



**MINISTRY OF ENVIRONMENTAL PROTECTION
AND AGRICULTURE OF GEORGIA**

**GEORGIA RESILIENT AGRICULTURE, IRRIGATION AND LAND PROJECT
ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN FOR
SHAVGHELE MASSIF DRAINAGE SCHEME**

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ABBREVAITIONS

CSC	Construction Supervision Company
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
PIU	Project Implementation Unit
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
ROW	Right of Way
SMDS	Shavghele Massif Drainage Scheme
ToR	Terms of Reference
TBD	To be Determined
WUO	Water User Organization

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 drainage systems is essential for high productivity and good yields. Ministry of Environmental Protection and Agriculture of Georgia (MEPA) included the rehabilitation and modernization of drainage infrastructure of Shavghele Massif into 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 will focus on upgrading and modernizing irrigation and drainage systems at main, secondary, and tertiary drain, collector and drain levels. These improvements will replace outdated and non-functional components. Shavghele Massif Drainage Scheme (SMDS) in Samegrelo region is the only sub-project of the GRAIL Project providing support to a drainage system. Other subprojects are designed to rehabilitate irrigation schemes.

Planned rehabilitation works include reshaping of the pumping station, main drains, collectors, and on-farm network, along with the rehabilitation or construction of necessary ancillary structures such as culverts and pumping stations.

Since all rehabilitation and construction activities will take place within the footprint of existing infrastructure, the sub-project 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. However, the assessment and analysis of environmental and social risks is an ongoing process and risk category may be revisited at any time of the subproject cycle.

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

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

Development of the ESMP was preceded by environmental and social screening of the sub-project design undertaken according to Attachment 1 of ESMF: Checklist for Environment and Social Screening of subprojects, as well as World Bank's ESS1 requirements. Screening Checklist is attached to this ESMP as Annex A.

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 of 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 throughout its implementation.

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

Shavgele Massif Drainage System sub-project will rehabilitate the existing drainage infrastructure. No new agricultural areas are going to be covered with drainage services.

Environmental and social impacts of the rehabilitation of SMDS will be limited to the sub-project area and mostly experienced at the construction phase. The machinery to be deployed at the construction site includes pumps, excavators, dump trucks, a pump excavator, and concrete mixers. Main types of works to be undertaken comprise rehabilitation of existing drainage infrastructure and construction of supplementary structures.

ESS 2: Labor and Working Conditions

ESS2 covers labor and working conditions for both direct and contracted workers. Therefore, to identify key labor requirements and associated risks, the Labor Management Procedure (LMP) has been developed under the Project. 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.

The goal of ESS2 is to ensure the working environment is safe, healthy, and conducive to well-being, while safeguarding health and safety of workers and respecting their rights in project-related activities. The key objectives of ESS2 are:

- 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.

ESS 3: Resource Efficiency and Pollution Prevention

ESS3 promotes efficient resource use, conservation, and pollution control. In line with ESS3, rehabilitation of SMDS will be organized the way to minimize water consumption, energy use, and waste generation while preventing pollution and environmental degradation.

By integrating ESS3 principles, SMDS project will enhance resource efficiency, reduce environmental impact, and promote sustainability in drainage system rehabilitation. These measures will ensure long-term benefits for 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.

ESS 4: Community Health and Safety

ESS4 is designed to ensure wellbeing of local communities in a projects' 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 SMDS rehabilitation are:

Health Protection:

Identify and manage health risks to communities coming from **environmental** impacts (e.g., poor air/water quality, hazardous materials, spread of disease) and **social** disruptions (e.g.,

economic displacement, loss of livelihoods, labor influx, concentration of workforce, gender-based violence).

Emergency Preparedness:

Develop and maintain effective emergency response plans for natural disasters, accidents, and other unforeseen events, prioritizing both immediate and long-term community health.

Resilient Infrastructure and Accessibility:

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

Traffic Management:

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.

Security and Conflict Management:

Understand and mitigate risks of conflicts between external workforce and local communities, prevent spread of communicable disease resulting from workers' interaction with communities, mitigate risks of power abuse by private security personnel should such be deployed by contractors.

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

If land acquisition, physical relocation of residents, or other forms of involuntary resettlement are required for SMDS rehabilitation, it will be undertaken in line with ESS5. 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 (PAP). Plans will be agreed with the World Bank and implemented prior to mobilization of contractors to individual worksites. RAP implementation report will be produced and agreed with the World Bank, after which commencement of works will be authorized. If PAP property is not formally registered, MEPA will support legalization of property, which hinders payment of compensation as per national legislation. In case of physical relocation and economic displacement, livelihood restoration options will be explored, agreed with the PAPs, and implemented to ensure that no one is worse off as a result of GRAIL Project implementation.

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. Rehabilitation works preventing operation of SMDS will be planned in the season with low or no demand for drainage to minimize negative impact on farming.

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 Checklist included in the GRAIL Project ESMF is used to identify potential biodiversity impacts, such as effects on critical and natural habitats, protected areas, or endangered species. Identified risks are specified and mitigation and monitoring measures prescribed in the site-specific ESMP. Alignment with ESS6 requires:

- 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 is not known movable/immovable cultural/historical and archaeological assets in the SMDS area; however, Chance Find Procedure will be applied in case of unexpected archeological discovery in line with ESS8.

ESS 10: Stakeholder Engagement and Information Disclosure

ESS10 requires meaningful and effective engagement of all Project stakeholders in its planning and implementation. The involvement of the local communities, micro, small and medium agribusinesses and farms, and other interested parties is essential for maximizing positive impact on targeted project beneficiaries in a just and fair way; avoiding disproportional negative impacts on vulnerable, disadvantaged and marginalized groups of population; receiving feedback necessary for adaptive project management.

Stakeholder Engagement Plan (SEP) of GRAIL Project will be followed during rehabilitation of SMDS. Effective stakeholder engagement includes Grievance Redress Mechanism (GRM) - a procedure that assists to resolve complaints and grievances in a timely, effective and efficient manner that satisfies all parties. GRM 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.

Contractors to be deployed for rehabilitation of SMDS will be required to establish and maintain a viable GRM for their workers.

2.2. ENVIRONMENTAL, SOCIAL AND H&S LAWS AND REGULATION OF GEORGIA AND INTERNATIONAL AGREEMENTS RELEVANT TO THE PROJECT

The following laws and international conventions, to which Georgia is a party, are relevant to the rehabilitation and operation of the Shavghele drainage System.

2.2.1. NATIONAL LEGISLATION

Law on Licenses and Permits (reg. #300.310.000.05.001.001.914; 24.06.2005, last amended 12.2024)

The 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 of licenses and permits, and sets out the rules for granting, amending, and abolishing licenses and permits.

Based on the National legislation, rehabilitation, reconstruction, demolition of the existing drainage system do not require Environmental Decision. Since the planned works on Shavghele drainage scheme envisage rehabilitation and reconstruction of the existing channels, no permit is required

Works on the Shavghele scheme are unlikely to require installation of the cement and crushing plant, as the project activity involves cleaning the drainage channel from the vegetation and excess sediments. Concrete and/or other construction materials will be provided from local factories or plants. Therefore, no separate license will be required by the project itself. The operators of these facilities are expected to hold the necessary licenses, and contractors must ensure that all materials are procured from duly licensed suppliers. If a contractor needs to use municipal water networks, consent and agreement has to be obtained from the local subdivision of the Georgian Amelioration LLC or local Municipality. The decision on selecting the water supply sources shall be decided by the contractor before selecting the camp location (if necessary). If drilling of the new borehole is required, the contractor will obtain a permit/license from the National Mining Agency under the Ministry of Economy and Sustainable Development of Georgia.

Law of Georgia on Environmental Protection (reg. #360.000.000.05.001.000.184; 10.12.1996, last amended 06.2023)

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 the project involves rehabilitation of existing drainage channels, no significant environmental risks or impacts are expected. The environmental risks associated with the cleaning of the channel from the vegetation and sediment is classified as moderate, taking into account the type, and scale of the project. Considering the location and sensitivity of the area, particularly, its proximity to the Kolkheti National Park, the Biodiversity Impact Assessment document has been prepared, which outlines the potential positive and negative affect during the project implementation and mitigation measure for minimizing an adverse impact. Furthermore, Shavghele drainage system 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 08.2025)

The 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

allow decision on the need of EIA. Activities not included in any of the annexes do not require environmental due diligence. Project proponent produces 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.

The rehabilitation activities of the Shavghele drainage scheme are not subject of the Environmental Assessment Code. However, contractors supplying any construction materials need to be checked whether they comply with the requirements of the Code. It is also possible that any other activities such as installation of the campsite may fall under Annex II of the Code. In this case, a screening procedure and agreement with the Ministry of Environment Protection and Agriculture of Georgia will be required.

Law on the Waste Management Code (reg. #360160000.05.001.017608; 26.12.2014, last amended 12.2024)

The Law 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.

The paper plastics in 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 by the municipality services. The majority of excavated material from the channel will be used for backfilling during the reconstruction of the pumping station and other structures of the scheme, as well as for the elevation of the berms along the channel. The excess construction waste (if any) will be disposed of in sites designated by the Solid Waste Management Company of Georgia and/or local Municipality and in accordance with the Waste Management Code of Georgia. Since the landfills for hazardous waste are absent in the country, such waste has to 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)

The 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 the Shavghela drainage system contributes significantly to the protection and sustainable management of water resources. By improving the drainage infrastructure, the project helps prevent waterlogging and enhances the efficiency of water use in adjacent agricultural areas and reduces the risk of surface and groundwater contamination. 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 quality.

Law on Water Resources Management (reg. #400000000.05.001.021003; adopted 30.06.2023)

The 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, SMDS works implemented before 1 September 2026 will be governed by the 1997 law and its current by-laws. Should any SMDS activities extend beyond September 1, 2026, they will comply with the 2023 law and its byways, 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)

The 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 the Shavghela drainage system plays a key role in preventing soil degradation and maintaining land productivity. Improved drainage reduces excessive soil moisture, which can lead to waterlogging and erosion. By stabilizing water levels and promoting proper runoff management, the project supports sustainable land use, preserves soil structure and fertility, and ensures long-term agricultural viability, fully aligning with environmental protection goals and sustainable resource management principles.

During Conduction of earth works to be undertaken under the GRAIL Project, 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 (#2260 08/05/2003 last amended October 2014)

The 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 fertility recovery and improvement.

Law on Protection of Atmospheric Air. (reg. #420.000.000.05.001.000.595; 22.06.1999, last amended 06.2023)

The 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 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 11.2023)

The law 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.

Although the implementation of the Shavghele drainage rehabilitation project involves the removal of a number of trees, it contributes to broader environmental sustainability and aligns with the goals of the Forest Code of Georgia. The project is designed to enhance land and water management in the region, thereby reducing soil erosion and mitigating the risk of flooding, which are key threats to nearby ecosystems and biodiversity. By rehabilitating the drainage system, the project enhances the resilience and fertility of adjacent agricultural lands, supporting more stable and sustainable farming practices. This, in turn, helps reduce pressure on forest resources by promoting more efficient land use. Tree removal will be conducted in a legally compliant and environmentally responsible manner, in coordination with the relevant authorities.

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.

The Shavghele drainage rehabilitation project area is located outside the boundaries of the Kolkheti National Park; however, it directly borders the park territory. Consequently, all legal

requirements stipulated by national legislation will be strictly observed during the implementation of the project. The project will contribute to the long-term sustainability and resilience of the surrounding ecosystems by reducing the risk of flooding and associated habitat degradation near the park's boundaries. Improved drainage infrastructure will help prevent the spread of excess surface water into protected ecosystems, thereby supporting the conservation of biodiversity and the natural balance within the national park.

Additionally, it is also acknowledged that Kolkheti National Park operates under an officially approved management plan. Should it be necessary, the project activities will be coordinated and aligned with the provisions and priorities outlined in this management plan, ensuring that implementation remains fully compatible with the park's long-term conservation objectives.

Law on the Red List and Red Book of Georgia (reg. #360.060.000.05.001.001.297; 06.06.2003 last amended 11.2023)

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.

The project will implement an ongoing monitoring program to assess the status of Red List species before, during the project. In collaboration with environmental authorities, any adverse impacts will be promptly addressed, and adaptive management strategies will be employed to ensure the conservation of protected species throughout the project lifecycle.

Law on Compensation for Damage caused by Hazardous Substances (#2350 23/07/1999 amended 06.2023 and renamed as Law on Environmental Liability)

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 as a result of 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

It is possible that there will be supplies of hazardous substances (oil products, diesel etc.). In unforeseen situations, it may be necessary to comply with the requirements of the law.

Laws and Regulations on Land Acquisition and Resettlement

Georgia has a number of laws to regulate land ownership rights and expropriation processes. The key principle is that compensation of physical assets should be provided at full replacement cost to be determined as per the World Bank standards. The laws also provide for compensation for income losses (e.g., losses resulting from loss of harvest). The laws

require consultation with and prior notification of the affected peoples, so that they are fully aware of and participate in the expropriation process.

The following laws of Georgia relate land use and land acquisition/expropriation, and relevant processes and procedures.

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)

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.

In case of Shavghele Sub-Project no property expropriation is envisaged.

Law on the Cost of New Land Cultivation Inflicted by Allocating Agricultural Land for Non-agricultural Purposes and Compensation for Damage. (Reg. # 370.020.000.05.001.000.244; 02.10.1997, last amended 06.2019)

Law establishes requirements for compensating the affected private landowners and land users for property loss and for the loss of future revenues forgone in case agricultural land is converted for non-agricultural use. If agricultural land is taken out of agricultural use, the law requires that a land replacement fee be paid to cover costs of agricultural land of equivalent size and quality, and that the owner/user of such land be fully compensated for damages.

The main purpose of the new law is to determine compensation measures for agricultural lands that can be used for non-agricultural purposes. The compensations measures will be determined based on the regions of Georgia. New law will determine scope of compensation and how these compensations will be allocated. In addition, the law will determine compensation for land users and owners in case the land use is temporarily suspended and/or quality of the land is deteriorated or there are limitations for land use.

Other Relevant Legislation

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

The 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)

The 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.

The rehabilitation works will be conducted in accordance with the provisions of this Law as well as all related procedures and principles. The minimum health and safety conditions will be provided in construction sites by considering this law. In the case of project activities, it is estimated that a total workforce of 148 personnel will be deployed for these activities. Therefore, construction companies have to consider the requirements of the legislation.

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

Law on Public Health (#1139 10/12/1997 amended 06. 2007)

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. Contractor companies will be entitled to have safety kits on site and trained personnel in case of the emergency. If any emergency happens, Contractor has to contact national emergency services 112, which will direct with the local Adjara regional service provider

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

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 out rules of assigning and abolishing the status of cultural heritage; and formulates frames for physical protection of cultural heritage. The Code 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 Shavghel drainage scheme area. However, the possibility of accidental discovery of archaeological remains during construction works (Chance Find) cannot be ruled out. In accordance with national legislation, any such findings must result in the immediate suspension of works and prompt notification of 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

Date	Title	Status in Georgia	Date
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
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

The SMDS is located in the Samegrelo-Zemo Svaneti Region, in the vicinity of the Poti Port, approximately 312 km west from Tbilisi, the capital of Georgia. It is located in the Khobi Municipality, on the downstream left embankment of Rioni River in the vicinity of the Black Sea, 21 km from the center of the Municipality. It is situated in a wetland delta formed at the mouth of the Rioni River, one of the major rivers in western Georgia, as it flows into the Black Sea.

This scheme is located at an average EL.0.8~2.0 m and it is designed to manage and mitigate water logging issues in the Shavghele area, which is prone to excessive moisture due to high rainfall and a dense river network. The primary objective of the SMDS is to remove surplus water from agricultural lands, thereby preventing waterlogging and enhancing soil conditions for farming activities.



Figure 1: Location of Shavghele Massif Drainage Scheme

The gross area of the lands of the Lenin Komsomo citrus-growing state farm is 850 hectares, including 30 hectares of unused land for agricultural crops.

The main causes of the swamping of the territory are difficult drainage of precipitation due to minor slopes of the ground surface, high groundwater levels, flooding of territory of the state farm by the waters of Lake during their high level. One of the main factors of inundation of the project area by the waters of the Rioni River was eliminated by the construction of the river embankment.

In the southern part of the project area, groundwater is located at a depth of 0~0.5m from the surface. The water intakes of closed collectors are open channels; their connection is designed by means of concrete culverts to protect the channels from erosion. Open drainage channels have an average depth of 2.0m a bottom width of 1.0m, and a slope of 2.0. The

distance between drains is 10m on the basis of the Averyanov Formula. The total length of closed drains is 99.8km and closed collectors 5km.

The main channel is a continuation of the Shavi-Ghele River, which flows into Paliastomi Lake to convey the 10-year frequency flow rate ($Q=39.0 \text{ m}^3/\text{s}$) and the Shavi-Ghele riverbed is deepened, widened and partially straightened. The cross-section of the main channel is calculated for 10-year frequency flow rates from $3.8 \text{ m}^3/\text{s}$ at the beginning of the channel to $39.0 \text{ m}^3/\text{s}$ at the end.

With a water level of +0.3 m in the Paliastomi Lake, normal drainage from the drained area is ensured, however the water level rise to +0.6m, the Shavi-Gele River rises and floods the territory of the state farm, sometimes even for several weeks, which is unacceptable. To protect the territory from flooding, a regulator sluice, a drainage pumping station and the embankment of the Shavi-Ghele River were planned.

When the water levels of Paliastomi Lake are high (+0.6m), backwater is created in the Shavi-Ghele River and the main drain. The drainage system and the open network suspended their functions and the plant roots end up in the water without receiving oxygen. In order to eliminate this event, a sluice regulator and a drainage pumping station were designed on the Shavi-Ghele River. When the water levels are high, the sluice-regulator is lowered, stopping the flow of water into the drainage channels from Shavi-Ghele, and water from the drained area is pumped by the pumping station into Shavi-Ghele. When the water levels are low, the regulator in the main drain is in a raised position and the water flows by gravity.

The design indicators are as follows.

- Total runoff of 10-year frequency : $W = 262,103 \text{ m}^3$
- Maximum water inflow : $Q = 39.0 \text{ m}^3/\text{s}$
- Permissible duration of flooding : $t = 0.5 \text{ days}$
- Capacity of pumps : $q = 2,880 \text{ m}^3/\text{h}$ ($0.8 \text{ m}^3/\text{s}$), 5 pumps ($14,400 \text{ m}^3/\text{h}$), lifting height 4.2m, 45kW
- Pressure pipelines : $D = 630\text{mm}$, $L = 72\sim 114\text{m}$

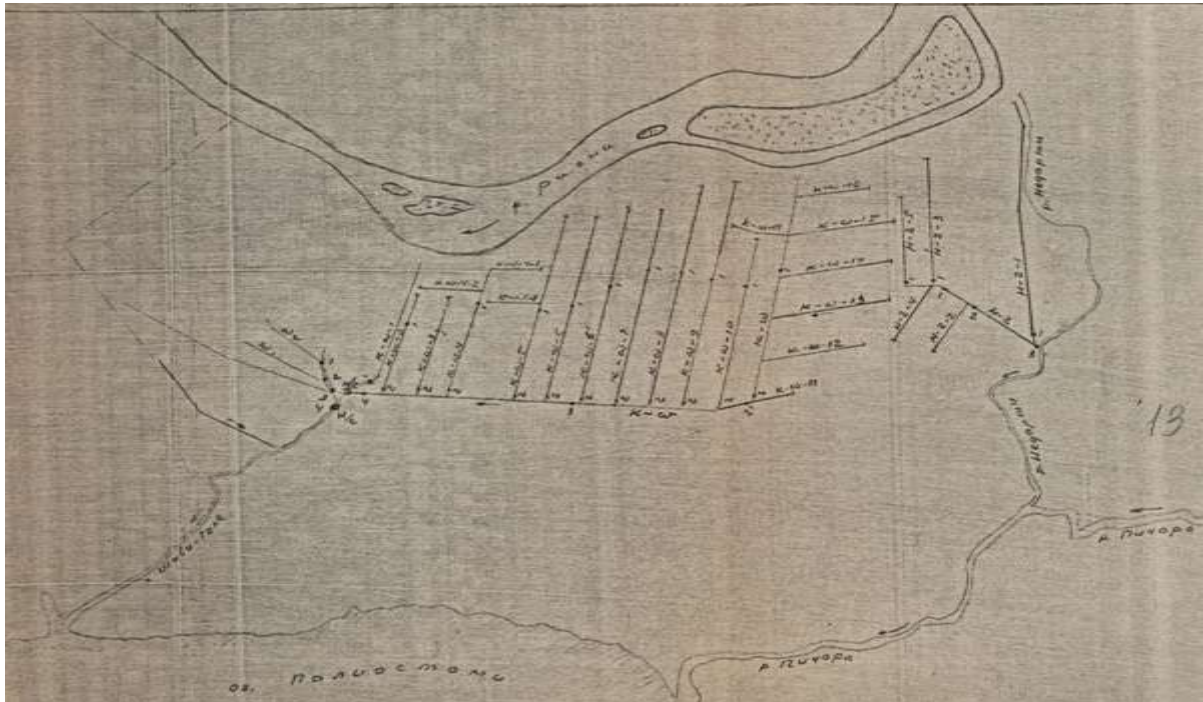


Figure 2: Schematic Plan of the Collector-drainage Network of the Massif (1:25,000)

3.2. EXISTING DRAIN AND STRUCTURES

The pumping station, installed 40 years ago, has no good access road and is difficult to reach, especially in rainy conditions. The pumping station was installed in 1982 with 8 pumps and a capacity 5.5 m³/sec in the drying areas. It is not functioning at the moment and only the concrete remained.



Figure 3: Existing Structures in the SMDS

3.3 EXISTING COMPONENTS OF DRAINAGE SCHEME

The gross project area for SMDS is 920 ha including roads, drains, forest and net farm fields and it is as follows.

Table 2. Gross Project Areas

Land	Roads	Drains	Forest	Settlement	Net Farm Fields	Gross Area
Area (ha)	13	46	41	64	756	920

The existing drainage scheme was constructed in 1982 in order to accelerate the agricultural development of drained lands, however, all drains are mostly filled with soils and muds and the drainage is getting worse due to reduced flow capacity, Therefore, the drains need to be rehabilitated by reflecting the rainfall pattern for 43 years from 1981 to 2023. The total volume of earthworks is provided in Table 3.

The drains have been designed based on the estimated discharge and slope. In many cases, the drains are oversized, meaning the design section is smaller than the existing section. In such cases, the drain will not be filled to meet the design section; instead, excavation will be carried out only to the required depth. Only Main Drain SK 2 requires a fully defined section. For main drain K-1 and K-2, the spoil will be deposited along the southern bank, to avoid backwatering from Paliastomi Lake. This will create a hydraulic barrier between the lake and the scheme, which will only be opened when scheme flood water levels are higher than downstream levels, ensuring positive flow out of the scheme.

Table 3. Volume of Earthwork on Drains

Drain	Length (m)	Excavation (m ³)	Filling (m ³)	Unit Q'ty for Excavation (m ³ /m)	Unit Q'ty for Filling (m ³ /m)
Main	7,078	51,776	31,551	7.32	4.46
Secondary	24,263	21,114	1,788	0.87	0.07
Tertiary	36,490	58,928	-	1.61	-
Total	67,831	131,817	33,339	1.94	0.49

The existing structures of the drainage system require rehabilitation/modernization. The number of the structures to be rehabilitated are as follows.

Table 4: Quantities of Structures

S. No.	Structures	Unit	Quantity
1	Drainage Outflow Structures		
2	Line-shaft vertical Turbine Pumps (1.4 m ³ /s)	Nos	5
3	Pump House	Nos	1
4	U/S Inlet and D/S outlet basin	Nos	1
5	Drain Channelization U/S and D/S	m	150
6	Electric Installation	Job	1
7	Flow Regulating Structure (Discharge gates 3 no 2.0*2.6m)	Nos	1
8	Earthen Embankment	m	1,090
9	Overflow Spillway Structure	m	95
10	Back filling the existing drain (SK-2-1-1)	m	270
11	Back filling the existing sump 20 diameter, depth 5	Nos	1
12	Bridge 6m span	Nos	1
13	Triple Barrel Box Culvert (3.5*2.5) m	Nos	1
14	Single Barrel Box Culvert (3.5*2.5) m	Nos	1
15	Double Barrel Box Culvert (1.5*1.5) m	Nos	1
16	Single Barrel Box Culvert (1.5*1.5)m	Nos	21

17	Pipe Culverts	Nos	
18	0.6 diameter RCC pipe culverts	Nos	45
19	0.8 m diameter RCC pipe culverts	Nos	33
20	1.0 m diameter RCC pipe culverts	Nos	18
21	Access Road to Pump House	m	300
22	Main and Secondary Drain Road Improvement	m	13,000

4. PROJECT DESCRIPTION

4.1 DESIGN OF DRAINAGE CHANNEL

The cross-section design for the main drain will be determined by considering hydraulic efficiency, topographic conditions, construction materials, and groundwater levels. The drains will primarily consist of earthen channels to address the overgrowth of reeds and aquatic plants while facilitating groundwater drainage. The main drainage channels will be expanded with a two-stage section structure and the retention section, lower section, will be planned with concrete lining, while the flood section will utilize earthen or rubble structures.

The elevation of the drain bottom will be approximately 10~20 cm lower than the field drainage ditch terminal elevation to minimize sediment deposition and aquatic plant growth. The area ($A=B \times H$) of the cross-section will be determined based on the watershed's time of concentration (T_c) and the hydrological Curve Number (CN) to calculate the design flood discharge. The side slopes will be planned as earthen structures with a slope gradient of 1:2.0, consistent with the field drainage ditches, to facilitate seepage drainage and ensure slope stability.

4.2. DESIGN OF PUMP STATION

The existing pump station is located in the outlet of the SMDS at a confluence point from the 2 main drains, S-K-1 and S-K-2 and collected water from the scheme is being naturally drained to the Paliastomi Lake due to the malfunctioned existing pump station with missing pump machine and gate leaves. Therefore, water flow in the main drains is blocked by the normal high water level of the Lake under normal conditions and it causes stagnant conditions.



Figure 4: Alternative Location for Installation of the Pump Station

The water level of the Lake has remained high for a long period of time, so that the water level of the drainage main drains is the same as that of the lake or sometimes flows back slightly, and the groundwater level in the scheme has not decreased. It is causing damage to crops due to over-watering. In addition, the scheme's topographical conditions are characterized by gentle slopes and groundwater in the agricultural fields remains high, preventing proper drainage due to prolonged water stagnation in the main drain. Therefore, the project proposes to demolish the outdated drainage gate structures and intake basins and install a new pump for forced drainage at the confluence of two main drains in order to universalize the cropping system and increase farmers' income.

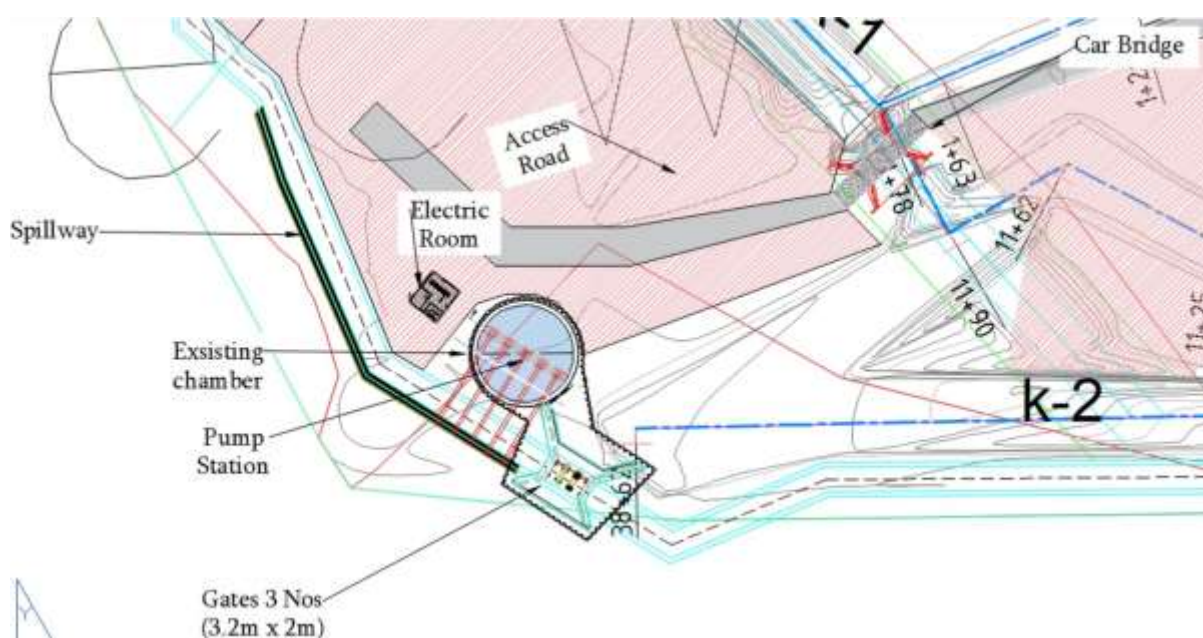


Figure 5: Layout of the Alternative 2 Pump Station and Discharge Gate

4.3. NEAREST SOURCES OF LICENSED MATERIALS

The locations and distances from the nearest sources of licensed materials - gravel, sand and water are located in the riverbed of the river Khobistskali and therefore long-range transportation will not be required (Table 5).

Table 5: Information on Licensed Quarries of Natural Construction Material

No.	License No.	Name	Owner	Obt./Exp. Date	Area(m ²)
1	10001277	Send Gravel Extraction from Khobistskali River, Vil Saijao	Shara-Gzamsheni Pirveli LLC	From 24.01.20 To 25.01.27	30,020
2	10001648	Send Gravel Extraction from Khobistskali River, near Vil Zubi	West Georgia LLC	From 03.09.20 To 05.09.26	20,360
3	10001656	Send Gravel Extraction from Khobistskali River, near Vil Bia	Prajm Concrete LLC	From 07.09.20 To 08.09.26	52,400
4	10002245	Send Gravel Extraction from Khobistskali River, near Vil Saijao	GRG LLC	From 28.07.21 To 29.07.26	62,660

It is possible to deliver concrete mixture from concrete plants on the territory of Khobi and Poti (Prime Concrete LLC). It also has a gravel extraction quarry nearby.

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 Shavghele River and/or boreholes. But, the drinking/using waters 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	1000113	Groundwater/freshwater Extraction (Entrepreneurial Purpose) nearby Vil. Patara Poti	Prime Concrete LLC	From 11.08.2011 To 02.06.2026	0.07
2	1000847	Groundwater/freshwater Extraction (Entrepreneurial Purpose) nearby Vil. Pirveli Maisi	Sanpetroleum Georgia LLC	From 19.09.2012 To 20.09.2037	0.07

5. PUBLIC CONSULTATION

According to the Project's Environmental and Social Framework, sub-contractor, contractor teams have obligation to conduct stakeholder consultation meetings on permanent bases, depending on activities and works that has to be performed during the Project design phase.

Information on the consultation meetings will be placed on the Ministry's and/or Company's web page(s), published in the local press and posted at the public spaces in the settlements along Shavghele drainage system, including administrations of respective municipalities and local self-governing bodies. Consultation meetings will be held in the locations convenient for attendance by the majority of the affected settlements. Meetings will be hosted by the representative of the MEPA and the Georgian Amelioration LLC and moderated by representatives of the Project Implementation Unit (PIU) of the MEPA. Meetings will inform 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 the Grievance Redress Mechanism (GRM) to be made available for their use during construction works. Meeting participants will be given a floor for questions and comments.

Based on the above-mentioned responsibilities, during the early design preparation stage, the design company, with the aim of assessing and collecting information on technical, agricultural, and potential land acquisition impacts on privately owned land, conducted several Public Consultation Meetings. These meetings involved representatives from Georgian Amelioration (GA), local municipalities, and local communities/farmers.

The first field visit took place on August 26–27, 2024, and was conducted together with representatives of Georgian Amelioration. At that time, access to the existing pump station was blocked by trees; therefore, only the existing drainage channels and structures were inspected. Additionally, GA confirmed that during the peak season, no flooding had occurred due to embankment overflow or seepage from the Rioni River. The net agricultural area is 628 ha out of a total gross area of 920 ha.

The second field visit was conducted on December 12–13, 2024. During this visit, the power-line tower along the river, the pump station, drains, and the Rioni River embankment were inspected. According to local farmers, water in the main drain had not been discharged due to waterlogging from the lake. They requested a new pump station to lower the water level in the drains to allow for crop cultivation. Information on the current technical specifications and functionality of the drainage system, as well as agricultural issues raised by farmers, was collected through a pre-designed questionnaire (Appendix C).

The third field visit took place on January 22, 2025, to assess the condition of the existing pump station and drains. During this visit, it was confirmed that the pump station and gate were non-functional and lacked essential structures. It was also observed that drain S-K-3 continued operating even during the highest water levels in Main Drain S-K-2. Therefore, the S-K-3 basin should be included in the flood analysis to estimate peak runoff at the pump station outlet.

The fourth field visit occurred on March 13, 2025, and included brief meetings with GA representatives and local farmers. The site conditions of drains and structures, including the pump station, were reviewed. According to information from local farmers, the main crops in the area include corn, potatoes, citrus, vegetables, and blackberries. Farmers also expressed

their willingness to pay for electricity to operate a new pump station and to clean the drains if the system is rehabilitated.

The fifth field visit was carried out on June 6, 2025, by the technical, social, and environmental experts of Geo-Consulting. The visit aimed to assess potential impacts on agricultural land resulting from the planned rehabilitation activities. Meetings were held with representatives from the local municipality and the community. The community leader and local farmers were informed about potential impacts on privately owned land.

The sixth consultation meeting was conducted on 30 January 2026 in Shavgele Village, Khobi Municipality, as part of the stakeholder engagement process for the Shavgele Irrigation Canal Rehabilitation Project. The consultation was organized to inform local beneficiaries about the planned works, present key technical, environmental, and social aspects of the project, functioning of ESMP and ensure meaningful community participation prior to the commencement of construction activities.

The documentary materials of the conducted consultation meetings are provided in Appendix F.

6. GRIEVANCE REDRESS MECHANISM

The point of contact regarding grievance management and the local stakeholder engagement activities are represented at every level of Project implementation and named as GM Focal Point

Design Sub- Consultant - Key Social Expert Nino Paatashvili

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PIU ES Specialist – Communications Officer Sophie Berishvili

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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 Shavghele drainage 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 GRM is discussed in detail in Annex C of the present ESMP.

Present draft ESMP will be disclosed in Georgian and English versions through the web page(s) of MEPA and/or Georgian Amelioration LLC as well as other media deemed easily accessible and convenient for the affected local communities ahead of scheduling stakeholder consultation meetings. Information on the consultation meetings will be placed on the Ministry's and/or Company's web page(s), published in the local press and posted at the public spaces in the settlements along Shavghele drainage system, including administrations of respective municipalities and local self-governing bodies. Consultation meetings will be held in the locations convenient for attendance by the majority of the affected settlements. Meetings will be hosted by the representative of the MEPA and the Georgian Amelioration LLC and moderated by representatives of the PIU of the MEPA. Meetings will inform 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 will be given a floor for questions and comments.

Minutes of the consultation meetings will be developed including record of presentations, comments, questions and answers; photo documentation; and scanned copies of participants' sign-up lists. ESMP will be finalized based on public feedback and minutes of consultations will be attached to the final version of ESMP.

7. LAND ACQUISITION AND RESETTLEMENT ISSUES

To conduct a preliminary assessment of potential resettlement and land acquisition issues, the design company, together with the technical, social, and environmental experts from Geo-Consulting, carried out field visits on March 13, 2025, and June 6, 2025. The purpose of these visits was to evaluate the potential impacts of the planned rehabilitation works on agricultural land. Meetings were held with representatives of the local municipality and the community. The community leader and local farmers were informed about potential impacts on privately owned land.

During the site visits, it was confirmed that no land takes and physical relocation is required for undertaking rehabilitation and operation of SMDS. The only potential impact identified may involve temporary disturbances to privately owned land plots due to the movement of construction vehicles. The farmers, the community leader, and the Head of the Municipality all confirmed that they have no objections to such temporary restrictions.

Prior to the commencement of rehabilitation works, further field visits will be conducted. A more detailed assessment of privately owned land will be carried out, and additional stakeholder meetings will be held with the local community. If any unanticipated damage to property occurs, 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.

8. ENVIRONMENTAL AND SOCIAL MITIGATION PLAN

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
PRE-CONSTRUCTION PHASE			
Notification of stakeholders	Grievances raised from local communities	<ul style="list-style-type: none"> 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/CSC/PIU
Recruiting and training of labor	<p>Disputes over terms and conditions of labor between Contractor and workers</p> <p>Damage to health and safety of workers</p>	<ul style="list-style-type: none"> 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 to the Labor Management Procedure approved by WB. 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. 	Contractor

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
		<ul style="list-style-type: none"> • Provide relevant personal protective gear to all workers and explain the mandatory nature of its use and enforce wear at the site. • No forced or child labor would be allowed to work on the project 	
Implementati on of the Resettlemen t Action Plan	Violation of private property and user rights of the affected communities	<ul style="list-style-type: none"> • In accordance with RAF, in case of any permanent or temporary impact on private lands, buildings or any other assets, develop and submit RAP completion reports to the World Bank for approval. • Implement Resettlement Action Plan (RAP) as approved by the World Bank prior to mobilization of the contractor to the work site. • Give formal notice to the contractor on taking the site upon approval of the RAP completion report. 	Contractor, PIU
Establishment of the work camps	Damage to environmentally and socially sensitive receptors	<ul style="list-style-type: none"> • If necessary, in coordination with PIU and local authorities, select worker camp locations in the areas that have least possible environmental and social impacts (e.g.: away from water sources, wetlands, settlements, etc.) 	Contractor
CONSTRUCTION PHASE			
Soil Excavation	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> • 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
Cleaning the drainage channels	- Increased water turbidity and sedimentation affecting aquatic species	<ul style="list-style-type: none"> • Schedule works outside sensitive breeding/spawning periods of aquatic species where feasible; 	Contractor

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
	<ul style="list-style-type: none"> - Possible harm to aquatic habitats and benthic organisms - Risk of pollution from oil, fuel, or lubricants used in machinery - Temporary noise and vibration affecting nearby residents and wildlife 	<ul style="list-style-type: none"> ● Use silt fences, sediment traps, or other measures to minimize sediment release into downstream water bodies; ● Avoid or minimize harm to aquatic organisms; ● Implement strict spill prevention measures; ● Properly collect, transport, and temporarily dispose removed material within the right of way, for farther use (such as backfilling, elevation of the berms along the channel etc.); ● Maintain continuous communication with local communities about work schedules and possible temporary disruptions. 	
Handling Chance Finds	Loss or damage of historic artifacts	<ul style="list-style-type: none"> ● 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. ● NACHP to provide written notice to Contractor/PIU on the completion of activities on the site and clearance for the resumption of works. 	PIU Contractor NACHP
Clearing of vegetation along the channels	Excessive impact on vegetation	<ul style="list-style-type: none"> ● Where applicable, the contractor shall obtain the necessary permit from the relevant authority with jurisdiction over the respective territory ● Trees, predominantly Alnus (bearded alder), have grown within the channels and drains. All such trees shall be removed from the drains. During the uprooting process, care should be taken to avoid disturbance to adjacent private land, thereby protecting the crops and farmland of private landowners ● Prior to the commencement of construction, the contractor shall conduct a comprehensive tree inventory across the entire project area, ensuring that all trees designated for removal are clearly and appropriately marked ● Avoid unnecessary cutting of the trees. 	Contractor

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
		<ul style="list-style-type: none"> ● Vegetation removal and storage should be carried out under the supervision of the contractor's environment specialist ● Limit the tree cutting activities in predefined boundaries ● Training of the staff in terms of tree cutting, handling and storing in the designated area. ● No wood burning should be allowed at the site ● The workforce should not disturb the fruit trees of the private landowners ● All wooden debris shall be removed from the drains to prevent decomposition and associated adverse impacts. ● Preserve/ compact the soil after tree cutting to avoid soil erosion ● All felled trees and vegetation shall be placed exclusively in designated areas, as specified by the relevant authority ● Handover the timber from the removed tree to the NFA/Municipal authorities ● Induction training and onsite training of the workers involved in land clearing activities. 	
Protection of faunal species	Damage to animals and birds	<ul style="list-style-type: none"> ● All rehabilitation works shall be carried out exclusively within the approved boundaries and the designated right-of-way (RoW) of the drains. ● Adhere to a maximum speed limit of 10 km/h near croplands and woodlands. ● Implement a no-horn policy ● Install protective fencing around excavated sites to prevent domestic and wild animals being harmed or falling into the excavations. ● 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

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
Protection of Aquatic Environment	Damage to aquatic species	<ul style="list-style-type: none"> ● Prevent the discharge of sediment-laden water from construction activities into drains or lake. ● Monitor dissolved oxygen (DO) levels monthly to ensure compliance with limits established by national legislation. ● Implement oil spill control measures and establish an emergency response system for prompt spill containment and management. ● Schedule works in sensitive aquatic habitats outside critical breeding or migration periods, where feasible. 	Contractor
Protection of Water Bodies	Risk of water pollution, sedimentation risks triggered by soil erosion	<ul style="list-style-type: none"> ● Prohibit the discharge of untreated wastewater from sewage into drains or water bodies during rehabilitation works; provide bio-toilets for workforce sanitation. ● Ensure no solid waste is disposed of into drains 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	<ul style="list-style-type: none"> - Emissions - Generation of dust - Generation of noise and vibration - Environment pollution with operation and/or 	<ul style="list-style-type: none"> ● Control generation of dust from vehicle movement by watering of roads as necessary. ● Keep all construction vehicles and machinery in a good technical condition to avoid excessive noise and emissions. 	Contractor

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
	accidental spillage of oil and lubricants	<ul style="list-style-type: none"> ● 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. 	
Operation of work camps (if any)	<ul style="list-style-type: none"> - Littering of the area with household waste - pollution of surface/ground water bodies with liquid discharges 	<ul style="list-style-type: none"> ● 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 carrying the sewage and submit it to the engineer. 	Contractor Local Municipality

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
Generation of non-hazardous construction waste	<ul style="list-style-type: none"> - Environment pollution with construction waste - Damage to landscape and surface water bodies from improperly dumped excess materials 	<ul style="list-style-type: none"> • Minimize the amount of generated wastes. • Separate wastes to: <ul style="list-style-type: none"> - single out reusable and recyclable waste. Reuse waste as feasible except asbestos-containing fraction. 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	<ul style="list-style-type: none"> - Damage to health and safety of workers handling waste - Damage to health and safety of communities within the impact zone - Pollution of environment with hazardous waste - Damage to landscape and surface water bodies from improperly dumped excess materials 	<p>Following measures will be taken in case of any accidental exposure to asbestos:</p> <ul style="list-style-type: none"> • 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. • 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. • Sprinkle asbestos-containing materials when handling; 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 	Contractor

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
		<p>landfills based on agreement concluded with the Solid Waste Management Company under the Ministry of Infrastructure of Georgia.</p> <ul style="list-style-type: none"> • 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. <p>Minimize the amount of generated wastes.</p> <p>Separate wastes to:</p> <ul style="list-style-type: none"> - Single out reusable and recyclable waste. Reuse waste as feasible except asbestos-containing fraction. 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. <ul style="list-style-type: none"> • Raise awareness of workers and personnel on the established rules of waste disposal. Enforce proper waste handling practice among all staff. 	
Generation of noise	<ul style="list-style-type: none"> - Nuisance to local communities - Health impact on workers 	<ul style="list-style-type: none"> • Keep vehicles and machinery in good technical condition to avoid unnecessary noise generation. • Prohibit conduct of noise-generating works at night time. • Prohibit speeding of construction vehicles and impose adequate speed limits for moving within and nearby 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	<ul style="list-style-type: none"> - Violation of civil rights of workers - Trauma, morbidity and mortality at work site 	<ul style="list-style-type: none"> • Comply with national labor legislation and the approved Labor Management Procedure (LMP), including working hours, minimum wages, legal working age, freedom of association, and prohibition of discrimination, forced labor, and child labor. 	Contractor/CSC

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
		<ul style="list-style-type: none"> ● 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 a Health and Safety Plan compliant with Georgian legislation and WB ESSs; appoint a site health and safety officer. ● Provide and enforce the use of personal protective equipment (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. ● Follow the workers' Grievance Redress Mechanism (GRM) as per the approved LMP. 	
Community liaison	<ul style="list-style-type: none"> - Nuisance to local communities - Conflicts between contractor and local population 	<p><u>Contractor is responsible to:</u></p> <ul style="list-style-type: none"> ● - Assign a local liaison person to lead communication with and receive requests / complaints from the local population. ● 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 LM 	Contractor

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
		<p>Procedure and strictly enforce them, including the dismissal of workers and financial penalties of adequate scale.</p>	
Works near and/or inside /agricultural areas	<ul style="list-style-type: none"> - Nuisance to local communities - Restriction of access to- and use of private property - Damage to private property 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> - Excessive impact on landscape - Residual pollution of ROW with construction waste and excess materials 	<p>After completion of construction activities, ensure that:</p> <ul style="list-style-type: none"> • 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 • 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. 	Contractor
OPERATION PHASE			
Operation and Maintenance trainings for Service	Flooding, soil erosion, salinization due to improper operation of the system	<ul style="list-style-type: none"> • 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 drainage scheme to avoid its malfunctioning. 	GA

ACTIVITY	RISK / EXPECTED IMPACT	MITIGATION MEASURES	RESPONSIBILITY
center Operators			
Application of pesticides by users of the drainage scheme	<ul style="list-style-type: none"> - Environmental pollution and damage to community health and safety from improper application of pesticides and poor disposal of packaging - Poor quality of farm produce due to excessive and improper use of pesticides 	<ul style="list-style-type: none"> • 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. • 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. 	GA
Maintain of the drains	Poor management of the removed sediments and vegetation during the cleaning of the channels	<ul style="list-style-type: none"> • Ensure regular maintenance of the channels to avoid accumulation of high volume of sediments and debris. • During the maintenance and removal of vegetation, organic waste should not be left in the drains for decaying. • Collect organic waste generated from canal cleaning and store in a designated area by the Municipality. • The wooden material might be distributed to the local communities as firewood. • Removed sediment material should be maintained by GA 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

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 with 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	Construction Supervision Company
<ul style="list-style-type: none"> • Transportation of construction materials during construction phase; • Movement of construction machinery 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Limit pollution of soil and air from emissions; • Limit nuisance to local communities from noise and vibration; • Minimize traffic disruption. 	CSC
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, excessive exhaust and	CSC

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?)
					leakage of oil products; Avoid excessive noise generation	
Servicing of construction vehicles and machinery	<p>Washing vehicles and machinery off-site of in the location sufficiently distant from water bodies;</p> <p>Servicing vehicles and machinery with oils and lubricants at service centers or in an especially arranged locations on-site;</p> <p>Technical adequacy of the servicing location:</p> <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 	CSC

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?)
Soil excavation	<ul style="list-style-type: none"> ● 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	<ul style="list-style-type: none"> ● 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 	CSC

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?)
Handling of chance finds	<ul style="list-style-type: none"> • 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	CSC/PIU; NACHP
Clearing of vegetation	<ul style="list-style-type: none"> • 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; 	Construction sites	Visual inspection	Prior and during vegetation clearing works	Avoid excessive impact on vegetation	CSC/PIU

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?)
	<ul style="list-style-type: none"> • Documents on the handover of timber and other parts of removed trees in place. 					
Sourcing of natural construction materials	<ul style="list-style-type: none"> • 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 	Quarries	<p>Checking documents</p> <p>Visual inspection</p>	During extraction of natural construction materials	<ul style="list-style-type: none"> • 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. 	CSC/PIU; National Agency of Mineral Resources

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?)
	natural regeneration of vegetative cover					
Generation of construction waste	<ul style="list-style-type: none"> • 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 	<p>Construction sites;</p> <p>Work camp;</p> <p>Waste disposal sites;</p> <p>Areas around work sites and waste disposal sites</p>	<p>Checking documents</p> <p>Visual Inspection</p>	Recurrent	Prevent pollution of the construction site and nearby area with waste	CSC/PIU; Environmental Supervision Department of the Ministry of Environment Protection and Agriculture

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?)
	<p>excessive amounts of waste on site;</p> <ul style="list-style-type: none"> • Dispose excessive construction material to the waste disposal area indicated by the Solid Waste Management Company of Georgia 					
Generation of household waste	<ul style="list-style-type: none"> • 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	CSC/PIU; Local municipalities

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?)
Generation of hazardous waste	<ul style="list-style-type: none"> ● 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 	construction sites and work camp	Visual inspection Checking of documents	Recurrent	<ul style="list-style-type: none"> ● Avoid damage to the health of workers and nearby communities; ● Avoid pollution of soil, surface water and ground water 	CSC/PIU; Department of Environmental Supervision under the Ministry of Environment Protection and Agriculture; Labor Inspectorate

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?)
	for deactivation and processing.					
Generation of noise	<ul style="list-style-type: none"> • 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 nearby settlements. 	<ul style="list-style-type: none"> • Construction sites and work camp • Routes of transportation 	Visual inspection	Recurrent	<ul style="list-style-type: none"> • Avoid nuisance to nearby communities; • Protect health of workers 	CSC/PIU

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?)
Labor management	<ul style="list-style-type: none"> ● 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; ● 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 	Construction sites and work camp	Checking documents; Visual inspection	Recurrent	<ul style="list-style-type: none"> ● Exclude exploitation and unfair treatment of workers; ● Reduce the probability of accidents 	CSC/PIU; Labor Inspectorate

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?)
	work camp, including provision of resting and catering facilities, safe drinking water and sanitation, separate WCs for men and women.					
Community liaison	<ul style="list-style-type: none"> • 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 community liaison person whose responsibility will be to have timely and efficient communication with the local population, positively or adversely impacted by the Project as well to the labor force 	Settlements affected by construction works	Visual inspection; Interviews with affected communities; Checking of GRM logs	Recurrent	<ul style="list-style-type: none"> • Minimize nuisance to local communities; • Avoid conflicts between contractor and local communities 	CSC/PIU

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?)
	<p>employee under the Construction Company.</p> <ul style="list-style-type: none"> ● 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 					

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?)
	<p>conducted in a timely, inclusive, and transparent manner.</p> <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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; 	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

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?)
	<p>work sites properly marked and fenced; temporary storage of construction materials and waste not preventing free movement of traffic and pedestrians;</p> <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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; 	Construction sites and work camps	Visual inspection	Final phase of construction works	<ul style="list-style-type: none"> • Avoid excessive impact on landscape; • Avoid residual pollution of ROW with construction waste and 	CSC/PIU

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?)
	<ul style="list-style-type: none"> • Access roads are repaired to pre-construction or better condition • No unaddressed consequences of accidental damage to fences, pipes or any other private property of local residents. 				excess materials	
OPERATION PHASE						
Delivery of drainage services to farmers	No malfunctioning of the drainage scheme; Awareness-rising among farmers being undertaken to promote adequate and rational practices	Along right of way of the drainage scheme; Office of the service provider	Visual inspection; Checking of awareness-raising campaign records	<ul style="list-style-type: none"> - Pre and post season checks - After extreme weather events 	Minimize soil erosion and salinization from excessive/improper irrigation; Minimize flooding and waterlogging of areas along right of way	GA
Application of pesticides by users of the drainage scheme	No excessive use of pesticides and adherence to the principles of Integrated Pest Management	In the agricultural fields served by Shavghele drainage scheme	Interviews with farmers Interviews with agricultural service providers	Recurrent	<ul style="list-style-type: none"> • Educate farmers on environmentally friendly practices through 	GA

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?)
					<p>awareness campaigns and training.</p> <ul style="list-style-type: none"> ● Provide training in Integrated Pest Management (IPM), Integrated Nutrient Management (INM), 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 	

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?)
					fertilizers; encourage the use of PPE. • Where feasible, establish vegetative buffer strips near field edges and water bodies to reduce sediment and pesticide runoff.	

APPENDIXES

APPENDIX A: CHECKLIST FOR ENVIRONMENT AND SOCIAL SCREENING OF SUBPROJECTS

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

<p>May the subproject have a high impact on the environment?</p>	<p>No</p> <p>A slight, short-term impact on the environment may occur during construction; however, no significant adverse effects are anticipated. The project involves the rehabilitation of the existing drainage system, which is expected to enhance agricultural areas and improve the local environment. Continuous discharge of water from the main channel will help improve aquatic water quality by reducing eutrophication and increasing dissolved oxygen levels. Construction activities will be limited in scope and duration and confined within the designated project boundaries.</p> <p>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.</p>
<p>What are the expected beneficial and adverse environmental impacts of subproject?</p>	<p>Shavghale Massif draining scheme of rehabilitation of a waterlogged area has significant positive impacts by enhancing agricultural productivity by improving the soil aeration, reducing water logging, eliminating the disease risk by draining stagnant water, helping the farmers for the timely land preparation for sowing in growing season, reduced risk of yield losses due to increased salinity and flooding, building the confidence of the farmers the money spent for the growing crops will not be lost due to stormwater, and improving water quality of the area and aquatic environment by reducing the chances for eutrophication and improving dissolved oxygen levels specifically in the main channels. This will result in economic growth for the area by high value crop production and enhance the livelihoods of the people.</p> <p>Anticipated insignificant adverse impact will be limited to construction activities only including impacts on vegetation including tree cutting from inside the existing drains to clear the drains, generation of spoil a part of which will be used for backfill, construction waste generation, traffic and noise due to movement of machinery, and dust emission during excavation and disturbance to faunal species due to rehabilitation activities These impacts would be managed by implementation of the ESMP.</p>

<p>May the subproject have a high impact on the local communities and other affected people?</p>	<p>No The Sub-Project focuses on rehabilitation of existing drainage system to lower the groundwater table and increase land fertility suitable for crops. The improvement will enhance agricultural production, boost crop yields, raise income levels, and improve the livelihoods of those involved in farming. However, some disturbances may occur during the rehabilitation activities. Such as noise, dust, pollution, flood or machinery movement during the rehabilitation phase, in case such occurs relevant mitigation measure will be addressed.</p>
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2. Mitigation Measures

<p>Were there any alternatives to the subproject design considered?</p>	<p>Yes Two alternatives were considered: No project Option and Rehabilitation of the Existing drainage system to drain the water ponding in SMDS. However, the rehabilitation of the existing drainage was considered best option to improve the fertility of land to increase agriculture productivity. Alternatives were considered for the selection of the suitable pump and locations for the pump installation.</p>
<p>What types of mitigation measures are proposed?</p>	<p>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.</p> <p>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.</p>
<p>What lessons from the previous similar subprojects have been incorporated into the project design?</p>	<p>The design should consider the public opinion in terms of collecting the information of past operations and current requirements of the farmers and their growing needs.</p>
<p>Have concerned communities been involved and how have their interests and knowledge</p>	<p>Several stakeholder engagement meetings have been conducted at Project design phase by Design</p>

<p>been adequately taken into consideration in subproject preparation?</p>	<p>consultant with GA and Municipality representatives and local farmers at Municipal Office on December 12-13, 2024; March 13, 2025 and June 6, 2025. During the meeting Consultant Company presented design scheme to the farmers, received their feedback and suggestions. The information about their operations was collected through a questionnaire and incorporated into the final design. Farmers demanded the installation of the new pump for the re-cultivation of the area, and if the pump is to be installed, they showed their willingness to pay for electricity bills during the operation and cleaning the drain. They also were informed about the possibility of temporary disturbance on privately owned land during the operation phase. During the maintenance of SMDS, any temporary use of privately owned land by GA, including but not limited to, short-term pipe storage or associated operational activities, landowners will be informed upfront, and their prior consent will be sought. The Design Consultant will continue consultations with local community representatives and farmers during the rehabilitation phase, addressing their concerns or grievances to a reasonable extent.</p>
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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)		x
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 ?		x
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?		x
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.)?		x
<p>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</p>			

Cultural resources safeguard screening information		Yes	No
5	Will the project require excavation near any historical, archaeological, or cultural heritage site?		x
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 declined¹
- 2. Subproject is accepted

Subproject preparation requires undertaking of Environmental and Social Impact Assessment

Subproject preparation requires Completion of the Checklist

Environmental and Social Management Plan for Small Construction and Rehabilitation Activities

¹ 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.

APPENDIX B: MAP OF PLANNED DRAINAGE SYSTEM

There are 2 main drains, 22 secondary drains and 105 tertiary drains, 67.8 km in all. The additional area on the east of the scheme will be brought into the scheme, connecting to the main drain SK-2, and blocking the existing small drain through the Kolkheti National park. This means all drainage water from within the boundaries, north of main drains SK-1 and SK-2 will drain through the newly installed gates and pump station.



Map of Shavghele Massif Drainage Scheme

APPENDIX C: PRESENT CONDITION OF SHAVGHELE DRAINAGE SCHEME



The Main Drain



View of Drained Water flowing towards the Paliastomi Lake



View of Disposal Points of Drainage / Stormwater into the Paliastomi Lake



Alder Trees Growing in the Secondary Drain



Existing Bridge on Main Drain



APPENDIX D: BIODIVERSITY ASSESSMENT REPORT

Biodiversity Assessment Report
(Shavghele Massif Drainage Scheme)

Georgia Resilient Agriculture, Irrigation and Land Project
Preliminary Design and Final Design for Rehabilitation and Modernization of
Irrigation and Drainage Schemes in Tashiskari, Tiriponi, Zeda Arkhi, Zemo Alazani,
Phase I, Narekvavi, Shavghele Massif

April 2025

YOOSHIN DASAN CONSULTANTS 

ABBREVIATIONS

CBD	Convention on Biological Diversity, Also Known as Convention of Rio De Janeiro.
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).
EMP	Environmental Management Plan
GoG	Government of Georgia
Ha	Hectare
IFC	International Finance Corporation
MAC	Maximum Admissible Concentration
MoEPA	Ministry of Environmental Protection and Agriculture
NBSAP	National Biodiversity Strategy and Action Plan
NFA	National Forest Agency
SMDS	Shavghele Massif Drainage Scheme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WB	World Bank

1. INTRODUCTION

1.1 Project Background

The Georgia Resilient Agriculture, Irrigation, and Land (GRAIL) project is co-financed by the World Bank and the Government of Georgia. The total project cost is USD 150.00 million, with each co-financer contributing USD 75.00 million. The main objectives of the project are to (a) improve irrigation and drainage services and agricultural production in the project areas, and (b) strengthen the national institutional capacity for irrigation and land management to support climate-resilient planning.

This Shavghele Massif Drainage Scheme (SMD) project is designed to finance rehabilitation and modernization of drainage system at main, secondary, and tertiary drain, collector and drain levels selected and shortlisted during the project preparation based on technical feasibility, economic viability and importance of drainage to the agricultural production in the relevant command areas for Shavghele Massif (807 ha) in Samegrelo region.

The scope of work supported by the GRAIL project will include the rehabilitation and modernization of headworks, main drains, distribution networks, collectors, and the on-farm network. The existing system was designed for large monocrop production areas of former Kolkhozes and Sovkhozes: whereas, the modernized system will consider the current land distribution and potential cropping patterns. Activities for the drainage system will involve reshaping the main collector and drainage network, as well as rehabilitating or constructing necessary ancillary structures, such as culverts and a pumping station. The details for the development of the drainage schemes are given below in the Table 1.

Table 1: Drainage Scheme for Development of Engineering Design

Drainage scheme	Area considered under the project (ha)	Headworks to be rehabilitated	Main drain to be rehabilitated	Network rehabilitation²
Shavghele Massif	807	0	YES+ a pumping station in intake basin on the main collector	Full rehabilitation of the drainage network

During the site visit and subsequent meetings with local residents and GA, it was confirmed that the nearby Rioni River does not flow into the SMDS. Instead, its flow is diverted into Paliastomi Lake through a drainage channel after passing the existing pump station. Since Paliastomi Lake is adjacent to the Black Sea, the fluctuations in the water level of the Black Sea directly affect the water level of Paliastomi Lake. The location map of the SMDS is illustrated in Figure 1.

² This includes secondary and tertiary network down to farm gates. Secondary drains need to be rehabilitated and modernized wherever feasible convert to pipelines for pressurized irrigation. Tertiary network is mainly unshared earth ditches without engineering structures and need to be fully redesigned and built based on actual land distribution, current and potential cropping pattern.

Figure 1. Location of the Shavgele Massif Drainage Scheme



1.2 Project Objectives:

Even with the best irrigation facilities, achieving high yields and producing quality crops can be challenging if flooding or high groundwater levels are not managed effectively. To protect crops from flooding and excessive moisture, it is essential to construct embankments in areas at risk of being submerged during heavy rains. Alternatively, drainage pumps can be installed to manage water accumulation beforehand, preventing crop submersion. Special methods should also be developed to lower groundwater levels to prevent soil over-moistening and ensure a suitable growing environment for crops.

While crops need water to grow, they can suffer significant damage if they are submerged or if there is too much moisture in the soil. Excess moisture can lead to oxygen deficiency and the accumulation of harmful gases like carbon dioxide. Therefore, to safeguard farmland from flooding and excessive soil moisture, it is crucial to efficiently remove surplus water. This involves calculating the required drainage capacity and planning suitable drainage facilities such as ditches, gates, and pumps. These efforts will promote safe farming practices, optimize land use, and enhance productivity. The objectives of this project are as follows:

- Increase productivity per unit area and ensure safe farming by preventing flooding and excess moisture in farmland.
- Establish conditions for widespread farmland use and improve cropping systems tailored to local topography and soil conditions.
- Enhance the use of agricultural machinery through wetland improvement, reduced labor requirements, and better management conditions.
- Address long-standing community requests by implementing projects that resolve complaints and meet farmer expectations.

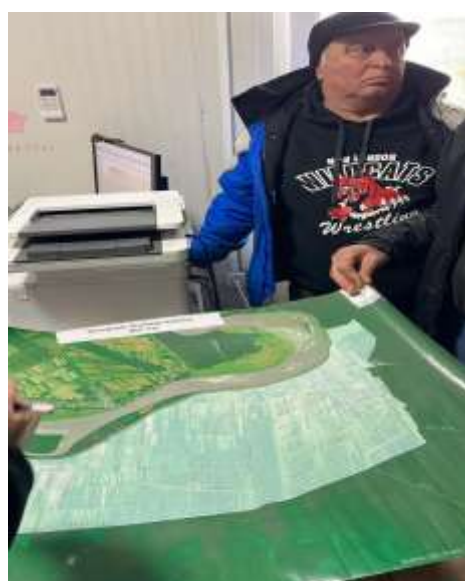
1.3 Approach and Methodology Adopted for the Study

Various methods and approaches were adopted for this biodiversity impact assessment. Key techniques used to collect data and analyze findings included consultations with GA team and

local communities, field surveys, and desktop reviews. This process involved site visits with various members of the technical team and consultation meetings with local farmers at the municipal office and the GA team. Two site visits by the consulting team were conducted on December 12, 2024, and March 20, 2025, while a public consultation was held on December 12, 2024. Data was gathered from farmers regarding issues such as waterlogging, growing seasons, crops patterns, harvesting seasons, existing irrigation techniques, livestock, and the local flora and fauna.

Additionally, a literature review was conducted by examining material from journals and various websites, leading to the preparation of a comprehensive report. The aim of the desktop study was to provide reliable information and support the findings from the field surveys. It focused on identifying and characterizing the biodiversity and ecological features of the proposed project site and its vicinity. This included identifying protected biodiversity sites and assessing their status under national and international legislation, as well as providing brief descriptions of why these sites are protected, such as habitat types and the presence of red-listed species.

Figure 2: Public Consultation in the Municipal Office of Shavghele Village



2. THE PROJECT

In the project area the drainage channels were well developed in the area before when the previous drainage pumping was functioning. Main drain channels, secondary channels, tertiary channels, and field drains were developed. However, due to the lack of maintenance and cleaning of the drainage channels after the drainage pumps stopped working, the channels are now full of vegetation in many areas, with reduced drainage channel capacity. Some drains are full of vegetation and some are even obliterated due to not being functional.

Figure 2: Main Channel condition of the existing drainage scheme



As the rehabilitation of the drainage pumping system is recommended in the present design, the drainage channels need to be cleaned with cross-section reshaping to accommodate the peak drainage discharge. For this purpose, drainage design has been carried out with recommendations for reshaping to accommodate the peak flow.

The gross area of the lands of the Lenin Komsomo citrus-growing state farm is 850 hectares, including 30 hectares of unused land for agricultural crops. The layout of the project schemes is illustrated in Figure 3.

The primary construction activities include dewatering, excavation, gate foundation and gate construction, bridge rehabilitation, tree removal, excavation of drainage systems, road improvements, and pump installations. This project is expected to be completed in approximately 20 months. The machinery to be mobilized includes pumps, excavators, dump trucks, a pump excavator, and concrete mixers. It is estimated that a total workforce of 148 personnel will be deployed for these activities.

Figure 3: Layout of the SMDS



3. LAND COVER

The land use data from World Cover 2021, provided by the European Space Agency (ESA), was utilized, highlighting the areas used for trees, shrubland, and cropland. Table 2 indicates the Tree cover, shrub land, grassland, cropland, built up area and herbaceous wetland in the scheme. Figure 3 illustrates the percentage of the type of the land; while land cover of the SMDS is shown in the Figure 4.

Table 2: Area Ratio by Type of Land

Index	Tree Cover	Shrubland	Grassland	Cropland	Built-up	Herbaceous Wetland	Total
Ar	687.03	12.62	169.05	92.29	4.78	24.38	850
Ra	69.39	1.27	17.07	9.32	0.48	2.46	100

Figure 3: Percentage of the Type of Land

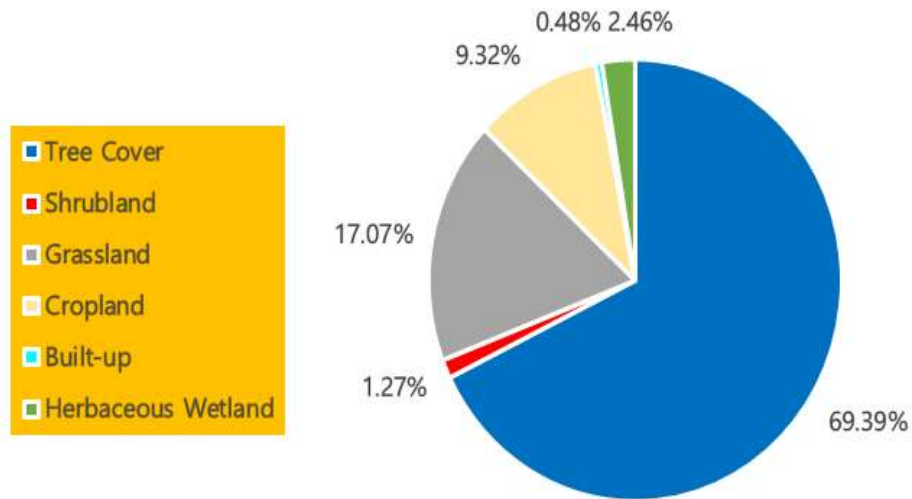
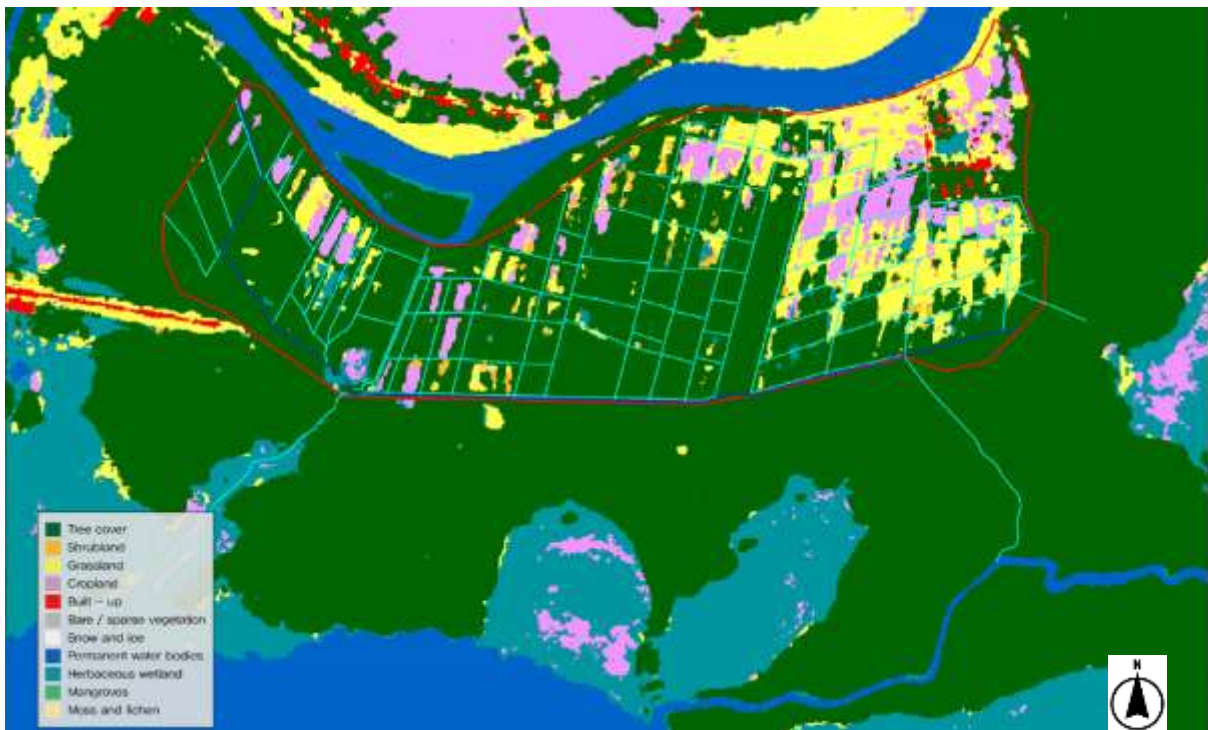


Figure 4: Land Cover of the SMDS



4. KEY LEGISLATION, CONVENTIONS, AND STANDARDS TO BE FOLLOWED

The biodiversity policy of the project is based on the best practice developed by the justification of the policies of the GoG, International policies and conventions signed by GoG and the requirements of the World Bank concerning to the protection of the environment and biological diversity (Table 3).

Table 3. Key legislation and policies for safeguarding biodiversity

Law	Date of issue/ activation	Consolidated version/ Last revision
Environmental Legislation of Georgia		
Law on Environmental Protection	1996	25.20.2019
Law on the System of Protected Areas	1996	20.07.2018
Law on Wildlife	1997	17.03.2020
Forest Code	1999	22.02.2019
Law on Red List and Red Book	2003	22.12.2018
Environmental Assessment Code	2017	05.07.2018
National Biodiversity Strategy and Action Plan (NBSAP)	2005	01.01.2014
National Environmental Action Program (2017-2021)	2018	22.05.2018
The National Forest Concept	2013	11.12.2013
Environmental Conventions Ratified by Georgia		
International Convention for The Protection of New Varieties of Plants.	1961	2008
Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Convention on Wetlands)	1971	1997
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).	1973	1996
Agreement on the Conservation of Populations of European Bats.	1991	2002
Agreement on The Conservation of African-Eurasian Migratory Water birds.	1995	2001
International Plant Protection Convention (1997 Revised Text).	1997	2007
Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) (CMS).	1983	2000
Convention on Biological Diversity (CBD), Also Known as Convention of Rio De Janeiro.	1992	1994
The Cartagena Protocol on Biosafety to the Convention on Biological Diversity.	2000	2009
European Landscape Convention of the Council of Europe.	2000	2011
Bird 92/43/EEC and Habitats 2009/147/EEC Directives of the Council of European Union (EU bird and Habitat Directives)	2009	2014
Convention on the Conservation of European Wildlife and Natural Habitats (Known as Bern Convention)	2008	2018
Environmental Policy of the Lender Organization		
Policy	Date of Issue	
World Bank Environment and Social Framework 2016	2016	
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	2016	
ESS3 Resource Efficiency and Pollution Prevention and Management	2016	
IFC Performance Standard- Guidance Note 6 (IFC PS6)	2012	

5. HABITATS

5.1 Kolkheti National Park

This area is a wetland forest area west of the Black Sea coast, east of the town Poti and salty Lake Paliastomi, and south of the mouth of the river Rioni (Phasis). It has been designated a national park. The area is the geographic center of historical Kolchheti (Colchis), well known from the Hellenistic legend Jason and the Argonauts. As it is a lowland area lying almost at the sea level, it can be swampy and difficult to reach. The area harbors many waterfowl birds (especially along the eastern shore of Lake Paliastomi), and rare endemic plants, and many water-associated amphibians, reptiles, and mammals

Figure 5: An aerial view of Kolkheti Park (Left side of main channel)



Kolkheti National Park - the first natural site in Georgia, is nominated on the UNESCO World Heritage List, for its Colchic forests and wetland. The Kolkheti Lowlands received international attention for the first time in 1996 when Georgia joined the Ramsar Convention – an intergovernmental treaty on wetlands of international importance, especially those that serve as habitats for waterfowl. Park is in the emerald network as well, which is ecological cooperation, created in order to make up special conservation interest. Wetlands are an important resting and staging area for thousands of waters birds' migration between Northern Eurasia and Africa. The dominated tree species in the park are alder, wing nut, spruce, etc.

The project area for the Shavghela Massif Drainage Scheme is outside the protected boundaries of the National Park and does not directly affect Kolkheti National Park. The construction activities will be limited to rehabilitating the existing drainage networks and the pump station. This work aims to improve the drainage system for farmland affected by waterlogging by lowering the water table. The Kolkheti National has its own management plan in Georgian language titled "Resolution No. 601 of the Government of Georgia of 2019 on the approval of the Technical Regulation – Management Plan of Kolkheti National Park and Katsoburi Nature Reserve" and this would be followed if needed.

Figure 6: Bearded Alder Trees in the protected area of Kolkheti National Park.



5.2 Paliastomi Lake

Paliastomi Lake is a protected area of international importance according to the Ramsar Convention (Site 893, ICUN Category II) and is part of Kolkheti National Park. The area and its biodiversity are safeguarded by international agreements, including Ramsar, Bonn, and the Black Sea conventions. The lake has a surface area of 17.3 km² and an average depth of 2.6 meters. Salinization, along with associated hydrological changes, has affected the biodiversity of the lake, particularly its fish species. The lake is fed by rainwater and its tributaries. Water levels are typically high during the summer, fall, and spring, while they drop during the winter months. The water is warm in July and August but becomes cold in winter. Due to strong winds, hypothermia is a common risk for those in or around the lake.

Figure7: A View of Paliastomi Lake



Paliastomi Lake is separated from the Black Sea by a 2-meter-high sandbar that stretches 300 to 400 meters. Sedimentation and extensive vegetation are significant issues for the lake. Until 1924, Paliastomi Lake was a freshwater lake. However, water drained from the lake into the Kaparchina River. The river's capacity was insufficient to drain all the floodwater, causing the water level to rise and flood the surrounding areas of Poti. To protect Poti from flooding, a canal was constructed to connect the lake with the sea. Over the time, a heavy storm eroded this canal, allowing seawater to enter the lake and resulting in its salinization of the lake.

Figure 8: Sandbar between Black Sea and Paliastomi lake



The lake's nutrient-rich waters, exacerbated by pollution, have led to the development of large blooms of algae and aquatic plants. This growth depletes oxygen levels, causing eutrophication and endangering fish and other aquatic species due to excessive nitrogen and phosphorus. In the northeastern part of the lake, the Pichora River flows in and further pollutes the lake by carrying sewage from nearby settlements and the airport channel, which also transports sewage from the city of Poti.

More than 300 different species of birds inhabit the lake, and over 100 species migrate through it, particularly when the surface of the Azov Sea freezes.

Figure 9: Marshes along the Paliastomi Lake



In SMDS area, water from all the secondary drains and tertiary drains flows to the main channels and pumped to the lake through gravity flow as shown in the Figure below.

Figure 10: A view of the drainage water flowing to wards Paliastomi Lake



Figure 11: A view of the disposal points of Drainage/ Stormwater in to Paliastomi Lake



5.3 Rioni River

The Rioni is the main river of western Georgia. It originates in the Caucasus Mountains, in the region of Racha and flows west to the Black Sea, entering it north of the city of Poti (near ancient Phasis). The city of Kutaisi, once the ancient city of Colchis, lies on its banks. It drains the western Transcaucasus into the Black Sea while the river Kura drains the eastern Transcaucasus into the Caspian Sea.

Figure 12: Rioni River flows along the Project site



Rioni river effects the project area due to percolation of the water in to the soil and raising the ground water table. During the site visit and meetings with the local residents and GA, it was confirmed that the flow of the nearby Rioni River does not flow into the SMDS.

6. FAUNA AND FLORA OF THE PROJECT SCHEME

6.1 Floral Species:

The vegetables grown by the farmers in the project area include: citrus, corn, potatoes, feijoa, rose flowers, black berry, fruit trees, laavis, strawberry, black berry, and tomatoes. These crops are being irrigated by the rain water and whenever require farmers using groundwater to irrigate the crops. No drainage water is being used for the irrigation purpose.

Figure 13: Agriculture fields for Feijoa in the village Shavghele



The area is covered by a deciduous wetland forest, composed mostly of bearded alder, several species of willows and oaks, spruce, common ash, and wing nut.

In the drainage channels trees have been grown up, among those bearded alder (*Alnus*), species is very dominant species along with *Picea Abies* as shown in the figures below.

Figure 14: Tree species in the Project Area

<p>Bearded alder Trees grown in secondary channel.</p>	<p>Spruce (<i>Picea Abies</i>) trees in the farmer's land</p>

From the private land farmers are harvesting the trees to sell out and for their use

Figure 15: Wood logs from the uprooted trees



The most common shrubs include: sea buck thorn, Hawthorne, spurge, blue thistle, Colchis sedge, blady grass, astragalus, coastal hedge nettle, fringed campion, paliurus, hawthorn, sea-buck thorn and others.

Figure 16: Shrubs grown at the edge of main channel and under growth



Hawthorn berry shrubs grown at the edge of main channel



Undergrowth in the Kolkheti National Park

6.2 Tree count survey in the Project Area

In the frames of the sub-project Shavghele, sub-consulting company “Geo Construction” performed random assessment of the trees on the Project buffer zone. 10 % of the total trees, located at the edge of the buffer zone, were selected. Assessment revealed, that all trees are under the governance of the Agency of Protected Areas. In case, trees are needed to be cut during the project implementation phase, construction company will follow all the procedures, defined in the Forest Code of Georgia and Law of Georgia on State Property. Table below gives detailed list and number of trees, collected during the performed assessment. Table 4 indicates that the dominant species is *Alnus* - Bare Headed Alder (80%) followed by Caucasian wall nut - *pterocarya pterocarpa* (8%). Considering the total area, this means that total of 18540 trees would be affected during the rehabilitation works of the drainage scheme.

Table 4: Tree count Inventory (10% of the Area)

Type of Tree	Numbers (10% of the Area)	Percentage
<i>Alnus</i>	1495	80%
<i>Salix</i>	62	3.3 %
<i>Ficus Carica</i>	28	1.5 %
<i>Morus alba</i> L.	19	1.0 %
<i>Juglans mandshurica</i>	15	0.8 %
<i>Pterocarya pterocarpa</i> (Michx.) Kunth.(wing nut/ Wall nut)	57	3 %
<i>Cryptomeria</i>	153	8.2 %
<i>Prúnus cerasiféra</i>	3	0.16 %
<i>Salix caprea</i>	2	0.10 %
<i>Acacia</i>	7	0.3 %
<i>Populus</i>	6	0.3 %
<i>Platanus. Orientalis</i>	6	0.3 %
<i>Ulmus georgica</i>	1	0.05 %
Total	1854	

6.3 Birds

The Kolkheti lowland is an important site for migratory water birds. Tens of thousands of these birds utilize the Kolkheti marshes, lakes, rivers, and coastal areas as stopover points and wintering grounds. The lowland and coastal regions play a significant role during the autumn and spring migrations of waders and shorebirds. During site visits discussions with farmers, and literature reviews, several bird species were noted, including quail, woodcock, herons, Colchian pheasants, *Fulica*, sandpipers, red-necked grebes, black-necked grebes, white-winged terns, gull-billed terns, marsh sandpipers, ruddy shelducks, white-fronted geese, glossy ibises, Eurasian spoonbills, squacco herons, great cormorants, and egrets.

Figure 17: Birds Species along the Project Area.



White fronted Goose in flight on the Lake



Red necked and black necked grebe in lake water



Egrets in flight in the marshes along the Paliastomi lake



Waders in flight above the lake Paliastomi during the migration.



Water Fowl birds flying observed during boating in the Paliastomi lake

6.4 Terrestrial Fauna:

The swamps and wetland forests of the park are home to several species, including:

- Roe deer (*Capreolus capreolus*)
- Wild boar (*Sus scrofa*)
- Otters (*Lutra lutra*)
- Coypu (*Myocastor coypus*)
- Golden jackal (*Canis aureus*)

These species inhabit the park's wetlands and swamps. These species consume various plant species such as blackberry, grasses, and forbs. Otters eat slow moving fish and invertebrate like crabs, clams, mussels and snail. Additionally, local farmers mentioned other animals during public consultations, such as foxes, badgers, martens, cows, and dogs. However, no wild animals were observed during the site visit. One coypu (primarily herbivores) was observed during the boating by the technical team in Lake Paliastomi. The project will not impact these animals, and poaching will be prohibited. The contractor will be committed to implementing the mitigation measures suggested in the Environmental and Social Management Plan (ESMP).

Figure 18: Cows grazing near the Lake



6.5 Bee Farming (Apiculture)

Bee farming also known as Apiculture is also being practiced in the Project area due to abundance of flowers in the national park by keeping honeybees for the production of honey and other bee products. It involves managing beehives and ensuring the health and well-being of the bees to maximize honey production. Farmers are establishing beehives, feeding bees when necessary, and harvesting honey

Figure 17: Apiculture practices in the Project Area



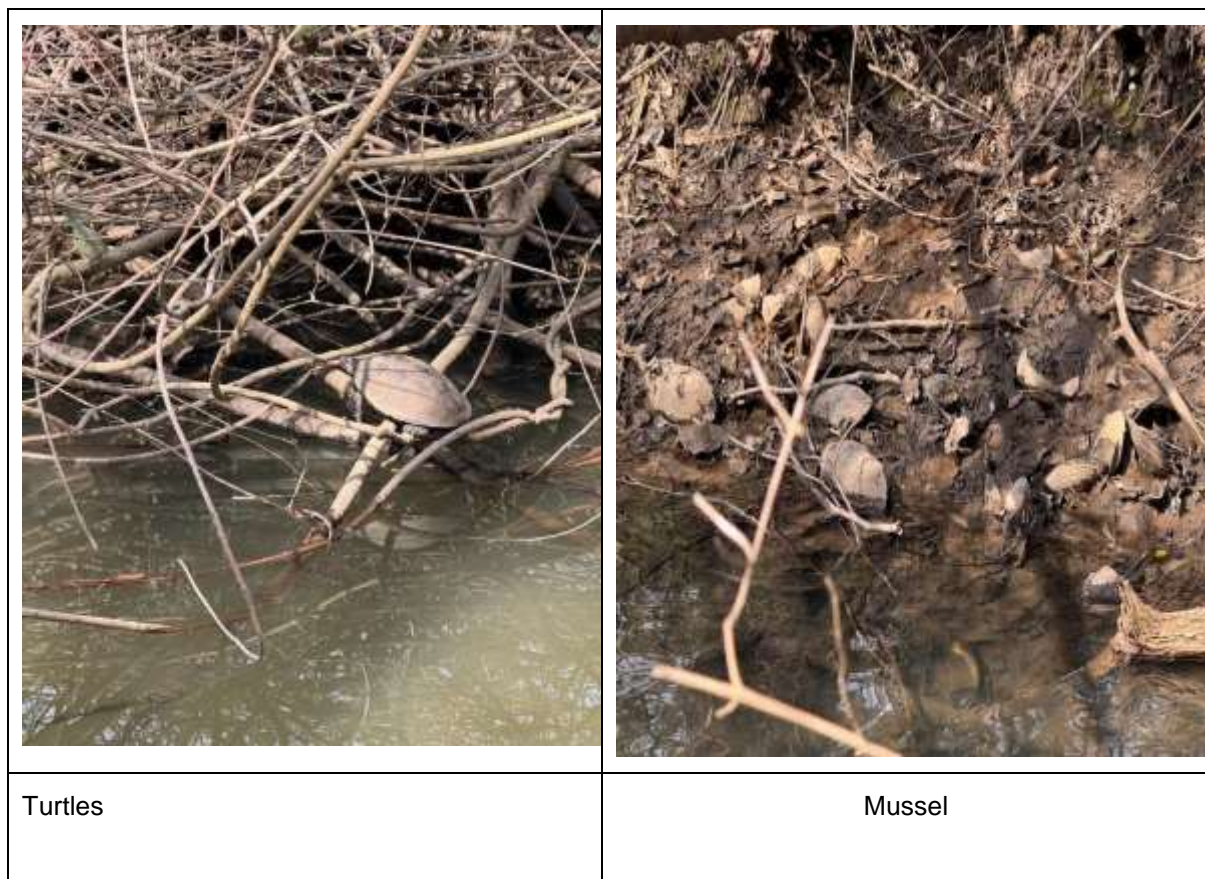
During the site visit one bee farm was observed along the access road to the main channel and pump station at a distance about 50 meters. Noise, vibration, and dust emissions can affect the productivity of honey. However, the impact is expected to be minimal since the project involves only a few pieces of machinery, including dumper trucks, an excavator, and a concrete mixer and can be avoided by the implementation of the ESMP. Additionally, any disturbance will be limited to the time spent passing near the bee farm.

6.6 Aquatic species:

Kolkheti National Park in Georgia is home to a diverse range of aquatic species, including numerous waterfowl, several fish species, and reptiles. The park's wetlands and Lake Paliastomi are particularly important habitats for these animals. Reptiles include Ring snake, dice snake, and European marsh turtle. While amphibians include common treefrog and lake frog.

Kolkheti National Park is rich in fish diversity, with 88 species recorded, including Black Sea species, freshwater fish, and those that migrate between the two. Common fish found in the park include pike, Black Sea herring, Danube bleak, vimba, carp, Welsh catfish, racer goby, round goby, and Black goby. Paliastomi Lake, in particular, is known for its fish population, although some species, like sturgeon and certain herring varieties, are now less common than in the past. Fishing within the park is permitted with the necessary authorization from the administration, including for scientific and research purposes.

Figure 18: Aquatic Life in the Project Area





Fish species in the chamber of pump station



Fish Catching from Chamber of the pump station

7. ANTICIPATED POTENTIAL IMPACTS OF SHAVGHELE SCHEMES

7.1 Potential Positive Impacts:

The SMDS has been part of the landscape for decades. Local ecosystems, including the adjacent wetlands and Lake Paliastomi, have already adapted to its presence. Rehabilitation will return the system to its intended, more functional state, reducing stagnation and improving ecological flows.

The rehabilitation of the SMDS in a waterlogged area is expected to yield significant positive outcomes. These include improved soil aeration, reduced waterlogging and associated diseases, enhanced agricultural productivity, and protection of rural infrastructure. Key anticipated benefits are:

- **Improved Soil Aeration:**

Drainage removes excess water, allowing air to fill the soil pores. This is crucial for root growth, nutrient uptake, and beneficial microbial activity, which are vital for healthy crop and tree growth in the scheme area.

- **Reduced Disease Risk:**

Waterlogged areas can become breeding grounds for disease vectors and pathogens, increasing risks of illnesses such as malaria, typhoid, and other waterborne illnesses. Proper drainage eliminates stagnant water sources, thereby reducing transmission risks.

- **Stable hydrological balance:**

Rather than increasing flood risk, the scheme **reduces it** by restoring water conveyance capacity and preventing waterlogging. Regular flow through the main channel ensures stable hydrological balance and protects both crops and infrastructure.

- **Support for Biodiversity in Agricultural Landscapes:**

While natural wetlands may face some disruption, the project can also improve conditions for biodiversity in agricultural landscapes by reducing stagnant water that favors pests and diseases, while maintaining ecological flow in drainage channels.

- **Enhanced Agricultural Productivity:**

Improved soil aeration and nutrient availability, along with reduced waterlogging stress, can lead to greater productivity and food security in SMDS area.

- **Infrastructure Protection:**

Effective drainage prevents structural damage to rural infrastructure, including roads and farm buildings, which can otherwise worsen under waterlogged conditions.

- **Timely Land Preparation:**

Rehabilitated drainage systems allow for earlier access to land by agricultural machinery, enabling timely sowing and cultivation in the growing seasons, particularly from April to September.

- **Reduced Risk of Yield Loss:**

By mitigating the effects of waterlogging and salinity, drainage rehabilitation helps avoid crop losses and associated financial setbacks for farmers.

- **Extended Growing Seasons:**

By reducing soil saturation and improving field access, farmers may be able to plant and harvest more than one crop per year, increasing overall land productivity.

- **Improved Water Quality:**

The upgraded drainage system can help improve both the quantity and quality of discharge water by reducing the release of excess nutrients and pollutants into surrounding ecosystems.

- **Climate Resilience and Adaptation:**

Improved drainage systems help buffer the effects of climate change by reducing vulnerability to extreme rainfall events, which are becoming more frequent. This enhances the area's resilience to floods and waterlogging.

- **Employment and Livelihood Opportunities:**

The rehabilitation work itself and the expected increase in agricultural activity can generate temporary and permanent employment opportunities for local communities, both during and after implementation.

7.2 Potential Adverse Impacts and Mitigation Measures:

Despite the benefits, the drainage scheme also poses potential negative environmental impacts if not carefully managed. These include:

-
- **Soil Erosion:**
Increased water flow through drains may lead to erosion, affecting soil stability and fertility.
 - **Salinity Risks:**
Lowering the water table can raise salt concentrations at the surface, especially in arid zones or areas with poor drainage control.
 - **Ecosystem Disruption:**
Wetlands and natural habitats may be affected by changes in salinity and hydrology, potentially harming flora and fauna.
 - **Water pollution**
Excessive use of fertilizers rich in nitrogen and phosphorous can contaminate the water quality of the receiving body Paliastomi lake resulting in eutrophication and damage to the aquatic species. Additionally, Pesticide runoff into a lake can have a variety of negative effects, including water contamination due to the presence of toxic substances, disruption of aquatic ecosystems by impacting algae, insects, fish, and large mammals, biodiversity loss by killing non-target species including beneficial insects, excessive algal growth depleting the oxygen level due to decay and potential health risks.

While drainage can in some contexts, contribute to salinity and erosion, these risks are well understood and controllable by the measures such as controlled drainage flow, proper outfall design preventing downstream sedimentation, monitoring and adaptive management.

The scheme does not involve converting natural habitats or protected areas into farmland. As such, **no significant impact on native biodiversity is anticipated**. In fact, improved water quality and management can **enhance aquatic ecosystems** by reducing eutrophication, especially in downstream water bodies like Lake Paliastomi.

Any adverse environmental impacts (e.g., noise, dust, minor runoff) are temporary and confined to the construction phase, typically lasting a short period. These impacts can be effectively managed through standard mitigation measures outlined in the Environmental and Social Management Plan (ESMP).

7.3 Approach to be followed for the Mitigation Measures

The implementation of mitigation measures for the SMDS rehabilitation will follow an integrated, environmentally sound, and participatory approach, aligned with the World Bank's Environmental and Social Framework. In particular:

ESS2: Labor and Working Conditions: Under which significant emphasis will be given to labor and working conditions for both direct and contracted workers. The process will be regulated in compliance to the Labor Management Procedure (LMP) developed under the Project. Procedure outlines Project's approach to comply with national requirements while aligning with the objectives of the World Bank's Environmental and Social Management Framework (ESMF). Specifically, it adheres to Environmental and Social Standard 2 (ESS2) – "Labor and Working Conditions" and Environmental and Social Standard 4 (ESS4) – "Community Health and Safety."

ESS 3: Resource Efficiency and Pollution Prevention and Management will guide efforts to minimize air, soil, and water pollution during rehabilitation and operation, including

measures to control erosion, manage solid and liquid waste, and prevent contamination of surface and groundwater.

The drainage rehabilitation project will incorporate ESS3 principles to promote efficient resource use, conservation, and pollution control throughout its implementation. The project will focus on minimizing water consumption, energy use, and waste generation while preventing pollution and environmental degradation.

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

ESS4: Community Health and Safety: Any risks or adverse impacts on local communities caused by the project construction activities will be avoided and controlled. The primary objective of this will be to minimize any adverse effects and maximize the positive outcomes that can arise from a project's activities on communities. In addition to the applicable Environmental and Social Safeguard Policies, the project will also adhere to the World Bank's Environmental, Health, and Safety (EHS) General Guidelines throughout its implementation.

ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources Under the Project's Environmental and Social Management Framework (ESMF) for small-scale construction and rehabilitation activities, the requirements of Environmental and Social Standard 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources must be adhered to. This includes the completion of two key instruments:

1. Environmental and Social Screening Checklist

This checklist is designed to identify potential biodiversity-related risks and impacts associated with the sub-project. It must assess the likelihood of adverse effects on critical habitats, protected areas, endangered species, or ecologically sensitive features in proximity to the project site — such as the disruption of ecosystems, degradation of water bodies, or fragmentation of wildlife corridors.

2. Environmental and Social Mitigation Plan (ESMP)

Where risks are identified — such as habitat loss, ecosystem degradation, or overexploitation of natural resources — an ESMP must be developed to outline appropriate mitigation measures. These may include:

- Avoiding interventions within or near critical habitats and ecologically sensitive areas. Implementing erosion control, afforestation, or reforestation programs to support ecosystem restoration.
- Engaging and consulting with local communities who depend on natural resources for their livelihoods.
- Establishing a biodiversity monitoring program to track ecological impacts during and after construction activities.

ESS10: Stakeholder Engagement and Information Disclosure: Timely and permanent communication with the local population, SME agribusinesses and farms as well as all other interested parties will be 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 mitigation hierarchy is a framework to identify measures to avoid, minimize, or mitigate potentially adverse impacts and risks on the biodiversity receptors and restored or rehabilitated where feasible. Following mitigation hierarchy will be avoided during the rehabilitation/ construction works of SMDS with the aim of achieving no net loss or a net gain of biodiversity.

- Avoidance - the main focus to start up this step of hierarchy that includes measures taken to avoid direct and indirect project-related impacts on the Critical habitat right from the beginning and during the construction depending upon the rising issues.
- Minimization - or mitigation measures are designed to reduce the duration, intensity and / or extent of direct, indirect and cumulative project-related impacts that cannot be completely avoided, as far as is practically feasible. Robust and pragmatic minimization measures can be effective in reducing biodiversity impacts below significance thresholds.
- Rehabilitation / Restoration – of the biodiversity impacted by project activities that cannot be completely avoided and / or minimized. Rehabilitation activities are planned within the Project.
- Offset - Biodiversity offsets are measures taken to compensate for any residual significant, adverse impacts that cannot be avoided, minimized and / or rehabilitated or restored, to achieve no net loss or a net gain of biodiversity. Biodiversity offsets are measurable positive conservation outcomes on priority biodiversity features that are attributed to project activities, and whose magnitude outweighs that of the residual adverse biodiversity impacts arising from the project development. Offsets require investments in conservation management protection where the results of these investments can be quantified.

7.4 Summary of the Mitigation Measures

The Contractor will be responsible for the implementation of these mitigation measures and will be supervised by the Supervision Consultant Company. The Contractor environmental specialist should have strong qualifications and demonstrated expertise in managing complex environmental issues throughout the project implementation phase. Summary of the mitigation measures to be applied during the various stages of the project is given below:

Preconstruction and Construction Phase

➤ Site Clearance and Vegetation Management

- Obtain necessary permits and conduct pre-construction environmental surveys.
- Limit all activities to defined project boundaries.
- Fence off sensitive areas and clearly mark work zones.
- Avoid unnecessary tree felling and ensure environmentally supervised removal and handling of vegetation.
- Implement erosion control measures and prevent soil loss from exposed areas.
- Train workers in proper procedures for vegetation handling and tree removal.

➤ **Soil and Spoil Management**

- Temporary storage of excavated material within the RoW of the project for further use as a backfilling material and for the elevation of the berms along the channel.
- Avoid construction during rainy seasons to minimize erosion.
- Monitor for soil contamination during works.
- Prevent environmental degradation from spoil transport by maintaining clean access roads and preventing runoff.

➤ **Fire and Safety Risk Management**

- Prohibit on-site burning of waste or vegetation.
- Provide fire safety training to workers.
- Restrict smoking in forested and sensitive zones.

➤ **Biodiversity and Wildlife Protection**

- Enforce speed and noise limits on access roads.
- Fence excavated zones and prohibit poaching activities.
- Schedule works to avoid wildlife breeding or nesting periods.
- Conduct pre-construction bird surveys and protect nesting trees.
- Minimize noise and light disturbance using low-vibration equipment and directional lighting.

➤ **Aquatic Ecosystem Protection**

- Prevent sediment discharge into water bodies.
- Monitor water quality throughout the works.
- Maintain environmental flows and avoid construction during fish spawning seasons.
- Prepare for spill prevention and emergency response.

➤ **Air Quality and Dust Control**

- Water access roads regularly and maintain machinery.
- Use enclosed systems for materials prone to generating dust.

➤ **Pollution Prevention and Waste Management**

- Store hazardous substances safely.
- Treat onsite wastewater before discharge.
- Train workers in waste handling, spill response, and chemical storage.

More detailed steps for addressing and mitigating each positive and adverse environmental or social impacts is presented in the Environmental and Social Mitigation and Monitoring Plan of this ESMP.

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APPENDIX E: QUESTIONNAIRE ON IRRIGATION AND DRAINAGE SYSTEMS AND AGRICULTURAL PRACTICES

Questionnaire: Information on Irrigation Systems and Agriculture practices კითხვარი: ინფორმაცია სარწყავ სისტემებზე და სასოფლო სამეურნეო საკითხებთან დაკავშირებით							
1	ზოგადი ინფორმაცია General Information	Part of the main canal. Secondary lines G1, G3-2, G4, G5, G5-1, G5', G4', G21					Remarks კომენტარი
2	Name of Irrigation Scheme საირიგაციო სქემის დასახელება	TIRIFONI/ტირიფონი					
3	District Total Command Area, Ha რეგიონის საერთო ჩამოკიდული ფართობი, ჰა	4837ჰა/ha					
4	Type of Crop(s) Cultivated: კულტურების ტიპები/სახეობები:	Present Crop Area (ha) არსებული კულტურების ფართობი (ha)	Present Average yield (ton/ha) მიმდინარე საშუალო მოსავალი (ტონა/ჰა)	Future crop area (%) მომავალი კულტურების ფართობი (%)	Expected Average yield (ton/ha) საპროექტო საშუალო მოსავლიანობა (ტონა/ჰა)	Plantation date (approximate) დათესვის თარიღი (დაახლოებით)	Harvesting date (approximate) მოსავლის აღების თარიღი (დაახლოებით)
	Maize (Corn)/სიმინდი	500	6			april/აპრილი	september/სექტემბერი
	Vegetables/ბოსტნეული	500	10			april/აპრილი	september/სექტემბერი
	Fruit tree/ხეხილი	4000				Perennial tree/მრავალწლოვანი წიწვიანი ხეები	
5	Water-provided (Irrigated) area წყალუზრუნველყოფილი ფართობი; მორწყული ფართობი / Irrigated area 2024; მორწყული ფართობი / Irrigated area 2023; მორწყული ფართობი / Irrigated area 2022;						
6	Do you have water fee (irrigation) collection practices? If so provide detail information? გაქვთ თუ არა წყლის გადასახადის (ირიგაციის შემთხვევაში) შეგროვების პრაქტიკა? თუ ასეა, მოგვარდეთ დეტალური ინფორმაცია?	contract/ხელშეკრულება					
7	(Contractual) Water-provided area საკონტრაქტო წყალუზრუნველყოფილი ფართობი; მორწყული ფართობი / Irrigated area 2024; მორწყული ფართობი / Irrigated area 2023; მორწყული ფართობი / Irrigated area 2022;						671 849 756
8	Types of irrigation canal network/გამანაწილებელი ქსელის ტიპები: Earth canals/გრუნტის არხები Open canals (concrete lined)/ლია არხი (ბეტონით მოპირკეთებული) Open canals (Parabolic flumes)/ლია არხი (პარაბოლური ღარები) Pipelines/მილსადენები						X X

9	<p>What do you think, how is the canal conditions overall? The Condition of Headworks, condition of Main Canal, condition of secondary canals? Do you think rehabilitation of canal systems is necessary , if so what should be rehabilitated ? როგორ ფიქრობთ, ზოგადად როგორია არხის მდგომარეობა? სათავე ნაგებობის, მაგისტრალური არხის, მუორე რიგის არხების მდგომარეობა? როგორ ფიქრობთ, საჭიროა თუ არა არხების სისტემების რეაბილიტაცია, თუ ასეა, რისი რეაბილიტაცია უნდა მოხდეს?</p>	<p>Rehabilitation of the main canal and secondary canals is necessary/მაგისტრალური არხის და მუორე რიგის არხების რეაბილიტაცია აუცილებელი</p>						
10	<p>What type of soil do you have on your farm? რა ტიპის ნიადაგი გაქვთ? Sandy/ქვიშნარი Clay/თიხნარი Loamy/პუშუსოვან/თიხნარი Other (please specify)/სხვა (აღწერეთ)</p>	<p>X</p>						
11	<p>Do you face any issues with soil quality? If yes, please describe გამოვლინდა თუ არა ნიადაგის ხარისხობრივი პრობლემები? თუ კი, აღწერეთ.</p>	<p>NO/არა</p>						
12	<p>How do you manage soil fertility? როგორ ანოყიერებთ ნიადაგს? Organic fertilizers/ორგანული სახეუქი Chemical fertilizers/ქიმიური სახეუქი Crop rotation/კულტურების მონაცვლეობა Other (please specify)/სხვა (აღწერეთ)</p>	<p>X</p>						
13	<p>Do you have access to sufficient water for irrigation? გაქვთ თუ არა წყდომბ საკმარის წყალზე სარწყავად? გაქვთ თუ არა წყდომბა შორწყისთვის საჭირო წყლის რაოდენობასთან? მდინარეში არის თუ არა საკმარისი წყლის რესურსი? არის თუ არა სათავეზე საკმარისი წყალი საპროექტო ფართობის უზრუნველსაყოფად? Do you have access to the amount of water needed for irrigation? Is there enough water resources in the river? Is there sufficient water at the head structure to provide the design area?</p>	<p>არა, აღნიშნული საპროექტო ღოყაცია მდებარეობს ოკუპირებულ ტერიტორიის მიმდებარედ რაც ართულებს და ზოგ შემთხვევაში შეუძლებელს ხდის ტექნიკური სამუშაოების ჩატარებას No, the mentioned project location is located adjacent to the occupied territory, which makes it difficult and in some cases impossible to carry out technical works.</p>						
14	<p>Provide present water distribution methods in field level and canal systems (please attach an additional page for information, if required)? მეთითეთ წყლის განაწილების არსებული მეთოდები საველე დონეზე და არხის სისტემაში (გთხოვთ დაურთოთ დამატებითი გვარდი ინფორმაციისთვის, საჭიროების შემთხვევაში)?</p>	<p>Surface irrigation with underground channels/ზედაპირული მორწყვა გრუნტის არხებით</p>						
15	<p>If you get enough water for irrigation in future: თუ თქვენ მიიღებთ საკმარის წყალს ირიტაციისთვის მომავალში: (i) do you change the type of crops? ცვლით თუ არა მოსავლის ტიპს? (ii) Do you increase the cultivated area, if so how much (approximate..)? (ii) გაზრდით თუ არა დაზემაველ ფართობს, თუ ასეა, რამდენად გაზრდით (დაახლოებით..)?</p>	<p>yes</p>						
16	<p>What type of irrigation application method do you use? რა ტიპის საირიგაციო სისტემას იყენებთ? (პროცენტები) Drip irrigation/წველოვანი რწყვა Sprinkler system/სპრინკლერი / წყლის გამფრქვევი სისტემა Surface (fallow) irrigation/მიფრთხილი მორწყვა Other (please specify)/სხვა (აღწერეთ)</p>	<p>X</p>						

17	Have you encountered any problems with your irrigation system? If yes, please describe. გამოვლინდა თუ არა რაიმე პრობლემა არსებულ საირიგაციო სისტემასთან? თუ კი, აღწერეთ.	Damaged system/დაზიანებული სისტემა	
18	Have you implemented any soil conservation practices? If yes, please describe თუ გამოგიყენებიათ ნიადაგის კონსერვაციის მეთოდები? თუ კი, აღწერეთ რომელი.	NO/არა	
19	Do you use any water-saving techniques in your irrigation practices? If yes, please describe. თუ იყენებთ წყლის დაზოგვის მეთოდებს თქვენს საირიგაციო პრაქტიკაში? თუ კი, აღწერეთ.	Water is supplied to the farmer on a schedul/ფერმერს წყალი მიეწოდება გრაფიკით	
20	Do you monitor the water balance in your fields? If yes, how? აზორცილებთ თუ არა წყლის ბალანსის მონიტორინგს სარწყავ ტერიტორიებზე? თუ კი, როგორ? იყენებთ თუ არა სისტემებზე წყალმზომებს?	მთავარ არხზე ხორციელდება მონიტორინგი ლარტყის მეშვეობით/ The monitoring is held with tape measure at main canal	
21	Are there any other challenges you face with your irrigation network that were not covered in this questionnaire? გამოვლენილა თუ არა ისეთი პრობლემა თქვენს საირიგაციო სისტემაში, რაც ნახსენები არ არის წინამდებარე კითხვარში? თუ კი, აღწერეთ.	არხს გააჩნია ფილტრაცია / canal has filtration	
22	Do you have any suggestions for improving irrigation network operation & management practices? გაქვთ თუ არა რჩევა, თუ როგორ შეიძლება საირიგაციო სისტემის გაუმჯობესება?	It is necessary to line the canals/აუცილებელია არხების მოპირკეთება	

APPENDIX F: RECORDS OF PUBLIC CONSULTATIONS

Georgia Resilient Agriculture, Irrigation and Land Project
Stakeholder Consultation Meeting

Minutes of Meeting

Location: Shavgele Village, Khobi Municipality

Date: 30 January 2026

Number of Participants: 26

Vulnerable Group Representatives (if any): None

Meeting Overview

The consultation meeting with beneficiaries/local farmers regarding the rehabilitation of the Shavgele Irrigation Canal was initiated by the PIU under the Ministry of Environmental Protection and Agriculture of Georgia (MEPA).

The Project Implementation Unit (PIU) was represented by a multidisciplinary team comprising engineering, social, environmental, and occupational health and safety specialists. The meeting was also attended by representatives of the design consultant, JV of Yooshin Engineering Corporation and Dasan Consultants Co., as well as the subcontractor, Geo-Consulting, including their respective environmental and social specialists.

Purpose of the Meeting

The purpose of the meeting was to inform local beneficiaries about the planned rehabilitation works of the Shavgele Irrigation Canal, to present the technical scope of the project, and to discuss environmental and social issues. In particular, the meeting aimed to provide the local population with detailed information regarding the significance, necessity, and implementation of the Environmental and Social Management Plan (ESMP).

Issues Discussed

Project Presentation

Mr. Levan Tskhovrebashvili, Engineer at PIU, presented the project objectives, detailed scope, and technical specifications to local farmers.

A project map was displayed, illustrating the alignment of the irrigation canal and the sections scheduled for rehabilitation. The engineer explained the planned technical works, including rehabilitation activities and installation of a new pumping system.

Information was also provided regarding the anticipated implementation schedule. Contractor mobilization is planned for late March, and commencement of construction works is expected in late spring.

The importance of environmental protection during project implementation was emphasized, noting that environmental considerations are fully integrated into the project design.

Grant Program

Mr. Soso Galumashvili, representative of Gepra Consultancy Group, introduced the grant program, its objectives, and anticipated benefits.

Grants will be allocated based on farmers' needs. A dedicated advisory group will support beneficiaries to ensure the appropriate and targeted use of grant funds.

Additional benefits are considered to encourage women's participation.

Social Aspects

Ms. Sopho Berishvili, PIU Social Specialist, discussed social aspects of the project and clarified that the project does not involve resettlement measures.

The importance of ensuring maximum community engagement at all stages of project implementation was highlighted. It was noted that regular meetings and the grievance and feedback mechanism will ensure timely information sharing and responses to community concerns.

Grievance Redress Mechanism (GRM)

Ms. Nino Paatashvili, Social Specialist from JV of Yooshin Engineering Corporation and Dasan Consultants Co., presented the Grievance Redress Mechanism (GRM), including complaint submission procedures and available feedback channels.

To facilitate continuous feedback from the community, grievance boxes will be installed in accessible locations. Complaint forms and informational brochures containing contact details will also be distributed.

Upon contractor selection, a designated contact person will be appointed to ensure ongoing communication with the local population regarding project-related matters.

Environmental Aspects

Ms. Rusudan Gholijashvili, PIU Environmental Specialist, addressed environmental risks and potential impacts associated with project implementation, as well as the corresponding mitigation and preventive measures.

She introduced the Environmental and Social Management Plan (ESMP), which will be implemented during both preparatory and construction phases.

It was emphasized that the World Bank places significant importance on environmental and social issues. Particular attention was given to community involvement in environmental matters.

It was further noted that the ESMP forms an integral part of the contract with the selected construction company, obligating it to comply with national legislation and the World Bank's environmental and social policies, including implementation of mitigation measures and proper waste management.

Questions and Responses

#	Question	Response
1	During the previous meeting, the local population requested that the cleaning of field access paths between plantings (ornate tracks) be included in the project. Has this request been considered?	Yes. The request has been considered, and cleaning of the specified areas will be fully implemented within the project scope.
2	Does the project include construction of crossings and small bridges?	The project considers rehabilitation of damaged bridges and culverts, and their replacement where necessary.
3	Is construction of a new canal included in the project?	No. The project does not include construction of a new canal; only

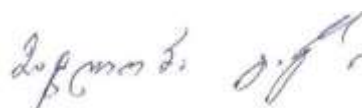
		rehabilitation of the existing canal system is planned.
4	Is there a specific plan determining where culverts will be cleaned and where canal cleaning will take place?	Yes. These details are specified in the project documentation, which defines the exact locations and volumes of culvert and canal cleaning works.
5	Does the project include cleaning of canals located within the village residential areas?	No. According to the project design, cleaning works within residential areas of the village are not included.
6	Will agreements be concluded with landowners in areas where construction equipment will access and works will be carried out?	Yes. In areas where construction equipment access and works are planned, appropriate agreements will be concluded with local landowners. These agreements will have a five-year term and will not be of a one-time nature; they will be renewed every five years in accordance with applicable rules and requirements.
7	Will local residents be allowed to use timber from trees cut under the project?	Following tree inventory (taxation) and issuance of the relevant felling permits, the timber will be transferred to the municipality. In accordance with applicable regulations, the municipality may allocate the timber for use by local residents.

Feedback Received

The local population expressed satisfaction with the information provided and confirmed their full engagement and willingness to cooperate with the project.

Project representatives left grievance brochures, which will be posted at the regional office of Georgian Amelioration and in the local municipal building.

Representative of the Local Population:



Representative of the Implementing Unit:



Representative of the Contractor/Subcontractor Company:





Հանրային կրթության նախարարության
 Հանրային կրթության բաժնի գործադիր տնօրենի կառուցվածքային միավորների
 կազմակերպչական ծրագրի գործադիր մարմնի
 ակտիվացման արդյունքների մասին

N	Կազմակերպչական միավոր	ՀՀ ԿԻՄ	Կազմակերպչական միավորի անունը
1	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	551721888	Կ. Կ. Կ.
2	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	579-112599	Կ. Կ. Կ.
3	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	599970659	Կ. Կ. Կ.
4	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	599852990	Կ. Կ. Կ.
5	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	511521030	Կ. Կ. Կ.
6	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	599822777	Կ. Կ. Կ.
7	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	6200401917	Կ. Կ. Կ.
8	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	595335471	Կ. Կ. Կ.
9	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	57793882	Կ. Կ. Կ.
10	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	551891898	Կ. Կ. Կ.
11	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	42001008152	Կ. Կ. Կ.
12	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	595454911	Կ. Կ. Կ.
13	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	557854119	Կ. Կ. Կ.
14	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	01011430	Կ. Կ. Կ.
15	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	565422222	Կ. Կ. Կ.



N	Կազմակերպչական միավոր	ՀՀ ԿԻՄ	Կազմակերպչական միավորի անունը
16	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	57272521	Կ. Կ. Կ.
17	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	598184470	Կ. Կ. Կ.
18	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում		Կ. Կ. Կ.
19	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	599409477	Կ. Կ. Կ.
20	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	555200009	Կ. Կ. Կ.
21	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	599171877	Կ. Կ. Կ.
22	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	577080229	Կ. Կ. Կ.
23	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	599000081	Կ. Կ. Կ.
24	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	551808803	Կ. Կ. Կ.
25	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	555444006	Կ. Կ. Կ.
26	ՀՀ ԿԻՄ Երևանի մարզկենտրոնում	511134121	Կ. Կ. Կ.
27			
28			
29			
30			
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36			

Site Visit Photos

30.01.2026



Minutes of Meeting (13 March 2025)

Visiting Members: Trevor Beaumont, Kim Yong Bok, Purushottam Timilsina, Tengez

Background:

The field visit to Shavegele Massif was done to check the current conditions of the area and to interact with the farmers to gather available information. A farmer was contacted and one meeting was done with Head of Municipality of the village together with a few farmers in the presence of the representatives of GA.

There are 314 households in the village.

Discussions:

The following discussions were carried out:

- Maximum 10% of the field drains in good condition at the moment as drain channels are blocked and not working properly mostly in the lower areas;
- During the rainfall season 1-2 days of flooding remains in the agricultural land especially in the lower areas which comes up till the height of the road;
- In the past 8 pumps were working every day for drainage during Spring and Autumn seasons. The electricity bills were paid by GA in the past;
- The pumps stopped working in 1995;
- Farmers are willing to pay for the electricity for operation if the system is rehabilitated;
- Farmers can clean the drain by themselves afterwards if the rehabilitation is done;
- 300 mm of pipes have been used from field drains to the tertiary drains in all the fields;
- The drainage pumping need to run all the time during the agricultural season as per the experience;
- The main crops grown in the area are: Corn, Potato, Citrus, Vegetables and Black Berries;
- Compost is used by the farmers for fertilizer;

Georgia Resilient Agriculture, Irrigation and Land (GRAIL) Project

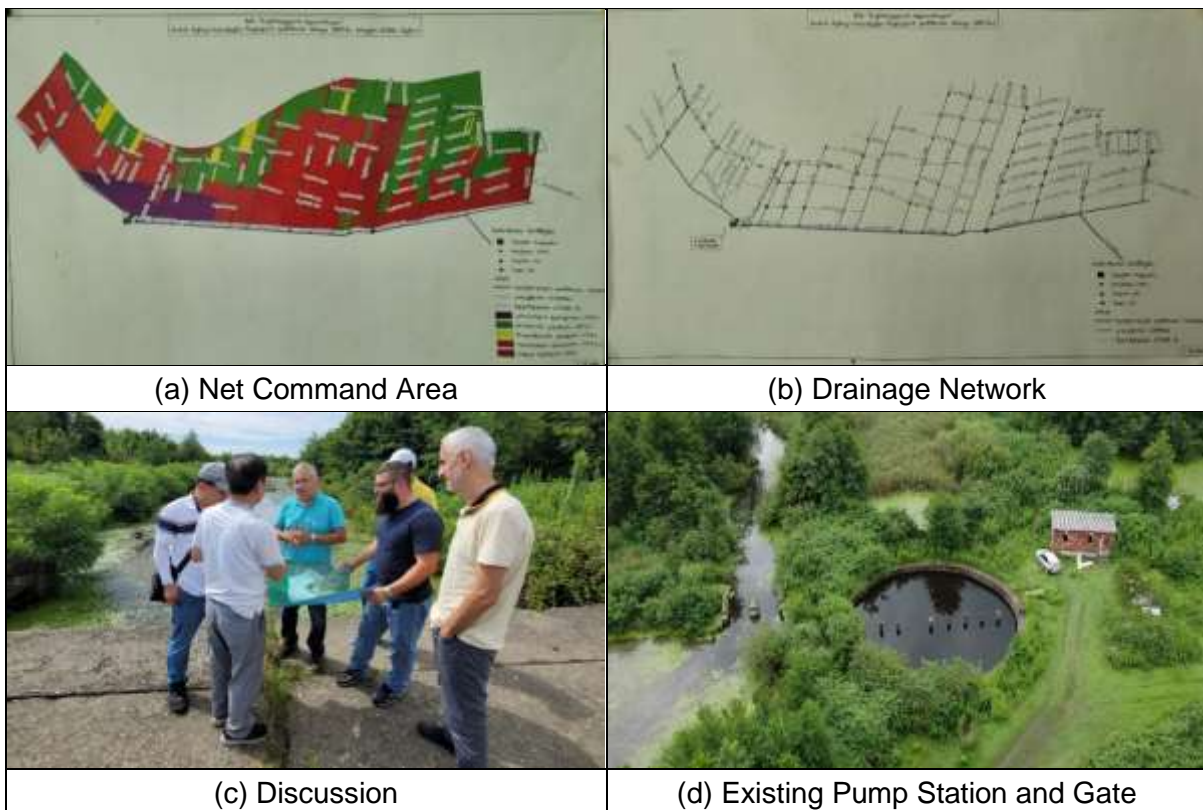
Attendance Sheet

Consultant: Yooshin Engineering Corporation in Joint Venture with Dasan Consultants and with Sub-Consultant Geo Consulting
 Date: 13-MAR-25 ... March 2025
 Time: 14:00
 Venue: Shavgele Village

No.	Name	Organization	Position	Contact No./Email Address	Signature
1	მარტო სოფია			577-34-17-26	<i>[Signature]</i>
2	მუხამედი მუსხელიძე			577-14-78-76	<i>[Signature]</i>
3	სტეპან ბერიძე			557-20-15-36	<i>[Signature]</i>
4	ბიჭიაშვილი გიორგი			599-85-29-70	<i>[Signature]</i>
5	გენადი ჩინჩარაძე			557-29-35-99	<i>[Signature]</i>
6	ირაკლი შურგულია		CA.	577-380-720	<i>[Signature]</i>
7	1. Tamaz Kiladze				
8	2. Murman Murvanidze				
9	3. Akhmed Kontselidze				
10	4. Khatuna Manvelidze				
	5. Genadi Chincharadze				
	6. Irakli Shurghulia				

Site Visit Photos

Photo 1: First Field Visit (26~27 August 2024)





(e) Main Drain (S-K-2)



(f) Secondary Drain (S-K-2-3-2)

Photo 2: Second Field Visit (12~13 December 2024)



(a) Meeting with GA



(b) Questionnaire Meeting with Local Farmers



(c) Power-line Tower along the Rioni River



(d) Secondary Drain (S-K-2-1)

Photo 3: Third Field Visit (22 January 2025)



Photo 4: Fourth Field Visit (13 March 2025)



Photo 5: Fifth Field Visit (06 June 2025)



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

1. Introduction

WB's ESS10 - Stakeholder Engagement and Information Disclosure, requires identification and engagement of local and other stakeholders throughout the project life cycle, disclosure of project information and establishment of grievance redress mechanism for external stakeholders.

Objective of the **Grievance Redress Mechanism** (GRM) is to assist to resolve complaints and grievances in a timely, effective and efficient manner that satisfies all parties involved. GRM 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 Shavghele 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 Shavghele 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.
- 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. 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. Time frame for resolving the stage 1 grievance is 7 days. The GRC shall convene as per necessity (but at least once a month) and shall include eight members. Special

provisions will be made for any complaints of a confidential nature. The GRC is a nine members 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 “Gangeoba”) 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

10 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; it will be presented to MEPA's Grievance Redress Commission. 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

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

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