-timber forest products other than food and biochemicals | No other non-timber forest products than food and biochemical were identified as significantly used by local population in the area. | Not of importance | Not applicable | Not applicable | Not applicable |

**Table 73 - Screening of ecosystem services affected by the Project**

| Service / Beneficiaries | Description | Importance to Beneficiaries | Replaceability | Value (Importance x Replaceability | Significance of residual Impact (with mitigation measures) |
|---|---|---|---|---|---|
| Biomass Fuel / local communities | Local communities use fuel wood for domestic purposes. Most cooking is still done on wood stoves. Firewood is the primary heating material in the area. | Essential<br>Uses of fuel wood are an essential source of energy and heat to the majority of households the Project area. Considering also the cold temperature during the winter, this service is essential. | High<br>Forest areas are abundant and non-valuable wood used for that could be used as firewood is easy to access and abundant.<br>A few people are using gas and some are using electricity, which is free in this area. | High | Negligible |
| Biochemicals, natural medicines, pharmaceuticals / local communities | 14% of households interviewed in the Project area declared collect medicinal herbs. Harvesting for monetary purposes is not practiced and pressure on medicinal resources is believed to be minimal. | Minor<br>Collection of medicinal herbs is not very common in the area. | High<br>Gathering plants for use in traditional medicine is generally a sustainable activity. It is assumed that there are sufficient spatial alternatives to maintain current levels of use. Replaceability of medicinal plants is therefore rated as high as a whole. | Low | Negligible |
| *Cultural services* | | | | | |
| Aesthetic Value / local communities | Aesthetic or visual benefits provided by landscapes, vegetation and natural landmarks<br>The study area encompasses several valleys, rivers, different vegetation altitudinal zonation and mountains peaks up to 4,000 m. | Moderate<br>The aesthetic value provided by mountains, forests, rivers and green spaces within and around local communities is likely to be important for communities and for tourism. | Site specific<br>Not all of aesthetic components of the landscape can be restored, depending of their characteristics. | High | Moderate |

**Table 73 - Screening of ecosystem services affected by the Project**

| Service / Beneficiaries | Description | Importance to Beneficiaries | Replaceability | Value (Importance x Replaceability | Significance of residual Impact (with mitigation measures) |
|---|---|---|---|---|---|
| Spiritual or religious value | No specific spiritual or religious site potentially affected by the project was recorded during the surveys | Not applicable | Not applicable | Not applicable | Not applicable |
| Traditional practices | No traditional practice potentially linked to ecosystems were identified | Not applicable | Not applicable | Not applicable | Not applicable |
| Intrinsic value of biodiversity | This service refers to the non-utilitarian value of biodiversity, such as the value some people might ascribe to a species or to a single individual because of its mere existence. | Not applicable | Not applicable | Not applicable | Not applicable |
| *Regulating* | | | | | |
| Regulation of air quality / local communities, project workers and livestock | Vegetated areas capture particulates and help to reduce impacts on communities and livestock from dust generation. In village areas, vegetated areas provide relief from the sun but are unlikely to be large enough to have a significant local cooling effect. | Moderate<br>Air quality is essential to local residents' wellbeing and health. However given that air quality is generally good in the area and is not considered being at risk from external factors or from the Project. Air quality is considered as of moderate importance to local communities. | High<br>Impacts on air quality are likely to be very localized and temporary (i.e. dust generation along roads). In addition, vegetated areas to be cleared will be not significant at a regional scale.<br>Air is a highly replaceable resource and quality is driven by regional factors (e.g. meteorology, vegetation cover) and local activities (e.g. mining activities, transport, energy generation). | Low | Negligible |

**Table 73 - Screening of ecosystem services affected by the Project**

| Service / Beneficiaries | Description | Importance to Beneficiaries | Replaceability | Value (Importance x Replaceability | Significance of residual Impact (with mitigation measures) |
|---|---|---|---|---|---|
| Climate regulation: global | Forests capture and store carbon dioxide and benefits accrue globally. | Not applicable<br>Greenhouse gas emissions by the Project will not be significant. This induces a relatively small impact in terms of climate change. Also the reservoir area is small so there is negligible impacts on carbon sink | Not applicable | Not applicable | Not applicable |
| Surface and groundwater regulation / local communities and project workers | River water levels vary considerably across seasons. The project will limit these water levels variation in some river section (between the reservoir and the power house and downstream the Nakra weir) | High<br>Water resources are considered of high importance. | High<br>No specific (other than HPP) threats have been identified for surface and groundwater regulation in the study area. | Medium | Negligible |
| Natural hazard regulation / local communities | The Nakra river when in flood flushes away accumulated sediment and in the event of landslide events on tributaries (such as event in 2011) flushes away blockages of the Nakra | Essential<br>The flushing of sediment from the Nakra river benefits the village of Nakra as reducing the risk of flooding from the bursting a natural dam created by a mudflow event on a tributary | Low<br>The service is site specific | Critical | High |
| Erosion regulation / local communities | Vegetation cover binds soils and prevents soil loss. The area is subject to erosion processes that are limited by forest and riparian habitats. | Essential<br>Forested areas prevent erosion on the slopes above the powerhouse and which could be partially cleared to allow road construction and this could put local communities at risk from unstable slopes | Low<br>The service is site specific | Critical | Negligible |

**Table 73 - Screening of ecosystem services affected by the Project**

| Service / Beneficiaries | Description | Importance to Beneficiaries | Replaceability | Value (Importance x Replaceability | Significance of residual Impact (with mitigation measures) |
|---|---|---|---|---|---|
| Water purification and waste treatment | Water purification is an ecosystem service provided by vegetation communities and soils in the study area. Vegetation plays a role in the filtration and decomposition of organic wastes and pollutants and the assimilation and detoxification of compounds. | Not applicable | Not applicable | Not applicable | Not applicable |
| Pest regulation | Natural enemies of insect pests, also known as biological control agents, include predators, parasitoids, and pathogens. They may control pests attacking crops or livestock. | Not applicable<br>It is unlikely that the Project affects the presence of parasitoids and pathogens or the abundance of small predators. | Not applicable | Not applicable | Not applicable |
| Disease regulation | The Project area is not subject to malaria and the Project is not expected to incur any water-borne diseases. The ecosystem in the Project area does not have discernible role in the regulation of diseases. | Not applicable | Not applicable | Not applicable | Not applicable |

**Table 73 - Screening of ecosystem services affected by the Project**

| Service / Beneficiaries | Description | Importance to Beneficiaries | Replaceability | Value (Importance x Replaceability | Significance of residual Impact (with mitigation measures) |
|---|---|---|---|---|---|
| *Supporting services* | | | | | |
| Habitat Provision / local, regional and global beneficiaries | Natural spaces that maintain species populations and protect the capacity of ecological communities to recover from disturbances. | High<br>Habitat provision in the form of pristine, natural or modified habitat is essential to the maintenance of species population and provision of many ecosystem services. | Moderate<br>The area encompasses modified habitat (i.e. lower areas and upper pasturelands) surrounded by natural habitats (i.e. upper areas and steep slopes). Whereas both provide different type of ecosystem services, natural habitats are essential to the provision of intermediate regulating services. Considering that natural habitats remain in and around the Project area but have been degraded, habitat provision replaceability is considered to be moderate. | High | Minor |

# Annex 6. Community Investment Strategy 2017-2022




# COMMUNITY INVESTMENT STRATEGY
# 2017-2021

February 2017

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# Abbreviations

| | |
|---|---|
| **ADB** | Asian Development Development |
| CIP AC | Community Investment Plan-Advisory Committee |
| **CI** | Community Investment |
| **CIS** | Community Investment Strategy |
| **CIP** | Community Investment Project |
| **CW Contractor** | Civil Works Contractor |
| **EBRD** | European Bank for Reconstruction and Development |
| **EIB** | European Investment Bank |
| **ES** | Environment and Social |
| **GNTA** | Georgian National Tourism Administration |
| **GoG** | Government of Georgia |
| **HPP** | Hydropower Plant |
| **KDB** | Korean Development Bank |
| **LALRP** | Land Acquisition and Livelihood Restoration Plan |
| **LEPL** | Legal Entity of Public Law |
| **MDF** | Municipal Development Fund of Georgia |
| **MoU** | Memorandum of Understanding |
| **MRDI** | Ministry of Regional Development and Infrastructure |
| **NACHP** | National Agency for Cultural Heritage Preservation of Georgia |
| **RD MRDI** | Road Department of the Ministry of Regional Development and Infrastructure |
| **SLR** | SLR Consulting |
| **TSU** | Tbilisi State University |

## 1.1 INTRODUCTION

### 1.1.1 Project Overview

The proposed Nenskra Hydropower Project is a high head hydropower project with an installed capacity of 280 MW, located in the upper reaches of the Nenskra and Nakra valleys in the North Western part of Georgia in the Samegrelo Zemo-Svaneti Region.

The Project uses the available discharges from the Nenskra River and the adjacent Nakra River, developing a maximum available head of 725 metres down to the powerhouse located approx. 17 kilometres downstream the dam. The main project components comprise a 130 metres high, 850 metres long asphalt face rock fill dam on the upper Nenskra River creating a live storage of about 176 million cubic metres and a reservoir area at full supply level of 2.7 square kilometres.

The Nakra River will be diverted into the Nenskra reservoir through a 12.2-kilometre long transfer tunnel. The power waterway comprises a headrace tunnel of 15 kilometres, a pressure shaft and underground penstock of 1,790 metres long.

The above-ground powerhouse is located on the left side of the Nenskra River and will house three vertical Pelton turbines of 90 megawatt (MW) capacity each, for a total installed capacity of 280 MW. A 220 kV transmission line that connects the powerhouse switchyard to a new Khudoni Substation will have to be built.

The Project is being developed by JSC Nenskra Hydro, whose main shareholders are K-water, a Korean Government agency and Partnership Fund, an investment fund owned by the Government of Georgia. K-water and Partnership Fund are referred to as the Owners in this document.

### 1.1.2 Purpose and justification

In light of K-Water-Partnership Fund through JSC Nenskra Hydro overarching business objectives with respect to sustainable development and corporate social responsibility, as well as JSC Nenskra Hydro's specific commitments under its 2017 Supplementary Environmental & Social Studies (2017 Supplementary E&S studies) , this document describes the JSC Nenskra Hydro's Community Investment Strategy that will become the basis for community investment over the 2017-2021 Construction period (hereinafter 'CIS').

The overall purpose of this Community Investment Strategy is to maximise the positive long-term impacts on local communities around JSC Nenskra Hydro project's activities and operations. As such, this CIS will be updated for the Operation phase.

### *1.1.3 Document structure*

The document is organized into three sections:

**Section 1: JSC Nenskra Hydro's CIS**

This section presents the CIS background, business case and policy requirements. It then presents the Strategy overview which includes guiding, scope, methodology and applicable project standards

**Section 2: Management**

Section 2 then describes the management approach, role and responsibilities, the governance structure and the investments areas covers by the CIS and their link to other work streams within the JSC Nenskra Hydro structure.

**Section 3: CIS Reporting and Monitoring Framework**

This last section presents the monitoring, evaluation and reporting systems and defines a framework monitoring program for JSC Nenskra Hydro's planned CIS outcomes defined by key performance indicators (KPIs), sources, methods and frequency of data collection.

## *1.2 CIS OVERVIEW*

### *1.2.1 Mission*

The CIS's mission is to improve JSC Nenskra Hydro's contribution to the sustainable development of Project-impacted communities and broadly to the population of the 2 affected valleys by strategically funding projects and programs that optimize Project opportunities, and assist in achieving the development aspirations expressed during the needs assessments process.

### *1.2.2 Guiding principles*

The CIS will be guided by a set of principles including:

- *Active participation and ownership:* The strategy will empower local stakeholders (communities & authorities) to drive the socio-economic development of their communities through involvement in the identification, implementation, and management of projects, building

ownership, responsibility capacity to manage social investments in the process. The specific projects must be designed and implemented in closed consultation with communities and other stakeholders JSC Nenskra Hydro Project.

- *Income generation and capacity building:* The Strategy shall build on revenue-generating opportunities and local capacity building by enhancing existing skills and knowledge and local institutions; and supporting new skills development opportunities where required.
- *Sustainability:* projects shall be designed to promote self-reliance and avoid dependency whilst creating opportunities for government support and partnerships with other development actors; they will have a clear sustainability strategy.
- *Inclusiveness:* ensure that all affected communities will have access to benefits arising from the overall community investment portfolio. This principle applies to *vulnerable groups* to ensure that they are prioritised in receiving positive benefits from the Community Investment Projects
- *Measureable outcomes*: project outcomes for JSC Nenskra Hydro and beneficiaries shall be measureable using outcomes and impact indicators to measure change.
- *Transparent*: community investment shall be governed by JSC Nenskra Hydro's Code of Business Conduct and shall be transparent and auditable.

### *1.2.3 Scope*

#### *1.2.3.1 Timeframe*

From an initial stage, this CIS covers the 2017-2021 Construction phase. It will be updated prior the Operation phase, to cover the Operation phase based on lessons learnt and achievements during Construction phase.

Detailed annual plans will be prepared and implemented in line with the strategy.

This strategy can be revised and improved based on the stakeholders' feedback and contributions.

#### *1.2.3.2 Geography*

The geographic scope of the CIS is primarily local with a focus in the Nenskra and Nakra valleys.

The CIS focuses primarily on the affected communities included in the LALRP. Although directly affected villages will be prioritized in all CI projects, due to nature of activities, the CIS will be inclusive. Some CI projects may require involvement of institutions and individuals from Mestia or other

districts of Svaneti be utilized to provide services for implementation of the CI projects.

#### *1.2.3.3 Type of Community Investment*

The selection of CI project will be based on criteria to be descrided in the annual Community Investment Plan with the aim at contributing to improve living conditions, and professional empowerment. As such, this CIS will not support investment projects related to :

- Political and religious matters
- Individual needs
- Major infrastructure

### *1.2.4 Methodology*

The CIS was developed following 2 steps, as follows:

#### *1.2.4.1 Step 1: Desktop review*

The baseline socio economic conditions have been analysed through the review of the existing data of socio-economic surveys
The background documents reviewed includes:

- Social Impact Assessment/SLR 2017
- Development Strategy for the Samegrelo Zemo-Svaneti Region-2014

#### *1.2.4.2 Step 2: Need analysis*

External consultations with local communities and local authorities in the Project's area were undertaken in order to identify the expectations and priority needs of affected communities, development plans for the region and main development actions in the region. Meetings were held with:

- Representatives of Municipality of Mestia
- Representatives of Gamgebeli in Chumberi and Nakra Communities
- Representatives of Chuberi and Nakra communities
- Representatives of the Tbilisi State University working on archaeological matters in Chuberi and Nakra
- Representatives of Ministry of Energy of Georgia
- Representatives of Municipal Development Fund of Georgia
- Representatives of Ministry of Regional Development and Infrastructure.

Consultations were held in December 2016 and were led by a team composed of WEG's Representative and assisted by JSC Nenskra Hydro social team.

Feedback from local communities and authorities regarding the proposed CI focus areas has been integrated in the Needs Assessment Report produced by WEG in December 2016.

## *1.3 PROJECT STANDARDS*

Applicable Standards must comply with for all Project activities (the "Project Standards"). Project Standards comprise:

- applicable Georgian Standards
- Georgian EIA requirements
- other commitments to and requirements of Georgian Government authorities
- lenders standards and other applicable international standards and guidelines
- applicable JSC Nenskra standards, policies and procedures and other industry guidelines which JSC Nenskra Hydro has committed to comply with.

### *1.3.1 Applicable Georgian Standards*

None applicable

### *1.3.2 Georgian EIA requirements*

No requirements

### *1.3.3 Other commitments to and requirements of Georgian Government*

None

### *1.3.4 Applicable JSC Nenskra standards, policy and procedures and other industry guidelines which JSC Nenskra Hydro has committed to comply with.*

Although the Implementation Agreement signed by JSC Nenskra Hydro and GoG in 2015 and the local legislation do not require any provision of Community Investment, the owners are committed to high international standards.
This CIS has been developed based on the IFC's "Strategic Community Investment- A Good Practice Handbook for Community Investment"[1].

In addition, this CIS seeks to support the broad community relations objectives of JSC Nenskra Hydro- in line with the broad requirements of the European Bank for Reconstruction and Development (EBRD), the Asian Development Bank (ADB), the European Investment Bank (EIB), the Korean Development Bank (KDB) and SACE (Italian Credit Agency) to avoid, minimise and mitigate Project-related impacts.

[1] Source: http://www.ifc.org/wps/wcm/connect/ace84b8048855511b57cf76a6515bb18/IFC_com_inv_handbook_2.pdf?MOD=AJPERES&CACHEID=ace84b8048855511b57cf76a6515bb18- 18 January 2017

# 2 MANAGEMENT

This section describes the overall management of the CIS and a specific procedure will be developed for the management of the CIP according to JSC Nenskra Hydro system and procedures.

## 2.1 APPROACH

JSC Nenskra Hydro is seeking to coordinate the implementation of the community development strategy using its internal resources. Third parties (CSOs, NGOs, Consultants, Governmental bodies) will be used as implementing partners for the specific investment projects. Implementing partners will be required to demonstrate the necessary experience and skills in the relevant focus areas. Ideally, partners will be local and have a good knowledge of the local environment and culture. It is important that their interests be aligned with that of communities and with achieving the development outcomes of the Strategy[1].

## 2.2 KEY ROLE AND RESPONSIBILITIES

Principal roles and responsibilities for the management of this CIS are outlined below. The table includes external bodies that are part of the governance scheme as described in the next section.

Table 1: Key Roles and Responsibilities

| Role | Responsibilities |
|---|---|
| JSCNH Project Manager | • Approve of this CIS and resources for implementation |
| JSCNH Chief E&S Officer | • Overall responsibility for scoping and implementation<br>• Ensure monitoring and evaluation, reporting and revision of the CIS if needed |
| JSCNH Social Manager | • Oversee the development and the supervision of the CIS implementation. |
| JSCNH Community Investment Officer | • Develop and implement the Community Investment Plan<br>• Timely implement the plan including coordination with implementing organizations and other stakeholders |
| JSCNH Procurement Department | • Manage the contractual process for implementation of CIP |
| JSCNHP Finance Department | • Make money available for CIP implementation and monitor CIP budget |
| JSCNHP Communication specialist | • Prepare the communication material of CIP and achievements |
| CIP Advisory Committee | • Agree with the Community Investment Plan<br>• Supervise the implementation of projects, sign the Act of Acceptance, supervise the long-term monitoring |
| Implementation partners | • Implement the projects under its responsibility according to the terms of contract/agreement |
| Mestia Municipality | • Agree with the Community Investment Plan<br>• Supervise the implementation of projects, sign the Act of Acceptance and in case of public infrastructure<br>• Take ownership of the project upon its completion. |

[1] Potential Implementing Partners include MRDI, NACHP, RD MRDI, TSU and various civil work Contractors (CW Contractors)

| Role | Responsibilities |
|---|---|
| Various Georgian Ministry (agriculture, education, health, National Agency for cultural heritage preservation etc..) | • Agree with the Community Investment Plan for the projects under its jurisdiction.<br>• Participate to the monitoring/evaluation of the implementation of the projects of its interest<br>• Take ownership of the projects under its jurisdiction upon its completion |
| GoG | • Shall use its best endeavor for a timely delivery of the CI projects |
| External Monitoring Consultant | • Report to lenders on CIS implementation progress |

## *2.3 GOVERNANCE*

The Community Investment Plan- from design to completion - will involve various bodies to successfully implement sustainable Community Investment initiatives. They are:

*Community Investment Plan- Advisory Committee (CIP-AC)*

The CIP- Advisory Committee is the key interface in the implementation of this CIS.
Key elements of the proposed approach to governance include:

- The CIP-AC will be guided by agreed rules that separates financial allocations and contractual rules (manage by JSC Nenskra Hydro) and decision making from delivery.
- The CIP-AC advises on the strategy, detailed annual CI Plan and annual CI implementation plan
- The CIP-AC supervises the implementation of projects
- Upon project's completion, the CIP-AC signs Act of acceptance proving that the project is finalized at satisfaction and according to the agreed scope of work.

Members[1] of this committee are as follows :

- Two representatives of Mestia Municipality Gamgeoba in Chuberi and Nakra Communities.
- Two members of Mestia Municipality Sakrebulo elected from Chuberi and Nakra Community.
- Two representatives from each village of Chuberi and Nakra
- Two representatives from JSC Nenskra Hydro

The CIP-AC will meet as often as necessary to ensure that the proposed CIP is aligned with the community needs and its implementation is in accordance with the terms and conditions agreed with the Implementing Partners.

An MoU will be developed explaining the rules for the steering committee members, how the committee will work/approval mechanism and roles & responsibilities of members.

[1] Members are selected on voluntary base, JSC Nenskra Hydro will recommend gender balance within the group.

*Mestia Municipality*

The Municipality of Mestia will assign to the CIP-AC representatives. As part of the CDP-AC, the Municipality Representatives will participate in the supervision of the implementation of projects and more importantly will take the ownership of the project of his interest for the operation phase of the project, notably for the infrastructure projects.

*Ministry of Agriculture, Ministry of Education and Science, Ministry of Health, Labour and Social Affairs, National Agency for Cultural Heritage Preservation and other relevant local State Institutions/development agencies, other international/national donors, Agricultural Cooperatives, Rural Development Associations etc.*

Technical expertise of Government technical services may be called upon in specific cases, and JSC Nenskra Hydro representatives may also intervene to provide guidance and technical support. The Representatives of Government technical services will participate in the projects design and monitoring within their area of expertise. They will agree upfront the design of projects to provide the necessary personal to operate the projects upon their completion e.i teachers for schools, health care agents and doctors for medical facilities etc.

## 2.4 INVESTMENT AREAS

### 2.4.1 CI areas

As discussed in Section 1.5 Methodology, Community Investment focus areas were identified based on two primary factors:

- Potential ES impacts of the Project as highlighted in JSC Nenskra Hydro's 2017 Supplementary E&S studies.
- Community needs and priorities identified primarily through the needs assessment consultations in December 2016 confirmed through the recent initial CIS consultation.

Based on these two factors, the CIS identifies five focus areas, which have been validated both internally and externally by local authorities and communities during initial CIS consultations. Active stakeholder participation and ownership is a key pillar of all 5 investment areas.

Table 2 next page presents the CIS focus and Community Investment priorities identified during the needs assessment process.

Table 2: Community Investment priorities[1]

[1] They are the priorities agreed by the both the affected population and local authorities during the need assessment conducted in December 2016. These priorities may change with the agreement of all stakeholders.

| CIS focus | Community Investment priorities |
|---|---|
| Infrastructure | • Rehabilitation of roads<br>• Improvement of social infrastructure in directly affected communities |
| Health | • Improving waste management<br>• Improving water supply system<br>• Refurbishment and upgrading clinics<br>• Medical equipment and emergency vehicles |
| Education and training | • Construction/refurbishment of schools and kindergartens<br>• Access to vocational training and driving training for unemployed youth and specific trainings for women<br>• Equal opportunity Action Plan will be developed to ensure gender equity |
| Agriculture and breeding | • Support of sustainable agricultural production/training to farmers on cattle breeding/high quality fodder, crop and honey production and green house production<br>• Marketing support |
| Tourism | • Support to tourism activities and marketing |

JSC Nenskra Hydro has allocated a total budget of 4,000,000 USD[1] for the 2017-2021 Construction period. Yearly allocated budget will be part of the CIP. A new budget will be allocated for the Operation Phase and this CIS will be amended accordingly. The CIS for the Operation Phase, will be based on lessons learnt and achievements during the Construction Phase.

### *2.4.2 CIS & LALRP*

The mandate of JSCNH LALRP unit is to ensure the success of land acquisition, compensation and livelihood restoration measures in restoring livelihoods and improving quality of life of Project-Affected Persons (PAPs). Such measures are not considered community investment. JSC Nenskra Hydro's Community Investments Plan will however seek to complement, enhance, and improve upon LALRP measures, aiming at "net gain" over and above impact mitigation aiming additional benefits. In addition, economically displaced persons will continue to be prioritized including revenue-generating activities, support to agriculture or cattle breeding, and capacity building.

### *2.4.3 CIS & Environment*

Many community projects may also present environmental benefits. The CIS will build on synergies in relation to projects with shared community and environment objectives, maximizing community participation and benefits. Agriculture, land use, natural resource management as well as waste

[1] This is direct investments in Communities- excluding management and governance 250,000USD

management and sanitation may present good opportunities for collaboration with the Environment department.

### *2.4.4 CIS & Leverage/facilitate action by other organisations/donors*

Where it is possible, JSC Nenskra Hydro Community Investments will seek leverage of its investment by combining its actions with other organisations and donors within its area of influence in order to maximize benefits. The ES team will work closely with the donor to ensure consistency within the Community Investment Strategy.

## *2.5 COMMUNITY AND GOG DISCLOSURE*

The CIP-AC and JSC Nenskra Hydro will report on progress to affected communities at periodic community meetings and to lenders as part of quarterly ES monitoring report. JSC Nenskra Hydro will include an update on Community Investment activities on its website.

This CIS will be disclosed to the Regional Office of Samegrelo Zemo-Svaneti [1] via face to face presentation, and will be part of the ESIA disclosure package.

[1] Local Regional Government Representation of Georgian GoG

# 3 IMPLEMENTATION SCHEDULE AND MONITORING-EVALUATION

## 3.1 KEY IMPLEMENTATION MILESTONES

Key implementation milestones related to this CIS are:

- Establish the CIP-AC structure with rules and agreement
- Liaise with other development organisations/donors for leverage and build capacity for greater benefits in the Svaneti region.
- Preparation and approval of CIP and annual budget
- Key prioritized Community Investment projects implemented.

## 3.2 CIS MONITORING FRAMEWORK

The CIS M&E is presented in Annex 1, which sets out Key Performance Indicators for the overall CIS outcomes and outputs indicated in the Implementation Plan. In addition, for each outcome or output, the CI Project Monitoring Framework defines the required the data sources, data method collection. The frequency of the CIS monitoring is annual and will last for the loan life cycle.

*Perception Survey*
On an annual basis, JSC Nenskra Hydro will appoint a Third Party surveyor entity who will conduct the Perception Survey. The results of the Perception Survey will be analysed in order to align recommendations of the study to the CIP.

Specific KPIs will be set for each Community Development Project along with the M&E framework and will be part of the Annual CIP and include in individual project agreements. Each CIP will require a baseline status assessment, mid-term evaluation and ex-post evaluation conducted by JSC Nenskra Hydro with the participation of the CIP-AC and any other stakeholder who may has interest in.

The ex-post evaluation will be used to evaluate the overall effectiveness of each project and long-term impact of each project.

## 3.3 MANAGEMENT REPORTING

*The Env&Social Chief Officer* is responsible for the overall management of the CIS and includes its revision.

*The Social Manager* will be responsible for the overall supervision of the implementation of this Community Investment Strategy.

*The Community Investment Officer* will be responsible for the overall design and implementation of the annual Community Investment Plan.

*The Community Relations Officer* and Community Liaison Officers will provide additional support and will assist in the supervision and monitoring of the implementation of CIP.

Implementing Partners for CIP are required to submit project progress and financial reports on a periodic basis (monthly, quarterly, as appropriate and defined in each project agreements).

Management and reporting will follow JSC Nenskra Hydro procedures.

### *3.4 PROGRESS AND PERFORMANCE REPORTING*

A quarterly progress report will be prepared for the CIP-AC, JSC Nenskra Hydro Project Manager, and will be reported to lenders as part of quarterly ES monitoring reports

An annual progress report will be prepared for public disclosure.

### *3.5 MONITORING AND EVALUATION OF COMMUNITY DEVELOPMENT PROJECTS*

A common methodology will be applied across all Community Investment Projects supported by JSC Nenskra Hydro and which are implemented by a range of different implementing partners.

Monitoring and Evaluation (M&E) is an essential part of project management and stakeholder engagement. It helps the Project understand the Community Investment Projects progress, by learning from achievements and problems, and agreeing practical ways of how to improve annual plans. The main functions of the M&E are to ensure improvements through evaluation of performance, to maximise the impact of each Community Investment Project, and to demonstrate that the impact is as anticipated and, if not to assess the impact of the project.

M&E activities are aimed at defining the extent of impact positive or negative, intended or unintended- on livelihoods of targeted populations. Reporting, monitoring and evaluation activities will follow a similar approach as outlined below:

Implementing partners will be required to submit monthly reports to JSC Nenskra Hydro in accordance with an agreed format :

- A quantitative section which reports progress on KPIs agreed in the general agreement to implement the project

- A narrative summary outlining issues encountered and proposed solutions
- A financial report showing spent vs budget

A quarterly will also be submitted. This report will mainly comprise the following sections:

- A narrative section summarizing the issues and actions and activities of the monthly reports
- Financial section : financial reporting, leverage/matched funds in cash or in kind and any major issues, actions taken or planned , lessons learned, requests for assistance.
- A summary of planned activities for the forthcoming period.
- An update on KPIs progress

In addition of the reports, regular site visits will be conducted and meetings will be held as needed to discuss progress and issues as often as necessary.

## *Annex 1 CIS Monitoring Framework*

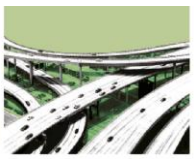
| Expected Results | Key Performance Indicators | Data Sources | Data Collection Method |
|---|---|---|---|
| Improve JSC Nenskra Hydro's contribution to the sustainable development of Project-impacted communities by strategically funding projects and programs that optimize Project opportunities, and assist in achieving the development aspirations expressed by the population in general and the affected people in particular in the Nenskra and Nakra valleys. | Number and dollar value of projects identified and supported by CIS | Budget | Document review |
| | % of respondents reporting positive opinion of JSC Nenskra Hydro impacts | Perception Study | Sample household survey |
| | % of respondents reporting favorable opinion of opportunities offered by the JSC Nenskra Hydro project | Perception Study | Sample household survey |
| | % of elected officials and local authorities reporting satisfaction with JSC Nenskra Hydro assistance in achieving development goals | Perception Study | Survey of elected figures and authorities |

SLR

global environmental solutions



Industry



Infrastructure



Mining & Minerals



Oil & Gas



Planning & Development



Renewable & Low Carbon



Waste Management