MINISTRY OF ENVIRONMENTAL PROTECTION
AND AGRICULTURE OF GEORGIA

GEORGIA RESILIENT AGRICULTURE, IRRIGATION AND LAND PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN
FOR

NAREKVAVI IRRIGATION SCHEME

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CONTENTS

LIST OF TABLES

LIST OF FIGURES

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ABBREVAITIONS

ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
GDP	Gross Domestic Product
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
HSE	Health and Safety, Environment
ILDM	Irrigation and Land Market Development
IPM	Integrated Pest Management
LLC	Limited Liability Company
LMP	Labor Management Procedure
MEPA	Ministry of Environmental Protection and Agriculture of Georgia
NACHP	National Agency of Cultural Heritage Preservation
NIS	Narekvavi Irrigation Scheme
PIU	Project Implementation Unit
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
ROW	Right of Way
ToR	Terms of Reference
TBD	To be Determined
WUO	Water User Organization

EXECUTIVE SUMMARY

Ministry of Environmental Protection and Agriculture of Georgia (MEPA) is implementing the Georgia Resilient Agriculture, Irrigation, and Land (GRAIL) Project, co-financed by the World Bank and the Government of Georgia. A Project Implementation Unit (PIU) under MEPA undertakes day-to-day management of the Project, including, among other functions, procurement, contract management, and environmental and social risk management. The rehabilitation and modernization of the Narekvavi Irrigation Scheme (NIS), located in Dusheti Municipality of Mtskheta-Mtianeti Region, is included in the Project's scope as one of several subprojects. Rehabilitation works will be carried out by a construction company ("Contractor") hired by PIU ("Employer"). PIU will undertake technical supervision of works, including environmental and social oversight, through a hired firm ("Engineer").

Planned rehabilitation works include rehabilitation of the existing headworks, replacement of damaged intake and sluice gates, cleaning and rehabilitation of the main canal, and reconstruction or replacement of damaged hydraulic structures such as the aqueduct, siphon, culverts, footbridges, and turnouts/outlets to restore reliable operation of the irrigation system.

Based on the approved design and current site conditions of the Narekvavi Canal, the works will be implemented entirely within the existing canal alignment, right-of-way, and/or State-owned land plots. All operations will take place from the left bank of the canal, and the contractor is obliged to avoid disturbance of the right bank properties.

The proposed rehabilitation methodology envisages the use of manual labor for cleaning and removal of sediment and vegetation from within the canal section. This approach has been selected to: (i) minimize potential damage to the existing canal lining, and (ii) avoid disturbance to adjacent private properties located along the right bank. Following cleaning activities, the new lining will be installed over the existing rehabilitated surface. At this stage, only limited use of machinery is anticipated mainly involving a concrete mixer operating from the left bank and placement of several precast box elements using a small loader. The Contractor shall ensure that construction activities are carefully managed to avoid any damage to nearby private property and assets.

Based on current design, the works are not expected to require private land acquisition, impose restrictions on land use, or result in physical or economic displacement of affected persons or livelihoods. Therefore, no impacts are anticipated under ESS5 (Land Acquisition, Restrictions on Land Use and Involuntary Resettlement), and no site-specific resettlement instrument is required for this subproject. The Contractor shall ensure that all activities remain within the approved project footprint and shall immediately notify the Employer/Engineer of any unforeseen impacts related to land, access, or livelihood encountered during implementation, so that appropriate corrective measures can be undertaken in accordance with the Project's environmental and social requirements.

Since all rehabilitation and construction activities will take place within the footprint of existing infrastructure, the subproject is not expected to cause significant environmental or social impacts.

According to the World Bank's Environmental and Social Standard (ESS)1 - Assessment and Management of Environmental and Social Risks and Impacts, the subproject is classified as a moderate risk operation based on its type, location, sensitivity, and scale.

Based on the Environmental and Social Management Framework (ESMF) of the GRAIL Project, which guides site-specific environmental and social due diligence, subproject preparation included completing of an Environmental and Social Screening Checklist (see annex 1) and preparing of an Environmental and Social Management Plan (ESMP).

Present ESMP, produced for NIS, details potential environmental and social impacts of rehabilitation and reconstruction of this existing irrigation scheme, provides mitigation measures, and carries a monitoring tool – all to minimize potential negative impacts during construction and operation phases of the sub-project.

The anticipated environmental and social impacts of the subproject are temporary, site-specific, and primarily associated with construction activities. Key risks include dust and noise generation, temporary traffic and access disruptions, occupational and community health and safety risks, construction waste generation, potential impacts on surface water quality, and disturbance to nearby land users. These impacts will be mitigated through the implementation of the ESMP, including dust suppression measures, proper waste management, traffic and safety controls, pollution prevention measures, worker training, and regular environmental and social monitoring throughout the construction period.

In accordance with the requirements of the World Bank Environmental and Social Framework and the GRAIL Project ESMF, the draft ESMP was disclosed and consulted with relevant stakeholders, including representatives of local communities and local authorities. Stakeholder feedback received during the consultation process were considered and incorporated into the final ESMP, as appropriate. The finalized ESMP was publicly disclosed and remain available throughout project implementation.

The ESMP will be implemented by the Contractor and supervised by the Engineer, who will monitor compliance with the environmental, social, health, and safety requirements set out in the ESMP, contractual documents, and applicable legislation. The PIU under MEPA will provide overall oversight of ESMP implementation, review monitoring reports, conduct periodic site inspections, and ensure that any non-compliances identified during construction are promptly addressed through corrective actions.

1. PREFACE

The agricultural sector is a very important component for Georgia's economy with great potential for competing on the internal and external markets. While the agricultural sector accounts for only 6 percent of GDP, it provides income and employment for about 50 percent of the country's workforce. In addition, the sector has a priority by the Government of Georgia in the context of food security. Waterlogging and flooding agricultural land are important challenges, especially for the western part of the country. Therefore, smooth operation of irrigation systems is essential for high productivity and good yields. Ministry of Environmental Protection and Agriculture of Georgia (MEPA) has included the rehabilitation and modernization of the Narekvavi Irrigation Scheme under the Georgia Resilient Agriculture, Irrigation, and Land (GRAIL) Project, co-financed by the World Bank and the Government of Georgia.

Under the GRAIL Project, rehabilitation efforts are aimed at upgrading and modernizing selected irrigation and drainage schemes through replacement of outdated and non-functional infrastructure and improvement of overall system performance. Narekvavi Irrigation Scheme (NIS), located in Dusheti Municipality within the Mtskheta-Mtianeti Region, is one of the irrigation subprojects financed under the Project.

A Project Implementation Unit (PIU), operating under MEPA, is mandated to undertake day-to-day management of GRAIL Project that includes, among other functions, procurement, contract management, and environmental and social risk management. NIS rehabilitation will be undertaken by a civil works contractor ("Contractor") hired by PIU ("Employer"). PIU will undertake technical supervision of works, including environmental and social monitoring, with the involvement of a hired consultant company ("Engineer").

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2. LEGAL FRAMEWORK

2.1. ENVIRONMENTAL AND SOCIAL STANDARDS OF THE WORLD BANK RELEVANT FOR GRAIL PROJECT

As the GRAIL Project is implemented with financial support from the World Bank. Hence, in parallel with the national environmental and social legislative requirements, it shall meet the requirements of the World Bank's Environmental and Social Framework (ESF). ESF comprises 10 ESSs. ESSs relevant to the GRAIL Project are the following:

ESS1: Assessment and Management of Environmental and Social Risks and Impacts: identification, control, and monitoring of risks and impacts, including identification of applicable requirements and monitoring outcomes.

ESS2: Labor and Working Conditions: labor relations, rules of employment, occupational health and safety, workforce protection, worker grievance mechanism, with specific requirements for contractor and subcontractor employees.

ESS3: Resource Efficiency and Pollution Prevention and Management: conservation of resources and control/prevention of wastes and pollution.

ESS4: Community Health and Safety: avoidance and control of risks and impacts on communities from project activities and workers, emergencies, security, and other factors.

ESS5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement: identification, planning, avoidance/response to the need for physical and/or economic displacement due to project activities, including information disclosure and consultation.

ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources: protection and conservation of biodiversity and habitats, support livelihood of local communities.

ESS8: Cultural Heritage: protection of tangible and intangible cultural heritage.

ESS10: Stakeholder Engagement and Information Disclosure: identification and engagement of local and other stakeholders throughout the project life cycle, disclosure of project information, grievance redress mechanism for external stakeholders

In addition to the applicable ESSs, the Project will also adhere to the World Bank Group's Environmental, Health, and Safety (EHS) General Guidelines and will comply to the national legislation of Georgia.

ESS 1: Assessment and Management of Environmental and Social Risks and Impacts

ESS 1 establishes an overarching framework for the identification, assessment, and management of environmental and social (E&S) risks and impacts associated with project activities. It requires a systematic process to ensure that projects are environmentally and socially sound and sustainable, and implemented in accordance with the mitigation hierarchy, including avoidance, minimization, mitigation, and, where necessary, corrective measures.

The subproject will be implemented in accordance with the requirements of ESS1 and will follow the ESMF of the GRAIL Project which defines the procedures for environmental and

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social screening, assessment, mitigation planning, monitoring, stakeholder engagement, and grievance management at the subproject level.

As the NIS subproject involves rehabilitation of the existing irrigation infrastructure, its environmental and social impacts are expected to be site-specific, temporary, low to moderate in scale, and manageable through implementation of the mitigation measures defined in this ESMP. These measures include, inter alia, management of waste and excavated material, control of dust, noise, and traffic-related disturbance, protection of nearby land and assets, occupational and community health and safety measures, and restoration of temporarily affected areas following completion of works.

ESS 2: Labor and Working Conditions

ESS2 covers labor and working conditions for both direct and contracted workers. To identify and address key labor requirements and associated risks for the GRAIL Project, Labor Management Procedures (LMP) were developed. LMP outlines Project's approach to comply with national requirements while aligning with the objectives of the World Bank's ESF. Specifically, it adheres to ESS2 – Labor and Working Conditions and ESS4 – Community Health and Safety.

Application of LMP to the NIS subproject will:

- Ensure safety and health in the workplace,
- Promote fair treatment, non-discrimination, and equal opportunities for project workers,
- Protect vulnerable groups among project workers, including women, persons with disabilities, children (of working age, in accordance with this ESS) migrant workers, contracted workers, community workers, and primary supply workers,
- Exclude all forms of forced labor and child labor,
- Uphold the principles of freedom of association and collective bargaining for project workers in accordance with national law,
- Provide accessible and effective channels for workers to raise workplace concerns.

Furthermore, the Contractor and any subcontractors that may be brought on board, will be required to establish, maintain, and effectively operate grievance mechanism for accepting and handling complaints from their personnel. Such mechanism will be equipped for adjusted treatment of complaints pertaining sexual exploitation and abuse (SEA) / sexual harassment (SH).

ESS 3: Resource Efficiency and Pollution Prevention

ESS3 promotes efficient resource use, conservation, and pollution control. In line with ESS3, rehabilitation of NIS will be organized in a way that minimizes water consumption, energy use, and waste generation, while preventing pollution and environmental degradation.

By integrating ESS3 principles, the NIS subproject will enhance resource efficiency, reduce environmental impact, and promote sustainability in irrigation system rehabilitation. These measures will ensure long-term benefits in terms of water conservation, energy savings, and pollution prevention, while maintaining compliance with national and international environmental standards.

Project beneficiary farmers will be trained to practice Integrated Pest Management (IPM) for optimized use of pesticides that allows to control spread of crop pests and diseases with minimal harm to agrobiodiversity, soil, and surface and ground water.

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ESS 4: Community Health and Safety

ESS4 is designed to ensure wellbeing of local communities in a project's impact area. The primary objective of this standard is to minimize any adverse effects and maximize the positive outcomes that can arise from project activities. The key elements of ESS4 applicable to NIS rehabilitation are:[1]

Risk Management:

Identify and manage risks to community health and safety, including those of environmental nature (e.g., poor air/water quality, hazardous materials) and social disruptions (e.g., displacement, loss of livelihoods).

Infrastructure Safety:

Ensure subproject infrastructure meets high safety standards to protect local communities, including secure construction sites and hazard-resistant facilities. incorporate safe road crossings into subproject design; establish workers' camps separated from local communities with strict protocols for interaction with local communities in order to avoid impacts from labor influx; implement sensitization and specific mitigation measures for social impacts from labor influx during construction.

Health Services:

Provide accessible healthcare to affected communities, particularly where project activities pose health risks, such as pollution or disease.

Emergency Preparedness and Response:

As part of the environmental and social assessment undertaken pursuant to ESS1, potential emergency situations and accident scenarios shall be identifying and assessed through a Risk and Hazard Assessment (RHA). Based on the results of the RHA, prepare an Emergency Response Plan (ERP) in coordination with the relevant local authorities and where appropriate, the affected communities. The ERP shall take into account the emergency prevention, preparedness, and response arrangements established for project workers under ESS2 and shall define procedures for incident notification, emergency communication, evacuation, and coordination with emergency response services.

Resilient Infrastructure and Accessibility:

Ensure that subproject infrastructure meets high safety standards and is adapted to climate change and natural hazards. Provide universal access to infrastructure.

Traffic Management:

Identify, evaluate, and monitor the potential traffic and road safety risks to workers, affected communities, and road users and, where appropriate, develop and apply measures for preventing community nuisance, health and property damage from project-related traffic by limiting speed, establishing schedules of movement, installing relevant signage, providing bypasses and worksite access roads to avoid congestion, and deploying flagmen as required. Undertake a road safety assessment for each phase of the subproject and monitor incidents

[1] https://documents1.worldbank.org/curated/en/290471530216994899/ESF-Guidance-Note-4-Community-Health-and-Safety-English.pdf

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and accidents and prepare regular reports of such monitoring. Use these reports to identify negative safety issues and establish and implement measures to resolve them.

Security and Human Rights:

Design and implement security arrangements that are proportional to the nature and significance of identified security risks and the subproject's operating environment to align with ESS4 and comply with national law. .

Community Engagement:

Community Engagement Plan was prepared for GRAIL Project to ensure meaningful participation of local communities at all stages of the Project implementation. Communities within the impact area of the NIS subproject will be contacted and communication channels will be established for their recurrent participation in subproject-level decisions at the early stage of subproject implementation. Also, A Project-level grievance redress mechanism (GRM) will be made available to subproject workers, local communities, and other stakeholders allowing them to provide feedback, ask questions, voice concerns, and seek their resolution.

ESS 5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement

Based on the current design, the subproject is not expected to require land acquisition, cause restrictions on land use, or result in physical or economic displacement. Therefore, no impacts are anticipated under ESS5, and preparation of a site-specific resettlement instrument is not considered necessary.

In the event of the NIS subproject implementation necessitating land acquisition, physical relocation of residents, or other forms of involuntary resettlement the issues will be addressed in compliance with WB ESS5 and the national legislation of Georgia. Resettlement Action Plans (RAPs) will be prepared according to the Resettlement Policy Framework (RPF) of the GRAIL Project. RAPs will be developed in a participatory manner, disclosed, and discussed with project-affected people

In the event of accidental damage to private property such as fences, gates, trees, or similar items that may occur during works near the settlements, the affected assets will either be replaced or compensated.

ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

ESS 6 intends to protect and conserve biodiversity, promote sustainable management of living natural resources, and enhance ecosystem services. Environmental and social screening of the NIS subproject was undertaken using Checklist included in the GRAIL Project ESMF to identify potential biodiversity impacts, such as effects on critical and natural habitats, protected areas, and endangered species. Identified risks are specified and mitigation and monitoring measures prescribed in the site-specific ESMP to ensure:

- Avoiding critical habitats or areas of high conservation interest.
- Minimizing disturbance of wildlife and the provision of ecosystem services.
- Engaging local communities reliant on natural resources.
- Monitoring biodiversity impacts during construction and operation.

ESS 8: Cultural Heritage

There are no known movable/immovable cultural/historical and archaeological assets in the NIS area; however, Chance Find Procedure is included in this ESMP and will be applied in case of unexpected archeological discovery in line with ESS8.

ESS 10: Stakeholder Engagement and Information Disclosure

Timely and permanent communication with the local population, small and medium agribusiness enterprises, and farms as well as all other interested parties will be essential to ensure smooth collaboration between subproject staff and local communities, minimize and mitigate environmental and social risks related to the subproject, and expand project benefits to all targeted beneficiaries including ones that may be traditionally vulnerable, disadvantaged, disproportionately affected by the project activities.

Stakeholder engagement for the NIS subproject will include the establishment, maintenance, and operation of a Grievance Redress Mechanism (GRM). The GRM will constitute a formal process for the receipt, registration, review, and resolution of complaints and grievances in a timely, effective, and efficient manner. It will apply to grievances arising in connection with the activities of MEPA/PIU, the Contractor, and/or subcontractor(s), and will be accessible to the subproject-affected communities and other external stakeholders.

2.2. Environmental and Social Laws and Regulations of Georgia and International Agreements relevant to the Subproject

All activities supported by GRAIL Project must be compliant with the national legislation of Georgia, international agreements that Georgia is a party to, and ESSs of the World Bank relevant for the Project.

The following laws and international conventions are relevant to the rehabilitation and operation of NIS.

2.2.1. National Legislation

Law on Licenses and Permits (reg. #300.310.000.05.001.001.914; 24.06.2005, last amended 01.04.2026)

This law defines activities which may result in an increased hazard to human life or health, involve interests of importance to the State or public, or imply consumption of State resources. The Law sets forth a full list of such activities and subjects them to obtaining licenses and permits, and sets out the rules for granting, amending, and abolishing licenses and permits.

Based on national legislation, rehabilitation, reconstruction, and demolition works related to the existing irrigation system do not require an Environmental Decision. Since the planned works on NIS envisage rehabilitation and reconstruction of the existing irrigation infrastructure and associated hydraulic structures, no environmental permit is required for the subproject itself.

Works on NIS are unlikely to require installation of a cement or crushing plant, as the subproject activities mainly involve rehabilitation of the existing headworks, main canal, and hydraulic structures, including removal of sediment and vegetation, canal repair, and replacement or reconstruction of damaged structures. Concrete and/or other construction materials will be supplied from local producers and the Contractor will not be requires to obtain

license for material extraction. However, the Contractor is obligated to purchase natural construction materials exclusively from suppliers holding valid extraction licenses. If the Contractor needs to use municipal water networks, consent and agreement has to be obtained from the local subdivision of the Georgian Amelioration LLC or a local municipality. The decision on selecting the water supply sources shall be made by the Contractor before selecting the camp location (if necessary). If drilling of the new borehole is required, the Contractor shall obtain a license from the National Agency of Mineral Resources under MEPA.

Law of Georgia on Environmental Protection (reg. #360.000.000.05.001.000.184; 10.12.1996, last amended 28.04.2026)

The law establishes the main principles of environmental protection. It aims to ensure natural environment in the condition that is safe for human health; protect environment from harmful impacts; retain qualitative parameters of environment; harmonize ecologic, economic, and social interests of public; sustainably manage the use of natural resources; and ensure effective operation of integrated system for regulating genetically modified organisms.

Since NIS rehabilitation involves the installation of a pipeline along the existing canal route for irrigation purposes, they are not expected to result in significant environmental risks or impacts. The environmental risks associated with the construction of the water intake structure are classified as moderate, taking into account the type, location, sensitivity, and scale of the project. Any potential environmental risks or impacts would be limited to the project area and would not affect surrounding areas, nor would they be irreversible.

Furthermore, NIS rehabilitation works will be implemented in the general frames of sustainability, risk reduction, environmental impact assessment, mitigation hierarchy, availability of information, and public participation in decision-making.

Law on Environmental Assessment Code of Georgia (Reg. #360160000.05.001.018492; 01/06/2017, last amended 28.04.2026)

This code is the fundamental environmental law that regulates procedures for conducting environmental impact assessment (EIA) and issuing environmental decisions (permits) for the activities defined by this law. The code rules in procedures of environmental screening, scoping, impact assessment, stakeholder consultation, and permitting; identifies parties involved in the EIA procedure and defines their roles. The code carries two annexes with lists of specific activities. Activities included in Annex I are subject to EIA and environmental permitting without consideration. Activities appearing in Annex II shall undergo screening to inform the decision on a need for EIA. Activities not included in any of the annexes do not require environmental due diligence. Project proponent produces a screening report for Annex II activities, as well as scoping report and EIA report for activities that require EIA. The designated national authority discloses these reports, solicits stakeholder 11 feedback, and takes decisions on the report approval. EIA report approval translates into a positive decision, which represents an environmental permit to undertake the project under consideration. The decision carries conditions to be met by the project proponent and enforced by the national authority. Law on Environmental Assessment Code covers environmental instruments other than EIA, such as environmental audit, transboundary environmental assessment, and strategic environmental assessment. It does not provide for the development and use of environmental and social framework documents, environmental and social reviews, or self-standing environmental and social management plans.

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The rehabilitation of NIS is not subject to EIA. However, suppliers of natural construction materials may need to hold environmental decisions issued against EIA and they need to be checked for compliance. It is also possible that subproject activities other than rehabilitation works, such as the installation of a campsite, may fall under Annex II of the Code. In this case, a screening procedure and agreement with MEPA will be required.

Law on the Waste Management Code (reg. #360160000.05.001.017608; 26.12.2014, last amended 29.04.2026)

This code establishes the legal framework for the management of various types of waste streams. It establishes a hierarchy of waste management going from prevention all the way down to final disposal. The code introduces principles of circular economy, promoting waste reuse and recycling.

Paper and plastic waste generated at the campsites will be collected separately and removed by a sub-contractor selected by the Contractor and approved by the supervisor. Domestic waste generated from the campsites (if any) will be collected in special containers provided by the municipality and disposed of through municipal services. The majority of excavated material from the canal will be used for backfilling during reconstruction of hydraulic and other structures of the scheme, as well as for site reinstatement, where appropriate. Excess construction waste (if any) will be disposed of at sites designated by the Solid Waste Management Company of Georgia and/or the local municipality, in accordance with the Waste Management Code of Georgia. Since landfills for hazardous waste are absent in the country, such waste shall be handed over to specialized companies for deactivation, recovery, and/or long-term storage.

Law on Water (reg. #400.000.000.05.001.000.253; 26.10.1997, last amended 07.2023)

This law regulates water resources in Georgia, including the use and protection of surface and underground water. It aims to ensure application of the unified State policy to water protection and use; rationale use of water resources for the benefit of present and future generations; provision of clean potable water to the population of the country; conservation and sustainable use of aquatic fauna; protection of the national interests in the field of water protection, use, and international trade; regulation of industrial production of water products; and regulate rights and obligations of physical and legal bodies in water protection and use.

The rehabilitation of NIS contributes significantly to the protection and sustainable management of water resources. By improving the irrigation infrastructure, the project will enhance the efficiency of water delivery and reduce water losses within the system. These outcomes support the rational use and protection of water for present and future generations, aligning with national policy priorities for environmental sustainability and water resource management.

Law on Water Resources Management (reg. #400000000.05.001.021003; adopted 30.06.2023, last amended 26.06.2025)

This law aims to establish a modern, integrated legal foundation for water-resources management in Georgia, ensuring implementation of state policy on water protection and use. It seeks to promote sustainable use of surface and groundwater, halt further deterioration of water quality, restore and improve aquatic ecosystems (including terrestrial and wetland

systems dependent on water), enable equitable use of water resources for current and future generations, introduce economic instruments (such as abstraction and discharge fees), adopt a river-basin management approach, and safeguard the legal rights and interests of individuals and legal entities in the field of water use and protection.

Georgia is transitioning from the Law of Georgia on Water (1997) to the Law of Georgia on Water Resources Management (2023)**.** The 1997 law remains in force until September 1, 2026**,** when most provisions of the 2023 law come to force. Accordingly, NIS works implemented before 1 September 2026 will be governed by the 1997 law and its current by-laws. Should any NIS activities extend beyond September 1, 2026, they will comply with the 2023 law and its by-laws, including requirements associated with river-basin management, permits for water abstraction and wastewater discharge, and enhanced monitoring and reporting.

Law on Soil Protection (reg. #370.010.000.05.001.000.080; 12.05.1994, last amended 11. 2021)

This law aims at the preservation of soil integrity and improvement of its fertility; establishment of rights and obligation of land owners, land users, and the State in soil protection and 12 provision of enabling environment for environmentally friendly farming; prevention of unintended negative impacts of the application of fertilizers; preservation of fertile layer of soil in subalpine and alpine zones of Georgia's mountainous terrain; and coordination of melioration activities for ensuring stable and high yields from farmed crops.

The rehabilitation of NIS is relevant to the objectives of this law, as it is intended to restore reliable irrigation service, reduce seepage losses from the deteriorated canal, and improve controlled delivery of water to agricultural lands within the command area. Rehabilitation of the main canal, intake structures, and associated hydraulic components will help reduce localized waterlogging caused by leakage from damaged canal sections, improve water conveyance efficiency, and support sustainable agricultural land use and soil productivity.

During earth works, topsoil must be stripped and stored separately and used for site reinstatement after backfilling. The same rule will apply to earth works undertaken in the course of extraction of natural construction materials. In addition, the Law will require the Project to manage risks of soil contamination from fuel, lubricants, and other hazardous substances.

Law on Soil Conservation and Fertility Recovery-Improvement (reg. #370.010.000.05.001.001.274; 08/05/2003 last amended 30.06.2023)

This law is based on the Constitution of Georgia, laws on Water, Pesticides and Agrochemicals, Soil Protection, System of Protected Areas and others, international treaties and agreements of Georgia and other normative acts. The law regulates the establishment of and compliance with maximum permissible levels of harmful substances, pesticides and agrochemicals in the soil. The law provides measures and remedies for soil conservation, and reinstatement and improvement of its fertility.

Law on Protection of Atmospheric Air. (reg. #420.000.000.05.001.000.595; 22.06.1999, last amended 02.07.2025)

This law is intended to provide, retain, and improve air quality that is needed to ensure human health and wellbeing; regulate emissions; support public disclosure of information on the

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quality of atmospheric air; and facilitate gradual adoption of EU standards of air quality in Georgia.

Construction works will cause noise and emissions. Although this impact will be limited in time and scale, the noise and emissions' levels must be kept to the minimum by application of mitigation measures.

Law on the Forest Code of Georgia (reg. #390000000.05.001.019838; 22.05.2020 last amended 25.11.2025)

This code regulates legal relations related to forest management. The purpose of this code is to conserve the biodiversity of the forest of Georgia, and, in order for the environmental, social and economic functions of forest to be performed, preserve and improve its qualitative properties, and the quantitative and qualitative characteristics of forest resources; preserve the original natural and cultural environment of forest, including the vegetation cover and animal world, and natural and cultural property located in forest, and rare and endangered plant species and other assets for future generations and to ensure the harmonized regulation of their interrelation; ensure targeted and rational use of forest resources and other natural potential of forest; determine the main principles of sustainable forest management.

Forest Code is not expected to come into action, since the rehabilitation works on NIS are not going to be undertaken within the territory of the State Forest.

Law on the System of Protected Areas. (reg. #360.050.000.05.001.000.127; 07.03.1996, last amended 04.2022)

The law serves conservation and sustainable use of Georgia's unique biodiversity. It establishes categories of protected areas and defines activities that are permissible within the boundaries of each of them.

Works on NIS are not expected to affect protected areas.

Law on the Red List and Red Book of Georgia (reg. #360.060.000.05.001.001.297; 06.06.2003, last amended 02.07.2025)

The law establishes the rules for compiling and maintaining the Red List and Red Book of Georgia, which identify endangered species of wild animals and plants found in Georgia. This law prohibits causing significant impact on listed species and their habitats and poses restrictions on the extraction of specimen of the protected species from the natural environment.

To ensure compliance, during the implementation the project will conduct detailed ecological surveys to identify any species listed in the Red List of Georgia (if any) within the project area. Any identified species will be monitored and, where necessary, mitigation measures will be implemented to protect these species. These measures may include translocation, establishing buffer zones, and scheduling activities to avoid sensitive periods for protected species.

Where the removal of tree species (if any) listed in the Red List of Georgia cannot be avoided, all required permits, approvals, and procedures will be obtained and implemented in accordance with the Law on the Red List and Red Book of Georgia including, species delisting procedures and the issuance of the relevant Government Decree authorizing such removal.

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Law on Compensation for Damage caused by Hazardous Substances (23/07/1999 amended 26.06.2025 and renamed as Law on Environmental Liability, reg #. 360150000.05.001.020241)

The purpose of this law is to provide compensation for damage to human life and health, the environment, objects of historical and cultural importance, property and economic interests resulting from the exposure to hazardous substances. The law specifies how charges for the use and / or harmful effects on the environment are to be calculated and levied by the National Environmental Agency under MEPA.

Subproject implementation may require supply of hazardous substances (oil products, diesel etc.) and in case of an emergency event, provision of this law will come to force.

Law on the Rules of Property Expropriation for Imminent Public Needs. (reg. #020.060.040.05.001.000.670; 23.07.1999, last amended 06.2023)

This law grants the government the power to seize any property from registered owners by means of expropriation for projects of imminent public necessity. The decision is made only through a Regional Court that must be preceded by the Decree of Minister of Economy and Sustainable Development, justifying the imminent nature of public necessity. The expropriator has to make every reasonable effort to acquire property by negotiation and is required to value the property at fair market value (at its own expense) before negotiations.

Rehabilitation of NIS is not expected to require expropriation of private property.

Law on the Labor Code (reg. # 270000000.04.001.016012; 17.12.2010, last amended 04.2025)

This code regulates labor and human resource management in Georgia. The code regulates labor relationships between workers and employees working in Georgia in enterprises, institutions, and organizations, regardless of their ownership or organizational form. It supports the realization of human rights and freedoms through fair reimbursement and the creation of safe and healthy working conditions. The code sets provisions for employment guarantees, working time, health and safety conditions and so forth. The Labor Code defines the minimum age of the employees as 14 years. Employees under 18 years of age are not allowed to undertake certain jobs, as defined in the Code, and there are limits on working hours for workers between 14 and 18.

Law on Occupational Safety (reg. #270000000.04.001.017910; 19.02.2019, last amended 06.2025)

This law defines basic requirements and general principles of occupational safety for jobs that are dangerous, hard, harmful, and/or hazardous. The law imposes a general obligation on employers to provide employees with a safe and healthy working environment and to inform workers of the potential risks their jobs may present to their health and safety. Measures that must be taken include but are not limited to training and information campaigns as well as adoption of relevant preventive measures. The law includes requirements for organizing and managing health and safety programs, providing emergency care and services, and responding to accidents. Other requirements include controlling access to hazardous workplaces, providing personal protective equipment at no charge to workers, and medical examinations.

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The Contractor will be required to provide workers with a safe and healthy working environment, conduct regular safety training and toolbox talks, supply appropriate personal protective equipment (PPE) free of charge, control access to hazardous areas, and establish emergency preparedness and accident response procedures. Occupational health and safety performance will be regularly monitored throughout the construction phase by the Contractor, the Engineer, and the Employer.

The requirements of this Law will be applied at both the rehabilitation and operation phases.

Law on Public Health (# 470.000.000.05.001.002.920 27/06/2027 amended 9. 12.2025)

The purpose of this law is to provide a safe environment for human health. The law provides the rights and obligations of the population and legal entities for the protection of public health. According to the Georgia Law on Public Health, the environmental qualitative norms are approved, which is required to be performed during the project implementation process.

The requirements of the law will be applied at both the rehabilitation and operation phases. The Contractor will be required to have safety kits on site and trained personnel in case of emergency. If any emergency occurs, the Contactor has to contact national emergency services 112, which will direct with the local Mtskheta-Mtianeti regional service provider

Law on Cultural Heritage (reg. #450.030.000.05.001.002.815; 08.05.2007, last amended 12. 2024)

This law provides for the protection of the national cultural assets in the territory of Georgia and beyond. It regulates legal aspects of cultural heritage preservation and use; sets forth principles of classification and registry of cultural heritage; spells our rules of assigning and abolishing the status of cultural heritage; and formulates frames for physical protection of cultural heritage. The Law covers management of chance finds and rules in procedures for authorizing large-scale excavation works by the Ministry of Culture based on the likelihood of archaeological finds in the allocated area to be established through the preliminary study.

No visible historical or cultural heritage sites have been identified within the NIS area. However, encountering of archaeological sites during the works is not excluded. According to the law, it will be necessary to stop work immediately and inform the relevant state authorities.

Technical Regulations

Technical Regulation No. 414 on the calculation of maximum permissible discharge (MPD) norms for pollutants discharged into surface water bodies with wastewater

Resolution No. 440 - Technical Regulation on the Water Protection Zones

Technical Regulations for Calculating Maximum Permissible Limit Values of Emission (MPV) of Harmful Substances into the Ambient Air

Resolution of the Government of Georgia No. on Approval of Technical Regulations for Inventory of Stationary Sources of Atmospheric Air Pollution

Governmental Decree No 370 – Technical Regulation on Acoustic noise limits for rooms/premises in residential houses and public establishments

Resolution No. 424 of 2013 of Georgian Government on Removing Fertile Layer of Soil, Storing, Using and Re-cultivating

Government Decree No. 361 – Technical Regulations on Construction Safety This decree establishes safety norms and procedures for construction activities. It specifies requirements for safe working conditions on construction sites.

Government Decree No. 477 – Technical Regulations on Working at Heights. This decree defines specific safety requirements for working at heights, including fall protection measures. Employers must implement risk assessments and preventive measures to protect workers from falling.

2.2.2. INTERNATIONAL AGREEMENTS AND TREATIES

Table 1. International Agreements and Treaties

Date	Title	Status in Georgia	Date
Natural Environment			
1971	Ramsar Convention on Wetlands of International Importance Especially as Wildfowl Habitat	In force	1997
1973	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	In force	1996
1983	Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) (CMS)	In force	2000
1992	Rio Convention on Biological Diversity	In force	1994
2000	Cartagena Protocol on Biosafety to the Convention on Biological Diversity	In force	2009
2010	European Landscape Convention	In force	2011
Environmental Pollution, Waste			
1997	Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management	In force	2009
1998	Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade	In force	2007
1989	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	In force	1995
2001	Stockholm Convention on Persistent Organic Pollutants	In force	2007
Climate			
1994	UN Framework Convention on Climate Change (UNFCCC)	In force	1994
1997	Kyoto Protocol to UNFCCC	In force	2005
Cultural Heritage			
1954	European Cultural Convention	In force	1997
1982	European Convention on the Protection of the Archaeological Heritage	In force	2000
1985	Convention for the Protection of the Architectural Heritage of Europe	In force	2000
2005	Council of Europe Framework Convention on the Value of Cultural Heritage for Society (Faro convention)	In force	2011

Date	Title	Status in Georgia	Date
Public Participation and Information Accessibility			
1998	Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters	Ratified	2004
Labor Issues			
1930	Forced Labor Convention	In force	1993
1948	Right to Organize and Collective Bargaining Convention	In force	1993
1950	European Convention for the Protection of Human Rights and Fundamental Freedoms	In force	1999
1958	Discrimination (Employment and Occupation) Convention	In force	1993
1962	ILO Social Policy (Basic Aims and Standards) Convention	In force	1997
1964	Employment Policy Convention (Geneva)	In force	1993
1973	Geneva Convention concerning Minimum Age for Admission to Employment	In force	1996

3. BASELINE INFORMATION

3.1 PHYSICAL-GEOGRAPHICAL CONDITIONS OF THE AREA

Narekvavi Irrigation Scheme is located in Dusheti Municipality, within the Mtskheta–Mtianeti Region of eastern Georgia, approximately 60–70 km north of Tbilisi. The scheme is situated within the Mukhrani Valley and is supplied from the Narekvavi Reservoir located in Gremiskhevi Village at an elevation of about 889 m above sea level on the Narekvavi River. The command area lies within an agricultural landscape characterized by gently sloping terrain, basalt plateaus, and fertile soils suitable for irrigated farming.

The Mtskheta–Mtianeti Region is known for its diverse natural landscapes and agricultural potential. The northern part of the region is dominated by the Greater Caucasus Mountains, including prominent peaks such as Mount Kazbek, while the southern areas transition into lower-elevation plains, including the Mukhrani Valley. These plains provide favorable climatic and terrain conditions for agriculture, with relatively gentle slopes and productive soils.

Within Dusheti Municipality, a key agricultural zone is the basalt plateau located between the Aragvi and Narekvavi rivers, with elevations ranging from approximately 875 to 950 meters above sea level. The area is further shaped by smaller tributaries, including Sakramuloskhevi, Khanatkhevi, and Tinashkevi, forming a landscape that supports rural settlements and cultivated land. The Narekvavi Reservoir and its associated irrigation command area are situated within this setting, where accessible terrain and suitable agro-climatic conditions provide strong potential for irrigated agricultural development.

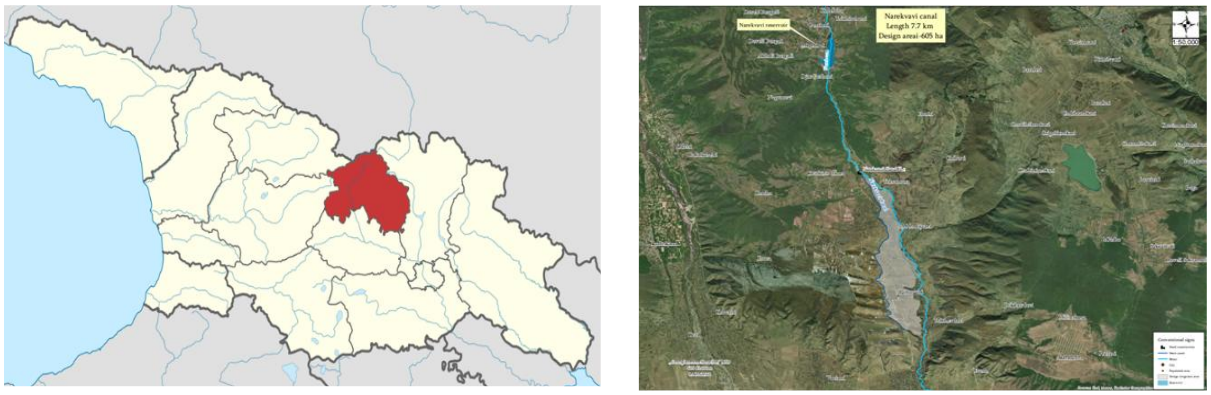

Figure 1. Location of Narekvavi Irrigation Scheme

The Narekvavi Reservoir serves as the primary water source for the Narekvavi Irrigation Scheme. Over time, sediment accumulation in the reservoir has reduced its active storage capacity and impaired water intake performance, thereby adversely affecting irrigation delivery and overall system functionality.

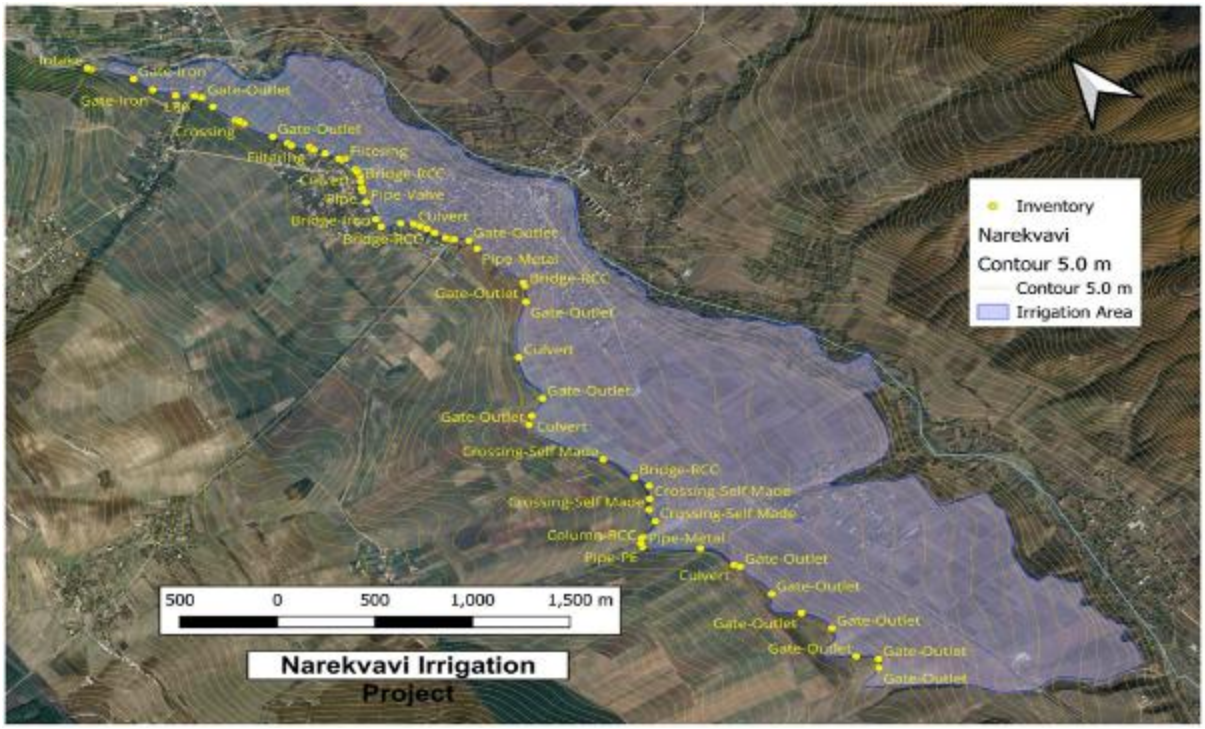

Figure 2. Narekvavi Irrigation Scheme Canal and Command Area.

The average annual rainfall in the project area is approximately 857 mm, however, precipitation is unevenly distributed throughout the year, with a marked seasonal concentration during spring and early summer. In recent years, the region has experienced increasing climate variability, characterized by more frequent drought periods and occasional episodes of intense rainfall. Rising temperatures and shifting precipitation patterns have further increased crop water demand and evapotranspiration rates. Under these changing climatic conditions, irrigation plays a critical role in stabilizing agricultural production and ensuring crop reliability during dry spells, as rainfed agriculture alone is insufficient to sustain consistent and economically viable yields within the command area.

NIS is supplied by the Narekvavi Reservoir, which serves as the primary regulated water source for downstream irrigation. The system was originally designed to convey a discharge of 1.0 m^3/s; however, current field observations indicate that the available flow is approximately 0.5 m^3/s. Over time, significant deposition of sediment has occurred within the reservoir, with more than 1.2 million cubic meters of sediment accumulated, substantially reducing its effective storage capacity. In addition, the river water exhibits noticeable turbidity, particularly during higher flow periods. The combined effects of reduced reservoir storage, sedimentation at the intake, and progressive structural deterioration of hydraulic components have significantly lowered the reliability and efficiency of irrigation water delivery to the command area. The main irrigation canal is 7,636 km long. There are no secondary canals, and the water is supplied through 23 outlets.

The vegetation within the NIS area consists primarily of riparian shrubs, grasses, and seasonal weeds along the riverbanks and reservoir margins. Surrounding upland areas are characterized by mixed alpine forest composed of both coniferous and deciduous tree species. Within the irrigation command area, agricultural land is the dominant land use, and natural vegetation has largely been replaced by cultivated fields. Vegetation observed along the canal

right-of-way mainly reflects secondary growth due to prolonged sediment accumulation and limited maintenance.

The aquatic environment of the Narekvavi River supports several common freshwater fish species, including Cyprinus carpio (Common carp), Squalius cephalus (European chub), and Barbus barbus (Common Barbel). These species are typical of moderate-flow river systems in the region. No protected or endangered species were identified during the site inspection, and the project area does not fall within any designated critical habitat or protected area.

Agriculture within the command area follows a mixed cropping pattern that includes wheat, maize, apple orchards, berries, tomatoes, vegetables, and fodder crops. While agriculture is economically significant for local livelihoods, improper disposal of pesticide containers was observed within sections of the canal. This practice presents localized risks to water quality and aquatic ecosystems and indicates the need for improved agrochemical management and farmer awareness as part of the overall irrigation system rehabilitation and operational strengthening.

The physical and geographical characteristics of the area, including accessible terrain, productive soils, and the availability of reservoir-fed irrigation water, create favorable conditions for irrigated agricultural development within the command area.

3.2. Existing Irrigation System and Structures

The Narekvavi Irrigation Scheme comprises a water diversion headworks located near Kvemo Shukhevi village, a 7.636 km long main canal, 23 turnout/outlet structures, an aqueduct, a siphon, pipe culverts, footbridges, and associated measuring and control elements along the canal alignment. The scheme is supplied water from the Narekvavi Reservoir and operates as a gravity-fed irrigation system serving agricultural lands within the command area.

The water diversion headworks are located at coordinates X: 465411.0 and Y: 4653813.0. The diversion structure across the river and the associated protection works appear generally stable, although exposed concrete surfaces show signs of aging and erosion. The side retaining wall leading to the intake regulator is in good condition, while the intake sluice and head regulator concrete structures remain structurally sound, but the steel gates are damaged and do not function properly.

The main canal follows a contour alignment and supplies irrigation water to the command area located on the left side of the canal. The head reach section of approximately 2.8 km is lined with precast concrete panels, while the downstream reach is lined with cast in-situ concrete. Some sections at the tail end remain unlined. Water is conveyed directly from the main canal to fields or irrigation blocks through 23 direct offtakes located along the left bank, as no secondary canal system exists within the scheme.

The gross command area of the scheme is 605 ha, while the net cultivated command area is 479 ha. The original design discharge of the scheme was 1.0 m^3/s; however, the flow observed during site assessment was approximately 0.5 m^3/s. Water released from the reservoir is monitored by an installed meter, while a measuring staff was also observed on the main canal. Canal discharge varies depending on irrigation demand and the seasonal cropping pattern.

3.3 Existing Components of Irrigation Scheme

Narekvavi Irrigation Scheme serves a gross command area of 605 ha, with a net cultivated command area of 479 ha. The scheme is a gravity-fed irrigation system supplied from the

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Narekvavi Reservoir and comprises a water diversion headworks, a 7.636 km long main canal, 23 turnout/outlet structures, an aqueduct, a siphon, pipe culverts, footbridges, and associated flow measurement and control elements along the canal alignment. The main canal irrigates the command area located on the left side of the canal, while no secondary canal system exists within the scheme.

The headworks are located near Kvemo Shukhevi village and include the diversion structure, intake regulator, sluice arrangements, retaining walls, and associated protection works. The head reach section of approximately 2.8 km is lined with precast concrete panels, while the downstream reach is lined with cast in-situ concrete, and some sections at the tail end remain unlined. Water is conveyed directly from the main canal to fields or irrigation blocks through 23 direct turnout/outlet structures located along the left bank.

Table 2. Main Characteristics of Narekvavi Irrigation Scheme

Parameter	Gross Command Are	Net Cultivated Command Area	Main Canal Length	Turnout/Outlet Structure	Original Design Discharge	Observed Discharge (m^3/s)
Value	605 ha	479 ha	7.636 km	23	1.0 m^3/s	approx. 0.5

Based on the condition assessment of the existing NIS, the principal irrigation structures requiring repair or replacement are summarized in Table 3, while the main linear rehabilitation works are presented in Table 4.

Table 3. Summary of Existing Irrigation Structure Condition

No	Structure	Intact	Repair	Replace	Total
1	Headwork/Intake		1		1
2	Pipe Culverts		7	4	11
3	Box Culvert			1	1
4	Footbridge	17		14	31
5	Turnout			23	23
6	Aqueduct			1	1
7	Siphon			1	1
			Total Structures		69 Nos

Table 4. Linear Rehabilitation Works of the Narekvavi Irrigation Scheme

No.	Item	Required Intervention	Length (km)
1	Canal lining works	Rehabilitation / replacement of deteriorated lining sections	6.70
2	Tail end canal in pipe	Improvement / placement in pipe	0.92

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The condition assessment indicates that several key hydraulic and access-related components of the scheme are in deteriorated condition. While some footbridges remain intact, most turnout/outlet structures, the aqueduct, siphon, and box culvert require replacement, while the headwork's and several pipe culverts require repair. In addition to the rehabilitation of discrete structures, improvement of canal lining and the tail-end canal section is also required to restore conveyance efficiency and improve the overall operational reliability of the irrigation system.

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4. PROJECT DESCRIPTION

The proposed subproject under the GRAIL Project involves rehabilitation and modernization of the existing Narekvavi Irrigation Scheme in Dusheti Municipality, Mtskheta–Mtianeti Region. The objective of the subproject is to restore the functionality of the irrigation system, improve conveyance efficiency, strengthen operational control, and ensure reliable delivery of irrigation water to the agricultural command area. The rehabilitation works are confined to the existing scheme footprint and are intended to restore the existing irrigation function rather than expand the command area.

4.1 DESIGN OF IRRIGATION CANAL

The scope of the detailed design for the Narekvavi Irrigation Scheme rehabilitation includes the full restoration of irrigation functionality from the head works to the tail-end of the command area. Based on observed deficiencies in the reservoir intake, main canal, and hydraulic structures, the following components are included in the design works:

Replacement of the intake regulator and sluice gate to restore operational control at the headworks.

Provision of a new flow-measurement structure and instrumentation to ensure accurate discharge monitoring and operational record-keeping.

- Rehabilitation of the main canal by lining with 100 mm reinforced mesh concrete, including removal of sediment and vegetation.
- Design and replacement of the damaged Aqueduct system with a new structure and upstream box culvert.
- Replacement of the damaged siphon system with a new structure designed for reliable long-term operation.
- Improvement of the unlined canal sections at the tail reach to ensure stability and minimize conveyance losses.
- Reconstruction or replacement of all 23 damaged left-bank outlets.
- Water Users' Association (WUA) and institutional capacity building for better water management.
- Preparation of updated operation and maintenance guidelines to support sustainable scheme functioning by GA and water users.

4.2. DESIGN OF HEADWORK'S AND INTAKE STRUCTURE

The Narekvavi Reservoir, located at an elevation of approximately 889 m above sea level, serves as the primary water source for the scheme. The proposed headworks rehabilitation is intended to restore structural integrity, operational control, and safe functioning of the intake system, without altering the original hydraulic regime of the scheme.

The intake head regulator gate, measuring approximately 1.23 m × 1.0 m, is defunct and will be replaced to restore reliable intake control. The under-sluice structure, including the existing 2.0 m × 2.2 m gate, also requires rehabilitation due to structural deterioration and inadequate functionality. Rehabilitation measures include replacement of damaged gate elements, repair of deteriorated concrete components, and restoration of associated structural features required for proper intake regulation and sediment management.

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Major rehabilitation works are also planned for the downstream basin and scour protection elements of the headwork's. These works include rectification of the damaged basin floor, reconstruction of collapsed or deteriorated cutoff elements, and stabilization of areas affected by scour and erosion, particularly on the left bank. These measures are necessary to prevent further structural degradation and to restore long-term hydraulic stability of the headworks.

Photo 1: Existing scour and structural deterioration at the downstream side of the Narekvavi headworks.

4.3. NEAREST SOURCES OF LICENSED MATERIALS

The nearest sources of licensed materials sand, gravel, and water, are located within the riverbeds of the Aragvi and Ksani rivers. The estimated transportation distance to the project site ranges from 7 to 15 kilometers.

Table 5. Information on Licensed Quarries of Natural Construction Material

No.	License No.	Name	Owner	Obt./Exp. Date	Area(m^2)
1	00040	Sand Gravel Extraction from Aragvi River, Vil Chartali	Daviti LLC	From 06.02.07 To 06.02.27	70,100
2	1002202	Sand Gravel Extraction from Aragvi River, near Vil Ananuri	Gravi LLC	From 07.08.06 To 07.09.26	60,540
3	10002384	Sand Gravel Extraction from Ksani River, near Vil Muxrani	Bena LLC	From 27.09.21 To 28.09.26	22,310
4	N490	Sand Gravel Extraction from Ksani River, near Vil Muxrani	BG Brothers LLC	From 08.05.27 To 15.07.27	10,010

Concrete required for the rehabilitation works may be supplied from batching plants located in or near the Narekvavi area, including Mukhrani Village. Licensed sources of sand and gravel are also available in the surrounding area.

The Contractor can use one or more concrete plants during the construction.

The water to be used in construction works will be supplied from the Narekvavi River and/or boreholes. But drinking as well as technical water can be delivered to the campsites by tanks from the following boreholes or from the municipal water network (Table 6).

Table 6. Information on Licensed Municipal Water Network

No.	License No.	Name	Owner	Obt./Exp. Date	Area(ha)
1	1005062	Groundwater/freshwater Extraction (Entrepreneurial Purpose) nearby Vil. Mukhrani	Sinensis LLC	From 22.11.2017 To 02.06.2026	0.07
2	10000057	Groundwater/freshwater Extraction (Entrepreneurial Purpose) nearby Vil. Natakhtari	Kale 2007 LLC	From 12.07.2018 To 13.07.2043	0.07

5. PUBLIC CONSULTATION

NIS rehabilitation design was prepared in a participatory manner and included extensive engagement of the design team with local communities.

Present ESMP is disclosed through MEPA's webpage in Georgian and English language versions and stakeholder consultation meeting was held to discuss it. The meeting was advertised through communication channels accessible to all interested parties and the meeting venue was selected so that it is easily accessible and convenient for subproject-affected people. The Meeting was hosted by the representatives of MEPA and Georgian Amelioration LLC and moderated by representatives of the PIU. Meetings informed local communities on the scope and nature of the upcoming works, expected positive and negative environmental and social impacts at the construction and operation phases, and GRM to be made available for their use during construction works. Meeting participants were given a floor for questions and comments.

Minutes of the consultation meeting is developed including record of presentations, comments, questions and answers; photo documentation; and scanned copies of participants' sign-up lists. ESMP finalized based on public feedback and minutes of consultation is attached to the final version of ESMP (see annex E).

All personal data collected, processed, stored, or disclosed under the Project are handled in strict compliance with the World Bank's applicable environmental and social requirements, including provisions on stakeholder privacy, protection of personal information, and grievance management, as well as the applicable national legislation on personal data protection and confidentiality.

6. GRIEVANCE REDRESS MECHANISM

The Grievance Redress Mechanism (GRM) has been established and is operational under the GRAIL Project to ensure that grievances and concerns raised by affected communities and other external stakeholders are addressed in an efficient, timely, transparent, and cost-effective manner. The mechanism covers grievances arising from project-related activities undertaken by the Ministry of Environmental Protection and Agriculture (MEPA), as well as by contractors and subcontractors engaged under the Project.

A project-level GRM is established during the design stage of the NIS subproject to address project-related concerns and will remain operational throughout the implementation of civil works and the defect liability period. During initial stakeholder engagement and consultation meetings, local communities were informed about the available channels for submitting grievances, inquiries, or suggestions throughout both the design and implementation phases of the Project. Stakeholders were also provided with information on the grievance resolution process and procedures for handling and addressing submitted complaints (see Figure 3).

To ensure a transparent, credible, and well-documented process for the fair and effective resolution of grievances, GRM focal points were appointed at each level of Project implementation pyramid - from the Contractor all way up to the PIU. Grievance boxes were installed at municipal offices and GA service offices to facilitate the submission of complaints. In addition, GRM brochures have been distributed in languages easily accessible to the effected communities, providing information on grievance submission procedures and contact details of the designated GRM focal points. Relevant GRM information is also available on the PIU website.

Throughout the implementation of the Project, the Contractor's Social Specialist and the Supervision Engineer, in coordination with the PIU will maintain regular and constructive engagement with local communities to promote effective communication, strengthen trust, and foster cooperation among affected stakeholders and Project representatives. Continuous dialogue will support the timely identification and resolution of concerns arising during Project implementation.

PIU, in coordination with the Supervision Engineer, will be in charge to continue communication with population. Meetings will be conducted to raise their awareness of the Project and the existing Grievance Mechanism.

Throughout the implementation of the project, no written grievances had been communicated with PIU or other involved parties.

The Project GRM is intended for project-affected people, local communities, and external stakeholders, and addresses concerns related to project impacts, stakeholder engagement, access restrictions, environmental and social risks, and community-level complaints.

In contrast, the Workers' GRM is specifically designed for direct workers, contracted workers, and other project personnel, and provides a confidential and accessible channel for raising workplace-related concerns, including labor conditions, occupational health and safety, discrimination, harassment, non-payment, contract-related issues, and other employment matters. Therefore, the Workers' GRM is addressed separately under ESS2 - Labor and Working Conditions, while the Project GRM is covered under the ESS10 - stakeholder engagement and community grievance management provisions. This separation ensures that each mechanism is tailored to the needs, context, confidentiality requirements, and protection measures relevant to its users.

The Worker's GRM is available to both direct and contracted workers engaged under the NIS subproject, providing a formal channel through which workers may raise workplace-related concerns and complaints. Such grievances may include, but are not limited to, occupational health and safety issues, working conditions, labor rights concerns, and incidents related to SEA / SH.

The Contractor's Social Specialist will be responsible for providing information and training on the Worker Grievance Mechanism to all direct and contracted workers during induction and recruitment processes. To ensure accessibility, grievance boxes and informational materials will be placed at workers' camps, site offices, and other locations frequently accessed by workers. Information brochures will clearly explain the grievance submission process, applicable timelines, confidentiality provisions, and contact details of the designated grievance focal points.

For direct workers, the Worker Grievance Mechanism will be administered by the Human Resources Specialist of the PIU, who will be responsible for receiving, recording, processing, and resolving grievances in accordance with the procedures established in the LMP.

For contracted workers, grievance mechanisms will be established and maintained by their respective employers. Civil works contractors will be responsible for ensuring that all workers have access to the mechanism and are informed of their rights to submit grievances without fear of retaliation. The Supervision Consultant will monitor the contractors' grievance management systems, including the registration, investigation, and resolution of grievances, and will report on their performance through monthly progress reports submitted to the PIU.

Oversight of the Worker Grievance Mechanism will be provided by the designated Grievance Mechanism (GM) Focal Point within the Supervision Consultant's team, who will be responsible for monitoring the effectiveness and accessibility of the mechanism throughout project implementation. In the absence of a Supervision Consultant, the PIU Environmental and Social Specialist will assume responsibility for monitoring, reporting, and ensuring the continued availability and proper functioning of the Worker Grievance Mechanism.

Specifically, the GRM:

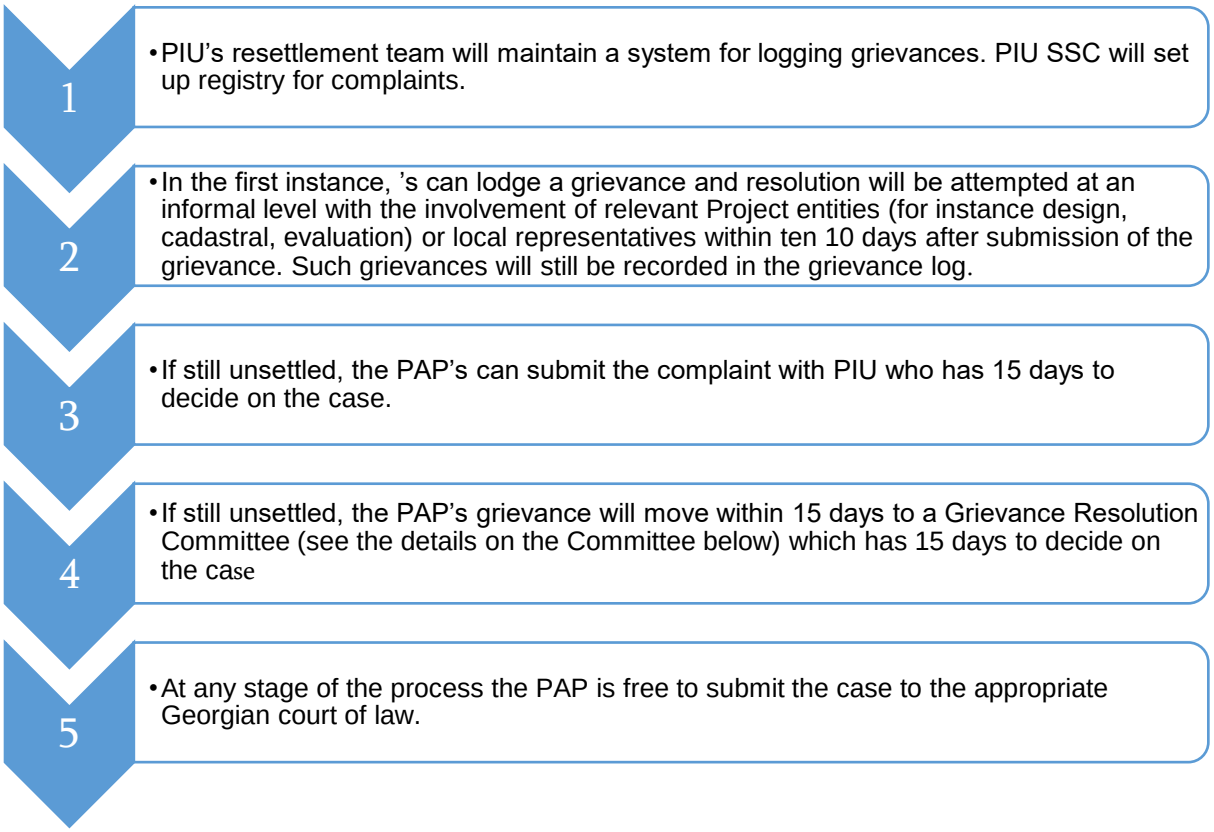
- Provides affected people with avenues for making a complaint or resolving any dispute that may arise during the course of the implementation of the projects;
- Ensures that appropriate and mutually acceptable redress actions are identified and implemented to the satisfaction of complainants;
- Supports accessibility and transparency in handling complaints and grievances;
- Manages time factor (avoids the need to resort to judicial proceedings (at least at first).

Typical grievances under sub-project might relate to:

- Land acquisition and physical displacement; (if occurred during Project implementation);
- Civil work damages;
- Environmental impacts; and
- Direct and/or indirect social - economic impacts.

The Grievance Redress Process in presented below Figure 3

Figure 3. Grievance Redress Process



Points of contact for grievance management and the local stakeholder engagement are appointed at every level of Project implementation. They are considered GM Focal Points.

Design Consultant - Nino Paatashvili, Key Social Expert

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The GRM addresses, in an efficient, timely and cost-effective manner, such grievances that may arise during conduct of work on Narekvavi irrigation scheme in regard to the actions undertaken either by PIU or contractors employed by PIU. GRM is for the use of the affected communities and external stakeholders. The detailed GRM process is described in Annex E of the present ESMP.

7. EXPECTED POSITIVE AND NEGATIVE IMPACTS AND APPROACH TO RISK MITIGATION

7.1 POSITIVE IMPACTS

The rehabilitation of the Narekvavi Irrigation Scheme is expected to generate significant positive environmental, social, and economic benefits. The subproject will improve the reliability and efficiency of irrigation water delivery, reduce water losses associated with the deteriorated canal infrastructure, and enhance agricultural productivity within the command area. Improved irrigation services are expected to contribute to increased crop yields, improved resilience of agricultural production to climate variability, and enhanced livelihoods of local farmers. The rehabilitation of existing infrastructure, rather than construction of a new irrigation system, will further minimize environmental disturbance while extending the operational life and functionality of the scheme.

7.2 NEGATIVE IMPACTS – PRE-CONSTRUCTION PHASE

No significant adverse environmental or social impacts are anticipated during the pre-construction phase. Potential impacts are limited to temporary disturbances associated with site preparation, mobilization of personnel and equipment, establishment of construction logistics, and communication with affected land users (if any). Any potential risks related to access restrictions, damage to private property, or unforeseen land-related impacts will be avoided through careful planning of construction activities and strict adherence to the approved project footprint.

7.3 NEGATIVE IMPACTS – CONSTRUCTION PHASE

The majority of adverse environmental and social impacts are expected during the construction phase and are anticipated to be temporary, localized, and reversible. Potential impacts include dust and noise generation, temporary deterioration of air quality, generation of construction waste, risks of soil and water contamination from fuels, oils, or construction materials, occupational health and safety risks to workers, community health and safety risks associated with construction activities and machinery operation, temporary disruption of access, and disturbance to nearby land users. Given that the works will be undertaken within an existing irrigation corridor and predominantly by manual methods, the magnitude of these impacts is expected to remain low to moderate and manageable through implementation of the ESMP.

7.4 NEGATIVE IMPACTS – OPERATION PHASE

No significant adverse environmental or social impacts are anticipated during the operation phase. The rehabilitated irrigation infrastructure will continue to operate within its existing footprint and function. Minor impacts may be associated with routine maintenance activities, temporary generation of maintenance waste, and occupational health and safety risks to maintenance personnel. These impacts are expected to be infrequent, localized, and readily managed through standard operational procedures and good maintenance practices.

In addition, improved irrigation services may contribute to the intensification of agricultural activities within the command area, which could result in increased use of fertilizers,

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pesticides, and other agrochemicals by farmers. Improper handling or excessive application of such substances could potentially affect soil quality and surface or groundwater resources. These risks will be managed through the promotion of good agricultural practices and compliance with applicable national regulations governing the use and storage of agrochemicals. Overall, operational impacts are expected to be localized, manageable, and predominantly positive.

7.5 MITIGATION HIERARCHY

The design of the Narekvavi Irrigation Scheme rehabilitation has applied the mitigation hierarchy by first seeking to avoid environmental and social impacts wherever feasible. The rehabilitation works have been confined to the existing canal alignment, right-of-way, and State-owned land, thereby avoiding land acquisition, involuntary resettlement, and significant impacts on natural habitats. The selected construction methodology, including the predominant use of manual labor and access from the left bank of the canal, further minimizes potential impacts on adjacent private properties and existing infrastructure.

Impacts that cannot be entirely avoided will be minimized and mitigated through the implementation of the ESMP. Key mitigation measures include dust and noise control, pollution prevention measures, proper waste management, protection of water resources, traffic and access management, occupational and community health and safety measures, and environmental and social monitoring throughout the construction period.

Following implementation of the proposed mitigation measures, residual impacts are expected to be minor, temporary, localized, and fully reversible. No significant residual environmental or social impacts are anticipated, and the overall environmental footprint of the subproject is expected to remain limited.

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8. ENVIRONMENTAL AND SOCIAL MITIGATION PLAN

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
PRE-CONSTRUCTION PHASE			
Contractor mobilization	Grievances raised from local communities	● Notify the public (local municipalities) about the upcoming works, using printed material and electronic media and post notifications in public places of the villages located within the project area. ● Plan physical works on the scheme in that way to avoid disrupting crop growth and harvesting during the season. If some interruptions are unavoidable, inform the farmers of the timing and duration of these disruptions. ● Conduct stakeholder engagement meetings on regular bases to respond to potential grievances or questions raised from the local community in a timely and accurate manner. ● Install grievance boxes at the community accessible locations.	Contractor/Engineer/ PIU
Recruiting and training of labor	Disputes over terms and conditions of labor between Contractor and workers. Foregone employment opportunities for local residents. Insufficient upfront arrangements for protecting health and ensuring safety of workers.	● Recruit unskilled or semi-skilled workers from local communities to the extent possible and deliver training, as feasible, to enhance their skills. ● Conclude written contracts with all staff and personnel to be employed observing national labor legislation. Comply with the ESF, ESS2 labor and working conditions, ESS4 health and safety conditions in accordance with the GRAIL Project LMP. ● Develop Health and Safety Plan according to the principles of the Organic Law of Georgia (13/06/2023), Law of Georgia on Insurance № 690 02/05/1997 (amended 15/12/2023), Law of Georgia on Fire Safety (and have it approved by PIU) IFC/WB EHS guidelines. Comply with the ESS2/ESS4 D occupational health and safety for identification of hazard and control measures, ● Training of the workers, documentation and reporting the incidents, emergencies preventions and remedial measures taken. ● Interpret Health and Safety Plan to workers through delivery of training on safety rules to be observed at work site. ● Provide relevant personal protective gear to all workers and explain the mandatory nature of its use and enforce wear at the site.	Contractor

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
		● Disallow forced and child labor	
Establishment of work assembly/office area	Damage to environmentally and socially sensitive receptors	● No workers' camp is planned under the Project. Only a small temporary assembly/rest area will be arranged for workers, where a site container will be installed for short-term use. The container will be located within an already disturbed or designated project area, avoiding any unnecessary land take, vegetation clearance, soil disturbance, or other environmental impacts. ● The area will be selected and managed in a manner that prevents damage to soil, surface runoff pathways, and surrounding environmental receptors. No accommodation, cooking facilities, or camp-related infrastructure will be established on site.	Contractor
CONSTRUCTION PHASE			
Soil Excavation	- Deterioration of quality or loss of topsoil - Safety threat from poorly stockpiled earth - Environmental damage from poorly disposed excess material - People and animals falling into excavated trenches - Aesthetic damage to landscape	● Do not mix up topsoil and subsoil. ● Designate specific locations for on-site temporary storage of topsoil and subsoil, so that the piles do not restrict access, are stable, and do not pollute surface water bodies due to erosion. ● Keep the height of subsoil stockpiles below 6 meters. ● Keep the height of topsoil stockpiles below 2 meters, the pile must be stabilized to prevent erosion and washing off the topsoil. ● Cover open trenches to protect people and animals from falling. Backfill excavated trenches as soon as feasible. ● Carry out re-cultivation of the site upon completion of earth works for site reinstatement. Prohibit alternative use of topsoil.	Contractor Municipal authority
Handling Chance Finds	Loss or damage of historic artifacts	● Contractor to take all physical activity on hold upon encountering of a chance find and immediately inform Supervisor Company and PIU. ● Contractor and/or PIU to formally notify National Agency of Cultural Heritage Preservation (NACHP) on the chance find and seek written communication on further steps and actions. ● NACHP to provide clearance report or guidance to Contractor/PIU and promptly undertake necessary actions required by the law of Georgia on Cultural Heritage.	PIU Contractor NACHP

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
		• NACHP to provide written notice to Contractor/PIU on the completion of activities on the site and clearance for the resumption of works.	
Clearing of vegetation along the channels	Excessive impact on vegetation	• Where applicable, the contractor shall obtain the necessary permit from the relevant authority with jurisdiction over the respective territory • Avoid unnecessary cutting of the trees. • Hand over timber from the removed trees (if necessary) to the Municipal authority; consider handing over other organic waste from tree cutting to local authorities for distribution to population for firewood. • No wood burning should be allowed at the site • Implement erosion control measures and prevent soil loss from exposed areas. • Train workers in proper procedures for vegetation handling and tree removal.	Contractor
General works	Damage to animals and birds	• All rehabilitation works shall be carried out exclusively within the approved boundaries and the designated right-of-way (ROW) of the canals. • Adhere to a maximum speed limit of 10 km/h near croplands and woodlands. • Implement a no-horn policy • Poaching is strictly prohibited. • Install signboards and information boards about local wildlife, emphasizing that poaching is not allowed. • Avoid construction activities during the breeding season. If any nests are discovered, relocate them to the nearest safe location.	Contractor
General works	Damage to aquatic species	• Prevent sediment discharge into water bodies. • Monitor water quality throughout the works. • Prepare emergency response for spill prevention.	Contractor

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
General works	-Surface and ground water pollution - Sedimentation triggered by soil erosion	● Prohibit the discharge of untreated wastewater from sewage into water bodies during rehabilitation works; provide bio-toilets for workforce sanitation. ● Ensure no solid waste is disposed of into the canals or surrounding areas; conduct routine site cleanups and remove waste promptly. ● Regularly monitor water quality of discharged water to ensure compliance with permissible pollutant limits. ● Prohibit on-site washing of vehicles and machinery. ● Conduct maintenance and fueling of vehicles only in designated areas or workshops; place generators on drip trays to prevent spills. ● Store fuel and hazardous materials away from water bodies in secondary containment systems (e.g., drip trays, bunded areas) with capacity to hold at least 110% of the tank volume. ● Develop and train a spill response team; ensure spill response kits (absorbent pads, PPE, disposal bags, shovels, brooms, caution tape, dustpans, neutralizing agents) are available on-site.	Contractor
Operation of construction vehicles and machinery	- Emissions - Generation of dust - Generation of noise and vibration - Environment pollution with operation and/or accidental spillage of oil and lubricants	● Control generation of dust from vehicle movement by watering roads as necessary. ● Keep all construction vehicles and machinery in good technical condition to avoid excessive noise and emissions. ● Ensure that engines and machinery are extinguished or working with a minimum load when not used as well as vehicles are moving in slow speed in order to reduce emissions. ● Establish a speed limit of 30-40 km/h within settlements. Cover the trucks during transportation of waste and construction materials. ● Conduct maintenance and repair of the vehicles at service centers or in designated areas away from surface water bodies. Undertake fueling of vehicles at service centers. If impossible, provide non-permeable surface and spill-confining areas. ● Provide hazardous material storage and spill kits at site and trained the workers to collect the spill. ● Regular water sprinkling on access roads.	Contractor

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
Operation of residential facilities at work camps (if any)	- Littering of the area with household waste - pollution of surface/ground water bodies with liquid discharges	● Implement regular housekeeping of the site, ensuring household waste is placed in designated containers, which are to be regularly emptied by municipal waste collection services. ● Conclude an agreement with the municipality for the handling of waste and provision of municipal waste containers. ● Provide bio-toilets for the workforce, ensuring they are regularly serviced by licensed waste management contractors; where bio-toilets are not feasible, install sewage pits that are regularly emptied by wastewater trucks and disposed of through the nearest approved sewage infrastructure. ● Sign an agreement with the licensed contractor for sewage removal.	Contractor Local Municipality
Generation of non-hazardous construction waste	- Environment pollution with construction waste - Damage to landscape and surface water bodies from improperly dumped excess materials	● Minimize volume of generated wastes. ● Separate wastes to: - single out reusable and recyclable waste. Reuse waste as feasible except asbestos-containing faction. Hand recyclable waste (e.g. paper, plastic, metals) to collecting/processing companies - collect household waste separately for the disposal by municipal service provider - collect construction waste for temporary storage at designated locations and deliver it to final disposal locations pre-agreed with local municipality or formal sanitary landfills, depending on composition and volume. ● Avoid piling of excessive volumes of waste at the construction site. ● Raise awareness of workers and personnel on the established rules of waste disposal. Enforce proper waste handling practice among all staff.	Contractor
Generation of hazardous construction waste	- Damage to health and safety of workers handling waste - Damage to health and safety of communities within the impact zone	Following measures will be taken in case of any accidental exposure to asbestos: ● Provide all employees handling asbestos-containing materials appropriate personal protective equipment and enforce its adequate use. ● Keep the number of workers handling asbestos-containing materials to the necessary minimum; educate them and keep sensitized to the rules of handling asbestos.	Contractor

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
	- Pollution of environment with hazardous waste - Damage to landscape and surface water bodies from improperly dumped excess materials	● In case of pollution, flooding during the heavy rainy seasons, that can increase the risks of diseases to local communities (through mosquitos, for example), the design consultant will address appropriate mitigation measures in accordance to the WB's ESS 4. ● Avoid unnecessary fragmentation of this material to minimize dust generation. ● Pack and seal asbestos-containing debris into minimum of 200 µm thickness polyethylene bags; attach warning labels to the packaging; store the bags temporarily in a protected predefined location on work site. ● Ensure safe transportation of asbestos-containing waste bags for disposal ensuring integrity of packaging; dispose asbestos-containing waste to the formal sanitary landfills based on agreement concluded with the Solid Waste Management Company under the Ministry of Infrastructure of Georgia. ● Safely store all types of fuel, oil, batteries, tires, chemicals and other hazardous substances during construction works and hand them over to the licensed companies for deactivation and processing. Minimize volume of generated wastes. Separate wastes to: - Single out reusable and recyclable waste. Reuse waste as feasible except asbestos-containing faction. Hand recyclable waste (e.g. paper, plastic, metals) to collecting/processing companies - Collect household waste separately for the disposal by municipal service provider - Collect construction waste for temporary storage at designated locations and deliver it to final disposal locations pre-agreed with local municipality or formal sanitary landfills, depending on composition and volume. ● Raise awareness of workers and personnel on the established rules of waste disposal. Enforce proper waste handling practice among all staff.	

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
Works generating noise pollution	- Nuisance to local communities - Health impact on workers	● Keep vehicles and machinery in good technical condition to avoid unnecessary noise generation. ● Prohibit conduct of noise-generating works at nighttime. ● Prohibit speeding of construction vehicles and impose adequate speed limits for moving within and nearly settlements. ● In the event of excessive noise, pollution, or vehicle movement during construction that exceeds regulatory limits, appropriate mitigation measures should be implemented, and the local community should be notified accordingly.	Contractor
Labor management	- Violation of the rights of workers - Trauma, morbidity and mortality at work site - Sexual Exploitation and Abuse/Sexual Harassment	● Comply with national labor legislation and the approved LMP, including working hours, minimum wages, legal working age, freedom of association, and prohibition of discrimination, forced labor, and child labor. ● Maintain transparent procedures for preventing rights violations, resolving disputes, and prioritizing recruitment of local unskilled/semi-skilled workers. ● Conclude written contracts with all personnel in line with national laws and WB standards. ● Develop and implement an Occupational Health and Safety Plan compliant with Georgian legislation and WB ESSs; appoint a site health and safety officer. ● Provide and enforce the use of PPE, communicate workplace safety rules, and train workers regularly on safety and emergency procedures. ● Document and report incidents, maintain emergency preparedness systems, and take corrective measures as needed. ● Provide adequate welfare facilities, including toilets, washing areas, drinking water, catering/rest areas, and hygiene supplies. ● Maintain and operate workers' GRM. ● Each worker shall sign and comply with the Code of Conduct before starting work. ● Breaches of the Code of Conduct shall result in disciplinary action, including removal from site or termination, where applicable.	Contractor/CSC
	- Nuisance to local communities	● Assign a GRM Focal Point to lead communication with and receive requests / complaints from the local population.	Contractor

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
Works near settlements	- Conflicts between Contractor and local population - Sexual Exploitation and Abuse/Sexual Harassment	● Consult local communities to identify and proactively manage potential conflicts between an external workforce and local people. ● Install banners with the name and contact information of contractor in visible locations around/along the work sites to ensure local communities can raise concerns and ask questions to Contractor. ● Raise awareness of local communities about any inconveniences they may experience and risks they may face due to presence of an external workforce in proximity to their settlements and works to be undertaken. ● Raise awareness of workers on overall relationship management with local population, establish the code of conduct in line with international practice and LMP and strictly enforce them, including the dismissal of workers and financial penalties of adequate scale.	
Works near and/or inside /agricultural areas	- Nuisance to local communities - Restriction of access to- and use of private property - Damage to private property	● Schedule works beyond the planting and harvesting periods to the extent possible in order to avoid/minimize service disruption. Inform the local population about construction and work schedules. ● Restricted vehicle movement to defined access routes and demarcated working areas in order to prevent excessive damage to vegetation and soil. Use noise-generating technologies between 08.00 a.m-19.00 p.m. ● Do not locate work camps in immediate proximity to settlements. Properly mark and fence work site. Allocate areas for temporary storage of construction materials and waste so that free movement of traffic and pedestrians is not hindered. ● In case a need for additional land take not completed prior to commencement of construction works emerges in the course of works, immediately inform PIU, do not engage in debates with community representatives, do not enter such area before PIU has completed required resettlement, and take site after formal notification by PIU	Contractor
Site reinstatement	- Excessive impact on landscape - Residual pollution of the ROW with	After completion of construction activities, ensure that: ● No waste and excess materials are left behind ● All trenches are backfilled, topsoil and spread and the ROW is reinstated to natural condition ● Access roads are repaired to pre-construction or better condition	Contractor

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
	construction waste and excess materials	● Any accidental damage to fences, pipes or any other private property of local residents is fully compensated either by payment or by restoration to the initial or better condition.	
OPERATION PHASE			
Operation and maintenance of NIS by Service Center Operators	Flooding, soil erosion, salinization due to improper operation of the system	● Deliver technical training to GA Service Center operators, on permanent functioning and operating of the pumps station, with the purpose to discharge the water on regular basis for avoiding flooding and salinization of the land. ● Duly perform routine and emergency repair works on the irrigation scheme to avoid its malfunctioning.	GA
Delivery of irrigation services to water users	- Soil erosion and salinization from excessive/improper irrigation of fields - Water loss, flooding and waterlogging of areas along right of way due to poor operation and maintenance of canals and hydraulic structures	● Undertake awareness-raising campaigns targeting irrigation water users to promote adequate and rational irrigation practice ● Duly perform routine and emergency repair of the irrigation scheme to avoid its malfunctioning.	GA Service Center
Application of pesticides by users of the irrigation scheme	- Environmental pollution and damage to community health and safety from improper application of pesticides and poor disposal of packaging	● Undertake awareness-raising campaign targeting water users to promote safe and rational use of pesticides and to popularize Integrated Pest Management (IPM) and Integrated Vector Management (IVM) approach only targeting the economically significant pest infestations and disease vectors of public health significance. ● Avoid or minimize harm to beneficial organisms that serve as natural predators or control agents of the targeted pests ● Empty bottles of the pesticides should not be thrown in the open environment and handled according to prescribed methods and appropriate PPEs must be used by the farmers.	GA

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
	- Poor quality of farm produce due to excessive and improper use of pesticides	● Farmers should use cultural practices, biological methods, and genetics and as a last resort the chemical means to prevent economically significant damage and disease transmission to human and animals.	
Maintenance of the canal system	Poor management of the removed sediments and vegetation during the cleaning of the canal system	● Ensure regular maintenance of the channels to avoid accumulation of high volume of sediments and debris. ● During the maintenance and removal of vegetation, do not leave organic waste in canals for decaying. ● Collect organic waste generated from canal cleaning and store in an area designated by the Municipality. ● Distribute wooden material to the local communities as firewood as relevant. ● Handle removed sediment in accordance with the established practice (e.g., distribution to the local farmers based on their request, or disposal on the territory designated by the local municipality)	GA Local Municipality

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9. ENVIRONMENTAL AND SOCIAL MONITORING PLAN

Activity	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Who (Is responsible for monitoring?)
CONSTRUCTION PHASE						
Supply of construction materials	Purchase of construction materials from the officially registered suppliers	Work camp of contractor	Verification of documents, labels and quality	Recurrent	Ensure technical reliability and safety of infrastructure	Engineer
● Transportation of construction materials during construction phase; ● Movement of construction machinery	● Technical condition of vehicles and machinery; ● Confinement and protection of truck loads with covering of material; ● Respect of the established hours and routes of transportation	Transportation routes	Visual inspection	Unannounced inspections during work hours and beyond	● Limit pollution of soil and air from emissions; ● Limit nuisance to local communities from noise and vibration; ● Minimize traffic disruption.	Engineer
Operation of construction equipment and machinery	Technical condition of equipment and machinery Equipment and machinery operation practices	Construction sites	Visual inspection	Daily	Reduce air and soil pollution from idling of engines,	Engineer

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					excessive exhaust and leakage of oil products; Avoid excessive noise generation	
Servicing of construction vehicles and machinery	Washing vehicles and machinery off-site of in the location sufficiently distant from water bodies; Servicing vehicles and machinery with oils and lubricants at service centers or in an especially arranged locations on-site; Technical adequacy of the servicing location: • solid, insulating floor or adsorbent layer (sand, gravel, membrane), • containment barriers allowing enough space for holding fuel over the maximum amount expected on the location at a time, • presence of emergency fire-fighting kit, • sedimentation pool at car wash area.	Construction sites and work camp	Visual inspection	Entire period of machinery operation	● Avoid land and water pollution with oil products due to servicing of vehicles and machinery; ● Readiness for fire emergency action to promptly localize fire source and minimize material damage	Engineer

Soil excavation	● No mixing of topsoil and subsoil. ● Organized on-site storage of topsoil and subsoil; no restriction of access, stability of soil stockpiles. ● Height of subsoil stockpiles not exceeding 6 meters. ● Height of topsoil stockpiles not exceeding 2 meters. ● Subsoil backfilled and excess subsoil disposed to the locations designated by local authorities in written. ● Timely coverage of trenches. ● Topsoil spread over the site upon completion of earth works for site reinstatement. No alternative use of topsoil.	Construction sites	Visual inspection	In the course of earth works	● avoid deterioration of quality or loss of topsoil ● No damage to human and environmental health from poorly stockpiled earth material ● Prevent falling of people and animals into excavated trenches ● Avoid aesthetic damage to landscape	Engineer

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Handling of chance finds	● Works on hold from the instance of chance find encounter through the formal communication from PIU to resume; ● Communication on the chance find encounter and subsequent actions between contractor and PIU and between PMD and the National Agency of Cultural Heritage Preservation (NACHP) on file; ● No damage to historic artifacts	Sites of excavation works	Checking of documents	Upon encounter of chance finds	Avoid loss or damage of historic artifacts	Engineer PIU NACHP
Clearing of vegetation	● Pre-construction survey/tree inventory undertaken prior to commencement of vegetation clearing; ● Formal permission from the relevant authority in place for tree extraction; ● Extracted trees stockpiled in a designated location, preferably under cover; ● Documents on the handover of timber and other parts of removed trees in place.	Construction sites	Visual inspection	Prior and during vegetation clearing works	Avoid excessive impact on vegetation	Engineer PIU

Sourcing of natural construction materials	● Purchase of material from the existing suppliers if feasible; ● Presence of extraction license and strict compliance with the license conditions; ● Excavation of river gravel and sand from outside of the water stream; arrangement of protective barriers of gravel between excavation area and the water stream; prohibition of entry of water stream by machinery; ● Demarcation and fencing of excavation areas; ● Reinstatement of worked sectors of quarries (if any) by harmonizing with landscape, facilitating natural regeneration of vegetative cover	Quarries	Checking documents Visual inspection	During extraction of natural construction materials	● Limiting erosion of slopes and degradation of ecosystems and landscapes; ● Limiting erosion of river banks, water pollution with suspended particles and disruption of aquatic life; ● Protection of cattle and population from damage.	Engineer PIU National Agency of Mineral Resources

Generation of construction waste	● Separation of reusable elements from the construction waste and reuse waste as feasible; ● Separation of recyclable elements from the construction waste and hand over to collecting points or recycling companies; ● Allocation of special area for temporary on-site storage of construction waste; no accumulation of excessive amounts of waste on site; ● Dispose excessive construction material to the waste disposal area indicated by the Solid Waste Management Company of Georgia	Construction sites; Work camp; Waste disposal sites; Areas around work sites and waste disposal sites	Checking documents Visual Inspection	Recurrent	Prevent pollution of the construction site and nearby area with waste	Engineer PIU Environmental Supervision Department of MEPA
Generation of household waste	● Placement of containers to collect household waste at construction sites and work camp; ● Concluding agreement with local municipalities on regular disposal of household waste.	Construction sites and work camp	Visual Inspection	Recurrent	Prevent littering; Avoid pollution of soil and water	Engineer PIU Local municipalities

Generation of hazardous waste	● Provision of workers handling hazardous waste with personal protective gear and enforcement of its adequate use; ● Sprinkling of asbestos-containing waste with water and no unnecessary fragmentation; ● Packaging of asbestos-containing as prescribed; storage of packed waste in designated and protected location and safe transportation to the sanitary landfill of the Solid Waste Management Company; ● No reuse of asbestos-containing waste; ● Collection and safe storage of used tires, batteries, filters, used and residual oil products and their hand over to the licensed companies for deactivation and processing.	construction sites and work camp	Visual inspection Checking of documents	Recurrent	● Avoid damage to the health of workers and nearby communities; ● Avoid pollution of soil, surface water and group water	Engineer PIU Department of Environmental Supervision of MEPA Labor Inspection Service of the Ministry of Internally Displaced People from the Occupied Territories, Labor, Health, and Social Affairs

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Generation of noise	● Vehicles and machinery kept in good technical condition to avoid excessive noise; ● No noise-generating works at night time; ● No speeding of construction vehicles and speed limited to 30-40 km/hour while moving within and nearly settlements.	● Construction sites and work camp ● Routes of transportation	Visual inspection	Recurrent	● Avoid nuisance to nearby communities; ● Protect health of workers	Engineer PIU
Labor management	● Presence of formalized contracts between Contractor and everyone employed by him; ● Observance of Labor Code requirements, including regulations pertaining working hours, leaves, compensation, age of workers, non-discrimination and other as relevant; ● Provision of uniforms and personal protective gear to workers and enforcement of their use;	Construction sites and work camp	Checking documents; Visual inspection	Recurrent	● Exclude exploitation and unfair treatment of workers; ● Reduce the probability of accidents	CSC/PIU; Labor Inspectorate

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	● Consistency with the rules of exploitation of the construction equipment and machinery; delivery of training on safety at work site; ● Maintenance of adequate sanitary conditions at construction sites and work camp, including provision of resting and catering facilities, safe drinking water and sanitation, separate WCs for men and women.					
GM Focal Point	● Provide effective Grievance Redress Mechanism (GRM). ● Install brochures, describing grievance procedure and providing all the necessary information for local communities as well as labor force for providing feedbacks and concerns. ● Appoint Contractor's GM Focal Point, a person whose responsibility will	Settlements affected by construction works	Visual inspection; Interviews with affected communities; Checking of GRM logs	Recurrent	● Minimize nuisance to local communities; ● Avoid conflicts between contractor and local communities	CSC/PIU

	be to have timely and efficient communication with the local population, positively or adversely impacted by the Project as well to the labor force employee under the Construction Company. ● Monitor the effectiveness of community liaison activities carried out by the Contractor and verify that the Contractor responds promptly and appropriately to community grievances and requests. ● Banners with the name and contact information of contractor installed in visible locations around/along the work sites; ● Awareness of the local communities about the nature and duration of the works and along with providing timely warnings about any disruptions to utility services due to the construction works.					

	● Ensure that awareness raising activities and consultations with local communities are conducted in a timely, inclusive, and transparent manner. ● Report to the PIU on the status of community relations, emerging issues, and the resolution of grievances					
Works near privately-owned land, buildings and other assets	● Vehicle movement restricted to the defined access routes and demarcated working areas in order to prevent excessive damage to vegetation and soil ● Regular water sparkling of construction site in order to prevent local settlements with dust. ● Use noise-generating technologies between 08.00a.m-19.00 p.m.; ● Work camps located away from settlements; work sites properly marked and fenced; temporary storage of construction materials	Settlements in the vicinity of construction sites and work camp	Visual inspection	Recurrent	Avoid temporary or permanent violation of ownership and/or user rights on the private property	CSC/PIU

	and waste not preventing free movement of traffic and pedestrians; ● No entry to land area owned/used by private owners or squatters and no clearing of privately owned/operated assets from ROW without formal notification from PIU that involuntary resettlement and compensation process have been fully completed.					
Site reinstatement	● No waste and excess materials remaining at construction sites and work camp; ● All trenches are backfilled, topsoil and spread and the ROW is reinstated to quasi-natural condition; ● Access roads are repaired to pre-construction or better condition ● No unaddressed consequences of accidental damage to fences, pipes or any	Construction sites and work camps	Visual inspection	Final phase of construction works	● Avoid excessive impact on landscape; ● Avoid residual pollution of ROW with construction waste and excess materials	CSC/PIU

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	other private property of local residents.					
OPERATION PHASE						
Delivery of irrigation services to farmers	No malfunctioning of the irrigation scheme; Awareness-rising among farmers being undertaken to promote adequate and rational practices	Along ROW of the irrigation scheme; Office of the service provider	Visual inspection; Checking of awareness-raising campaign records	- During irrigation season - After extreme weather events	Minimize soil erosion and salinization from excessive/improper irrigation; Minimize water lose, flooding and water-logging of areas along ROW	GA
Application of pesticides by users of the irrigation scheme	No excessive use of pesticides and adherence to the principles of Integrated Pest Management	In the agricultural fields served by Narekvavi irrigation scheme	Interviews with farmers Interviews with agricultural service providers	Recurrent	● Educate farmers on environmentally friendly practices through awareness campaigns and training. ● Provide training in Integrated Pest Management, Integrated Nutrient Management,	GA

					and safe handling of hazardous substances in line with MSDS guidance, explained in practical terms. ● Promote compost and manure as alternatives to chemical fertilizers. ● Ensure safe use, storage, and disposal of pesticides and fertilizers; encourage the use of PPE. ● Where feasible, establish vegetative buffer strips near field edges and water bodies to reduce sediment and pesticide runoff.	

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APPENDIX A: CHECKLIST FOR ENVIRONMENT AND SOCIAL SCREENING OF SUBPROJECTS

Checklist for Environmental and Social Screening and Classification of Sub-Project Impact Identification

May the subproject have a high impact on the environment?	No A slight and short-term impact on the environment may occur during the construction phase; however, no significant adverse effects are anticipated. The project involves rehabilitation of the existing Narekvavi Irrigation Scheme, which is expected to improve the reliability and efficiency of irrigation water delivery, support agricultural productivity, and enhance the overall functioning of the irrigation system. Construction activities will be limited in scope and duration and will be confined within the designated project boundaries. All activities will be conducted under the strict supervision of the Construction Supervision Company (CSC) and the Project Implementation Unit (PIU), ensuring full compliance with relevant national laws and regulations as well as the World Bank's environmental and social policies.
What are the expected beneficial and adverse environmental impacts of subproject?	The rehabilitation of the Narekvavi Irrigation Scheme is expected to have significant positive impacts through restoration of effective irrigation service, improved reliability of water delivery, reduction of conveyance losses, improved agricultural productivity, and better livelihood opportunities for local farmers. The project will also strengthen water management through improved monitoring and operational control of the irrigation system. Potential adverse impacts are expected to be temporary and mainly limited to the construction phase, including vegetation clearance, spoil and construction waste generation, dust, noise, traffic disturbance, localized soil erosion, pollution risks from construction materials and fuels, and temporary disturbance to fauna and irrigation service. These impacts can be mitigated through implementation of ESMP.
May the subproject have a high impact on the local communities and other affected people?	No The subproject focuses on rehabilitation of the existing irrigation scheme to improve irrigation service and support agricultural productivity within the command area. The improvement will enhance agricultural production, boost crop yields, raise income levels, and improve the livelihoods of those involved in farming. However, some temporary disturbances may occur during the rehabilitation activities, such as noise, dust, pollution, and

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	movement of machinery during the construction phase. In case such impacts occur, relevant mitigation measures will be applied.

2. Mitigation Measures

Were there any alternatives to the subproject design considered?	Yes Two alternatives were considered: No project Option and Rehabilitation of the Existing Narakvavi Irrigation Scheme to smooth supply of Irrigation water to the farmers. However, the rehabilitation of the existing irrigation schemes was considered best option to improve the irrigation structures and to increase agriculture productivity.
What types of mitigation measures are proposed?	The proposed mitigation measures include strategies to prevent topsoil loss through proper stockpiling, minimize vegetation clearance, protect faunal species and the national park, manage non-hazardous and hazardous waste responsibility, avoid or reduce noise generation, impact on the aquatic environment, dust suppression measures, ensure safe storage of oil, fuel, batteries, and chemicals, effectively manage labor practices and mitigate potential damage to private land. From the social perspective, if any unanticipated damage or temporary intervention to private property occurs, prior to the rehabilitation works, it will be documented, and all related issues will be addressed in full compliance with the World Bank's Environmental and Social Standard 1 (ESS1) and Environmental and Social Standard 5 (ESS5): Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement.
What lessons from the previous similar subprojects have been incorporated into the project design?	The design should consider the public opinion in terms of collecting information on the past operations and current requirements of the farmers and their growing needs.
Have concerned communities been involved and how have their interests and knowledge been adequately taken into consideration in subproject preparation?	Several stakeholder engagement meetings have been conducted at Project design phase by Design consultant with GA and Municipality representatives and local famers at Municipal Office on September 25, 2024, on March 27, 2025 and on February 4 2026. During the meetings Consultant Company design team presented preliminary project to the farmers and GA local representative received their feedback and suggestions. The site visits were also conducted to asses resettlement impact on the site and exchange information on the following issue, with local farmers Municipal Representatives and GA.

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Resettlement Screening Information		Yes	No
1	Is the information related to the affiliation, ownership, and land use status of subproject site available and verifiable? (The screening cannot be completed until this is available)		×
2	Will subproject (temporary or permanently) reduce other people's access to their economic resources, such as land, pasture, water, public services, or other resources that they depend on?		×
3	Will subproject result in resettlement of individuals or families or require the acquisition of land (public or private, temporarily or permanently) for its development?		×
4	Will subproject result in the temporary or permanent loss of crops, fruit trees and household infra-structure (such as ancillary facilities, fence, canal, granaries, outside toilets and kitchens, etc.)?		×
If answer to any above question (except question 1) is "Yes", then ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement is applicable and mitigation measures should follow this ESS and the Project RPF Cultural			
Cultural resources safeguard screening information		Yes	No
5	Will the project require excavation near any historical, archaeological, or cultural heritage site?		×
If answer to question 5 is "Yes", then possible chance finds must be handled in accordance with relevant procedures provided in the ESMF			

3. Conclusion

1. Subproject is declined[2] ☐
2. Subproject is accepted ■

Subproject preparation requires undertaking of Environmental and Social Impact Assessment ☐

Subproject preparation requires Completion of Checklist Environmental and Social Management Plan for Small Construction and Rehabilitation Activities ■

[2] A high environmental and/or social risk/impact subproject is ineligible for the Project support. Only activities with moderate or substantial risks may be funded from the Project proceeds.

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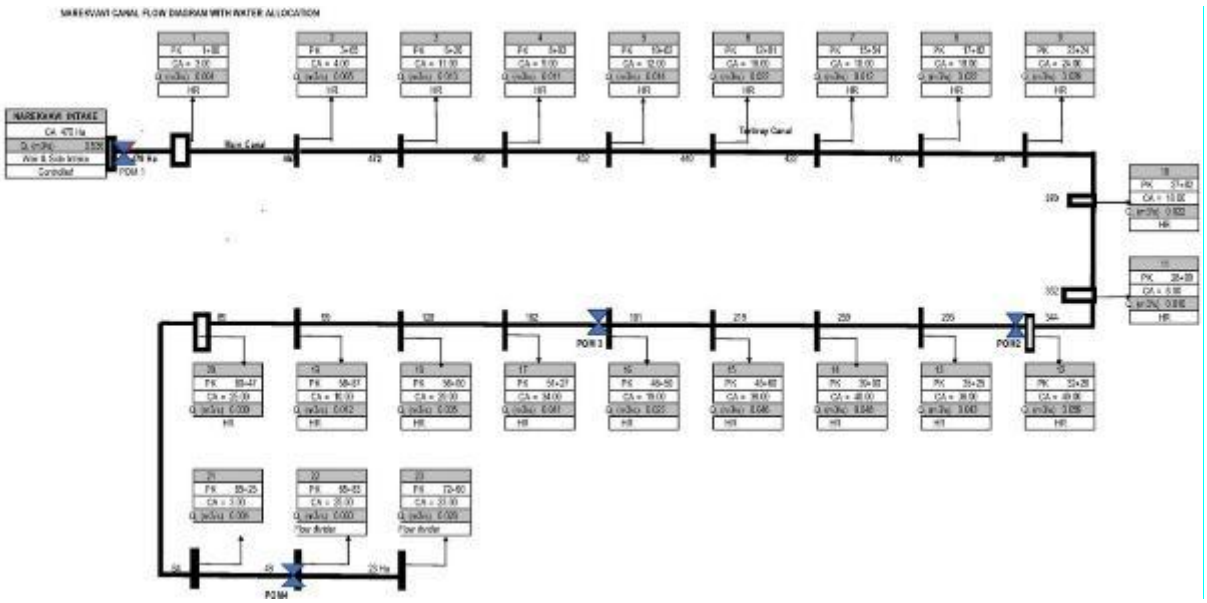
APPENDIX B: SCHEMATIC LAYOUT PLAN OF THE SCHEME

The planned rehabilitation of the Narekvavi Irrigation Scheme includes restoration of the existing gravity-fed irrigation system supplied from the Narekvavi Reservoir. The scheme comprises the headworks, a 7.636 km long main canal, 23 turnout/outlet structures, an aqueduct, a siphon, culverts, footbridges, and associated flow measurement and control structures. The planned works include rehabilitation of the canal and headworks, replacement or reconstruction of damaged hydraulic structures, improvement of the tail-end canal section, and installation of SCADA-supported monitoring points along the canal alignment.

Figure 4. *Schematic Layout Plan of the Scheme*



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APPENDIX C: PRESENT CONDITION OF NAREKVAVI IRRIGATION SCHEME

Airial View of Narakvavi Existing scheme and cropland

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Gate for controlling the flow of Irrigation

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Bridge for crossing the Canal

Existing Hydraulic structures

Water degradation due to water pounding in the existing scheme

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APPENDIX D: GRIEVANCE REDRESS MECHANISM OF THE PROJECT PLANNING AND MONITORING DIVISION

1. Introduction

WB's ESS10 - Stakeholder Engagement and Information Disclosure, requires timely and permanent engagement and communication with the local and other stakeholders, as well as all other interested parties, which is essential to ensure smooth collaboration between project staff and local communities, minimize and mitigate environmental and social risks related to the project, and expand project benefits to all targeted beneficiaries including ones that may be traditionally vulnerable, disadvantaged, disproportionately affected by the project activities.

The main objective of a Grievance Redress Mechanism (GRM) is to assist to resolve complaints and grievances in a timely, effective and efficient manner that satisfies all parties involved. Specifically, it provides a transparent and credible process for fair, effective and lasting outcomes. It also builds trust and cooperation as an integral component of broader community consultation that facilitates corrective actions.

GRM will also address grievances in an efficient, timely and cost-effective manner that arise in the Narekvavi Sub-Project under either due to actions by MEPA or the contractor or sub-contractor employees by MEPA from affected communities and external stakeholders.

A separate mechanism is developed to address worker grievances, which is described in the Labor Management Procedure (LMP) document approved by the WB.

MEPA is responsible for managing the GRM, but many of the grievances on the Narekvavi Sub- Project will likely relate to the actions of the design consultant /sub-consultant and so will need to be resolved by the design consultant /sub-consultant. MEPA together with them will administer the GRM process deciding whether they or the Contractor is responsible and determining the best course of action to resolve the grievance. The Implementation Consultant will support MEPA to monitor grievance resolution being undertaken by the contractor.

The Project GRM deals with the issues of land and other assets acquisition (e.g., amount of compensation, suitability of residual land plots, loss of access roads, etc.) as well as the losses and damages caused by rehabilitation works, and any direct or indirect environmental and social impacts. Therefore, GRM has to be in place by the time MEPA starts preparation of RAPs and other site-specific environmental and social instruments and shall function until the completion of all civil work activities and beyond till the defect liability period ends. PAPs and other potential complainants should be fully informed of the GRM, its functions, procedures, timelines and contact persons during consultations meetings and other stakeholder engagement activities. All grievance related correspondence will be documented, and the grievance resolution process will be systematically tracked.

Specifically, the GRM:

- Provides affected people with avenues for making a complaint or resolving any dispute that may arise during the course of the implementation of the projects.
- Ensures that appropriate and mutually acceptable redress actions are identified and implemented to the satisfaction of complainants.

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- Supports accessibility and transparency in handling complaints and grievances; ▪ Manages time factor (avoids the need to resort to judicial proceedings (at least at first).

Complaint and grievances are divided in this manner:

Complaint: an expression of dissatisfaction that is related to an impact caused by a project activity, which has adversely affected an individual or group. The interests of an individual or group wants a proponent or operator (or contractor) to address and resolve it (e. g. problems related to dust deposition, noise or vibration). A complaint is normally of a less serious nature than a grievance; and

Grievances: a claim raised by an individual or group whose livelihood, health and safety, cultural norms and heritage are considered to have been adversely affected (harmed) by a project activity which, if not addressed effectively, may pose a risk.

- Typical grievances under component 1 may relate to:
- Land acquisition and physical displacement
- Civil work damages
- Environmental impacts; and
- Direct and/or indirect social - economic impacts.

As a Governmental Structure, the grievance practice at MEPA is based on the General Administrative Code of Georgia. As part of the project, MEPA will modify the GRM practice to allow a PAP (Project Affected Person) to complain about any decision about concerns regarding the project. All types of grievances will be recorded by the GRM. Anonymous grievances will also be accepted, recorded, and investigated to the extent feasible.

GRM will include following Steps:

Step 1: Submission of grievances either in writing via/through telephone hotline/mobile, mail, social media (FB etc.), website, grievance logbook via a contractor organization and directly to the MEPA. The GM will also allow anonymous grievances to be raised and addressed.

Step 2: Recording of grievance, classifying the grievances based on the typology of complaints and the complainants in order to provide more efficient response and providing the initial response immediately as possible. The typology will be based on the characteristics of the complainant (e.g., vulnerable groups, persons with disabilities, people with language barriers, etc.) and the nature of the complaint.

Step 3: Grievance can be investigated in three stages, namely:

Grievance Resolution Committee (Stage 1)

Stage 1, of the GM involves an informal (oral) review of the complaint (whether written or oral). A local Grievance Resolution Committee (GRC) will be established in the Municipality, with an office in the municipal building. Once a standing grievance has been logged, the corresponding local GRC will be engaged to define a solution to solve the grievance. At this stage the grievance is reviewed in an informal (oral) way and the Grievance Redress Committee members make and sign the minutes on the matter.

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If at Stage 1 the PAP's complaint is not resolved the PAP is informed about grievance resolution procedures of Stage 2. A PAP has the right to use the procedures of Stage 2 without applying to Stage 1 procedures. In the first instance, PAP's can lodge a grievance and resolution will be attempted at an informal level with the involvement of relevant Project entities (for instance design, cadastral, evaluation) or local representatives within ten 10 days after submission of the grievance. Such grievances will still be recorded in the grievance log.

Special provisions will be made for any complaints of a confidential nature. The GRC is a nine member's committee consisting of the following.

- PIU Team member as a committee coordinator.
- Social Safeguard Specialist of Supervision Consultant - as a committee member
- Regional/municipal representative (from "Gamgeoba") as a committee secretary.
- Village attorney ("Rtsmunebuli") as a committee member;
- Representative of a PAP as a Committee member.
- Woman – representative of the Project Affected Household (AH) as a committee member;
- Representative of local non-government organization (NGO) taking into account the grievance character – as a committee member;
- Local specialist of social and environmental safeguards from the Supervision Consultant – as a committee member;
- Local specialist of social and environmental safeguards from the Construction Company – as a committee member.

Members of the GRC will be invited in accordance with the types of complaints to be addressed. The meeting will start without the complainants by reviewing all PAP complaints received since the last GRC meeting, and to propose a solution to all grievances within the past one or two weeks. Then, the GRC will welcome the complainants whose grievances had been reviewed during the previous meeting to discuss the proposed resolution.

For each grievance, the GRC will determine whether additional investigations are warranted. If so, additional information will be collected before the next GRC meeting and will also be provided to the PAP before the meeting. The GRC will then inform the PAP about the date, time and place of its review meeting, and invite the PAP accordingly.

The GRC will receive the complainant and discuss with them a solution to their grievance. The committee shall draw up and sign the minutes of their discussion on the matter. If the grievance is satisfactorily resolved, the PAP will also sign the minutes in acknowledgement of the agreement. In cases where the project has agreed to put in place additional measures, these will be specified, with a timetable for delivery, in the minutes of the meeting. If the grievance remains unresolved, the PAP will explain the Stage 2 escalation process.

Grievance Resolution at Central Level (Stage 2)

In this stage, the grievance will be reviewed at the MEPA level. Unsolved grievances at Stage 1, with the complainant's consent, will be sent to MEPA in written form. Similarly, aggrieved complainants/PAPs dissatisfied with the GRC decision, can escalate their grievances to MEPA at the PIU Level. The GRC will assist him/her in lodging an official complaint. MEPA's GM Focal point will review the written complaints of PAPs, which were not satisfied at Stage 1 and send them internally to the appropriate departments for redress. The timeframe for referral is

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15 days. The complainant shall be informed of the decision within a maximum of 30 days, in accordance with the response time stipulated in the Administrative Code of Georgia.

MEPA's Grievance Redress Commission (Stage 3)

The grievance continues to be unresolved at Stage 2 by the appropriate department; If still unsettled, the PAP's grievance will move within 15 days to a Grievance Resolution Committee (see the details on the Committee below) which has 15 days to decide on the case. The Grievance Redress Commission will review and decide upon the grievance in compliance with the Administrative Code of Georgia. The complainant shall be informed in writing of MEPA's decision. If MEPA's decision fails to satisfy the aggrieved affected persons, they can pursue further action by submitting their case to the appropriate court of law.

The composition of the Grievance Redress Commission is as follows:

- Member of Board of MEPA (Head of the Grievance Redress Commission);
- PIU Team Leader (Deputy Head of Commission);
- GRM Focal Point within in PIU (member);
- Head of Legal Division (member);
- Head of Resettlement Division (member);
- Head of International Projects Division (member);
- Head of Technical Supervision and International Projects Planning Division (member);
- Resettlement and social issues consultant (member);
- Environmental consultant (member);

Closure of Grievances

A grievance will be considered "resolved" or "closed" when a resolution satisfactory to both parties has been reached, and after corrective measures have been successfully implemented. When a proposed solution is agreed between the Project and the complainant, the time needed to implement it will depend on the nature of the solution. However, the actions to implement this solution will be undertaken within one month of the grievance being logged and will be tracked until completion. Once the solution is being implemented or is implemented to the satisfaction of the complainant, a complaint closes out form will be signed by both parties (MEPA - PIU Team and the complainant), stating that the complainant considers that his/her grievance is closed. The grievance then, will be archived in the Project Grievance database. A detailed grievance logbook will be maintained and submitted to the World Bank team.

In certain situations, however, the Project may "close" a grievance even if the complainant is not satisfied with the outcome. This could be the case, for example, if the complainant is unable to substantiate a grievance, or it is obviously speculative or fraudulent. In such situations, the Project's efforts to investigate the grievance and to arrive at a conclusion will be well documented and the complainant advised of the situation. PIU team will not dismiss grievances based on a cursory review and close them unless the complainant has been notified and had the opportunity to provide supplementary information or evidence.

Grievance Records and Documentation

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MEPA will nominate a GM Focal Point to manage a grievance database to keep a record of all grievances received. The database will contain the name of the individual or organization lodging a grievance; the date and nature of the grievance; any follow-up actions taken; the solutions and corrective actions implemented by the Contractor or other relevant party; the final result; and how and when this decision was communicated to the complainant.

Supervisor Consultant company in its monthly monitoring reports will provide information on grievance management. Grievance monitoring and reporting will occur in MEPA's six-monthly and annual public reports. GRM Focal Point Contact Information is provided above in this ESMP.

Information on the Project and future stakeholder engagement programs will be available on the PIUs website and will be posted on information boards in affected villages in the Project area. Information can also be obtained from the GM Focal Point

All grievance related correspondence will be documented, and the grievance resolution process will be systematically tracked in Grievance Log Book.

Grievance Logbook

Name of reporter: **Institutional affiliation of Reporter:** **Date of report:**			
Name of the Project: **Name of the creditor/grant recipient:** **Name of responsible person for grievance resolution (if any):**			
Grievance Nature	**Response**	**Actions Taken**	**Subsequent Developments**

Design consultant/sub-consultant companies in their monthly monitoring reports will provide information on grievance management in the Report Form on Public Grievance. Grievance monitoring and reporting will occur in MEPA's six-monthly and annual public reports.

Form of Report on Public Grievances

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Designated GRM Officer	Name of Reporter if not Anonymous	Nature of Complain	Actions Taken/ Redress Made	Subsequent Developments	Total # of Grievances	# of Redress Grievances

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APPENDIX E: MINUTES OF MEETING

Minutes of the Stakeholder Consultation Meeting

Meeting Venue: Mchadijvari Village, Dusheti Municipality, Georgia

Meeting Date: 8 May 2026

Number of Participants: 10

Agenda

The purpose of the consultation meeting was to introduce the Narekvavi Main Canal Rehabilitation Project to local residents and other interested stakeholders, as well as to discuss the project's environmental and social aspects.

The meeting was held in Mchadijvari Village, Dusheti Municipality, with the participation of representatives of the local authorities, local residents, and the project team.

The meeting was attended by:

- Representatives and residents of Mchadijvari Village;
- Members of the Project Engineering Team;
- Environmental, Social and HS team.

The engineering aspects of the project were presented by the Project Engineer, who provided a detailed overview of the technical characteristics of the canal, the project area, the villages located along the alignment, and the agricultural lands that will benefit from irrigation upon completion of the rehabilitation works.

Representatives of the Environmental and Social Team also introduced the participants to the project's environmental and social requirements, applicable health and safety standards, and the mitigation measures to be implemented during the construction phase. Particular attention was given to the Environmental and Social Management Plan (ESMP), including its key provisions and implementation requirements.

Questions Raised and Responses

1. How long will the construction works last, and will they affect the irrigation season?

Response:

Project representatives explained that the construction schedule will be carefully planned to avoid disruption of the irrigation season and to ensure that local residents do not experience interruptions to their water supply.

2. When will the exact commencement date of the construction works become known?

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Response:

The procurement process for the rehabilitation works has already been launched. Following completion of the tender procedures, the construction contractor will be selected, and the local population will be informed in advance of the planned commencement date of the works.

3. Local residents expressed concern that construction waste and debris should not remain along the canal after completion of the works.

Response:

Representatives of the Project Implementation Unit's Environmental, Social, Health and Safety (ESHS) Team explained that the project is financed by the World Bank and is implemented in full compliance with its environmental and social requirements, under which environmental protection and health and safety issues are subject to strict supervision.

Accordingly, particular attention will be paid to proper waste management and site restoration following completion of the construction works. Waste management is considered one of the project's priority environmental requirements and is comprehensively addressed in the Environmental and Social Management Plan (ESMP), which forms an integral part of the construction contract.

Key Outcomes of the Meeting

During the consultation, local residents expressed their support for the project and noted that rehabilitation of the irrigation system would make a significant contribution to agricultural development and improve the efficient use of agricultural land within the project area.

The participants placed particular emphasis on the following issues:

- Timely and efficient implementation of the construction works;
- Ensuring uninterrupted irrigation during the irrigation season;
- Compliance with environmental requirements;
- Proper management of construction waste and restoration of the work areas upon completion of the construction activities.

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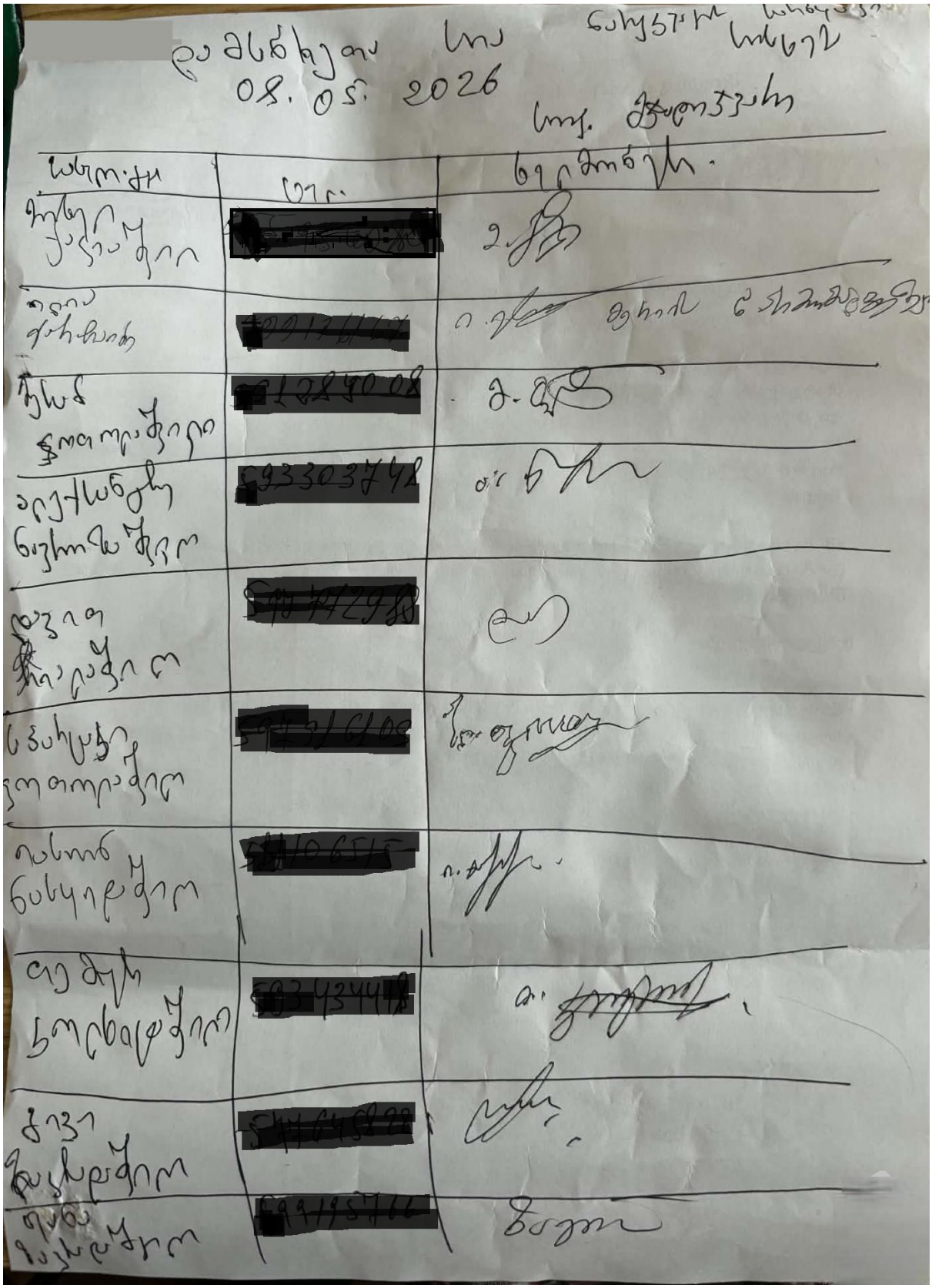
1. Attendance List



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2. Photos

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