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**GENERAL DIRECTORATE OF STATE HYDRAULIC
WORKS**

**Türkiye Second Irrigation Modernization
and Water Efficiency Project**

**Tokat Kazova Right and Left Bank Irrigation
Renovation Construction Project**

**ENVIRONMENTAL AND SOCIAL MANAGEMENT
PLAN**

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PROJECT TAG

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LIST OF ABBREVIATIONS

AFAD	Disaster and Emergency Management Authority
AoI	The area of Influence
AQ	Air Quality
BERN	Convention on the Conservation of European Wildlife and Natural Habitats
BD	Biodiversity
CHS	Community Health and Safety
CİMER	Presidential Communication Center
CoC	Code of Conduct
DD	Data Deficient
DSİ	State Hydraulic Works
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EN	Endangered
E&S	Environmental and Social
EPSA	Ex-Post Social Audit
ESCP	Environmental and Social Commitment Plan
ESIA	Environmental and Social Impact Assessment
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
ESS	Environmental and Social Standard
ESSF	Environmental and Social Screening Form
GBV	Gender-Based Violence
GM	Grievance Mechanism
I-ESMS	Institutional Environmental and Social Management System
IUCN	International Union for Conservation of Nature
LC	Least Concern
LMP	Labor Management Plan
LRP	Livelihood Restoration Plan
NGO	Non-Governmental Organization
NL	Noise Level
NT	Near Threatened
OG	Official Gazette
OHS	Occupational Health and Safety
PDO	Project Development Objective
PGA	Peak Ground Acceleration
PIU	Project Implementation Unit
PMT	Project Management Team
PMU	Project Management Unit

PPE	Personal Protective Equipment
RAP	Resettlement Action Plan
RF	Resettlement Framework
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SO	Soil
STS	Special Technical Specifications
TIMPII	Türkiye Second Irrigation Modernization and Water Efficiency Project
TurkStat	Turkish Statistical Institute
VU	Vulnerable
WB	World Bank
WBG	World Bank Group
WD	Water Drainage

EXECUTIVE SUMMARY

This Environmental and Social Management Plan (ESMP) has been prepared for the Tokat Kazova Right and Left Bank Irrigation Renovation Construction Project (hereinafter referred to as the “Sub-Project”), which will be implemented by the General Directorate of State Hydraulic Works (DSİ) under the Türkiye Second Irrigation Modernization and Water Efficiency Project (TIMP II) financed by the World Bank. The ESMP has been prepared in accordance with the World Bank Environmental and Social Framework (ESF), relevant Environmental and Social Standards (ESSs), and applicable national legislation to identify potential environmental and social risks and impacts and define mitigation, monitoring and institutional measures for environmentally and socially sound project implementation.

The Sub-Project is located within the Yeşilırmak Basin in Tokat Province and covers irrigation areas within the administrative boundaries of the Central, Pazar and Turhal districts. Irrigation water is supplied from the Almus Dam Reservoir through the Gümenek Regulator and conveyed to the Kazova Right Bank and Left Bank irrigation systems. The irrigation scheme serves one of the most productive agricultural areas of Tokat Province, including the Kazova and Turhal Plains.

The Sub-Project aims to modernize the existing irrigation infrastructure and improve water use efficiency by replacing the existing open-channel irrigation network with a closed pressurized piped irrigation system. The project covers approximately 20,028 ha of irrigation area, including gravity-fed and pump irrigation zones. The proposed works include the installation of approximately 309 km of transmission, main, secondary and tertiary pipelines together with associated hydraulic structures, valves, hydrants and control facilities. The modernization is expected to significantly reduce water losses, improve irrigation efficiency and support sustainable agricultural production.

For environmental and social assessment purposes, the Area of Influence (AoI) has been defined as a 500 m buffer surrounding the project boundary. Within this area, 59 neighbourhoods have been identified. Land use within the AoI is predominantly agricultural, consisting mainly of irrigated cropland used for the cultivation of sugar beet, wheat, barley, sunflower, maize, vegetables, forage crops and fruit production. The project area is located within a broad alluvial plain extending along the Yeşilırmak Valley and does not include any known critical habitats or protected cultural heritage sites within the project footprint.

Potential environmental and social impacts are expected to be temporary, site-specific and mainly associated with construction activities. These impacts may include dust emissions, noise and vibration from construction equipment, temporary traffic disruptions, occupational health and safety risks, community health and safety concerns, temporary restrictions on access to agricultural lands and short-term interruptions to irrigation services during construction. However, these impacts are considered limited in scale and can be effectively managed through the implementation of appropriate mitigation measures. The environmental and social risk classification of the Sub-Project has been determined as Moderate.

The Sub-Project is not expected to cause physical displacement of households or residential structures. Nevertheless, where land acquisition, easement establishment, temporary land use or economic displacement becomes necessary, all relevant activities will be undertaken in accordance with Turkish legislation and the requirements of the World Bank ESS5 and the project-specific Resettlement Framework. Chance find procedures will also be implemented during excavation works to manage any unexpected discoveries of cultural heritage resources.

The ESMP defines mitigation and monitoring measures addressing potential environmental and social risks during project implementation. These include dust and noise control, management of construction waste and excavated materials, protection of soil and water resources, traffic safety measures and occupational health and safety practices. Stakeholder engagement activities will be maintained throughout the project lifecycle, and a Grievance Mechanism (GM) will be established. TIMPII Stakeholder Engagement Plan (SEP) will be used for this sub-project and all project parties (contractor, State Hydraulic Works (DSİ) PMU,) will be responsible for ensuring compliance with the TIMPII SEP. The GM for the Tokat Kazova Right and Left Bank Irrigation Renovation Construction Project is designed in accordance with the Stakeholder Engagement Plan (SEP) of the Second Türkiye Irrigation Modernization and Water Efficiency Project (TIMPII). The project-based GM is described in detail in Section CHAPTER VI of the TIMPII Stakeholder Engagement Plan. The steps completing the GM and the description of this process are provided accordingly. There are specific steps comprising the complaint mechanism, and this process is detailed in Section VI.5.

Overall responsibility for environmental and social management will rest with DSİ through the Project Management Unit (PMU), while contractors will be responsible for implementing site-specific environmental, social, health and safety measures during construction. Monitoring

activities will be conducted throughout project implementation to verify compliance with national legislation, World Bank requirements and the commitments set out in this ESMP.

Upon completion, the Sub-Project is expected to generate significant long-term benefits through improved irrigation service delivery, reduced water losses, enhanced water-use efficiency, increased agricultural productivity and strengthened climate resilience within the Kazova irrigation system. These outcomes will contribute to sustainable agricultural development and improved livelihoods across the project area.

CHAPTER I.

PROJECT DESCRIPTION

I.1 Introduction

Under the Türkiye Second Irrigation Modernization and Water Efficiency Project (TIMP II), financed by the World Bank and implemented by the General Directorate of State Hydraulic Works (DSİ), the overall objective is to improve irrigation service delivery and enhance water use efficiency within selected irrigation schemes. The Project Development Objective (PDO) is to reduce water losses and support sustainable agricultural production through the rehabilitation and modernization of existing irrigation infrastructure.

This Environmental and Social Management Plan (ESMP) has been prepared for the Tokat Kazova Right and Left Bank Irrigation Renovation Sub-Project to ensure that potential environmental and social risks and impacts associated with the sub-project are effectively managed in accordance with the World Bank Environmental and Social Framework (ESF), the applicable Environmental and Social Standards (ESSs), and the relevant legislation of the Republic of Türkiye.

The ESMP serves as a practical and site-specific management instrument that provides a structured framework for identifying, assessing, mitigating, monitoring, and managing potential environmental and social (E&S) risks and impacts that may arise during the planning, construction, and operation phases of the Sub-Project. In this context, the ESMP aims to:

- Prevent or minimize potential adverse environmental and social impacts;
- Define and implement appropriate mitigation measures and, where necessary, compensation mechanisms for unavoidable impacts;
- Safeguard occupational health and safety (OHS) and community health and safety (CHS);
- Ensure meaningful stakeholder engagement and the effective functioning of the grievance mechanism;
- Achieve full compliance with national regulatory requirements and the World Bank ESSs.
- In addressing these matters, the framework documents prepared specifically for the project have been followed.¹

¹ <https://www.dsi.gov.tr/Sayfa/Detay/1997>

Prepared in accordance with the Special Technical Specifications (STS), this ESMP considers the applicable World Bank Environmental and Social Standards, namely ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS8, and ESS10.

The environmental and social risk classification of the Sub-Project has been determined as “Moderate Risk.” This classification reflects the rehabilitation nature of the works within the existing irrigation footprint, the absence of significant or irreversible environmental impacts, the lack of critical natural habitats or protected cultural heritage sites within the Sub-Project area, and the limited, temporary, and reversible characteristics of the anticipated construction activities.

Following review by General Directorate of State Hydraulic Works (DSİ) and the World Bank (WB), the draft ESMP will be disclosed to project-affected stakeholders and the public for consultation. The consultation process, and stakeholder feedback will be adequately documented and comments received will be incorporated into the ESMP, as appropriate. Following revision of the document, the final ESMP will be re-disclosed prior to implementation of the Sub-Project.

I.2 Project Background

Türkiye’s irrigation infrastructure largely consists of systems constructed several decades ago. Over time, insufficient operation and maintenance financing, physical deterioration and deferred rehabilitation needs have resulted in a decline in system performance. In particular, water losses in irrigation conveyance and distribution system due to seepage, evaporation, and structural degradation in open canal irrigation networks have reduced the quantity and reliability of irrigation services. This situation has led to significant reductions in agricultural productivity within irrigated areas and in some cases, farmers have shifted from high-yield irrigated agriculture to lower-yield and risk-prone rainfed farming.

In this context, the Türkiye Second Irrigation Modernization and Water Efficiency Project, financed by the World Bank and implemented by the General Directorate of State Hydraulic Works (DSİ), aims to improve irrigation service delivery and enhance water use efficiency in selected irrigation schemes. The Project supports sustainable water resource management, strengthens resilience to climate change, and contributes to increased agricultural productivity.

The Project focuses on the rehabilitation and modernization of existing irrigation systems, particularly those that have been operating for decades without adequate operation and maintenance financing. Investments under the Project include the conversion of open canal systems into closed, pressurized pipe networks; reduction of water conveyance losses; strengthening of measurement and monitoring infrastructure; and promotion of digital irrigation practices. These investments will enable more controlled, measurable, and efficient water use. Importantly, the Project will make use of an already allocated and dedicated water quota within the relevant reservoir without increasing water abstraction, thereby ensuring that water balance at the basin or sub-basin level is not adversely affected.

The Project consists of three main components:

Component 1 – Rehabilitation and Modernization of Irrigation Systems:

Rehabilitation of existing irrigation infrastructure and conversion to closed, pressurized pipe systems.

Component 2 – Institutional Strengthening, Digital Irrigation, and Smart Water Management:

Enhancement of technical capacities of irrigation associations and relevant institutions, strengthening of water measurement and accounting systems, and support for digital irrigation applications.

Component 3 – Project Management:

Coordination, monitoring, and reporting of Project activities, including implementation of environmental and social risk management requirements in line with the World Bank's Environmental and Social Framework (ESF).

The Tokat Kazova Right and Left Bank Irrigation Renovation Sub-Project is implemented under Component 1 of the Project and involves the conversion of the existing open canal irrigation system into a closed, pressurized pipe network. The Sub-Project is expected to reduce water losses, improve irrigation coverage, and support sustainable increases in agricultural productivity.

I.3 Sub-Project Description

I.3.1 Sub-Project Objectives

The existing irrigation system is characterized by high operation and maintenance costs and significant water losses occur due to seepage and evaporation from open canals. Over time, physical deterioration and technical limitations of the infrastructure have reduced the efficiency, reliability, and sustainability of irrigation service delivery.

The primary objective of the Tokat Kazova right and left bank irrigation renovation construction works is to convert the existing open canal irrigation system into a closed, pressurized pipe network in order to reduce water losses in irrigation conveyance and distribution processes and improve overall irrigation efficiency.

In this context, the Sub-Project aims to:

- Enhance water use efficiency;
- Strengthen the reliability and continuity of irrigation service delivery;
- Reduce operation and maintenance costs; and
- Support sustainable increases in agricultural productivity.

The existing irrigation system consists predominantly of open trapezoidal canals and associated hydraulic structures, which have been in operation for several decades. Over time, physical deterioration, seepage losses, operational inefficiencies, and maintenance constraints have reduced system performance. The proposed Sub-project does not involve the development of a new irrigation scheme or expansion into new irrigation areas; rather, it focuses on rehabilitating and modernizing the existing infrastructure within the current irrigation boundaries.

Under the Sub-project, the existing open canals will be progressively decommissioned and replaced by buried pressurized pipelines to be installed largely along the current canal alignment. In sections where feasible, installation works will be limited to the existing DSI service road corridor, allowing continuity of irrigation supply during construction. Moreover, the construction of the main pipeline is planned to be completed outside the irrigation season to minimize disturbance to agricultural activities.

The modernized system will enable controlled and pressurized water delivery to farmers, support the integration of water metering devices, and facilitate the adoption of advanced irrigation techniques such as drip and sprinkler systems. By reducing evaporation and seepage losses associated with open canals, the Sub-project is expected to improve overall system efficiency without increasing water abstraction beyond existing allocations.

The modernization works will be implemented within the established irrigation network and will not involve modifications to the dam structure or changes in reservoir operating rules.

Consequently Tokat Kazova Right and Left Bank Irrigation Renovation Construction Project aims to modernize the existing irrigation system.

The Sub-Project covers a total irrigation area of **20,028 ha** consisting of:

- **Gravity-fed irrigation area: 19,574.25 ha**
 - Kazova Right Bank: 8,348.69 ha
 - Kazova Left Bank: 11,225.56 ha
- **Pumped irrigation area: 453.00 ha**
 - Oğulcuk Pumped Irrigation Scheme
 - Ulaş Pumped Irrigation Scheme

I.3.2 Sub-Project Location

The Sub-Project is located within the Yeşilırmak Basin, inside the administrative boundaries of Central, Pazar and Turhal districts in Tokat Province.

The works to be carried out under the Sub-Project will take place within the boundaries of the existing irrigation area and will primarily follow the alignment of the current open canal routes. The Sub-Project does not involve the development of a new irrigation area or the creation of a new water source.

The location map and general layout of the –Sub-Project area are presented in Figure 1.

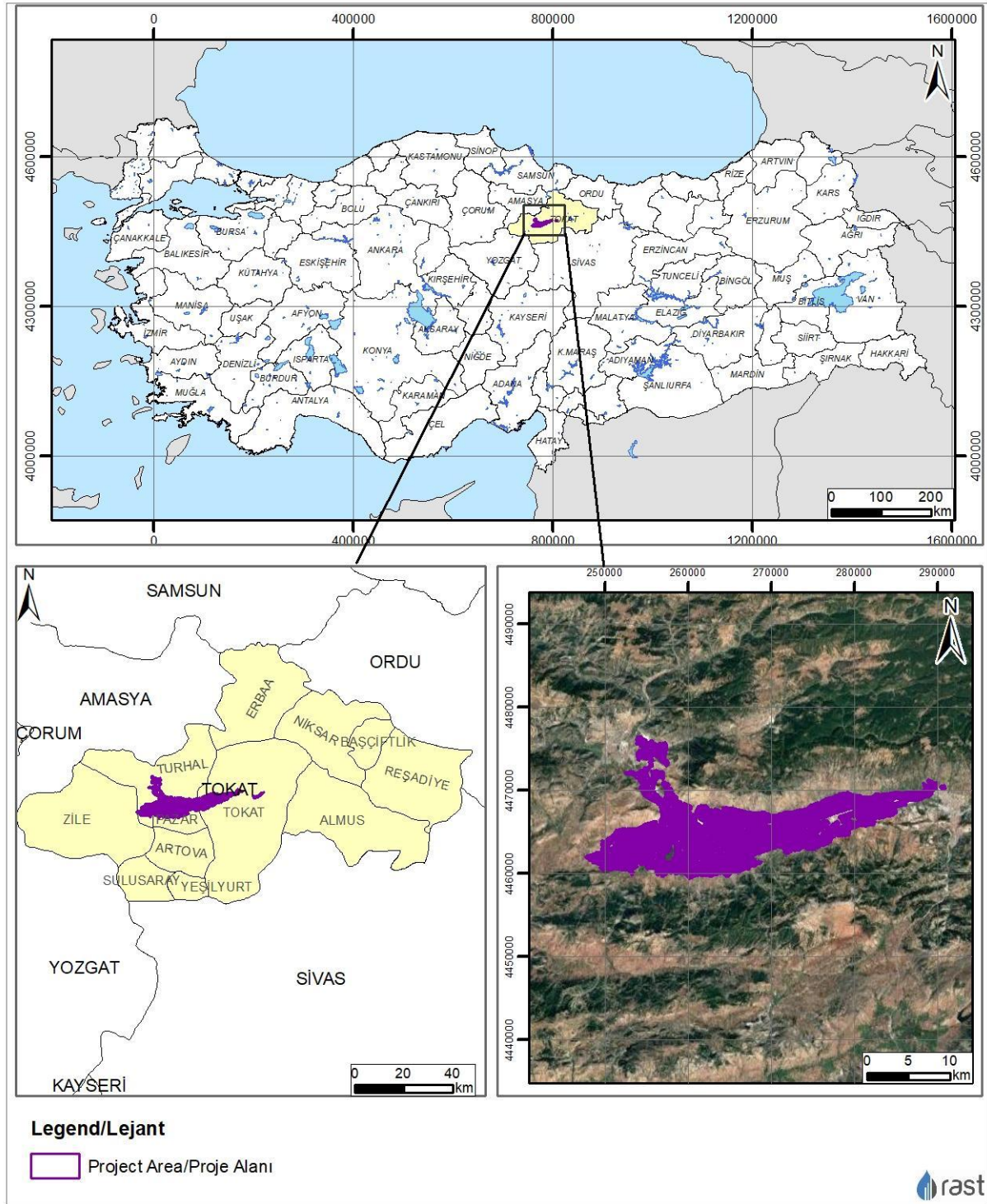


Figure 1. Location Map of the Sub-Project Area

I.3.3 Sub-Project Components

The Kazova Right Bank and Left Bank Irrigation Scheme is currently in operation. The primary water resource of the irrigation scheme is Almus Dam. Water released from Almus Dam

reaches the Gümenek Regulator (see Photograph 1) along the riverbed and is subsequently distributed throughout the irrigation scheme.

The existing facilities comprising the irrigation scheme are:

- Gümenek Regulator,
- Open-Canal Irrigation Network,
- Drainage Canals,
- Ulaş Pumped Irrigation Scheme, including pumping and irrigation facilities.

The proposed Sub-Project comprises the following components:

- Rehabilitation and replacement of the existing open-canal network and associated hydraulic structures (no new irrigation areas will be developed under the Sub-Project).
- Construction of a settling basin adjacent to Gümenek Regulator,
- Construction of a pump station in Oğulcuk, and
- Construction of balancing reservoirs for the Oğulcuk and Ulaş pumped irrigation scheme.

All works will be implemented within the existing irrigation area and will not extend beyond the established irrigation boundaries.

As the principal component of the Sub-Project, the existing open trapezoidal (irrigation) canals, which currently serve as the primary water distribution system, will be progressively decommissioned and replaced with a buried, pressurized pipeline network. The replacement works will follow the existing canal alignment in order to minimize land acquisition requirements and disturbance to agricultural parcels.



Photograph 1. Photos from Gümenek Regulator

Table 1 summarizes the key characteristics of the proposed irrigation pipeline network, including pipeline lengths, diameters, and design discharges. The total irrigation area within the scope of the Sub-Project is 20,028 ha, of which 19,574.25 ha corresponds to the main pipeline³ (gravity) system, 453 ha to the Irrigation (pumped) system.

Table 1. Main Characteristics of the Proposed Irrigation Pipeline Network

Area	Irrigation Area (ha)	Total Irrigation Area (ha)	Pipeline Type	Length (m)	Total Length (m)	Initial Pipe Diameter (mm)	Initial Discharge Q _{baş} (m ³ /sn)
Main Pipeline ² (Gravity))	19,574.25	20,028	Main Pipeline	51,705.00	772,867.5	4,000	18.713
			Secondary Pipeline	721,162.50			
Oğulcuk Irigation Scheme (Pumped)	453		Main Pipeline	2,100.00	8,177	560	0.235
			Secondary Pipeline	4,609.00			
			Rising Main	1,468			
Ulaş Irigation Scheme (Pumped)			Main Pipeline	2,130.00	11,398	700	0.346
			Secondary Pipeline	8,991.00			
			Rising Main	277			

For the main pipeline (gravity) system, the pipeline network consists of 51,705 m of main pipeline and 721,162.50 m of secondary pipeline, corresponding to a total pipeline length of 772,867.50 m. The initial pipe diameter is 4,000 mm, while the initial discharge is indicated as 18,713 m³/s.

For the pumped systems, the Oğulcuk Irrigation system includes 2,100 m of main pipeline, 4,609 m of secondary pipeline, and 1,468 m of forced pipeline, with a total pipeline length of 8,177 m. The initial pipe diameter and discharge are given as 560 mm and 0.235 m³/s, respectively. A pump station and a balancing reservoir will be constructed for the Oğulcuk Pumped Irrigation Scheme. The approximate locations proposed for the pump station and balancing reservoir are presented in Photograph 2.



Location of the Pump Station (Approx.)



Location of the Balancing Reservoir (Approx.)

Photograph 2. Approximate Locations of the Proposed Oğulcuk Pump Station and Balancing Reservoir

² Tokat Kazova Right Bank and Left Bank Irrigation Renovation Project – General Layout Plan of the Irrigation and Drainage Network Based on the As-Built Survey (Scale: 1:50,000)

The Ulaş Irrigation system comprises 2,130 m of main pipeline, 8,991 m of secondary pipeline, and 277 m of forced pipeline, resulting in a total pipeline length of 11,398 m. The initial pipe diameter is 700 mm, and the initial discharge is 0.346 m³/s. The existing pump station serving the Ulaş Pumped Irrigation Scheme will remain in operation, and a balancing reservoir will be constructed. The approximate locations of the existing pump station and the proposed balancing reservoir are shown in Photograph 3.



Photograph 3. Approximate Locations of the Proposed Ulaş Pump Station and Balancing Reservoir

The general layout plan of the Sub-Project area is provided in Figure 2 (Annex 1) and Figure 3.

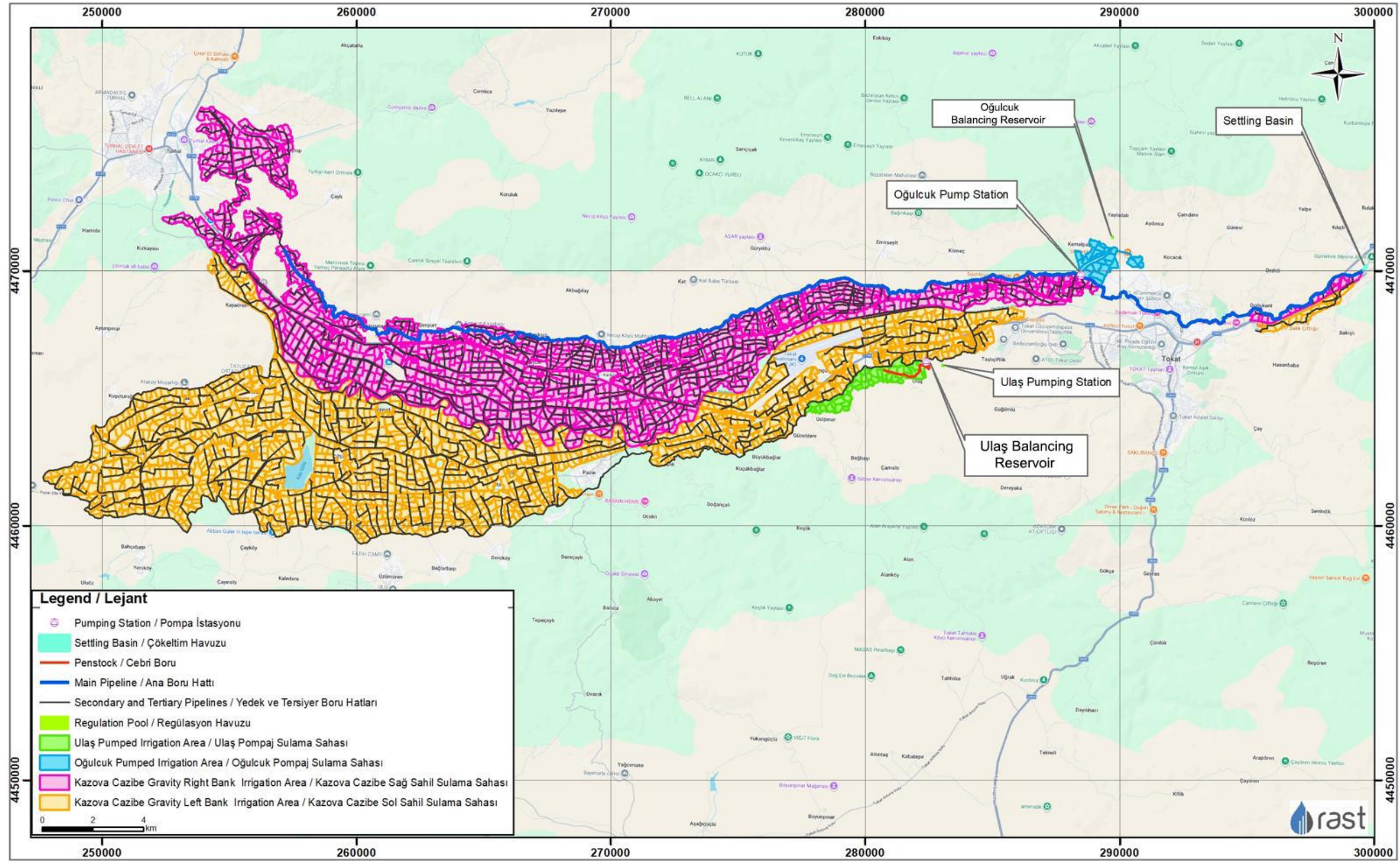


Figure 2. General Layout Plan (Entire Area)

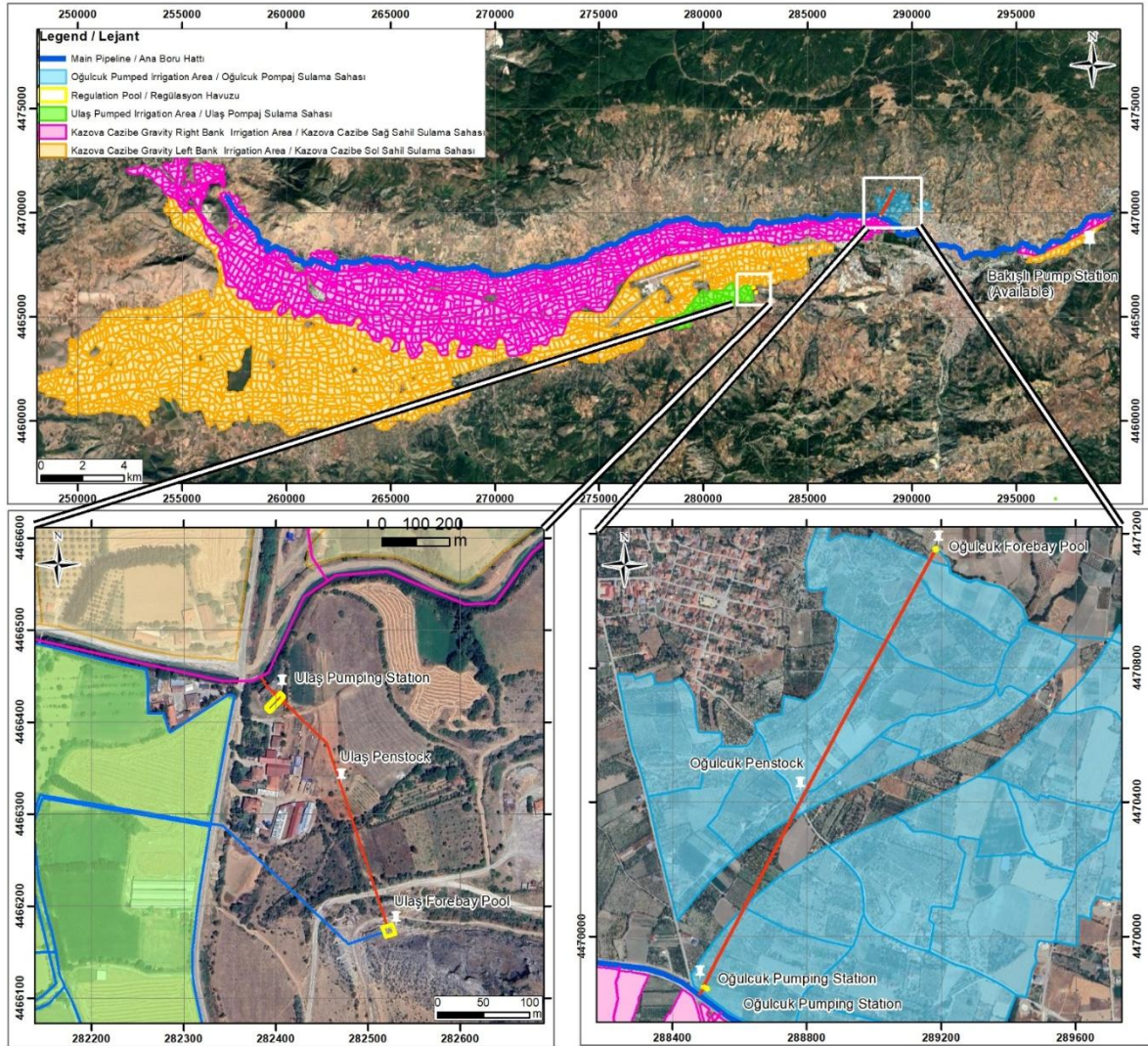


Figure 3. Location of Pump Stations on the General Layout Plan

Bedding and haunching material will be required for the construction of the pipelines. For this purpose, one borrow pit/material site has been identified to meet the demand for aggregate required for the pipeline construction works.

Within the scope of the Kazova Right and Left Bank Irrigation Rehabilitation Works, the material to be used for the bedding and haunching layers of the pipe network is planned to be supplied from the Kaya-2 (ER: 3378361) Material Site. The site is located on forest land, to the south of Ulaş Village, along the Tokat–Amasya–Turhal highway. Within the scope of the Project, a 10.58 ha material site, a 3.5 ha material storage area, and a 0.1 ha crushing-screening-washing plant are planned.

The Ministry of Environment, Urbanization and Climate Change has granted an “EIA Not Required” decision for the borrow pit on May 06, 2019 (see Annex 2). The location of the pit is given in Figure 4.

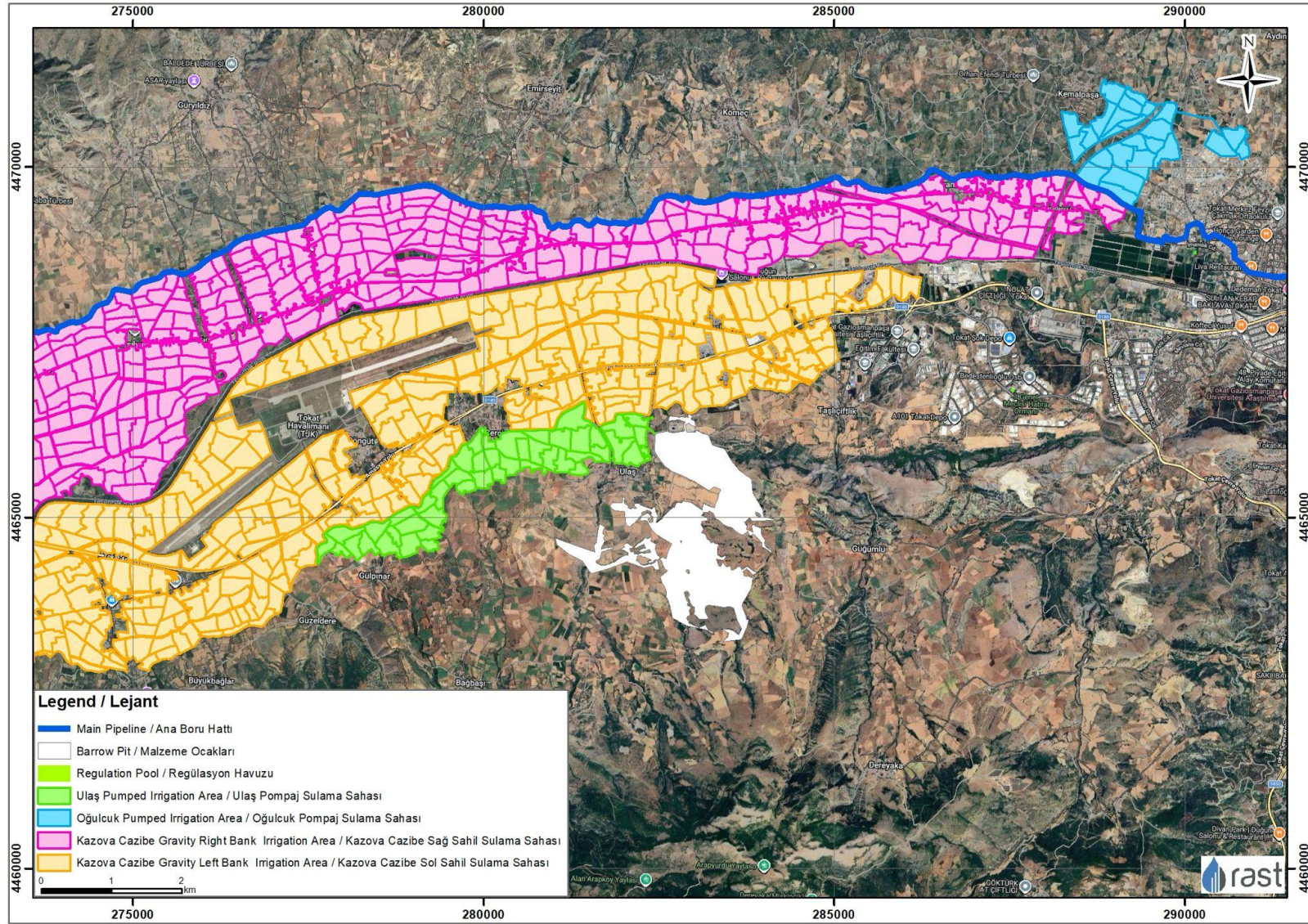


Figure 4. Location of the Borrow Pit

I.3.3.1 Integration of Water Control and Metering Devices

As part of the modernization process, the Sub-Project will enable the integration of water metering devices and improved flow control mechanisms within the irrigation units. These measures are intended to enhance water accounting, promote equitable distribution, and support efficient irrigation practices.

I.3.3.2 Decommissioning and Rehabilitation of Existing Canal Sections

Following commissioning of the pressurized system, the existing open canal sections will be taken out of operation. Where applicable, canal sections will be filled, stabilized, or otherwise rehabilitated to ensure safe and stable land conditions and to prevent safety risks associated with abandoned open structures.

The Sub-Project does not include modifications to the Almus Dam structure, reservoir capacity, or basin-level water allocation arrangements. All work will be implemented within the boundaries of the existing irrigation area.

I.3.3.3 Associated Facilities

The World Bank's ESF requires the application of the ESSs to Associated Facilities. As defined under the ESF, Associated Facilities are facilities or activities that are not funded as part of the Project but are: (a) directly and significantly related to the Project; (b) carried out, or planned to be carried out, contemporaneously with the Project; and (c) necessary for the Project to be viable, and would not have been constructed, expanded, or conducted if the Project did not exist. In this context, no facilities or activities associated with the Sub-Project meet all three of these criteria. Therefore, no Associated Facilities have been identified under the Sub-Project.

I.3.4 Sub-Project Schedule and Workforce

I.3.4.1 Sub-Project Schedule

The overall implementation period of the Sub-Project is estimated to be approximately three (3) years. This timeframe covers the installation of the pressurized pipeline system,

construction of associated hydraulic structures, reinstatement works, testing, and final commissioning of the system.

Construction activities are expected to be implemented in phased sections along the irrigation area rather than simultaneously across the entire area. This approach will allow for better coordination with irrigation periods, minimize disruption to agricultural activities, and facilitate progressive reinstatement of completed sections.

The main construction stages are anticipated to include:

- Site preparation and establishment of temporary work areas,
- Trench excavation and pipe laying,
- Installation of valve chambers, pumping stations, balancing reservoirs, hydrants and control structures,
- Backfilling and surface reinstatement,
- System pressure testing and commissioning.

The exact sequencing of works will be determined during detailed construction planning and may take into account seasonal irrigation demand, weather conditions, and agricultural production cycles.

I.3.4.2 Workforce

During the peak construction period, the Sub-Project is expected to employ 300 workers, including skilled and unskilled labor. The workforce will primarily consist of construction personnel such as machine operators, pipe installation teams, technical supervisors, health and safety staff, and site management personnel.

It is anticipated that part of the workforce may be recruited locally where feasible, while specialized technical staff may be recruited from outside the Sub-Project area. No permanent workforce is expected during the operation phase, as the system will be operated and maintained by DSI and/or relevant irrigation union using existing institutional capacity.

Where necessary, temporary construction site facilities will be established in compliance with national regulations and good international practices, including provisions related to occupational health and safety, sanitation, and waste management. Workers'

accommodation facilities or camps shall comply with the World Bank Group (IFC) Guidelines on Workers' Accommodation.

The exact location for the construction site facilities or camps will be finalized prior to the construction phase.

I.4 Legal Framework

I.4.1 National Legal Framework

The Sub-Project is required to comply with the following laws during the construction, and operational phases. Adherence to these laws is essential to mitigate or prevent potential risks and adverse impacts on the environment and human health.

Environmental Law

- Law No: 2872
- OG: 11.08.1983, No. 18132

Environmental Law No. 2872 establishes the legal framework for protecting the environment, ensuring sustainable use of natural resources, and preventing environmental pollution. Enacted in 1983, it provides measures to safeguard ecosystems and mitigate environmental risks associated with development projects.

Occupational Health and Safety Law

- Law No: 6331
- OG: 30.06.2012, No. 28339

This law outlines the duties, responsibilities, rights, and obligations of employers and employees to ensure occupational health and safety in workplaces. It sets out the necessary measures to create safer working environments and reduce workplace risks.

Labor Law

- Law No: 4857
- OG: 10.06.2003, No. 25134

The Labor Law governs the rights and obligations of employers and employees in Türkiye. It covers aspects such as working conditions, employment contracts, wages, and social security provisions to ensure fair labor practices.

Law on the Protection of Cultural and Natural Assets

- Law No: 2863
- OG: 23.07.1983, No. 18113

This law aims to protect the cultural heritage and natural resources Türkiye, ensuring their preservation for future generations. It provides guidelines for identifying, documenting, and safeguarding cultural and natural assets from harm during development activities.

EIA Exemption Status

The Tokat Kazova Right Bank and Left Bank Irrigation Renovation Project involves the rehabilitation of existing irrigation facilities and does not include any increase in capacity. Therefore, it is exempt from the provisions of the Environmental Impact Assessment (EIA) Regulation.

For the Kaya-2 Material Quarry and Crushing-Screening-Washing Plant planned for the supply of material to be used within the scope of the Sub-Project, a “EIA Not Required” decision was issued by Tokat Governorship, Provincial Directorate of Environment and Urbanization, with decision date 06.05.2019 and decision number 29687149 220.02 E.201943 (see Annex 2).

Additional by-laws related to these laws, to which the Sub-Project must comply, are provided in Annex 3 for further reference.

I.4.2 International Standards

The Tokat Kazova Right and Left Bank Irrigation Renovation Construction Project will be financed mainly by the World Bank (WB). Therefore, following WB Environmental and Social Standards (ESSs) alongside the national legislation shall be met.



ESS1 (Assessment and Management of Environmental and Social Risks and Impacts) sets out the Borrower’s responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing, in order to achieve environmental and social outcomes consistent with the ESSs.

	ESS2 (Labor and Working Conditions) recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Borrowers can promote sound worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions.
	ESS3 (Resource Efficiency and Pollution Prevention and Management) recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services and the environment at the local, regional, and global levels. This ESS sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life-cycle.
	ESS4 (Community Health and Safety) addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable.
	ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement - involuntary resettlement should be avoided. Where involuntary resettlement is unavoidable, it will be minimized and appropriate measures to mitigate adverse impacts on displaced persons (and on host communities receiving displaced persons) will be carefully planned and implemented.
	ESS6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources) recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development and it recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. ESS6 also addresses sustainable management of primary production and harvesting of living natural resources, and recognizes the need to consider the livelihood of project-affected parties, including Indigenous Peoples, whose access to, or use of, biodiversity or living natural resources may be affected by a project.
	ESS8: Cultural Heritage recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. ESS8 sets out measures designed to protect cultural heritage throughout the project life-cycle.
	ESS10 (Stakeholder Engagement and Information Disclosure) recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation.

Figure 5. The World Bank Environmental and Social Standards

The gap analysis between local regulations and the WB ESSs is provided as a summary in Table 2 and more detail in Annex 4.

Table 2. The Gap Analysis Between Local Regulations and the WB ESSs (Summary)

ESS	Main Gap / Key Issue	Gap-Filling Measure / Required Document
ESS1 Environmental and Social Assessment	Turkish EIA process does not fully cover social impacts, vulnerable groups, cumulative impacts, associated facilities, and detailed sub-management plans.	Project-specific E&S assessment and ESMP will be prepared in line with ESS1, including social baseline, cumulative impact assessment, associated facilities review, executive summary, legal framework, and required sub-management plans.
ESS2 Labor and Working Conditions	National labor legislation is generally aligned; however, a specific worker grievance mechanism is not clearly required.	Worker Grievance Mechanism will be included in the ESMP, and the Contractor will prepare a project-specific Labor Management Plan.
ESS3 Resource Efficiency and Pollution Prevention	National legislation is broadly aligned, but detailed mitigation, monitoring, residual impact assessment, and specific studies such as GHG estimation are not systematically required.	ESMP will include resource efficiency and pollution prevention measures, monitoring requirements, residual impacts, and relevant sub-management plans/studies.
ESS4 Community Health and Safety	Gaps exist in managing labor influx, SEA/SH risks, traffic, emergency preparedness, and community health and safety at project level.	Traffic Management Plan, Community Health and Safety Management Plan, Emergency Preparedness and Response Plan, and SEA/SH-related provisions will be prepared as relevant.
ESS5 Land Acquisition and Resettlement	Gaps remain regarding full replacement cost, informal users, vulnerable groups, livelihood restoration, and continuous consultation.	Resettlement Framework and site-specific Resettlement Plans will be applied where land acquisition is required; Livelihood Restoration Plans will be prepared if necessary.
ESS6 Biodiversity Conservation	Legally unprotected sensitive ecological areas and detailed biodiversity impact management may not be fully addressed under national EIA.	Biodiversity risks will be assessed in line with ESS6; significant biodiversity impacts are considered ineligible under TIMP II, and additional biodiversity plans will be prepared only if needed.
ESS8 Cultural Heritage	National framework mainly covers physical cultural heritage but does not fully address intangible cultural heritage.	Chance Find Procedure will be implemented, and potential impacts on intangible cultural heritage will be assessed where relevant.
ESS10 Stakeholder Engagement	National EIA consultation requirements are more limited and do not ensure continuous, inclusive, and well-documented engagement for all projects.	SEP will guide disclosure, consultation, stakeholder engagement, and operation of the Project-level GRM throughout implementation.

CHAPTER II.

BASELINE DATA

II.1 Sub-Project Area

The Sub-Project is located within the Yeşilirmak Basin, inside the administrative boundaries of Central, Pazar and Turhal districts in Tokat Province. The Sub-Project area extends from the Gümenek Regulator, located to the east of Tokat city center, across the Kazova and Turhal Plains. The irrigation area is located within the Kazova and Turhal Plains and covers approximately 20,028 hectares between the right and left bank main canals. The neighborhoods and villages located within the Sub-Project area are listed in Table 3.

Table 3. Neighborhoods and Villages Located within the Sub-Project Area

No	TOKAT CITY CENTER	TURHAL	PAZAR
1	Güneşli Neighborhood	Hamam Neighborhood	Erkilet Neighborhood
2	Emirseyit Town	Varvara Neighborhood	Esentepe Neighborhood
3	Güryıldız Town	Arzupinar Village	Merkez Neighborhood
4	Akyamaç Village	Ataköy Village	Seyitali Neighborhood
5	Bakışlı Village	Bahçebaşı Village	Sinanpaşa Neighborhood
6	Büyükbağlar Village	Çariksiz Village	Bağlarbaşı Village
7	Büyükyıldız Village	Çaylı Village	Beşevler Village
8	Çerçi Village	Dökmektepe Village	Çayköy Village
9	Dedeli Village	Gümüştop/Dazya Village	Çiftlik Village
10	Gülpınar Village	Kalaycık Village	Dereçaylı Village
11	Gümenek Village	Kat Village	Kaledere Village
12	Güzeldere Village	Kuşoturağı Village	Menteşe Village
13	Kemalpaşa Village	Necip Village	Ovayurt Village
14	Kömeç Village	Şatroba Village	Taşlık Village
15	Küçükbağlar Village	Taşlıhöyük Village	Tatar Village
16	Söngüt Village	Tatlıcak Village	Tepeçay Village
17	Taşlıçiftlik Village	Yeniköy Village	Fatih Neighborhood
18	Ulaş Village	Asarcık Village	Mehmet Akif Ersoy Village
19	Yeşilyurt Village	Karaevli Village	
20	Hasan Baba Neighborhood	Üçgözen Village	
21		Arapören Village	

The Sub-Project area satellite image is shown in Figure 6 .

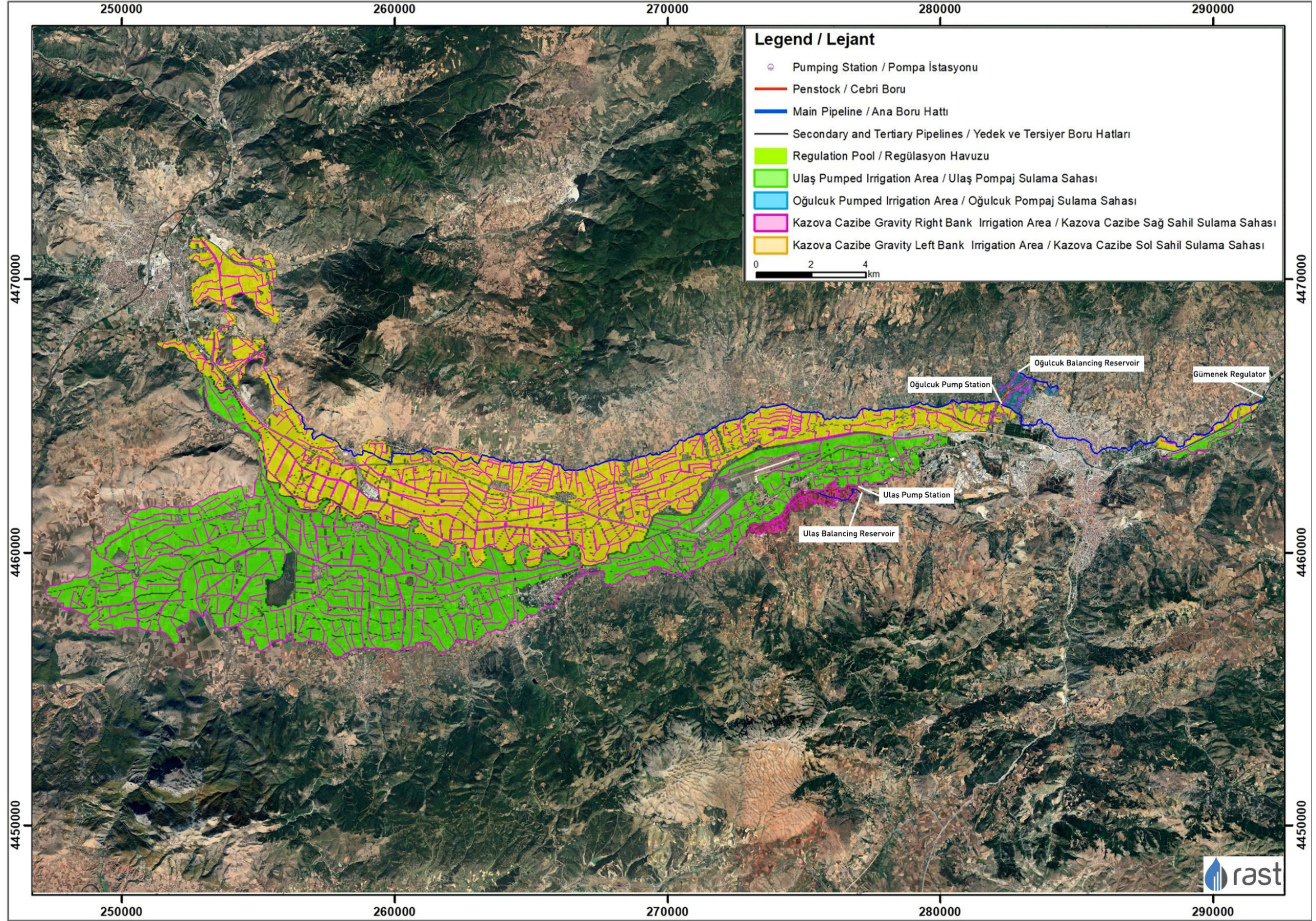


Figure 6. Satellite Image of the Sub-Project Area

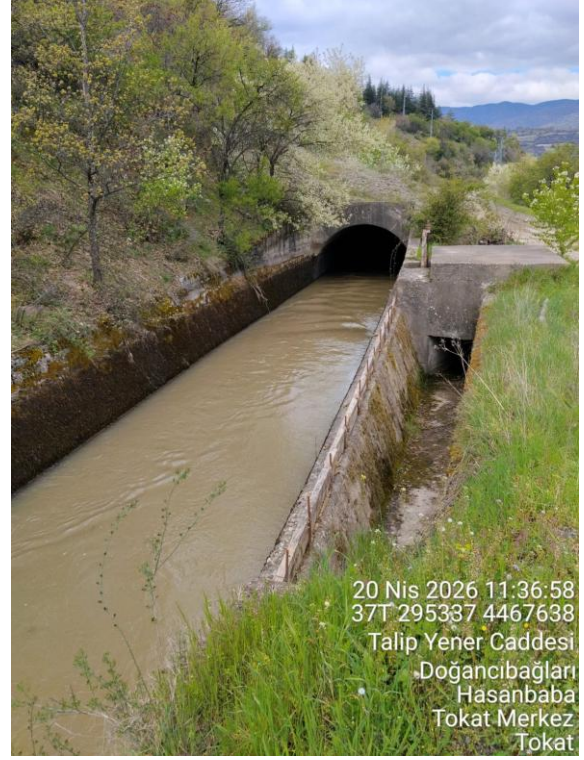
Photographs illustrating the canals and agricultural lands in the irrigation area are given in Photograph 4 - Photograph 7.



Photograph 4. Photographs from Canals and an Agricultural Land (Drone – 20-21.04.2026)



Photograph 5. Photographs from Canals and an Agricultural Land - Continued (Drone – 20-21.04.2026)



Photograph 6. Photographs from Canals and an Agricultural Land - Continued (Drone – 20-21.04.2026)



Photograph 7. Photographs from Canals and an Agricultural Land - Continued (Drone – 20-21.04.2026)

II.2 Area of Influence (Aoi)

The Area of Influence (Aoi), determined in accordance with national legislation and the WB ESSs, represents the geographical area that may be directly or indirectly affected by the Sub-Project during its construction and operation phases. In this context, the Aoi considers potential impacts on physical environmental components such as air, water, and soil, as well as on ecosystems, human health, quality of life, and economic activities, thereby enabling the integrated assessment of environmental and socio-economic dimensions.

For the Sub-Project, the Aoi has been defined as a 500-meter buffer zone surrounding the irrigation project boundary. Within this area, a total of 59 neighborhoods (see Table 3) have been identified. The Sub-Project Aoi is illustrated in Figure 7.

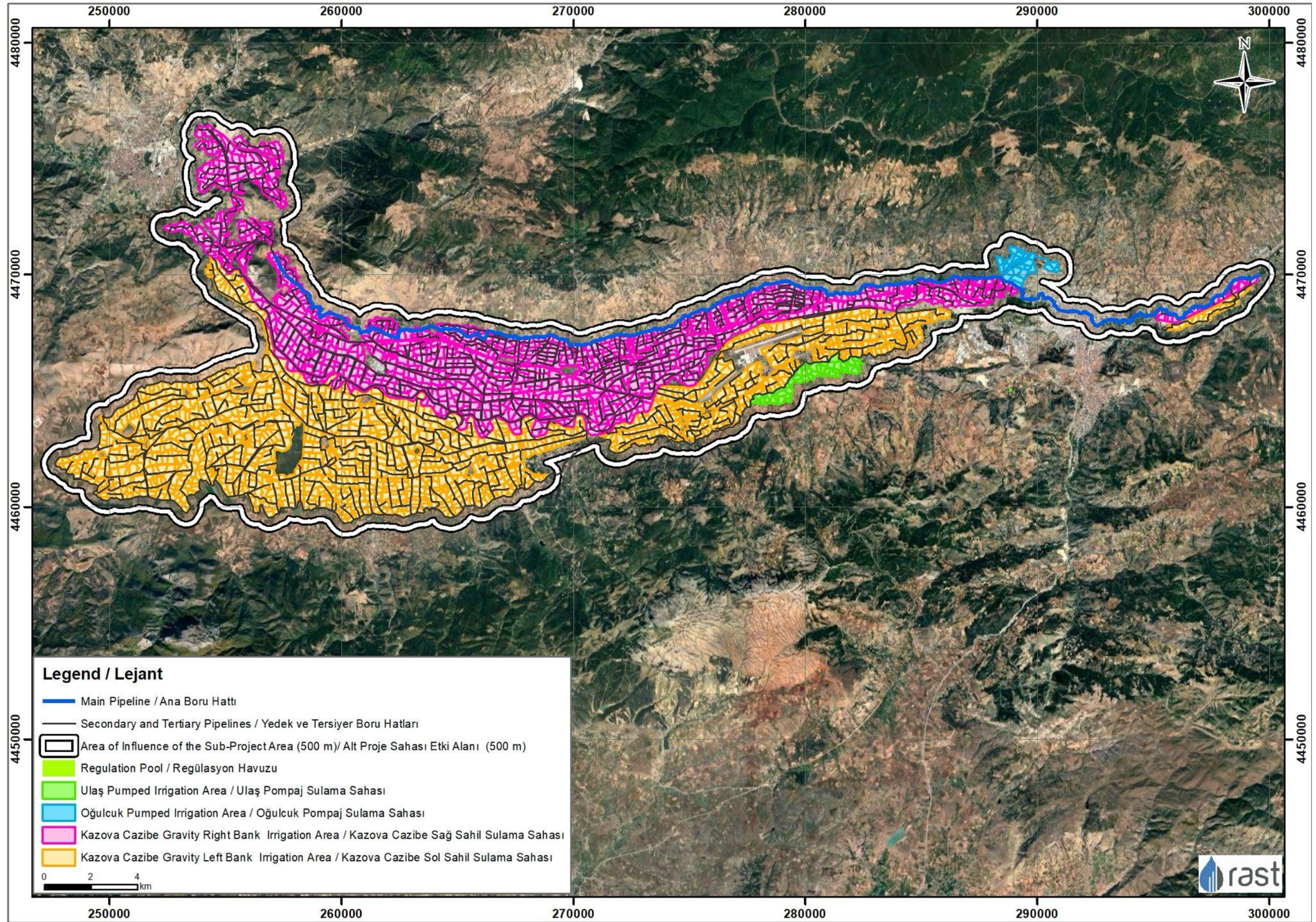


Figure 7. Area of Influence of the Sub-Project

II.3 Environmental Baseline Conditions

II.3.1 Land Use and Topography

The Sub-Project area is located within the Yeşilirmak Basin and lies within the administrative boundaries of the Central, Pazar, and Turhal districts of Tokat Province. The Sub-Project area is assessed in two sections, namely the right bank and the left bank, based on the flow direction of the Yeşilirmak River.

According to the hydrological and land classification studies conducted for the Sub-Project, the total gross gravity-irrigated area on the right and left banks was determined to be approximately 19,574.25 ha. In addition, the Pump Irrigation Area Area approximately 453 ha. Land use within the Sub-Project area is predominantly characterized by agricultural activities. The Kazova and Turhal Plains are among the most important agricultural production areas of Tokat Province, where sugar beet, wheat, barley, sunflower, maize, vegetables, and forage crops are widely cultivated. Through the modernization of the irrigation system, it is envisaged that the existing agricultural production pattern will diversify, irrigation efficiency will improve, and the economic benefits derived from agricultural production will increase.

The Sub-Project area exhibits the characteristics of a broad alluvial plain extending along the Yeşilirmak Valley, with topography generally consisting of flat or gently sloping terrain. Slopes within the irrigable area range approximately between 0.5% and 10%, while the extensive plain areas are generally characterized by slopes of between 0.5% and 2%. Areas with steeper slopes are mainly located on the hillsides and elevated terrain surrounding the Sub-Project area. Elevations in the higher areas surrounding the Kazova and Turhal Plains reach approximately 1.469 m above sea level.

Land consolidation activities within the Sub-Project area were completed prior to the preparation of this ESMP and are not under the scope of current Sub-Project. Therefore, the land consolidation process and its associated impacts are outside the scope of this ESMP. The current Sub-Project is limited to the modernization of the existing irrigation infrastructure within the already consolidated area.

Although land consolidation has been completed, limited land acquisition and/or establishment of easement rights may still be required at specific locations for project components such as irrigation structures, pipelines, access roads, or other ancillary facilities. Any such land acquisition requirements arising under the current Sub-Project will be identified during implementation and managed in accordance with the World Bank Environmental and Social Standard 5 (ESS5), the TIMP II Resettlement Framework (RF), and applicable national legislation.

II.3.2 Geology

The geological structure of the study area consists of Paleozoic-aged Tokat Metamorphics forming the basement and Mesozoic and Cenozoic sedimentary and volcanosedimentary units unconformably overlying this basement. The oldest geological unit in the area is the Tokat Metamorphics, which comprise calcschist, greenschist, phyllite, marble, metatuff, meta-agglomerate, and metadiabase. These units are overlain successively by the Eocene-aged Haydaroğlu Formation and the Miocene–Pliocene-aged Boyunpınar Formation, while the youngest cover deposits are represented by Quaternary alluvium and colluvial slope debris.

Throughout the Sub-Project area extending across the Kazova and Turhal Plains, Quaternary alluvial deposits transported and deposited by the Yeşilırmak River and its tributaries are widely exposed at the surface. These alluvial deposits mainly consist of bouldery gravel, gravelly sand, sand, and clay layers and constitute the principal aquifer system of the region. Metamorphic schists, the Eocene-aged Haydaroğlu Formation, and locally exposed Mesozoic limestones occur around the alluvial plains.

From a tectonic perspective, the region is influenced by the North Anatolian Fault Zone, with the active North Anatolian Fault located approximately 40 km north of the Sub-Project area. Intense folding and faulting are observed within the Paleozoic basement rocks, while broad anticline and syncline structures have developed within the overlying sedimentary units. The present-day topography and geomorphological characteristics of the area have largely been shaped by tectonic activity and erosional processes during the Quaternary period.

II.3.3 Climate

The Sub-Project area is located within a transitional zone between the Central Black Sea Region and the Central Anatolia Region and is characterized by a continental climate. Distance from the sea and elevation are the main factors influencing the regional climate. Therefore, summers are generally hot and dry, while winters are cold and wet. Winter conditions become more severe at higher elevations, where snowfall is common.

Meteorological data for the Sub-Project area are based on observations from the Tokat Meteorological Station. According to long-term meteorological records³ covering the period between 1927 and 2025, the average annual precipitation is approximately 433.5 mm. The lowest average monthly precipitation, 8.5 mm, occurs in August, while the highest precipitation values, 53.1 mm and 59.1 mm, are recorded in April and May, respectively. Approximately 35.8% of the annual precipitation occurs during spring, 27.8% during winter, and 14.1% during summer. This distribution indicates that precipitation is concentrated mainly in the winter and spring seasons. July and August constitute the driest period of the year.

The average annual temperature in the project area is 12.6°C. The lowest average monthly temperature is recorded in January at 2 °C, while the highest average monthly temperature is observed in August at 22.5°C. Long-term observations indicate pronounced seasonal temperature variations and confirm the prevalence of hot and dry conditions during the summer period, which increase irrigation demand across the Sub-Project area.

II.3.4 Soil Quality

The dominant soils within the Sub-Project area have developed on alluvial materials transported and deposited by the Yeşilırmak River and its tributaries. These soils, which are widespread across the plain areas, generally consist of clay, silt, sand, and gravel fractions and exhibit characteristics that are favorable for agricultural production. Investigations carried out through test pits and land surveys indicated that fine-textured soils with high clay and silt content are predominant throughout the area, while sandy and gravelly layers occur locally. Colluvial soils are also observed on the slopes surrounding the plains.

³ <https://www.mgm.gov.tr/veridegerlendirme/il-ve-ilceler-istatistik.aspx?k=A&m=TOKAT>

Detailed land classification and drainage studies have been conducted at different times to determine the soil characteristics of the Kazova and Turhal Plains. The findings of these studies indicate that the majority of soils within the Sub-Project area are suitable for agricultural production. However, varying degrees of salinity and sodicity problems have been identified in certain parts of the area. Land classification studies revealed approximately 3.918 ha of land affected by slight salinity and 811 ha affected by moderate salinity, while high salinity and sodicity problems were identified in more limited areas. Agricultural production currently continues in these areas owing to the existing drainage systems and soil reclamation works carried out over previous years.

II.3.5 Air Quality

The primary sources of air emissions within the AoI are construction-related dust and vehicle exhaust emissions. However, as no specific air quality complaints have been reported in the area, no baseline monitoring has been conducted under the Sub-Project.

In cases where site-specific baseline data are not available, information from the National Air Quality Monitoring Network operated by the Ministry of Environment, Urbanization and Climate Change may be used. The Tokat – Meydan, Tokat and Turhal air quality monitoring stations are located near the Sub-Project area (see Figure 8). Average values of the data recorded at these stations between 02 June 2025 and 02 June 2026 have been considered (see Table 4). These data provide a general indication of ambient air quality conditions in the Sub-Project area.

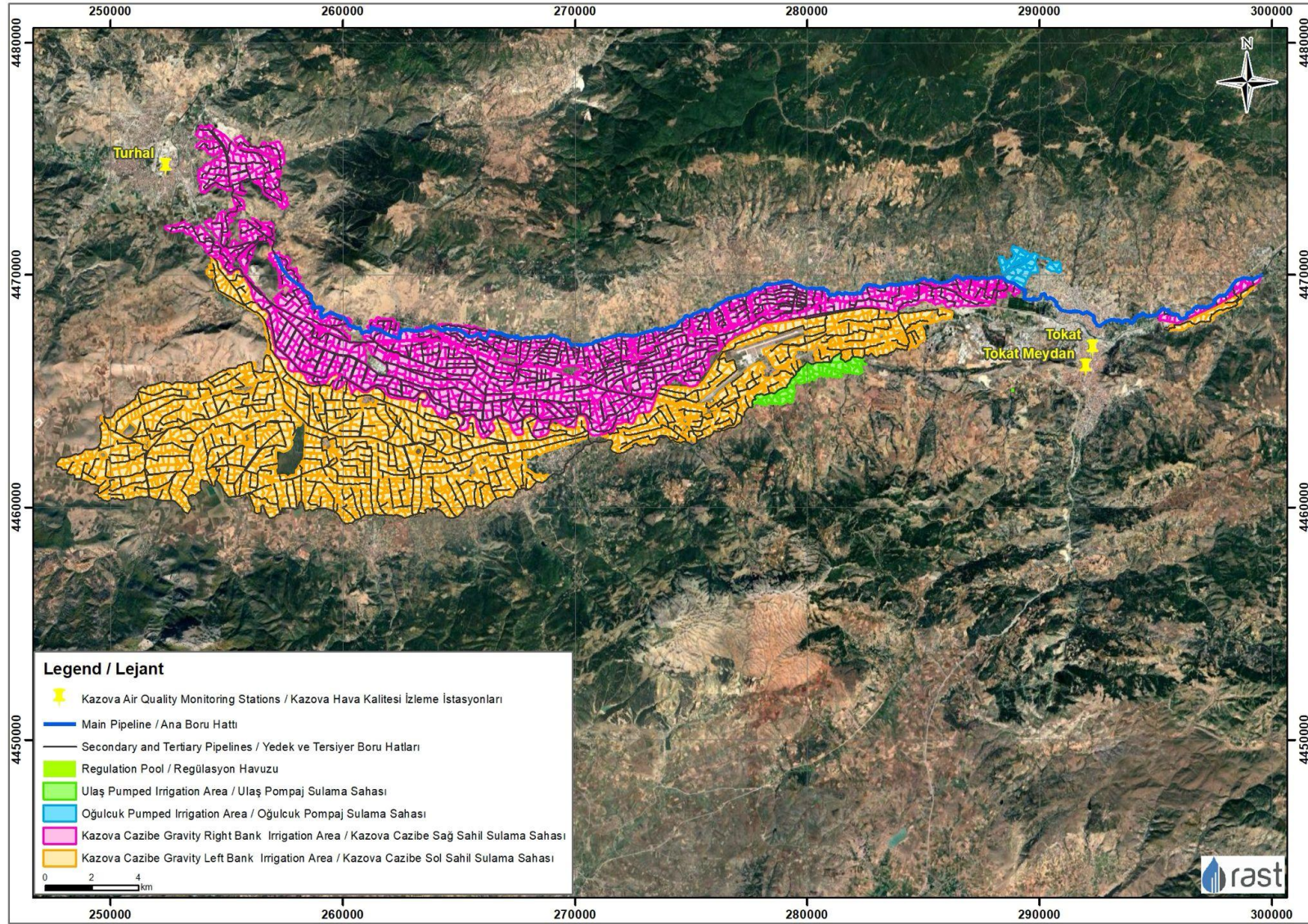


Figure 8. Sub-Project Area and Location of Air Quality Monitoring Stations

Table 4. Average Air Quality Monitoring Results (02 June 2025 - 02 June 2026)

Air Quality Monitoring Stations	Tokat	Tokat Meydan	Turhal
Distance to Sub-Project Area (km)	1.1	1.9	1.4
PM ₁₀ (µg/m ³)	18.31	51.70	40.88
PM _{2.5} (µg/m ³)		22.08	8.12
SO ₂ (µg/m ³)	3.29		
CO (µg/m ³)		779.06	
NO ₂ (µg/m ³)		52.80	30.68
NO _x (µg/m ³)		77.19	44.17
NO (µg/m ³)		24.40	13.50
O ₃ (µg/m ³)		43.92	

II.3.6 Noise

The Sub-Project area is generally located in close proximity to residential settlements. However, no complaints have been received from residents regarding noise levels associated with irrigation activities. In addition, the Sub-Project is not expected to generate significant noise emissions. Therefore, no baseline monitoring has been conducted for noise conditions at the site.

II.3.7 Water Resources and Use

The water source of the Sub-Project is the Gümenek Regulator (Photograph 8), a diversion structure supplied by the Almus Dam reservoir (Photograph 1) located within the Yeşilırmak Basin. Irrigation water is conveyed to the Kazova Right Bank and Left Bank Irrigation Systems through the Gümenek Regulator. The Sub-Project area extends across the Kazova and Turhal Plains and constitutes one of the most important irrigation systems within the Yeşilırmak Basin.



Photograph 8. Almus Dam - General Overview

The Kazova Right Bank and Left Bank Irrigation Scheme is an irrigation system that is currently in operation. The existing facilities comprise the Gümenek Regulator, the open-channel irrigation network, drainage canals, the Oğulcuk Pump Irrigation Scheme and its associated pumping and irrigation facilities and the Ulaş Pump Irrigation Scheme and its associated pumping and irrigation facilities. Through the existing system, irrigation water is supplied to agricultural lands located within the administrative boundaries of the Merkez, Pazar, and Turhal districts of Tokat Province.

The Gümenek Regulator is currently operating without any operational problems, and its main characteristics are presented in Table 5. The characteristics of the existing Kazova Right Bank and Left Bank Irrigation System are provided in Table 6.

Table 5. General Characteristics of Gümenek Regulator

Description	Value	Unit
Regulator Type	Fixed Concrete	
Thalweg Elevation	610.00	m
Crest Elevation	615.00	m
Crest Length	87.00	m
Regulator Height	4.50	m
Bridge Deck Elevation	620.20	m
Intake Elevation	614.75	m
Right Bank Intake Capacity	7.500	m ³ /sn
Left Bank Intake Capacity	10.000	m ³ /sn
Spillway Discharge Capacity (100-Year Flood)	300	m ³ /sn

Table 6. Characteristics of the Existing Kazova Irrigation System

Description	Value	Unit
Gross Irrigation Area	20,485	ha
Right Bank Main Canal Length	123.42	km
Left Bank Main Canal Length	89.50	km
Irrigation System Type	Conventional Irrigation System	

II.3.8 Wastewater Management

Wastewater services are operated through sewerage systems in district centers and connected to wastewater treatment facilities. In rural settlements, the availability of sewerage infrastructure varies from settlement to settlement, and septic tanks or individual wastewater solutions are used in some areas.

II.3.9 Waste Management

At present, only municipal solid waste and packaging waste are generated within the Sub-Project area. These wastes are collected by the relevant municipalities and transported to the Sanitary Landfill and Disposal Facility operated by the Tokat–Turhal–Zile–Pazar Solid Waste Management Union, which holds the required environmental permits and licenses, where they are ultimately disposed of.

II.3.10 Natural Hazard Potential

The Sub-Project area and its surroundings are not subject to any significant risk from rockfalls, avalanches, or widespread landslides. The Sub-Project area is predominantly located on flat or gently sloping terrain extending across the Kazova and Turhal Plains, and surface water is conveyed away through the existing drainage canal network within the irrigation scheme.

However, the Sub-Project area is influenced by the North Anatolian Fault Zone (NAFZ), one of the most significant active fault systems in Türkiye. The North Anatolian Fault is known to pass approximately 40 km north of the Sub-Project area. Therefore, as in many parts of the country, seismic hazard must be taken into consideration during Sub-Project design and engineering activities.

According to the Türkiye Earthquake Hazard Map prepared by the Disaster and Emergency Management Authority (AFAD), the Sub-Project area is located within the 0.2760–0.337 g peak ground acceleration (PGA) range (see Figure 9). These values are generally assessed as indicating a moderate level of seismic hazard.

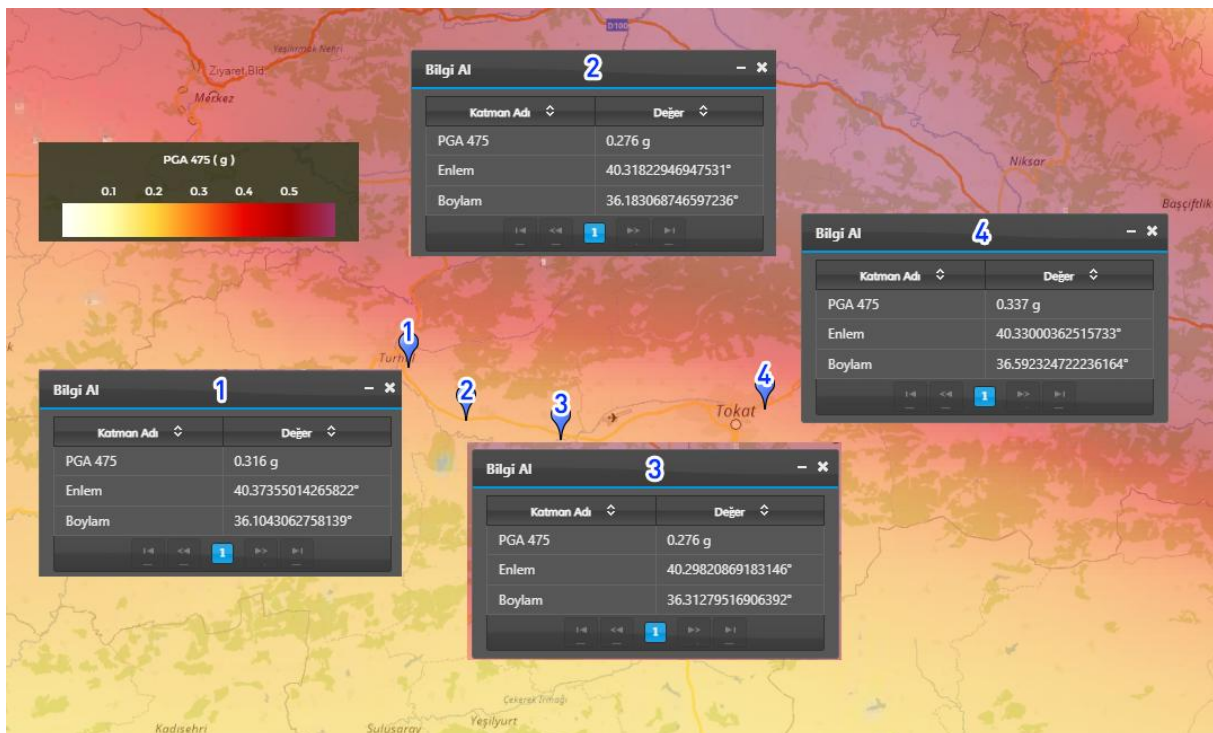


Figure 9. Türkiye Earthquake Hazard Map

II.3.11 Biodiversity and Protected Areas

II.3.11.1 Biodiversity

Within the scope of the Tokat Kazova Right and Left Bank Irrigation Renovation Construction Project, the field surveys conducted in the Sub-Project area on 21 April 2026, the results of the available literature, academic studies previously carried out in the region, the information obtained from interviews with local residents, and the data derived from field studies previously conducted by our team were evaluated together.

As a result of these assessments, it was determined that 262 plant, 4 amphibian, 14 reptile, 148 bird, and 29 mammal species may potentially occur within the Sub-Project area and its immediate surroundings. The list of species is provided in Annex 5.

A total of 262 plant species are considered likely to occur within the Sub-Project area and its surroundings, including five endemic species. Information on the endemic species was obtained from literature and academic studies; however, these species were not identified during the site visit. Of these, one species is listed as Vulnerable (VU) under both the IUCN Red List and the Bern Convention.

All four amphibian species considered likely to occur in the area are classified as LC (Least Concern) according to the IUCN Red List. Under the Bern Convention, one species is listed in Appendix II, while the other three are listed in Appendix III. No endemic amphibian species were identified within the Sub-Project area.

Among the fourteen reptile species identified, twelve are classified as LC, one species is classified as NT (Near Threatened) and one species is classified as VU according to the IUCN Red List. The species classified as VU is the spur-thighed tortoise (*Testudo graeca*). Under the Bern Convention, six reptile species are listed in Appendix II, while eight are listed in Appendix III. No endemic reptile species were identified within the Sub-Project area.

Among the 148 bird species considered likely to occur within the Sub-Project area, the European Turtle Dove (*Streptopelia turtur*), Greater Spotted Eagle (*Clanga clanga*), and Common Pochard (*Aythya ferina*) are classified as VU according to the IUCN Red List. The Eurasian Curlew (*Numenius arquata*) and Northern Lapwing (*Vanellus vanellus*) are classified as Near Threatened (NT), while all remaining species are listed as LC. Moreover, no endemic bird species were identified within the sub-Project area.

Among the 29 mammal species considered likely to occur within the Sub-Project area, the Marbled Polecat (*Vormela peregusna*) is classified as VU according to the IUCN Red List. The Eurasian Otter (*Lutra lutra*), Anatolian Ground Squirrel (*Spermophilus xanthoprymnus*), and Mediterranean Horseshoe Bat (*Rhinolophus euryale*) are classified as NT, while the Anatolian Blind Mole Rat (*Nannospalax xanthodon*) is classified as Data Deficient (DD). All remaining mammal species are listed as LC. Moreover, no endemic mammal species were identified within the Sub-Project area.

The species listed above were identified based on available literature, previous academic and field studies and the habitat characteristics of the Sub-Project area and its surroundings and are therefore considered as having the potential to occur in the area. It should be noted that not all of these species are expected to be present at the same time within the Sub-Project area; rather, the list is intended to provide a general representation of the region's fauna and flora. The summary of the literature review is presented in Table 7.

Table 7. Summary of the Fauna Species

Fauna Species	Number of Species	BERN			Endemic	IUCN				
		Annex 1	Annex 2	Annex 3		VU	NT	LC	DD	EN
Amphibians	4		1	3	-			4		
Birds	148		95	46	-	3	2	143		
Mammalia	29		10	6	-	1	3	24	1	
Reptilians	14		6	8	-	1	1	12		

II.3.11.2 Protected Areas

Tokat Kaz Lake Wildlife Development Area, which is a protected area, is located in the western part of the Sub-Project area.

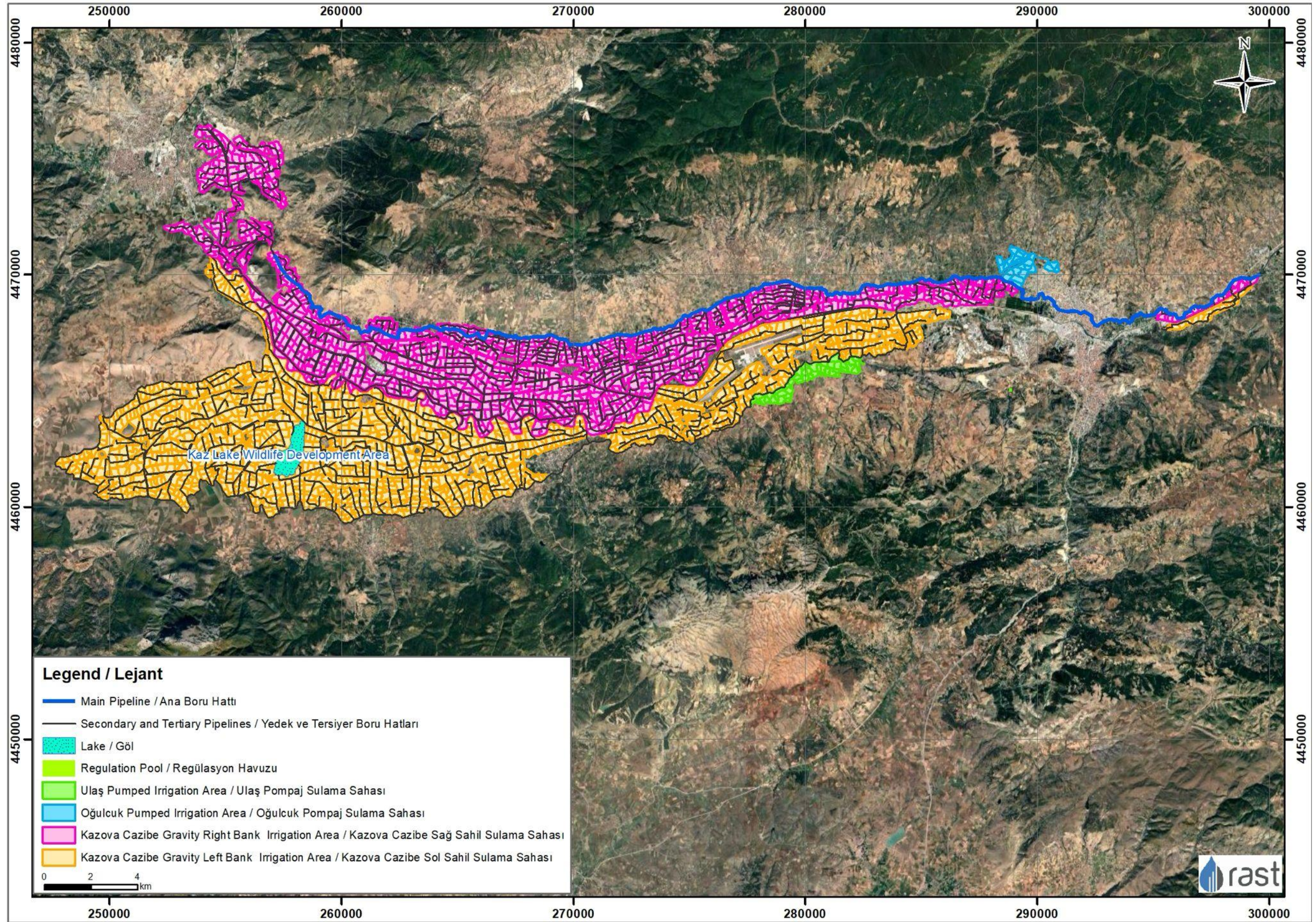


Figure 10. Location of the Tokat Kaz Lake Wildlife Development Area Relative to the Sub-Project Area



Photograph 9. Tokat Kaz Lake Wildlife Development Area

According to the official correspondence of the Ministry of Agriculture and Forestry, 1st Regional Directorate (see Annex 6), the Sub-Project is located within the Kaz Lake Wildlife Development Area and falls within the scope of Law No. 4915 on Terrestrial Hunting. Accordingly, it was stated that the opinions and information of the relevant institutions and organizations should be obtained prior to the implementation of Sub-Project activities.

The Kaz Lake Wildlife Development Area is located within the administrative boundaries of Tokat Province and covers a total protected area of approximately 1.170 hectares. Approximately 274 hectares of the site consist of the lake area, of which 201 hectares are classified as wetland and 73 hectares as dry land. Situated at an elevation of approximately 535 m above sea level, the site is located about 39 km from Tokat city center, 19 km from Turhal District, 11 km from Pazar District, and 23 km from Zile District. The area was previously designated as a Wildlife Protection Area; however, pursuant to Article 4 of Law No. 4915 on Terrestrial Hunting and the Council of Ministers Decision No. 2006/10966 dated 13 September 2006, it was redesignated as a Wildlife Development Area and officially declared through publication in the Official Gazette dated 5 October 2006 and numbered 26310.

As the Kaz Lake Wildlife Development Area is located within the Sub - project area, appropriate mitigation and monitoring measures should be implemented to minimize potential impacts on the wetland ecosystem, waterbirds, breeding habitats, reedbed habitats, and herpetofauna. The principal mitigation and monitoring measures proposed for implementation during the construction and operation phases of the Sub-Project are presented in Table 10.

II.4 Socio-Economic Characteristics of the Sub - Project

There are 59 neighborhoods within the Sub-Project's scope. A baseline study was conducted for these neighborhoods, involving both desk research and fieldwork. The agricultural structure of the region was analyzed using the "2024 Agricultural Statistics for Tokat Province" report published by the Tokat Governorate's Provincial Directorate of Agriculture and Forestry. The findings and other sections of this report were supported by fieldwork. In this context, meetings were held with the Director of the Yeşilırmak Irrigation Union, the Tokat Provincial Director of Agriculture and Forestry, the President of the Tokat Chamber of Agriculture, and the District Directors of Agriculture and Forestry in Pazar and Turhal.

Additionally, three separate focus group discussions (FGDs) were conducted with the village heads of the villages within the Sub-Project area. A total of 13 village heads from 13 different neighborhoods participated in these FGD sessions.

II.4.1 Demography and Population

The Sub-Project area is located within the administrative boundaries of Merkez, Turhal and Pazar Districts in Tokat Province. According to the 2025 data of the Address Based Population Registration System of the Turkish Statistical Institute (TÜİK), the total population of Tokat Province District is approximately 614.141.

According to TÜİK, 2025 data, the total population of the neighborhoods within the region is 95.785. (Tokat Central: 68.913, Turhal: 15.361 and Pazar: 11.511.)

The population of the neighborhoods within the Sub-Project's area of influence is listed below in Table 8.

Table 8. Population Sizes of Neighborhoods (Source: TURKSTAT, 2025)

Row	Neighborhood / Town / Village	Population	Neighborhood / Town / Village	Population	Neighborhood / Town / Village	Population
1	Güneşli	1,839	Hamam	1,543	Erkilet	912
2	Emirseyit	2,115	Varvara	2,654	Esentepe	1,154
3	Güryıldız)	2,193	Arzupinar	382	Merkez	843
4	Akyamaç	338	Ataköy	174	Seyitali	1,052
5	Bakişli	215	Bahçebaşı	211	Sinanpaşa	957
6	Büyükbağlar	711	Çariksiz	198	Bağlarbaşı	312
7	Büyükyıldız	454	Çayli	406	Beşevler	145
8	Çerçi	298	Dökmetepe	289	Çayköy	188
9	Dedeli	412	Gümüştop	163	Çiftlik	204
10	Gülpinar	267	Kalaycık	122	Dereçayli	385
11	Gümenek	196	Kat	497	Kaledere	167
12	Güzeldere	184	Kuşoturağı	231	Menteşe	243
13	Kemalpaşa	741	Necip	204	Ovayurt	316
14	Kömeç	255	Şatroba	139	Taşlık	128
15	Küçükbağlar	422	Taşlıhöyük	195	Tatar	179
16	Söngüt	379	Tatlıcak	268	Tepeçay	152
17	Taşlıçiftlik	1,258	Yeniköy	114	Fatih	940
18	Ulaş	394	Asarcık	584	Mehmet Akif Erson	646
19	Yeşilyurt	118	Karaevli	468		
20	Hasan Baba	161	Üçgözen	760		
21			Arpaören	161		

II.4.2 Cultural Heritage

Based on the reviews conducted along the alignment of the existing main irrigation canal and the main and backup pipelines planned for rehabilitation, no registered cultural heritage

assets were identified within the direct footprint of the Sub-Project components. However, archaeological sites, mounds, tumuli and various registered cultural heritage assets have been identified within the irrigation area and its vicinity (see Annex 7, Institutional Opinions of the Tokat Provincial Directorate of Culture and Tourism).

According to the official opinions provided by the Tokat Provincial Directorate of Culture and Tourism, a total of 39 cultural heritage assets are located within the irrigation scheme and its vicinity. However, based on comprehensive field surveys conducted within the Sub-Project area, it was determined that the majority of these cultural heritage assets are located outside the Sub-Project Aol. A total of 17 cultural heritage assets were identified within the Sub-Project Area and its Aol, and these assets have been assessed within the scope of this ESMP.

Along the main pipeline alignment, the closest cultural heritage receptor is Komana Ancient City at an approximate distance of 24 meters. However, existing water conveyance structures, continuous water flow and an approximately 6.5-meter-wide asphalt road are already present between the ancient city and the construction area, and the existing road functions as a physical barrier. Therefore, no significant direct or indirect impact from the Sub-Project activities is anticipated.

Registered archaeological sites, including Yazıbağı Höyük, Köyönü Tumulus, Çavundur Höyük and Hutepe Höyük, are located near the backup pipeline alignment. However, the pipeline alignment remains outside the legally protected boundaries of these assets. The impact corridor for the backup pipeline has been limited to 10 meters on each side of the alignment, and no registered cultural heritage asset is located within this corridor. The closest approach distance is approximately 15 meters to Köyönü Tumulus. In this area, the construction corridor will be restricted on the tumulus side, necessary signage and warning markers will be installed, and no activities will be carried out within 10 meters of the foothills of the tumulus.

No physical intervention is envisaged within the protected boundaries of registered cultural heritage assets. A minimum 20-meter buffer zone will be maintained around nearby archaeological sites where feasible, and no excavation, machinery entry or material storage will be permitted within these areas. In addition, the relevant opinion of the Regional Council for the Conservation of Cultural Property has been obtained for the Sub-Project, and in the event of any chance find during construction, the Chance Find Procedure defined in the ESMP will be implemented. Considering the existing management and mitigation measures, the

current approach is considered sufficient to manage potential risks related to cultural heritage.

The locations of the main registered sites and cultural heritage assets within or near the irrigation area in relation to the Sub-Project area are presented in Figure 11, while detailed information is provided in Table 9 and their visual appearances are shown in Photograph 10.

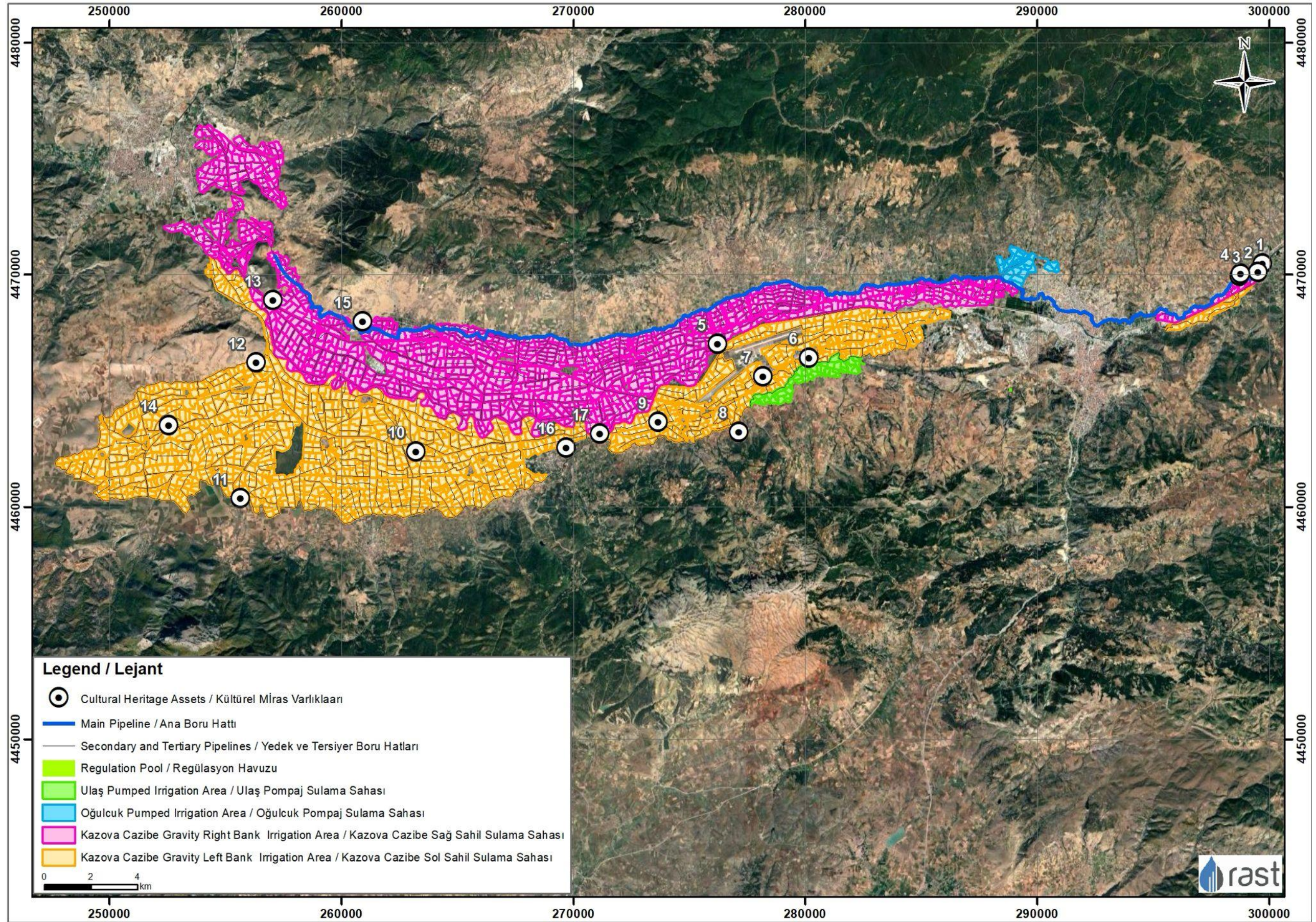


Figure 11. Location of the Cultural Heritage Assets and Sub-Project Area

Table 9. Registered Sites and Assets

No	Name of Cultural Heritage Asset	Province / District	Location of the Asset			Approximate Distance to Sub - project Activities (pipeline, access road, drainage canal, etc.) (meter)	Period
			Within Sub - project Area	Within Sub - project Area of Influence	Outside Sub - project Area and Area of Influence		
1	Gümenek Historic Bridge	Tokat			x	281 (main pipeline)	Seljuki Period
2	Komana Ancient City				x	24 (main pipeline)	Hellenistic, Roman, Byzantine, Seljuki, Ottoman Period
3	Gümenek Rock Tomb				x	55 (main pipeline)	Roman Period
4	Gümenek Turbah				x	150 (main pipeline)	Ottoman Period
5	Yazıbağı Hoyuk				x	58	Bronze and Iron Period
6	Kervancı Han Ruins				x	181	Seljuki Period
7	Alipaşa Cemetery				x	175	Ottoman Period
8	İkiztepe Tumulus				x	328	Hellenistic period
9	Köyönü Tumulus				x	15	Roman Period
10	Çavundur Hoyuk				x	100	Middle Bronze, Iron, Roman and Byzantine Period
11	Dökmetepe Hoyuk	Pazar			x	57	Bronze and Hittite Period
12	Tatlıcak Settlement	Turhal			x	247	Iron Period
13	Ancient Cemetery (Turhal)	Turhal			x	50	Roman, Byzantine and Ottoman Period
14	Hutepe Tumulus	Turhal			x	68	Hellenistic and Roman Period
15	Tembel Tepe Hoyuk	Turhal			x	240 (main pipeline)	Early Bronze Period
16	Mahperi Hatun Caravanserai	Pazar			x	350	Seljuki Period
17	Pazar Tavukçu Historic Bridge	Pazar			x	120	Anatolian Seljuki Period



1 - Gümenek Historic Bridge



2 - Komana Ancient City



3 - Gümenek Rock Tomb



4 -Gümenek Turbah



5 - Yazıbağı Hoyuk



6 -Kervancı Han Ruin



7 - Ali Paşa Cemetery



8 - İkiztepe Tumuli



9 - Köyönü Tumulus



10 - Çavundur Hoyuk



11 - Dökmetepe Hoyuk



12 - Tatlıcak Settlement



13 - Ancient Cemetery (Turhal)



14 - Hutepe Tumulus



15 - Tembel Tepe Hoyuk



16 -Mahperi Hatun Caravanserai



17 - Pazar Tavukçu Historic Bridge

Photograph 10. Photographs of Registered Sites and Assets

In addition, Chance Find Procedure (see Annex 8) has been incorporated into the ESMP to manage any unexpected discoveries of cultural heritage during construction, in line with national legislation and the requirements of the World Bank Environmental and Social Framework, particularly ESS8 on Cultural Heritage. Furthermore, the official opinions provided by the Tokat Provincial Directorate of Culture and Tourism (Annex 7) indicate that the Directorate has no objection to the implementation of the Sub-Project in accordance with the applicable regulatory framework.

Considering (i) the official opinions of Tokat Provincial Directorate (ii) the absence of direct impacts on cultural heritage assets, (iii) the limited, linear nature of the works largely following existing alignments and (iv) the existing regulatory framework and mitigation measures defined in the ESMP, the current approach is deemed sufficient to manage potential risks related to cultural heritage.

Therefore, the preparation of a separate, site-specific Cultural Heritage Management Plan is not considered necessary for this sub-project.

II.4.3 Livelihoods and Employment

The settlements located within the Sub-Project Aol in Turhal, Pazar, and Tokat Central districts are predominantly rural in character, and their economic structure is largely based on agricultural activities.

In the settlements located within the Sub - project Area of Influence, the primary sources of livelihood consist of irrigated and rainfed agriculture together with small-scale livestock activities. In areas where irrigation infrastructure is available, cereal crops such as wheat, barley, maize, and sunflower, as well as fodder crops, vegetables, and certain locally cultivated industrial crops are produced. Agricultural production is largely carried out through family-run farming practices, and land ownership is predominantly household-based.

Livestock activities in the settlements are conducted on a limited scale in the form of cattle breeding, small ruminant farming, and poultry production. Livestock activities are generally integrated with agricultural production systems.

Due to the industrial, commercial, and service activities concentrated in Tokat city center and Turhal district center, some household members residing in the settlements are employed in

non-agricultural sectors. In the relevant settlements, there are also households generating income through wage employment, small-scale trade, and public sector employment in addition to agricultural activities. A pattern of part-time or seasonal engagement in non-agricultural employment alongside farming activities is observed in the rural settlements.

This situation indicates that the local economy is not entirely dependent on agriculture; however, agricultural production and the associated irrigation infrastructure continue to constitute the primary economic basis of the area.

In the settlements, income sources are diversified and consist of agricultural production income, wage employment in provincial and district centers, and, to a limited extent, income derived from livestock farming.

Women in the relevant settlements play an active role in agricultural production processes and contribute to livestock activities and household-based production. Although the rate of women's formal wage employment remains limited in rural settlements, women are observed to undertake an active economic role within the family-based production structure.

Seasonal labor intensity increases in line with agricultural production cycles, particularly during planting and harvesting periods, and limited seasonal labor mobility is observed in the area. However, there is no significant or large-scale seasonal migration movement within the Sub - project Area of Influence.

The economic structure of the region is directly or indirectly linked to agricultural production and the associated irrigation infrastructure. In this context, the irrigation and water conveyance infrastructure investments planned by DSI are considered to play an important role in terms of agricultural productivity and continuity of production in the local economy.

II.4.4 Main Economic Activities in the Sub-Project Area

Turhal, Pazar, and Tokat Central districts have a mixed economic structure that includes agricultural production activities alongside trade, small-scale industry, and service sectors. Although commercial activities, public services, food processing facilities, and small industrial enterprises located in Tokat city center and Turhal district center provide alternative employment opportunities for the rural population, the settlements located within the Sub - project Area of Influence largely retain their rural character. Therefore, economic activities in the area are predominantly based on agricultural production.

Crop production constitutes the primary source of livelihood in the settlements. Both irrigated and rainfed agricultural activities are carried out in the region, and it is estimated that irrigated agricultural land currently represents approximately 30–40% of the total agricultural area. Rainfed agriculture continues to constitute a significant component of the agricultural production structure.

In rainfed agricultural areas, maize is the most commonly cultivated crop, while fodder crops constitute the second most common production type. In addition, wheat, barley, and other cereal crops form important components of the regional cropping pattern. Fodder crop production is integrated with livestock activities and provides an important contribution to rural household economies.

In areas where irrigation is available, crops with relatively higher productivity and income generation potential are preferred. In irrigated agricultural areas, vegetable production is widespread, particularly tomato cultivation. In addition, pepper, beans, cucumber, and similar vegetable crops are also cultivated. Vegetable production is carried out both for household consumption and for market-oriented commercial purposes.

Agricultural production is largely based on family-run farming practices, and land ownership generally consists of small- and medium-scale household-operated agricultural parcels. Agricultural activities increase seasonal labor demand in the region, and limited seasonal labor mobility is observed particularly during planting, maintenance, and harvesting periods.

Livestock activities constitute a complementary component of the local economic structure. Cattle breeding and small ruminant farming are carried out on a limited scale in the settlements and are generally integrated with crop production systems. Household-level poultry farming activities are also commonly observed. Livestock production is generally conducted for household consumption and supplementary income generation rather than on a fully commercial scale.

Public institutions, commercial enterprises, food processing facilities, and service sector activities located in Tokat city center and Turhal district also provide non-agricultural income sources for the rural population. Consequently, some household members engage in wage employment alongside agricultural activities, contributing to diversified household income structures.

Pasture use and livestock-related activities were also assessed during stakeholder consultations conducted within the scope of the study. Based on the information obtained, the DSI water conveyance and irrigation canal alignments planned under the Sub - project are not expected to create significant impacts on existing pasture areas, grazing activities, or access routes currently used by local communities.

The economic structure of the settlements located within the Sub - project Area of Influence is directly linked to agricultural production and irrigation infrastructure. Therefore, the irrigation and water conveyance infrastructure investments planned by DSI are expected to contribute significantly to increasing agricultural productivity, improving crop diversification, and supporting the sustainability of rural livelihoods in the region.

II.4.5 Education and Health Services

In terms of education services, it has been observed that some rural settlements located within the Sub - project Area of Influence do not have schools, and access to formal education is provided through the school transportation system. This situation indicates that educational infrastructure at the settlement level is limited, while education services are primarily organized through district centers and central schools. Within the scope of the transportation system, students are transported to schools by shuttle services during the day, which constitutes a common access model in rural settlements. In this context, access to education services is directly linked to transportation routes and service planning. The administrative coordination of education services is carried out by the Tokat Provincial Directorate of National Education together with the relevant district directorates of national education.

In terms of health services, it has been determined that a significant portion of the rural settlements do not have health clinics, family health centers, or permanently operating healthcare units. Residents living in the settlements primarily access primary healthcare and hospital services through district centers and Tokat city center. Primary healthcare services are provided through family health centers located in district centers, while preventive healthcare and coordination functions are carried out by district health directorates.

Regarding secondary healthcare services, state hospitals located in Tokat city center together with Turhal State Hospital provide healthcare services to the regional population. Within this framework, residents of rural settlements regularly travel to district and provincial centers for

medical examinations, diagnostic procedures, outpatient services, and referral processes. Due to the limited presence of healthcare facilities at the settlement level, access to healthcare services is closely associated with transportation availability and seasonal conditions, particularly for elderly individuals, persons with chronic illnesses, pregnant women, and households with children.

In the settlements located within the Sub - project Area of Influence, education and health services are delivered through a centralized structure. Access to education services is ensured through the school transportation system, while access to healthcare services is mainly provided through healthcare facilities located in district centers and Tokat city center. This existing structure also constitutes an important background for planning the location, timing, and communication methods of meetings and consultations to be conducted within the scope of stakeholder engagement processes.

Transportation from the settlements to district centers is generally provided through paved roads, and no significant transportation-related barriers regarding access to education and health services have been identified. Distances between the settlements and district centers are generally short, allowing daily access to public services.

II.4.6 Vulnerable/Disadvantaged Individuals/Groups and Social Equity

The identification of vulnerable groups is based on two key criteria:

- Being disproportionately affected by the negative impacts of the Sub-Project;
- Difficulty participating in consultation activities.

In this context, people with physical or mental disabilities, people over 65 living alone, female heads of households, poor individuals who live on government/association assistance and asylum seekers/refugees who do not speak Turkish are defined as vulnerable in the Aol.

Given that there are approximately 59 rural neighborhoods within the Sub - project Impact Area and that the area spans a wide geographical region, a detailed identification of vulnerable groups has not been conducted for each individual neighborhood at this stage. However, based on field observations and stakeholder interviews, it is assessed that vulnerable individuals possessing the characteristics defined above may be present in these rural settlements within the context of their general demographic structure.

Within the scope of field studies and stakeholder consultations, no concentrated presence of refugees, asylum seekers, or a distinct socially marginalized community has been identified within the Sub - project Impact Area. However, it is assessed that vulnerable groups may face greater difficulties in areas such as access to information, participation in decision-making processes, transportation, and access to public services.

During the Sub-Project, measures will be taken to ensure that all segments of society, including vulnerable and disadvantaged groups, are informed in an inclusive manner and their participation is facilitated through stakeholder engagement activities.

II.4.7 Infrastructure Services

Infrastructure services in Tokat Province are generally well developed, and basic services such as drinking water, electricity, wastewater, natural gas, transportation, communication, and solid waste management are largely provided in a systematic manner. In the settlements located within the Sub - project Area of Influence in Turhal, Pazar, and Tokat Central districts, access to basic infrastructure services is generally ensured.

Drinking water services are provided by the relevant municipalities and water utilities. In rural settlements, a piped drinking water network is available, and households generally receive water through household connections to the distribution system. In some settlements, individual water storage tanks and small-scale pumping systems may also be used. Overall, drinking water infrastructure is considered adequate.

Wastewater services are operated through sewerage systems in district centers and are connected to wastewater treatment facilities. In rural settlements, the availability of sewerage infrastructure varies from settlement to settlement, and septic tanks or individual wastewater solutions are used in some areas. Wastewater services are managed under the coordination of the relevant municipalities.

An electricity distribution network is available in all settlements, and households are connected to the national grid. Electricity infrastructure is also essential for agricultural production activities, particularly for irrigation systems and the operation of agricultural equipment. Although occasional interruptions may occur in rural areas, electricity supply is generally stable and reliable.

A natural gas distribution network is widely available in district centers, and in recent years, access to natural gas has also been extended to some rural settlements as part of infrastructure expansion works. In certain settlements within the Sub - project Area of Influence, natural gas networks are available and households benefit from this service.

Transportation infrastructure is generally well developed. Asphalt roads connect district centers with rural settlements, while internal settlement roads are typically either asphalt or stabilized surfaces. During winter months, adverse weather conditions may occasionally affect accessibility in some rural roads. Due to agricultural activities, tractor and heavy vehicle traffic is an important component of internal road use within the settlements.

Solid waste collection services are carried out regularly by municipalities. In rural settlements, household waste is collected periodically and transported to district-level disposal systems. Agricultural waste is generally managed on-site or reintegrated into the production cycle.

Telecommunication and internet infrastructure is well developed in district centers; however, in rural settlements, mobile network coverage is generally available, while internet speed and coverage quality may vary between settlements.

In the settlements within the Sub-project Aol, access to basic infrastructure services is generally ensured. However, due to the rural character of these settlements, the quality and diversity of services are more limited compared to district centers. Drinking water, electricity, and transportation infrastructure are widely available, while sewerage and natural gas services vary at the settlement level. As in the case of education and health services, some services are provided through centralized systems, requiring residents to access district centers for full service coverage.

II.4.8 Traffic and Transportation

Tokat Province is located at the intersection of the Black Sea Region and Central Anatolia Region and has a well-developed regional road network in terms of transportation. The Sub - project Area of Influence, which includes Turhal, Pazar, and Tokat Central districts, is connected to the provincial center and surrounding provinces via the D100 highway and associated secondary roads. There is regular road connectivity between district centers and Tokat city center, and transportation is provided by private vehicles and public transport services such as minibuses and buses.

The settlements within the Sub-Project AoI have a rural character, and transportation is mainly provided through village and neighborhood roads connecting them to district centers. Motorized vehicle access is available to all settlements. The majority of the roads connecting settlements to district centers are asphalt paved, while some internal settlement roads consist of stabilized or concrete surfaces.

The inter-settlement road network also supports the use of tractors and agricultural machinery due to the intensity of agricultural activities. In particular, agricultural vehicle movements increase during planting, maintenance, and harvesting periods. Heavy vehicle traffic is mainly concentrated in district centers and industrial zones, while it remains limited in rural settlements within the Sub - project Area of Influence.

Public transportation services are limited; however, minibus routes and shuttle services operate on certain routes between settlements and district centers. The school transportation system requires the daily movement of students from settlements to schools located in district centers. Access to healthcare services and other public services is also largely dependent on transportation to district centers.

During winter months, adverse weather conditions such as snow and icing may temporarily affect rural road accessibility; however, road maintenance and snow clearance operations are regularly carried out by municipalities and relevant public authorities. Road widths are consistent with rural settlement standards, and there is no dense urban traffic characteristic within the settlements.

CHAPTER III.

ENVIRONMENTAL AND SOCIAL ASSESSMENT

III.1 Introduction

Following an assessment of the potential environmental and social risks and impacts associated with the Tokat Kazova Right and Left Bank Irrigation Renovation Construction Project, an Environmental and Social (E&S) Screening Form was developed by DSI and is presented in Annex 9.

As indicated in the Screening Form, the environmental and social risk category of the Sub-project has been determined as 'Moderate'. This section reassesses the initially defined risk categorization in light of the identified baseline conditions and anticipated construction and operational impacts.

III.2 Overview of Sub-Project Risk Profile

The Sub-project involves the rehabilitation and modernization of an existing irrigation distribution system within an established irrigation area. The works are limited to the replacement of open-canal with buried pressurized pipelines, largely following the existing alignment and service road corridors. The Sub-project does not include the construction of a new dam and significant land acquisition. Basin-level water savings will be achieved.,

Given the nature and scale of the Sub-project, the anticipated environmental and social risks are site-specific, largely temporary, and reversible. The environmental and social risk assessment are presented in the following sub-titles.

III.3 Environmental Risk Assessment

III.3.1 Air Quality and Noise

Construction activities such as trench excavation, pipe laying and vehicle movement may generate localized dust emissions and temporary noise. These impacts are expected to remain limited to the construction corridor and nearby agricultural areas. No significant air emissions are expected during operation.

Given the rural character of the Sub-project area and the temporary nature of construction activities, the significance of air and noise impacts is assessed as low to moderate during construction and negligible during operation. All construction activities will be carried out in

compliance with the requirements of the Industrial Air Pollution Control Regulation and the Regulation on the Assessment and Management of Environmental Noise.

III.3.2 Soil and Land Disturbance

Temporary soil disturbance, topsoil stripping and localized compaction will occur along the trench alignment. However, the works are limited to the existing irrigation corridor and the service roads. With proper topsoil management and reinstatement, impacts on agricultural productivity are expected to be temporary and reversible.

For excavations carried out outside the concrete canal sections, the upper layer of the excavated material will be separated and treated as topsoil for reuse, where appropriate. The remaining material will be used for backfilling and ground leveling following pipe installation works. Any surplus material will be transported to licensed excavation/inert construction waste disposal (dumping/stockpiling) sites operated or designated by the Tokat Municipality for final disposal. Excavation material management, transport and disposal practices will be carried out in compliance with the provisions of the Regulation on Excavation Soil, Construction and Demolition Waste.

III.3.3 Water Resources

The Sub-project does not involve increased abstraction of water resources beyond existing allocations. During construction, there may be temporary and localized disruption to irrigation services in certain sections. However, phased implementation and coordination with DSI are expected to minimize such impacts.

In the long term, the Sub-project is expected to result in a positive environmental outcome through reduced seepage and evaporation losses and improved water use efficiency. All construction activities will be carried out in compliance with the provisions of the Water Pollution Control Regulation to prevent potential contamination of surface water resources and irrigation infrastructure.

III.3.4 Biodiversity

Based on the April 2026 site visit findings, the Sub-Project area is predominantly agricultural land located within the existing canal corridor. The site visit confirmed the absence of

designated critical habitats and other biodiversity features that would trigger ESS6 requirements within the Sub-Project area and its Aol. Therefore, no significant biodiversity impacts are anticipated and any vegetation clearance will be limited to the existing canal corridor.

As the Kaz Lake Wildlife Development Area is located within the Sub-Project area, monitoring measures (see Table 9) should be implemented to minimize potential pressures on the wetland ecosystem, waterbirds, breeding habitats, reedbed habitats, and herpetofauna.

III.4 Social Risk Assessment

III.4.1 Land Use and Access

The Sub-Project covers the rehabilitation of the existing irrigation infrastructure located within the administrative boundaries of Tokat city center, Pazar, and Turhal District.

According to the current Sub-project description, no intervention requiring residential demolition or physical displacement within settlement areas is envisaged. The Sub-project Area of Influence predominantly consists of agricultural land. No direct intervention in public buildings or residential areas within neighborhood centers is planned.

In the event that expropriation is necessary, the provisions of the World Bank's ESS5 will apply and site-specific Resettlement Plan in line with the project's RPF will be prepared. In this context:

- In cases of expropriation or restrictions on land use, affected persons will be identified.
- In the event of physical or economic displacement, the necessary Resettlement Plan or Resettlement Framework will be implemented.
- Land rehabilitation will be ensured in cases of temporary land use.
- Compensation processes will be carried out in accordance with national legislation and the requirements of ESS5.

Temporary access restrictions to agricultural lands may occur during the construction of irrigation canals. However, these restrictions are expected to be short-term. Additionally, alternative routes for accessing agricultural lands will be provided. Another potential impact is a temporary disruption in the supply of irrigation water from existing irrigation canals. Any

damage caused to these canals during construction will be repaired promptly to prevent loss of livelihood.

III.4.2 Community Health and Safety

During the construction phase of the Sub- Project, there will be certain impacts on traffic patterns and community safety in the area. The use of roads providing access to residential areas by heavy construction machinery may pose traffic safety risks to the local population. Short-term transportation disruptions caused by road works may temporarily hinder villagers' access to healthcare facilities. Alternative route planning and safety measures are an important part of the Sub-Project to minimize these negative impacts.

Temporary fencing, warning tapes and signage shall be installed around construction work areas. Additional protection measures, including temporary access arrangements where necessary, shall be implemented to prevent children and other people from entering these areas. Regular maintenance and control of the irrigation system is important to minimize the community health risks that may arise during the operational phase. Effective traffic management to counter increased traffic density from service vehicles and farmers will reduce the likelihood of accidents. To ensure environmental sustainability, protective measures such as sediment traps should be implemented to counter soil erosion caused by improper irrigation. This will both protect community health and prevent negative impacts on water ecosystems. In addition to signing the code of conduct, additional measures should be in place to manage the SEA/SH risks considering the labor influx, including CoC, training on SEA/SH, or GRM in place for sensitive grievances . All Sub-Project activities will be carried out in line with the labour management plan prepared for the Sub-Project.⁴

The Contractor are obliged to give code of conduct training, including GBV and SEA/SH, to each worker so that the presence of workers who will work during the construction do not result in any disturbance/conflict within the local communities and their interaction with community members do not result in inappropriate behaviors/misconducts. DSI will ensure that the Contractors develop a Code of Conduct and that all workers are informed and receive training about it before starting to work. A Code of Conduct will be part of the employment

⁴https://cdniys.tarimorman.gov.tr/api/File/GetGaleriFile/425/DosyaGaleri/7572/timp2_labor_management_procedure.pdf

contract to be signed by all workers at the job start-up phase. The training given in the Code of Conduct will be checked and reported by Environmental and Social Experts. Scaling and evaluation will be carried out at the end of the training provided. According to the results of the evaluation, training material will be updated by adding the learnings from near misses or incidents, as they occur.

During the construction phase of the Sub-Project, a significant influx of labor, comprising approximately **300 workers**, is anticipated in the project area. A labor influx of this scale has the potential to introduce various socio-economic risks, particularly impacting demographic dynamics, social cohesion, and local infrastructure in nearby residential and rural communities. The interaction between the incoming workforce and the local population may lead to cultural misunderstandings, increased pressure on local resources, or potential disputes and conflicts. Within this context, proactively managing the risks of Gender-Based Violence (GBV) and Sexual Exploitation, Abuse, and Sexual Harassment (SEA/SH) is of critical importance to ensure the safety and well-being of host communities, with a specific focus on vulnerable groups, women, and children.

To mitigate these risks and maintain community safety, the Contractor is strictly required to establish a comprehensive **Code of Conduct (CoC)** that applies to all personnel. Every worker must sign this Code of Conduct as an integral part of their employment contract during the onboarding phase and must complete mandatory training covering GBV and SEA/SH prevention before commencing any site activities. Under the supervision of DSI, Environmental and Social Experts will regularly monitor, evaluate, and report on the effectiveness of these training programs. Furthermore, a highly sensitive and confidential **Grievance Redress Mechanism (GRM)** will be operationalized to safely capture and address any community or worker complaints regarding misconduct. All project activities will strictly adhere to the established Labor Management Procedures (LMP), and training materials will be dynamically updated based on evaluations and lessons learned from any reported near misses or incidents.

III.4.3 Labor and Working Conditions

Occupational health and safety risks, particularly related to trench excavation, represent the most significant construction-phase risk. However, these risks are typical for linear infrastructure Sub-Projects and can be controlled through appropriate safety management systems.

All labor and occupational health and safety practices during construction will be implemented in compliance with the Occupational Health and Safety Law No. 6331 and related secondary legislation. In addition to national legislation, ESS2 and ESS4 will be fully implemented, including mitigation measures aimed at managing the labour influx and preventing SEA/SH. Compliance with the labour management plan prepared specifically for the Sub-Project will also be ensured.

III.4.4 Occupational Health and Safety

The objective of OHS management under the Tokat Kazova Right and Left Bank Irrigation Renovation Construction Project is to prevent occupational accidents and health risks through compliance with national legislation, World Bank ESS2, and relevant international good practice.

At a minimum, the Contractor will prepare and implement a site-specific OHS Plan before construction starts. This will include risk assessments, safe working procedures, emergency preparedness and response, incident reporting, worker training, provision of personal protective equipment, first aid arrangements and regular site inspections.

In order to effectively manage occupational safety and health (OSH) operations at the construction site, the Contractor shall establish an independent OSH unit led by a full-time, certified OSH specialist. This unit will include a sufficient number of full-time OSH specialists, an occupational physician, and medical personnel (paramedics/nurses), commensurate with the project's hazard classification and the number of workers. Reporting directly to the Site Manager to ensure full authority over on-site safety enforcement, this team will be responsible for conducting daily site inspections, holding toolbox meetings, coordinating regular OSH Committee meetings, and preparing reports.

The Contractor will be responsible for identifying site-specific hazards, implementing preventive and protective measures, assigning qualified OHS personnel, providing adequate resources and equipment and ensuring that all workers and subcontractors comply with OHS requirements. Chemical and hazardous material handling, storage and spill response measures will also be implemented as part of OHS management.

DSİ will supervise the Contractor's compliance with OHS requirements through document review, site monitoring and follow-up of corrective actions, incidents and non-compliances.

III.5 Risk Categorization

Based on the analysis presented in the previous sections, the Sub-Project is characterized by:

- Limited spatial footprint within an existing infrastructure corridor,
- Temporary and reversible construction impacts,
- Absence of resettlement,
- No major changes in water abstraction or basin hydrology,
- No impacts on critical habitats or protected areas,
- Manageable occupational and community safety risks.

Accordingly, the environmental and social risk level of the Sub-Project is assessed as Moderate, consistent with the initial screening results.

The identified risks can be effectively managed through the implementation of the mitigation and monitoring measures defined in this ESMP.

CHAPTER IV.

ESMP MATRIX:

RISKS, IMPACTS, MITIGATION, AND MONITORING

IV.1 Construction Phase

The construction phase of the Sub-Project will primarily include excavation of trenches along the alignment of the existing irrigation canal, construction of a sedimentation basin, installation of pressurized pipeline sections, backfilling of trenches, construction of a pump station and loading basin and site reinstatement works.

Construction activities will be planned in a manner that will not adversely affect the continuity of irrigation services, and the principle of avoiding construction works during the irrigation period will be adopted. Except for mandatory situations, construction works will be carried out in segments / phases, thereby preventing irrigation interruptions and minimizing temporary impacts on agricultural activities

During the construction phase, surplus excavated material that is deemed unsuitable for reuse will be temporarily stored at locations to be designated by the construction contractor, ensuring that such storage does not prevent on-site activities, access roads, or stream crossings. The selected storage areas will be properly managed to prevent interference with the existing surface water pathways. To mitigate potential adverse impacts from precipitation and surface runoff, drainage channels will be constructed around the disposal areas in order to control storm water flow and prevent erosion, sediment transport, and material instability.

Excavated material found suitable for reuse will be utilized as backfill material. The suitability of excavated material for reuse will be determined based on laboratory and field tests to be conducted during the construction phase.

The main environmental impacts during construction phase are expected to relate to temporary soil disturbance, topsoil stripping, localized dust emissions, noise generation, waste production, and short-term alterations to surface drainage patterns. Given the linear nature of the Sub-project and its location within predominantly agricultural land, impacts are anticipated to be site-specific, temporary and reversible, provided that appropriate mitigation measures are implemented.

From a social perspective, the key risks are associated with temporary access restrictions to agricultural parcels, potential disruption of irrigation supply in certain sections, construction-related traffic movement, and community health and safety risks including labor influx arising from open trench works. Occupational health and safety risks, particularly those related to

deep trench excavation, represent a significant construction consideration and require strict control measures.

From a social perspective, the primary risks are related to community health and safety, including temporary restrictions on access to agricultural plots, potential interruptions in the supply of irrigation water in certain areas, construction-related traffic, and an influx of labor resulting from open-cut trenching. In addition, the management of permanent or temporary land acquisition/expropriation processes, the maintenance of transparent and continuous stakeholder participation throughout the project, and the operation of an effective grievance management mechanism to prevent potential local unrest constitute critical social risk areas. Taking into account the characteristics of the project site, procedures for the protection of cultural heritage must be meticulously applied in response to any incidental findings that may be encountered during construction work. Occupational health and safety risks, particularly those related to deep trench excavations, represent a significant construction challenge and require strict control measures.

Overall, the construction-related environmental and social impacts are expected to remain localized and manageable through the implementation of the mitigation and monitoring measures presented in the following table.

Table 10. ESMP Matrix: Risks, Impacts, Mitigation, and Monitoring Table – Construction Phase

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	Mitigation and Monitoring
Air Quality									
AQ-C 001	Temporary deterioration of local air quality due to dust emissions generated during excavation, trenching, backfilling and stockpiling along the pipeline route, settling basin, pump station, and balancing reservoirs. Impacts are expected to be localized, short-term and reversible; however, they may affect nearby agricultural fields, farm workers and, if any, nearby settlements.	ESS1 ESS3	• Prioritize use of the existing DSI canal service road as the primary work corridor where feasible, to reduce disturbance to cultivated land and minimise dust deposition on crops. • Regular water spraying on active excavation areas and soil stockpiles during dry and windy conditions. • Limiting stockpile height/footprint; separate stockpiling away from field edges where possible. • Progressive backfilling to minimise exposed surfaces; avoid leaving open trenches/stockpiles for extended periods. • Suspension of dust-generating works during extreme wind conditions where necessary.	Throughout construction phase; increased frequency during dry and windy conditions	Construction Contractor	• Visual observation of dust levels along the construction corridor • Evidence of dust deposition outside the work corridor (e.g., adjacent agricultural fields) • Records of dust suppression activities (e.g., water spraying) • Complaints from farmers/residents regarding dust • Ambient dust measurement results (PM10 or settled dust) if complaints occur	• Daily during active excavation and trenching works • Daily site inspection, with additional checks during windy conditions • Daily review of dust suppression records • Continuous review of grievance records • In case of complaint or visible excessive dust emissions	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
AQ-C 002	Dust emissions from movement of construction vehicles on unpaved roads and temporary access routes, potentially affecting crops, farm operations and nearby residences. This impact is expected to remain temporary and manageable with appropriate controls.	ESS1 ESS3	• Use DSI service road for haulage and material transport where available; restrict off-road driving in cultivated land. • Watering of unpaved routes during dry conditions. • Enforcing speed limits (max. 30 km/h) on site/access roads. • Covering trucks transporting fine materials; wheel cleaning where dust/mud may be carried to public roads.	Throughout construction phase	Construction Contractor	• Visible dust plumes generated by construction vehicles along access routes • Vehicle speed compliance on site and access roads • Records of watering of unpaved access roads • Complaints from farmers/residents related to vehicle-generated dust • Ambient dust measurements (PM10 or settled dust) if excessive dust or complaints	• Daily visual inspection during active vehicle movement • Daily monitoring of vehicle speed compliance • Daily review of watering records during dry conditions • Continuous review of grievance records • In case of complaint or visible excessive dust emissions	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
AQ-C 003	Localized and temporary exhaust emissions (NOx, PM, CO) from construction machinery and transport vehicles, contributing to short-term deterioration of ambient air quality within the construction corridor.	ESS1 ESS3	• Use of well-maintained machinery compliant with Turkish emission standards. • Prohibition of unnecessary engine idling. • Routine maintenance/inspection; immediate repair of polluting equipment.	Throughout construction phase	Construction Contractor	• Maintenance and inspection records of construction machinery • Visible black smoke or abnormal exhaust emissions from equipment • Engine idling practices during construction activities • Complaints from workers or nearby receptors regarding exhaust emissions	• Monthly review of machinery maintenance records • Daily visual inspection during site supervision • Daily observation of idling practices during active works • Continuous review of grievance records	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
AQ-C 004	Potential dust deposition on cultivated fields adjacent to works, which may temporarily affect crop quality/yield if not properly managed.	ESS1	• Route selection at section level: adopt DSI service road alignment where feasible; if not, maintain minimum practical corridor width in fields. • Increased watering frequency near actively cultivated lands and during harvesting/critical growth periods.	During trenching activities near cultivated lands	Construction Contractor in coordination with DSI	• Visible dust deposition on adjacent cultivated fields • Effectiveness of dust control measures near agricultural plots (e.g., watering frequency)	• Daily visual inspection during trenching works near cultivated lands • Daily monitoring during active construction in agricultural sections	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
	The risk is reduced where works can be limited to the DSI service road, but may still occur in sections without such corridor.		- Temporary wind barriers in sensitive locations where applicable. - Ongoing coordination with landowners on timing and sequencing of works.			- Complaints from farmers regarding dust impacts on crops - Records demonstrating use of the DSI service road corridor where feasible	- Continuous review of grievance records - Weekly review of section-based corridor selection and work alignment		
Noise Level									
NL-C 001	Temporary increase in ambient noise levels due to excavation, trenching, pipe laying, backfilling and operation of heavy machinery along the pipeline corridor, settling basin, pump station, and balancing reservoirs. Impacts are expected to be localized, short-term and reversible, primarily affecting farm workers.	ESS1	- Where feasible, limiting the works to the DSI canal service road to reduce proximity to farm receptors and minimize disturbance within cultivated plots. - Use well-maintained equipment with silencers; avoid unnecessary idling. - Restrict works to daytime hours (e.g., 07:00–19:00). - Avoid simultaneous operation of high-noise equipment where practicable.	Throughout construction phase	Construction Contractor	- Condition of construction equipment and presence of silencers - Compliance with permitted working hours (daytime construction) - Complaints from farmers/residents regarding construction noise - Noise measurement results if complaints are received	- Daily site inspection during active construction works - Daily monitoring of working hour compliance - Continuous review of grievance records in case of complaint	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
NL-C 002	Noise disturbance to nearby rural settlements located close to sections of the route, particularly during intensive excavation and concrete works. While impacts are expected to remain within manageable levels in a rural setting, short-term disturbance may occur.	ESS1 ESS4	- Schedule higher-noise activities away from early morning/late evening periods. - Position stationary equipment (generators, compressors) as far as practicable from receptors; use temporary acoustic screens where needed. - Advance notice to residents for works near settlements; maintain grievance redress mechanism for rapid response.	During works near settlements	Construction Contractor	- Distance of stationary equipment (generators, compressors) from nearby receptors - Implementation of noise control measures (e.g., acoustic screens where applicable) - Complaints from residents regarding construction noise - Noise measurement results if complaints are received	- Daily inspection during works near settlements - Daily monitoring during active construction in settlement-adjacent sections - Continuous review of grievance records in case of complaint	Construction Contractor DSI Representative	Included in the Sub - project Budget
NL-C 003	Occupational noise exposure risks for workers due to prolonged operation of heavy machinery and equipment. It is expected that the impacts will be kept to a minimum provided that the necessary occupational safety and health measures are taken	ESS2	- Provide and enforce use of PPE (e.g., hearing protection). - Task rotation to limit exposure where necessary. - Toolbox talks on noise hazards; OHS inspections.	Throughout construction phase	Construction Contractor	- PPE compliance (use of hearing protection by workers) - Records of toolbox talks and OHS trainings related to noise hazards - OHS inspection findings regarding worker noise exposure - Records of task rotation where implemented	- Daily supervision during construction activities - Weekly review of toolbox talk and training records - Periodic OHS audits during construction phase - Continuous monitoring during high-noise activities	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
NL-C 004	Vibration and nuisance from compaction and heavy equipment movement, potentially causing temporary disturbance to nearby	ESS1	- Avoid unnecessary high-impact compaction near sensitive structures; select appropriate compaction methods. - Pre-works visual checks of nearby structures in sensitive locations; respond promptly to complaints.	During compaction and heavy equipment operations	Construction Contractor	- Evidence of structural damage to nearby buildings, agricultural facilities or infrastructure - Complaints from nearby receptors related to	Daily inspection during compaction and heavy equipment operations near sensitive structures	Construction Contractor DSI Representative	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
	structures or agricultural facilities. Impacts are expected to be minor and localized; however, sensitivity may increase near structures/utility crossings.					vibration or equipment movement • Records of pre-construction visual condition checks of nearby structures	• Continuous review of grievance records • Prior to works and periodic checks in sensitive sections		
Soil									
SO-C 001	Loss or degradation of fertile topsoil due to stripping and trench excavation along agricultural lands. Given that the Sub-Project corridor largely traverses cultivated fields, improper topsoil handling may result in reduced soil productivity and long-term impacts on crop yield. Impacts are expected to be localized and reversible with proper management.	ESS1 ESS8	- Prioritise installation of new pipeline within the existing DSI canal service road corridor where feasible, thereby minimizing direct disturbance to cultivated plots. - Separate stripping and storage of topsoil (minimum 20–30 cm or as encountered). - Strict segregation of topsoil and subsoil. - Limit stockpile height and apply compaction to prevent erosion. - Reinstatement of topsoil to original profile immediately after backfilling.	During excavation and reinstatement works	Construction Contractor	- Visual verification of topsoil stripping and segregation from subsoil - Storage conditions of topsoil stockpiles (separate and protected) - Presence of works within the DSI service road corridor where feasible - Quality of land reinstatement following backfilling	- Daily inspection during active trenching and excavation works - Daily monitoring of topsoil handling and storage practices - Section-based monitoring during pipeline installation works - Inspection during reinstatement of agricultural lands	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
SO-C 002	Soil compaction caused by heavy construction machinery operating on agricultural land, potentially reducing permeability and agricultural productivity. Risk is significantly reduced in sections where works are limited to the DSI service road.	ESS1	- Restrict machinery movement to already defined working corridor. - Use existing DSI service road as primary haul route where available. - Avoid unnecessary access to cultivated plots. - Post-construction soil loosening (sub-soiling) where compaction is observed.	Throughout construction phase	Construction Contractor	- Evidence of machinery movement outside the defined working corridor - Visual evidence of soil compaction within agricultural plots - Post-restoration soil condition following reinstatement works - Complaints from farmers regarding soil productivity or field condition	- Daily site supervision during active construction works - Continuous monitoring during machinery operations in agricultural sections - Inspection following restoration of each pipeline section - Continuous review of grievance records	Contractor DSI Representative	Included in the Sub - project Budget
SO-C 003	Soil erosion from open trenches and temporary stockpiles, particularly during rainfall events. While the terrain is generally moderate, localized runoff and sediment movement may occur. Impacts are expected to be minor and manageable if promptly addressed.	ESS1 ESS6 ESS8	- Progressive excavation and backfilling to minimize exposed surfaces. - Stabilization of stockpiles if stored for extended periods. - Avoid leaving trenches open for prolonged periods. - Temporary diversion of runoff where necessary.	During excavation phase	Construction Contractor	- Evidence of sediment runoff from exposed soil or stockpiles - Stability of trench walls and temporary excavations - Condition and management of soil stockpiles - Evidence of sediment accumulation in nearby drainage paths	- Daily inspection during excavation works - Daily monitoring of trench stability and exposed surfaces - Inspection following rainfall events - Continuous monitoring during active excavation sections	Contractor Supervision (DSI Representative)	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
SO-C 004	Soil contamination due to accidental spills of fuel, oil or lubricants, particularly within agricultural areas. Impacts are expected to be minor and manageable if promptly addressed.	ESS1 ESS3	- Refuelling only in designated areas (preferably on service road sections, or service stations). - Availability of spill kits at all active work areas. - Immediate removal of contaminated soil and disposal in accordance with Turkish regulations as hazardous waste.	Throughout construction phase	Construction Contractor	- Spill and incident records related to fuel, oil or lubricant leakage - Availability and condition of spill response kits at work areas - Designation and condition of refueling areas - Evidence of contaminated soil and response actions taken	- Daily site inspection during construction activities - Continuous monitoring during refueling operations - Incident-based reporting and follow-up inspection - Periodic review of spill response records	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
Water Drainage									
WD-C 001	Temporary disruption of irrigation water supply during construction, particularly in sections where the new pressurized system replaces the existing open canal. In sections where irrigation services continue, by carrying out construction activities in sections / phases without coinciding with the irrigation season, the risk of irrigation interruption and temporary impacts on agricultural activities are reduced.	ESS1 ESS4 ESS10	- Conduct construction activities outside the irrigation season whenever possible - Implement phased construction to avoid full interruption along entire alignment. - Provide advance notice to farmers prior to planned interruptions. - Temporary bypass solutions where technically required.	Throughout construction phase	Construction Contractor in coordination with DSI	- Records of construction sections implemented outside the irrigation season - Records of phased construction and sections with parallel irrigation operation - Duration of irrigation interruptions in affected sections - Complaints from farmers regarding irrigation disruption	- Continuous monitoring during construction in irrigation-sensitive sections - Section-based monitoring during pipeline installation works - Monitoring during periods of planned irrigation interruption - Continuous review of grievance records	Construction Contractor DSI Representative	Included in the Sub - project Budget
WD-C 002	Disturbance of existing agricultural drainage patterns due to trench excavation, potentially causing localized waterlogging or altered runoff in adjacent fields. It is expected that the impact will be minimal provided the necessary measures are taken	ESS1	- Maintain existing field drainage crossings during construction works. - Provide temporary drainage culverts across open trenches where required. - Ensure reinstatement of original drainage gradients following backfilling. - Avoid blockage of culverts and irrigation intakes.	During excavation and reinstatement	Construction Contractor	- Presence of water ponding or waterlogging in adjacent agricultural fields - Functionality of existing field drainage crossings during construction - Condition of temporary drainage culverts installed across trenches - Complaints or feedback from farmers regarding drainage problems	- Daily inspection during active trenching works - Monitoring during excavation and reinstatement activities - Inspection following rainfall events - Continuous review of grievance records	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
WD-C 003	Sediment transport to drainage channels during rainfall events, especially from exposed soil stockpiles and trench walls. It is expected that the impact will be minimal provided the necessary measures are taken	ESS1 ESS3 ESS6	- Minimize exposed soil surfaces through progressive works. - Install temporary sediment control measures where runoff risk exists. - Avoid discharge of turbid water into natural or artificial drainage channels.	During excavation phase	Construction Contractor	- Visible sediment accumulation in drainage channels - Condition and effectiveness of temporary sediment control measures - Evidence of turbid water discharge from excavation areas	- Daily inspection during excavation works - Monitoring during active earthworks in sensitive drainage sections - Inspection following rainfall events - Continuous review of grievance records	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
						Complaints or observations related to sediment movement in nearby fields			
WD-C 004	Accumulation of water in open trenches, potentially causing localized flooding or instability, particularly in sections without service road corridor and during rainfall events. It is expected that the impact will be minimal provided the necessary measures are taken	ESS1	- Avoid leaving trenches open for extended periods. - Implement controlled dewatering where groundwater or storm water accumulates. - Pump water in a controlled manner to prevent erosion or downstream sedimentation.	During trench excavation	Construction Contractor	- Presence of standing water in open trenches - Dewatering activities and records where pumping is required - Stability of trench walls under wet conditions - Evidence of uncontrolled discharge or erosion from pumped water	- Daily inspection during active trench excavation - Monitoring during dewatering operations (if applicable) - Inspection following rainfall events - Continuous monitoring in sections with groundwater or stormwater accumulation	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
WD-C 005	Long-term positive impact: improved water use efficiency through transition from open canal to pressurized closed system, reducing seepage losses, evaporation and uncontrolled withdrawals.	ESS1	- Proper commissioning and pressure testing. - Routine inspection and maintenance of valves and hydrants. - Monitoring of leakage rates and efficiency.	Commissioning following construction phase	Construction Contractor	- Leakage records identified during pressure testing and commissioning - Inspection records of valves, hydrants and pipeline connections - Evidence of leaks or pressure loss during system testing - Maintenance and inspection records related to system integrity	- Monitoring during pressure testing and commissioning stage - Periodic inspection during commissioning phase - Continuous monitoring during system start-up and testing - Review of inspection and maintenance records during commissioning	Construction Contractor DSI Representative	Included in the Sub - project Budget
Waste Management									
WM-C 001	Generation of excess excavated material during trenching works, which may lead to uncontrolled dumping, visual impact or obstruction of agricultural land if not properly managed. Impacts are expected to be localized and temporary.	ESS1 ESS3	- Reuse excavated suitable material for backfilling as priority. - Temporary storage within defined working corridor (preferably along DSI service road where available). - Transport surplus material to licensed disposal sites approved by local authorities. - Prohibit disposal in agricultural fields, drainage channels or natural depressions.	During excavation and backfilling works	Construction Contractor	- Volume of excavated material reused for backfilling versus disposed material - Disposal receipts and records from licensed disposal sites - Condition and management of temporary material storage areas - Evidence of uncontrolled dumping in agricultural lands or drainage areas	- Daily site supervision during excavation and backfilling works - Weekly review of disposal documentation and records - Continuous monitoring of storage areas during active construction - Incident-based inspection if uncontrolled dumping is suspected	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
WM-C 002	Mixing of topsoil with subsoil and construction waste, reducing its suitability for agricultural reinstatement. It is expected that the impact will be minimal provided the necessary measures are taken.	ESS1 ESS3	- Strict segregation of topsoil, subsoil and construction waste. - Clearly designated storage areas within corridor. - No disposal of construction debris within topsoil stockpiles.	During excavation and reinstatement	Construction Contractor	- Visual verification of segregated stockpiles (topsoil, subsoil, construction waste) - Evidence of mixing of construction debris with topsoil stockpiles - Condition and designation of temporary storage areas within the working corridor	- Daily inspection during active excavation and trenching works - Continuous monitoring of stockpile management during construction - Inspection during reinstatement of agricultural lands	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
						Complaints or observations regarding improper soil or waste handling	Continuous review of grievance records		
WM-C 003	Generation of construction waste such as concrete debris, scrap metal, packaging materials and pipe off-cuts, which may cause soil contamination or visual nuisance if improperly handled. It is expected that the implementation of waste management will minimize the impacts.	ESS1 ESS3	- Separate collection of recyclable materials (metal, plastic). - Temporary storage in designated areas. - Disposal through licensed waste contractors. - Removal of all debris from agricultural lands before handover.	Throughout construction phase	Construction Contractor	- Condition of construction waste storage areas - Waste transfer records and documentation from licensed waste contractors - Segregation of recyclable materials (metal, plastic, packaging) - Site cleanliness and removal of debris from agricultural lands before handover	- Weekly inspection during construction phase - Monitoring prior to handover of each completed pipeline section - Periodic review of waste transfer documentation - Continuous monitoring of site housekeeping practices	Construction Contractor DSİ Representative	Included in the Sub - project Budget
WM-C 004	Generation of hazardous waste (e.g., waste oil, used filters, contaminated absorbents), posing risk of soil and water contamination. It is expected that the implementation of waste management will minimize the impacts.	ESS1 ESS3	- Collection and storage in sealed, labelled containers on impermeable surface. - No maintenance within cultivated fields; use already designated areas (preferably on service road sections, temporary site facilities, or service stations). - Disposal via licensed hazardous waste contractors in accordance with Turkish regulations.	Throughout construction phase	Construction Contractor	- Presence and condition of hazardous waste storage containers (sealed and labelled) - Waste transfer forms and records from licensed hazardous waste contractors - Evidence of oil stains or contamination on soil at work areas - Condition of designated areas used for equipment maintenance and refuelling	- Daily visual inspection during construction activities - Monthly review of hazardous waste documentation and transfer records - Continuous monitoring of storage areas during active works - Incident-based inspection if spill or contamination is suspected	Construction Contractor Supervision (DSİ Representative)	Included in the Sub - project Budget
WM-C 005	Domestic waste generation from construction personnel, potentially leading to littering within agricultural land or drainage channels. It is expected that the implementation of waste management will minimize the impacts.	ESS1 ESS3	- Provision of adequate waste bins at work fronts and site facilities. - Regular collection and disposal to municipal waste system. - Prohibition of open burning.	Throughout construction phase	Construction Contractor	- Availability and condition of waste bins at work fronts and site facilities - Evidence of littering in agricultural lands or drainage channels - Records of domestic waste collection and disposal to municipal system - Evidence of compliance with prohibition of open burning	- Weekly inspection during construction phase - Continuous monitoring of site cleanliness during active works - Periodic review of waste collection records - Incident-based inspection if improper disposal or burning is observed	Construction Contractor; Supervision (DSİ Representative)	Included in the Sub - project Budget
WM-C-006	Generation of domestic wastewater from construction personnel during construction activities (e.g., sanitary use, washing). If improperly managed, wastewater may	ESS1 ESS3	- Provision of adequate sanitary facilities (portable toilets or connection to existing sewerage network where available) at construction work fronts and site facilities. - Ensure regular maintenance and periodic emptying of portable sanitary units by licensed service providers.	Throughout construction phase	Construction Contractor	- Availability and condition of sanitary facilities at work areas - Records of periodic emptying and maintenance of portable toilets (if used)	- Weekly inspection during construction phase - Continuous monitoring of sanitation conditions at work areas	Construction Contractor Supervision (DSİ Representative)	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
	lead to localized soil contamination or unhygienic conditions within the work areas. It is expected that the impact will be minimal provided the necessary measures are taken		- Prohibit discharge of untreated wastewater to agricultural land, drainage channels or surface waters. - Where feasible, ensure connection of site facilities to the existing municipal sewerage infrastructure serving nearby settlements. - If it cannot be connected to the existing municipal sewer system, the wastewater must be treated before discharge			- Evidence that wastewater is discharged to the municipal sewerage system or removed by licensed service providers - Absence of wastewater discharge to soil, drainage channels or agricultural land - If wastewater treatment is performed, the relevant parameters must be monitored in accordance with local regulations	- Periodic review of maintenance and service records - Incident-based inspection if leakage or improper discharge is observed		
WM-C-007	Generation of equipment washing water from construction machinery (e.g., excavators, trucks or small equipment). Wash water may contain sediment, oil or grease, potentially leading to localized soil contamination or pollution of drainage channels if discharged directly to the ground. It is expected that the impact will be minimal provided the necessary measures are taken	ESS1 ESS3	- Conduct equipment washing only in designated washing areas where feasible. - Use sediment traps or simple settling pits to remove suspended solids before discharge. - Prohibit direct discharge of washing water containing oil, grease or sediment to agricultural land, drainage channels or surface waters. - Collect and properly manage oily residues generated during washing activities.	Throughout construction phase	Construction Contractor	- Presence of designated equipment washing areas - Condition and effectiveness of sediment traps or settling pits (if used) - Absence of uncontrolled discharge of wash water to soil or drainage channels - Evidence of oil or grease contamination around washing areas	- Periodic inspection during construction phase - Additional inspection when equipment washing activities are conducted	Construction Contractor Supervision (DSi Representative)	Included in the Sub - project Budget
WM-C-008	Generation of concrete or cement-contaminated water (e.g., concrete truck wash water or cement slurry) during minor structural works such as valve chamber construction. Such wastewater may have high pH and may lead to soil or water contamination if improperly discharged. It is expected that the impact will be minimal provided the necessary measures are taken	ESS1 ESS3	- Establish designated, impermeable concrete washout areas within the construction site. - Prohibit direct discharge of concrete wash water and cement slurry to soil, drainage channels or surface waters. - Collect wash water in lined pits or containers and allow settling of solids prior to disposal. - Reuse clarified water where feasible or dispose of it via licensed wastewater management systems. - Collect and properly manage hardened concrete residues and dispose of them as construction waste. - Ensure washing activities are carried out only in controlled areas away from agricultural land and water bodies	Throughout construction phase	Construction Contractor	- Presence and condition of designated concrete washout areas - Evidence of uncontrolled discharge of concrete wash water to soil or drainage channels - Condition of washout areas and management of hardened residues	- Inspection during concrete-related works - Periodic monitoring during construction phase	Construction Contractor Supervision (DSi Representative)	Included in the Sub - project Budget
Biodiversity									
BD-C	Temporary and localized impacts on vegetation may	ESS6	- Limiting the works, as far as possible, to the existing canal and road alignments - Avoiding unnecessary land clearing	Throughout construction phase	Construction Contractor	Observed damage to vegetation within the Sub-Sub - project area	Periodic monitoring during construction phase	Construction Contractor	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
001	occur along the canal alignment, service roads and working areas.		Reinstating the stripped topsoil					Supervision (DSi Representative)	
BD-C 002	Adverse impacts on fauna may occur during construction activities. Impacts are expected to be localized and temporary.	ESS6	- Site personnel shall be provided with training on wildlife awareness and protection measures. - Vehicle speeds within the sub- Sub-Project area shall be limited to 30 km/h. - All waste generated shall be managed and disposed of in accordance with applicable environmental legislation. - Feeding of domestic animals (e.g., cats and dogs) within or around the site shall be prohibited and food waste shall not be left in the area. - Water resources shall not be polluted or adversely affected. - If an injured wild animal is encountered during works, the Nature Conservation and National Parks Tokat Provincial Directorate shall be notified. - Dust control measures shall be implemented, including watering of soil and unpaved roads. - Light pollution shall be minimized during night time works. - If wildlife is observed within the Sub-Project area, activities shall be temporarily suspended until the animal leaves the site.	Throughout construction phase	Construction Contractor	Observed animal mortality within the Sub - project area	Periodic monitoring during construction phase	Construction Contractor Supervision (DSi Representative)	Included in the Sub - project Budget
BD-C 003	Adverse impacts on protected area may occur during construction activities. Impacts are expected to be localized and temporary.	ESS6	- In line with the official correspondence of the Ministry of Agriculture and Forestry, 11th Regional Directorate, Tokat Branch Directorate, presented in Annex 6, the relevant institutions shall be informed and their opinions, permits and guidance shall be obtained prior to the commencement of any activities to be carried out in and around Kaz Gölü Wildlife Development Area. - Sub-Project activities shall be implemented in compliance with the management/development plans, protection zones and any conditions to be defined by the competent authority for Kaz Gölü YHGS. - Activities shall be restricted to existing roads and previously disturbed areas. - In accordance with the Regulation (Regulation on Wildlife Protection and Wildlife Development Areas), no structures, facilities, construction camps, storage areas, new access roads, borrow areas, or excavation/fill disposal areas that are not included in approved plans shall be established within Kaz Gölü YHGS.	Throughout construction phase	Construction Contractor	Observed animal mortality within the Sub-Project area	Periodic monitoring during construction phase	Construction Contractor Supervision (DSi Representative)	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
			• No disturbance shall occur within wetlands, reedbeds, stream channels, or irrigation/drainage canals. • Excavation, filling, material storage, and vehicle parking shall not be undertaken within these sensitive areas. • • Night-time works shall not be undertaken in reedbeds, lake shore habitats, or key feeding areas. • Disturbance associated with artificial lighting and noise shall be minimized. • Waste storage, waste disposal, excavation disposal, untreated wastewater discharge, fuel/oil leakage, or any activity that may cause sediment transport into Kaz Gölü YHGS or areas affecting it shall not be allowed. • All wastes shall be stored in designated, impermeable, and controlled storage areas. • Refuelling and maintenance activities shall be carried out at designated locations away from water resources. • Spill response equipment shall be available on site at all times. • Appropriate drainage and erosion-control measures shall be implemented to prevent sediment transport. • Site personnel shall be informed and trained regarding the presence of slow-moving fauna and other sensitive wildlife. • Where necessary, fauna shall be relocated to suitable habitats under the supervision of a qualified fauna specialist. • High-noise activities shall be avoided during migration and breeding periods. • Construction machinery and vehicles shall enter the site free of soil, plant material, and other potential invasive species vectors. • Hunting, disturbance of wildlife, egg/chick collection, reed cutting, reed burning, removal of vegetation and habitat destruction by workers shall be strictly prohibited. • Workers shall receive training on biodiversity sensitivities and environmental protection requirements. • No construction activities shall be carried out in or near sensitive wetland, reedbed, lake shore or bird breeding/nesting habitats during the bird breeding season, which is between March and July. • Where works are unavoidable during this period, pre-construction surveys shall be conducted by a qualified biologist/ornithologist.						

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
			- Sub-Project activities shall be carried out in a manner that does not alter the hydrological regime, water level, wetland character, reedbed structure or natural habitat integrity of Kaz Gölü YHGS. - The boundaries of Kaz Gölü YHGS, protection zones and no-entry sensitive areas shall be communicated to site personnel, and warning signs, boundary demarcation and access restrictions shall be implemented where necessary. Artificial lighting shall not be directed toward wetlands, reedbeds, or other sensitive habitats. - Low-intensity, downward-directed lighting fixtures shall be used wherever practicable. - Temporarily disturbed areas shall be restored and rehabilitated upon completion of the works. - Native and locally occurring plant species shall be used for rehabilitation and revegetation activities. - If sensitive species, nesting sites or areas with intensive bird use are identified, works shall be temporarily suspended and additional measures shall be implemented in consultation with the relevant authorities.						
Cultural Heritage									
CH-C 001	Cultural heritage assets located in the vicinity may be adversely affected during excavation works. No physical intervention is envisaged within the protected boundaries of registered cultural heritage assets.	ESS8	- A minimum 20-meter buffer zone will be maintained around nearby archaeological sites where feasible, and no excavation, machinery entry or material storage will be permitted within these areas - If any findings are encountered, the Chance Find Procedure will be implemented.	Throughout construction phase	Construction Contractor	Cultural heritage assets with Field observations	Periodic monitoring during construction phase	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
Occupational Health and Safety									
OHS-C 001	Risk of trench collapse during excavation works (2.5– 8 m depth), potentially resulting in serious injury or fatality. This represents one of the most significant construction risks of the Sub - project. It is expected that the impacts will be kept to a minimum provided that the necessary	ESS2	- Preparation and implementation of a detailed Excavation Safety Plan. - Use of trench shoring, benching or trench boxes where required based on soil conditions. - Daily inspection of trench stability. - Prohibition of worker entry into unsupported deep trenches. - Safe access/egress (ladders every 25 m or as per regulation).	During all trench excavation works	Construction Contractor	- Presence of trench shoring, benching or trench box systems - Records of daily trench inspection and stability checks - Evidence of safe access and egress points (ladders or ramps) - Compliance with prohibition of entry into unsupported trenches - Evidence of adequate spacing of ladders	- Daily inspection before start of excavation works - Additional inspection after rainfall or ground disturbance - Continuous monitoring during trench excavation activities - Periodic supervision by DSI representative during trenching works	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
	occupational safety and health measures are taken.					(approx. every 25 m or as required by regulation)			
OHS-C 002	Risk of falling into open trenches by workers or third parties, particularly in sections near agricultural fields or access roads. It is expected that the impacts will be kept to a minimum provided that the necessary occupational safety and health measures are taken.	ESS2	- Installation of temporary fencing, warning tapes and signage along open trenches. - Adequate lighting where works extend into low-visibility conditions. - Securing trenches at end of each working day.	Throughout excavation phase	Construction Contractor	- Presence and condition of temporary fencing, warning tapes and signage around open trenches - Adequacy of trench protection measures (barricades, covers, guardrails) - Evidence of adequate lighting in low-visibility conditions - Status of trench securing at the end of each working day	- Daily site inspection during excavation works - Additional inspection at the end of each working day - Periodic checks during low-visibility or night works - Incident-based inspection following complaints or safety observations	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
OHS-C 003	Struck-by or caught-in hazards from heavy machinery and pipe handling operations. It is expected that the impacts will be kept to a minimum provided that the necessary occupational safety and health measures are taken.	ESS2	- Defined machinery movement routes (preferably along DSI service road where available). - Appointment of trained signallers during lifting operations. - Mandatory high-visibility clothing. - Exclusion zones around lifting and pipe-laying operations.	Throughout construction phase	Construction Contractor	- Compliance with PPE requirements (high-visibility clothing, helmets, safety boots) - Presence of trained signallers during lifting and pipe handling operations - Availability and implementation of lifting plans for heavy equipment and pipe installation - Presence of exclusion zones around lifting and pipe-laying areas - Compliance with defined machinery movement routes	- Daily supervision during construction works - Continuous monitoring during lifting and pipe handling operations - Periodic inspection of lifting plans and safety procedures - Incident-based inspection in case of near-miss or safety observation	Construction Contractor	Included in the Sub - project Budget
OHS-C 004	Exposure to overhead power lines and buried utilities, posing electrocution or service interruption risks. It is expected that the impacts will be kept to a minimum provided that the necessary occupational safety and health measures are taken.	ESS2	- Identification and mapping of existing utilities prior to excavation. - Minimum approach distances maintained near overhead lines. - Coordination with relevant utility authorities before works.	Prior to and during works near utilities	Construction Contractor	- Availability of utility mapping and identification records prior to excavation - Compliance with minimum approach / safety distances near overhead power lines - Evidence of coordination with relevant utility authorities before works - Presence of warning signage or marking around identified utility lines - Records of utility clearance checks before excavation	- Prior to excavation works in relevant sections - Continuous monitoring during works near utilities - Spot checks during excavation activities - Additional inspection if unidentified utilities are encountered	Contractor; Supervision (DSI Representative)	Included in the Sub - project Budget
OHS-C	Risk of flooding or water accumulation in trenches, particularly during rainfall	ESS2	- Avoid prolonged open trench sections. - Controlled dewatering where required. - Immediate evacuation of workers if trench stability is compromised.	During excavation phase	Construction Contractor	- Presence of standing water in trenches - Availability and functionality of	Daily inspection during trench excavation works	Construction Contractor	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
005	events or where groundwater is encountered, leading to drowning or instability hazards. It is expected that the impacts will be kept to a minimum provided that the necessary occupational safety and health measures are taken.		- Daily weather review and suspension of works during extreme rainfall.			dewatering equipment (pumps, drainage channels) • Records of weather risk assessment and daily weather review • Evidence of trench protection or worker evacuation during heavy rainfall	• Additional inspection after rainfall events • Continuous monitoring in sections prone to water accumulation • Incident-based inspection if flooding or instability is observed		
OHS-C 006	Traffic-related risks in sections adjacent to public roads or service roads, including collision hazards. It is expected that the impacts will be kept to a minimum provided that the necessary occupational safety and health measures are taken.	ESS2	• Preparation of Traffic Management Plan. • Installation of warning signage and barriers near road sections. • Enforcing speed limits (max. 30 km/h) on site/access roads.	Throughout construction phase	Construction Contractor	• Presence and visibility of traffic signage and warning barriers near road sections • Compliance with site speed limits (max. 30 km/h on access roads) • Implementation of the Traffic Management Plan • Records of traffic-related incidents or near-misses	• Daily supervision during construction works • Continuous monitoring in sections adjacent to public or service roads • Incident-based inspection and reporting • Periodic review of traffic safety compliance	Construction Contractor Supervision (DSi Representative)	Included in the Sub - project Budget
OHS-C 007	Relevant risks regarding GBV, SEA/SH, and the prohibition of child and forced labor. It is expected that the impacts will be kept to a minimum provided that the necessary occupational safety and health measures are taken.	ESS2 ESS4	• Development and implementation of the Contractor's Labor Management Plan (LMP), including working conditions, fair treatment, non-discrimination, equal opportunity, vulnerable/disadvantaged individuals/workers, GBV, SEA/SH and the prevention of child and forced labor. • Development and implementation of the Contractor's LMP in accordance with the TIMPII LMP, covering working conditions, fair treatment, non-discrimination, equal opportunity, vulnerable/disadvantaged individuals/workers, GBV, SEA/SH and the prevention of child and forced labor. • Provision of written contracts for Sub-Project workers detailing job descriptions, working hours, wages, rights and responsibilities, code of conduct and other relevant labor/operational procedures. • Information on GBV/SEA/SH service providers should be shared during public consultations. The Sub-Project GM should be designed to receive GBV/SEA/SH grievances anonymously and ensure they are addressed in a confidential and sensitive manner. Relevant Sub-Project staff should be trained in order to refer GBV survivors to existing identified service providers and ensure that they are provided services promptly. The Code of Conduct for workers will include the prohibition of GBV/SEA/SH.	Throughout construction phase	Construction Contractor	• Signing of the Code of Conduct (CoC) by all personnel and subcontractors. • Provision of awareness and training sessions on SEA/SH and GBV for all employees. • Maintenance of grievance records / Grievance logs.	• Before construction work begins and during the pre-construction phase weekly, monthly, and quarterly	Construction Contractor Supervision (DSi Representative)	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
			- All workers will be given training on avoidance of discrimination and codes of conduct. The trainings given to the employees will be explanatory about the concepts of SEA/SH and GBV. At the same time, through the trainings, it will be ensured that workers learn the Grievance Mechanism of the Sub-Project and the steps to be followed in exercising their legal rights. Access to the Grievance Mechanism will be easy and effective. The grievance mechanism officer designated for the Sub-Project will be announced to all employees during the trainings to be given before starting work. There will be brochures and posters containing the grievance mechanism and the contact information of the authorized person in places such as the cafeteria, canteen and service areas used by the employees.						
OHS-C 008	Lack of institutional OHS structure, leading to non-compliance with local laws and international standards.	ESS2	• Full compliance with Turkish OHS Law No. 6331 and World Bank ESS2. • Allocation of adequate resources including budgeting for PPE, safety infrastructure, and emergency equipment. • Appointment of a qualified OHS team (certified OHS Experts, workplace physician, and paramedic). • Development of formal OHS Procedures, including a dynamic Risk Assessment Matrix updated regularly. • Implementation of a Permit-to-Work (PTW) system for high-risk operations (e.g., deep trenching, lifting).	Prior to and throughout the construction phase	Construction Contractor	• Approved site-specific OHS Plan and dynamic Risk Assessment records. • Formal İSG-KATİP appointment records of the OHS personnel. • Active Permit-to-Work (PTW) logs for high-risk tasks. • Proof of allocated OHS budget and resource inventory.	• Prior to mobilization • Monthly OHS audits • Continuous monitoring by DSİ	Construction Contractor Supervision (DSİ Representative)	Included in the Sub - project Budget
Community Health and Safety									
CHS-C 001	Risk of injury to third parties (farmers, local residents, children) due to open trenches along agricultural lands and access routes. Impacts are expected to be localized and temporary but may be significant if access control is inadequate.	ESS4	• Installation of warning signage, barricades and safety tape along open trench sections and all over construction sites • Securing trench sections at the end of each working day. • Provision of temporary crossing points for farmers and field access where necessary. • - Public awareness notices in nearby settlements prior to works.	Throughout excavation phase	Construction Contractor	• Presence and condition of barricades, warning signs and safety tape along open trench sections • Availability and condition of temporary crossing points for farmers and field access • Evidence that trenches are secured at the end of each working day • Records of community complaints related to access or safety	• Daily inspection during active excavation works • End-of-day checks to confirm trench securing • Continuous monitoring in sections close to settlements or access routes • Incident-based inspection following complaints or safety observations	Construction Contractor; Supervision (DSİ Representative)	Included in the Sub - project Budget
CHS-C 002	Temporary restriction of access to agricultural parcels, potentially affecting farm operations and machinery movement.	ESS4 ESS5 ESS10	• Prioritize use of DSİ canal service road corridor where feasible to minimize disruption of field access. • Maintain access routes to cultivated plots at all times. • Coordinate work schedule with landowners in advance.	During trenching works	Construction Contractor in coordination with DSİ	• -Availability and functionality of access routes to agricultural parcels • Evidence of coordination with farmers and landowners prior to works	• Daily monitoring in active trenching sections • Periodic checks during works affecting agricultural access routes	Construction Contractor DSİ Representative	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
	Risk is reduced in sections where works are limited to DSI service road.		Restore access immediately after pipe installation.			- Records of coordination meetings with DSI and landowners - Farmer complaints related to restricted access or machinery movement	- Continuous monitoring until access routes are fully restored - Incident-based inspection following farmer complaints		
CHS-C 003	Increased traffic risk due to movement of heavy construction vehicles on rural roads and agricultural tracks, including potential collision with tractors, pedestrians or livestock. It is expected that the impact will be minimal provided the necessary measures are taken.	ESS4	- Preparation and implementation of a Traffic Management Plan. - Use of DSI service road for haulage where available to reduce interaction with public roads. - Installation of traffic warning signs at road crossings. - Enforcing speed limits (max. 30 km/h) on site/access roads. - Deployment of flagmen where required.	Throughout construction phase	Construction Contractor	- Presence and visibility of traffic warning signage at road crossings - Compliance with site speed limits (max. 30 km/h on access roads) - Implementation of the Traffic Management Plan - Records of traffic incidents, near-misses, or complaints from road users	- Daily supervision during construction works - Continuous monitoring in sections near public roads or agricultural tracks - Incident-based inspection and reporting - Periodic review of traffic safety compliance and records	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
CHS-C 004	Temporary increase in heavy vehicle movement through or near rural settlements, potentially causing nuisance and safety concerns. It is expected that the impact will be minimal provided the necessary measures are taken	ESS4 ESS10	- Advance notification to village representatives (mukhtars) before works near settlements. - Avoidance of peak agricultural activity periods where practicable. - Controlled scheduling of material deliveries.	During works near settlements	Construction Contractor	- Records of advance notifications to village representatives (mukhtars) before works near settlements - Delivery schedules for construction materials and equipment - Records of community complaints related to vehicle movement or nuisance - Communication logs with local stakeholders	- Monitoring during works near settlements - Periodic checks during material delivery activities - Incident-based inspection following complaints - Regular review of communication and delivery records	Construction Contractor DSI Representative	Included in the Sub - project Budget
CHS-C 005	Dust and noise nuisance affecting nearby residents and farm workers, particularly in sections without DSI service road corridor. It is expected that the impact will be minimal provided the necessary measures are taken	ESS4 ESS10	- Implement previously defined dust and noise mitigation measures. - Increase watering frequency near sensitive receptors. - Restrict high-noise activities to daytime hours.	Throughout construction phase	Construction Contractor	- Records of community complaints related to dust or noise - Visible dust levels along construction corridor and near sensitive receptors - Compliance with working hours (daytime activities only) - Evidence of watering activities near settlements or sensitive receptors	- Daily inspection during construction works - Increased monitoring near settlements or sensitive receptors - Complaint-based inspection when grievances are received - Periodic review of dust suppression activities	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
CHS-C 006	Risk of damage to local roads or irrigation crossings due to heavy vehicle use. Risk is reduced in sections where works are limited to DSI service road.	ESS4	- Pre-construction condition survey of critical access roads. - Repair of any damage caused by construction activities. - Use of designated access routes only.	Throughout construction phase	Construction Contractor	- Records of road condition surveys along access routes - Evidence of road damage caused by construction traffic - Records of repair or reinstatement works conducted by contractor	- Periodic inspection during construction phase - Inspection prior to demobilization of construction activities - Additional inspection following heavy vehicle traffic or complaints	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
						Compliance with use of designated access routes	Incident-based inspection when road damage is reported		
CHS-C 007	GBV and SEA/SH risks due to labor influx. It is expected that the impact will be minimal provided the necessary measures are taken	ESS2 ESS4	- Development and implementation of the Contractor's Labor Management Plan (LMP), including working conditions, fair treatment, non-discrimination, equal opportunity, vulnerable/disadvantaged individuals/workers, GBV, SEA/SH, and the prevention of child and forced labor. -Development and implementation of the Contractor's Labor Management Plan in accordance with the TIMPII LMP, covering working conditions, fair treatment, non-discrimination, equal opportunity, vulnerable/disadvantaged individuals/workers, GBV, SEA/SH, and the prevention of child and forced labor.	Throughout construction phase	Construction Contractor	- Signing of the Code of Conduct (CoC) by all personnel and subcontractors. - Provision of awareness and training sessions on SEA/SH and GBV for all employees. - Maintenance of grievance records / Grievance logs.	Before construction work begins and during the pre-construction phase weekly, monthly and quarterly	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
CHS-C 008	Temporary Access Restrictions to Agricultural Parcels. Impacts are expected to be localized and temporary	ESS5	- Inform farmers and local mukhtars at least 15 days prior to any access restriction. - Provide temporary and safe access points/bypass roads for farming equipment. - Schedule heavy construction activities outside of peak harvesting periods.	Throughout construction phase	Construction Contractor	- Notification records (signed by mukhtars). - Visual check of bypass roads.	during the pre-construction phase weekly, monthly, quarterly	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
CHS-C 009	Disruption of Irrigation Supply. Impacts are expected to be localized and temporary	ESS2 ESS4	- Installation of temporary bypass pipes. 24-hour rapid repair protocol	Throughout construction phase	Construction Contractor	- Continuous water flow status. - Number of accidental pipe damages and repair time.	during the pre-construction phase weekly, monthly, quarterly	Construction Contractor Supervision (DSI Representative)	Included in the Sub - project Budget
CHS-C 010	Social tension, conflict, or public health risks (including communicable diseases) arising from the influx of ~300 construction workers into local rural communities. Impacts are expected to be localized and temporary provided that rigorous social management is enforced.	ESS4	• Implementation of a strict Labor Influx Management Procedure as part of the Sub-project LMP. • Mandatory integration of Community Interaction Rules into the workers' Code of Conduct (CoC) to minimize social friction. • Prioritization of local labor recruitment to reduce the total volume of external workforce influx. • Provision of health screenings and awareness training on communicable diseases for all incoming workers. • Establishment of a continuous dialogue channel with village mukhtars to proactively monitor and manage any community integration issues.	Prior to and throughout the construction phase	Construction Contractor	• Documented evidence of local worker hiring rates. • Signed copies of the Code of Conduct (CoC) focusing on community rules by all staff. • Records of health awareness sessions and worker medical check compliance. • Log of consultation meetings held with local mukhtars regarding worker presence. • Number of community complaints registered under the GM regarding worker behavior.	• Before mobilization • Weekly and monthly regular site reviews • Incident-based upon community feedback	Construction Contractor; Supervision (DSI Representative)	Included in the Sub - project Budget
Stakeholder Engagement									
SE-C 001	Shortcomings in communication processes with local communities, property owners, and relevant institutions may lead to mistrust of the –Sub-project,	ESS10	• As part of process management, the Stakeholder Engagement Plan and Grievance Mechanism (GM) will be actively implemented. • Before field activities commence, local stakeholders will be provided with the necessary information regarding the work schedule and measures to be taken.	Throughout construction phase	Construction Contractor	• Number of grievances • Number of incidents. • Near-miss records. • Informing local communities about activities.	• Regular compliance reports	Contractor Supervision Consultant DSI PIU	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of Mitigation and Monitoring
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	
	misinformation, and social discontent. Failure to analyze stakeholder expectations, local needs, and social dynamics in the region has the potential to deepen social inequalities or lead to unforeseen negative consequences for affected communities. It is expected that impacts will be minimized through the implementation of necessary measures and the effective management of the stakeholder engagement process		- In this context, the contractor is responsible for appointing a liaison officer to facilitate dialogue with the public, managing potential conflicts between external personnel and the local community, and displaying signs containing contact information in visible areas. - Furthermore, compliance with international codes of conduct regarding employee relations with the local community will be strictly monitored, and deterrent sanctions, including dismissal, will be applied in case of violations.			Appropriateness and adequacy of warning signs.			
Vulnerable and Disadvantaged Groups									
VDG-C 001	Construction sites pose risks to both traffic safety and vehicle damage due to the presence of heavy machinery, loose ground materials, and uneven road surfaces. Temporary road closures during construction activities have the potential to restrict access to transportation networks for local communities and businesses. Furthermore, temporary disruptions arising from repair and maintenance processes may have an impact on public health. On a social level, ethical conduct rules and control mechanisms will be rigorously enforced to prevent risks such as sexual exploitation, abuse, or harassment (SEA/SH) in interactions between external personnel and the local population.	ESS4 ESS10	- The use of access roads must be coordinated in a manner that does not jeopardize the safety of service vehicles in areas where transportation-based education is provided. - In this context, school administrations and local residents must be informed in advance regarding speed limits, warning signs, and heavy cargo shipments. - Any work that could obstruct access will be planned in advance; alternative routes and scheduling information will be provided to village heads. - Care will be taken to ensure that activities are carried out outside the irrigation season so as not to disrupt agricultural production; vehicle movements will be restricted to designated routes to protect vegetation. - Furthermore, to prevent noise pollution, working hours will be limited to 08:00-19:00, and a community liaison officer and complaint mechanism will be maintained for all stakeholders.	Throughout construction phase	Construction Contractor	- Number of grievances - Number of incidents. - Near-miss records. - Informing local communities about activities. - Appropriateness and adequacy of warning signs.	During the construction phase, weekly, monthly, and quarterly	Contractor Supervision Consultant DSI PIU	Included in the Sub - project Budget

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring			Cost of
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility	Mitigation and Monitoring
Land Acquisition									
LA-C 001	Construction activities are being carried out within an existing irrigation corridor and do not require large-scale land acquisition. However, temporary access restrictions to agricultural land may occur during trench excavation work. Implementing the Resettlement Plan before construction activities begin will minimize their impact.	ESS5 ESS10	- Land acquisition must be completed before construction begins. - The Resettlement Plan must be implemented.	Throughout construction phase	Construction Contractor	- Number of participation activities. - Number of grievances. - Expropriation process update. - Number of ongoing and completed cases. - Number of lands acquired with consent. - Compensation payments. - Damage to assets and compensation/repair records.	During the construction phase, weekly, monthly, and quarterly	Contractor Supervision Consultant DSI PIU	Included in the Sub - project Budget

IV.2 Operation Phase

During the operation phase, the Sub-project will function as a pressurized closed irrigation system replacing the existing open canal. Operational activities will primarily involve routine inspection, valve operation, periodic maintenance of pipeline sections and associated chambers, and monitoring of system performance.

Given the buried nature of the pipeline and the absence of continuous above-ground mechanical systems along most of the alignment, operational environmental impacts are expected to be minimal. No regular emissions to air, wastewater discharge, or routine solid waste generation are anticipated under normal operating conditions.

Noise generation will be limited to localized valve chambers and control structures, which are enclosed and situated away from dense residential areas. Occupational risks during operation are expected to be low and primarily associated with confined space entry, maintenance works, or emergency repairs in case of pipeline failure.

Overall, the operational impacts of the Sub-project are expected to be negligible to minor, localized and manageable through routine maintenance and adherence to standard safety procedures.

The operational phase Environmental and Social Management measures are summarized in the following Table 11.

Table 11. ESMP Matrix: Risks, Impacts, Mitigation, and Monitoring Table – Operation Phase

ID	Expected Environmental and Social Risks and Impacts	Related WB ESSs	Proposed Mitigation Measures	Impact Reduction		Impact/Effect Monitoring		
				Time / Frequency	Responsibility	Monitoring Parameter	Frequency	Responsibility
AQ-O 001	No routine air emissions during normal operation. Potential temporary dust emissions may occur only during maintenance or emergency repair works (e.g., pipe rupture).	ESS1 ESS3 ESS10	- Implement dust control measures during repair works (watering, controlled excavation). - Limit disturbed area during maintenance.	As required (maintenance or repair events)	DSi / Irrigation Union	- Presence of dust during maintenance or repair activities - Implementation of dust suppression measures (watering, controlled excavation) - Complaint records from nearby land users or workers	- Event-based monitoring during maintenance works - Additional inspection if complaints are received	DSi / Contractor (if engaged)
NL-O 001	Localized and minor noise from valve chambers and control structures during operation, particularly during opening/closing of valves. Valve rooms are enclosed and located away from dense settlements; therefore impacts are expected to be negligible.	ESS1 ESS4	- Maintain valve equipment in good mechanical condition. - Keep valve chambers closed during operation. - Restrict unauthorized access to operational facilities.	During routine operation	DSi	- Equipment maintenance and inspection records - Condition of valve chambers and control structures - Community complaints related to operational noise	Periodic inspection during routine operation	DSi
SO-O 001	Risk of soil disturbance in case of pipeline leakage or rupture, potentially affecting agricultural land. Impacts would be localized and temporary.	ESS1 ESS5	- Routine inspection and pressure monitoring to detect leaks early. - Immediate isolation of affected section in case of rupture. - Prompt repair and reinstatement of affected land.	Continuous monitoring; event-based repair	DSi	- Leakage detection and system monitoring records - Response time to detected failures or leaks - Evidence of soil reinstatement and land restoration	- Continuous system monitoring - Event-based inspection following leak incidents	DSi
WM-O 001	Limited waste generation during maintenance activities, including small quantities of scrap materials, replaced valves, gaskets or packaging.	ESS3	- Collection and proper disposal of maintenance waste. - Disposal via licensed waste contractors where required. - No disposal within agricultural fields.	As required (maintenance events)	DSi	- Records of waste collection and disposal - Evidence of disposal through licensed waste contractors - Site cleanliness following maintenance activities	Event-based monitoring during maintenance works	DSi
OHS-O 001	Occupational health and safety risks during maintenance or confined space entry into valve chambers, including slip, trip, electrical or confined space hazards.	ESS2	- Implementation of confined space entry procedures. - Use of appropriate PPE. - Lock-out/tag-out procedures during maintenance. - Adequate ventilation in enclosed chambers.	During maintenance activities	DSi	- OHS procedure and confined space entry records - PPE compliance during maintenance works - Records of incidents, near misses, or safety observations	Monitoring during each maintenance activity	DSi
CHS-O 001	Community safety risks in case of uncontrolled leakage or sudden pipe burst, potentially causing localized flooding of agricultural areas. Risk is expected to be low due to controlled pressurized system.	ESS4 ESS10	- Pressure monitoring and automatic shut-off mechanisms where applicable. - Rapid response and isolation of damaged sections. - Inform affected landowners promptly.	Continuous monitoring; event-based	DSi	- System pressure monitoring records - Incident response and emergency intervention logs - Records of communication with affected landowners	- Continuous monitoring of system pressure - Event-based review following incidents or failures	DSi
GM-O 001	Ineffectively operated Grievance mechanisms can trigger social unrest by leaving the concerns and demands of the local community unanswered. Unresolved feedback can undermine the bond of trust between project management and the community, paving the way for increased social tension and potential conflicts.	ESS10	- A grievance mechanism covering Occupational Health and Safety and Public Health and Safety issues will be established during the operational period. - Up-to-date information about the grievance mechanism will be provided continuously.	Continuous monitoring; event-based	DSi	- Grievance records - Information meetings and records	Continuous monitoring; event-based review	DSi

CHAPTER V.

IMPLEMENTATION REGULATION, CAPACITY BUILDING, AND TRAINING

V.1 Roles and Responsibilities

The Project will be implemented by a Project Management Unit (PMU) within DSI. To ensure effective E&S risk management in line with national regulatory and ESF requirements throughout the lifetime of the project, as per the Project's Environmental and Social Commitment Plan (ESCP), the PMU will include at least one qualified Environmental/OHS Specialist and one dedicated Social Specialist. Additionally, a Monitoring and Evaluation (M&E) Specialist will be assigned to track and report on overall project performance and compliance. DSI's existing staff from Department of Real Estate Expropriation and Investigation Planning and Allocation Department / Environment Branch Office will be assigned to the PMU as environmental, social and OHS specialists. If necessary, DSI will recruit E&S consultants. Additionally, under Türkiye Second Irrigation Modernization and Water Efficiency Project, DSI has started developing its own Institutional Environmental and Social Management System (I-ESMS). Once the I-ESMS is fully functional, the E&S risk management of the project will be implemented under the ESMS. The ESCP will include such provision of following the ESMS once it is fully functional.

Under the TIMPII Project, Construction Contractors will be required to strictly comply with the Project's E&S risk management plans and procedures, including simplified site-specific ESIAs (incorporating ESMPs), customized ESMPs and Labor Management Procedures (LMP). Additionally, Contractors shall ensure full compliance with the field-level requirements of the Stakeholder Engagement Plan (SEP), particularly regarding public announcements and the operationalization of the Grievance Redress Mechanism (GRM). To ensure overall alignment with the World Bank ESF and national legislation, these activities will be monitored by the PMU's dedicated Environmental/OHS and Social Specialists. They will be obliged to implement activities and measures as shown in ESMP that will be part of their construction contracts. Some of the items to be included in the bidding documents will be including relevant ESF instruments, requirement of compliance with applicable national legislation and WBG standards and EHS guidelines, the list of Environmental, Social, Health and Safety documentation to be produced by the Contractor. This provision will be specified in the Construction Contractors' contracts. Construction Contractors will be expected to disseminate and create awareness within their workforce of E&S risk management compliance for their effective implementation.

Table 12 summarizes the roles and responsibilities regarding the implementation arrangements for E&S management.

Table 12. The Roles and Responsibilities Regarding the Implementation Arrangements for E&S Management

Level/ Responsible Party	Roles and Responsibilities
DSI Project Management Unit (PMU)	• Provide support, supervision and quality control to E&S focal points and Construction Contractors. • Ensure that project activities do not fall within the WB Exclusion List. • Complete the Screening Forms for relevant Sub-Project activities. • Complete site-specific ESMPs for subproject activities, if applicable. • Coordinate the provision of technical assistance for the preparation of simplified site-specific ESAs (including ESMPs) and other E&S assessment and management documents in accordance with World Bank ESG requirements. • Review and approve site-specific simplified ESAs (including ESMPs) and other relevant E&S assessment and management documents. Keep documentation of all progress. • Oversee the overall implementation and monitoring of E&S mitigation activities, compile progress reports from subprojects and report to the World Bank on a quarterly basis. • Conduct training activities as indicated in Table 13. • Ensure that all tender and contract documents include all relevant E&S management provisions as per screening forms, customized ESMPs, simplified site-specific ESIA (including ESMPs) and other relevant E&S assessment and management documents. • Monitoring and visiting the construction sites of the projects below on a monthly/quarterly basis. • Monitor the implementation of the YYP by municipalities. • Prepare and implement the Project Operations Manual (POM). • To ensure the establishment and effective implementation of the complaint mechanism and to ensure coordination with Regional Directorates. • Notify the World Bank of any serious incident that may have significant adverse effects on the environment, affected communities, the public or workers within 48 hours of becoming aware of such incident and send the incident investigation report prepared by the construction contractor, together with the root cause analysis and corrective action plan, to the World Bank within 15 days. • After completion of subproject activities, it prepares the Subproject E&S Completion Report explaining the adequacy of E&S risk management measures and submits it to the World Bank.
Regional E&S Focal Points in DSI 7th Regional Directorates (Irrigation Associations)	• Oversee weekly implementation and report progress and performance to the EIS on a monthly basis. • Ensuring that Construction Contractors comply with the subproject's E&S risk management plans (ESMP, SEP, LMP and RP) and procedures as well as national legislation. • Monitor/assess whether the Construction Contractor's on-site E&S practices are in compliance with the E&S risk management tools prepared for the subproject. • Implement the SEP in coordination with the PMU. • To ensure the sustainability of the GM and, if possible, to receive, record and resolve complaints. • Educate communities on relevant E&S mitigation measures. • Promptly notify the EIS of any chance findings and any serious incidents that could have significant adverse effects on the environment, affected communities, the public or workers. • Be open and responsive to concerns raised by affected groups and local environmental authorities regarding the E&S aspects of subproject implementation. Consult with these groups during site visits as necessary.
Site Resettlement Focal Point of Municipalities / Institutions Appointed by Governorships	• Support the PMU in preparing resettlement plans. • Implement resettlement plans. • Coordinate with the PMU in conducting resettlement consultations. • Maintain records of resettlement-related complaints. • Prepare and submit quarterly resettlement plan progress reports.
Site Construction Contractors	• The Construction Contractor shall establish a site-level E&S/OHS organization before the commencement of construction works. • The Contractor shall assign qualified Environmental, OHS and Social Specialists, proportionate to the scale and risks of the construction activities, to ensure the effective implementation of the ESMP, SEP, LMP, GM and other relevant E&S management requirements at site level.

	• Comply with and implement the project's E&S mitigation measures as well as national legislation. • Take all necessary precautions to protect the health and safety of workers and community members and to prevent, minimize or reduce environmental damage resulting from subproject activities. • Monthly report on E&S performance to E&S Focal Points. • Prepare and implement Contractor Environmental and Social Management Plans (C-ESMPs) and other sub-management plans in accordance with E&S risk management tools prepared for Sub-Project s (customized ESMPs, simplified site-specific ESIA s (including ESMPs), etc.). • Prepare and implement site-specific LMP/Code of Conduct • To ensure that construction-related grievances are included in monthly implementation reports. • Monitor field activities daily as defined in the C-ESMP in accordance with the E&S risk management tools prepared for Sub-Project s. • Promptly notify the PMU and E&S Focal Points of any chance findings and serious incidents that may have significant adverse impacts on the environment, affected communities, the public or workers. Prepare an incident investigation report with root cause analysis and corrective action plan within 10 days and submit the report to the PMU.
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World Bank, will conduct prior review of the ESIA s and ESMPs for all subprojects Sub-Project s and provide no objections to the E&S Screening Form set, customized ESMPs and site-specific simplified ESIA s (including ESMPs) to be prepared. The prior review of the subsequent E&S documents may be considered based on the adequacy of the documents of the first five Sub-Project s and/or complexity of a specific Sub-Project. The World Bank will review site-specific E&S compliance and monitoring reports. In case of non-compliances, complaints and incidents, the World Bank may require DSI to undertake additional screening, review and approval procedures.

V.2 Training and Capacity Development

The successful implementation of the project will depend on the effective implementation of the E&S risk management measures specified outlined in this ESMF. Training and capacity building for key stakeholders will be required to ensure effective implementation of the E&S assessment and management documents, including the ESMF, RF, LMP, SEP and site-specific E&S assessment and management documents. The initial training approach is outlined in Table 13 below. To the extent possible, E&S risk management training will be integrated into the project cycle and operational procedures. Given the need to raise awareness at multiple levels among project staff and stakeholders, a cascade model is recommended whereby knowledge is tracked from the national level to the site.

Table 13. Indicative Training and Capacity Building Approach

Level	Responsible Part	Audience	Topics / Themes that can be covered
National Level	DSİ E&S Team	PMU	• Requirements of WB ESF • ESMF and its approach: ○ Identifying and assessing E&S risks ○ Selection and implementation of relevant E&S risk management measures/tools ○ E&S monitoring and reporting ○ Incident and accident reporting ○ Preparation, implementation and monitoring of the Resettlement Plan (RAP), Livelihoods Restoration Plan (LRP) and Ex-Post Social Audit (EPSA) ○ Handling of SEA/SH complaints
National Level	PMU	Other members of DSİ-PUB	• OHS, including emergency preparedness, • Specific aspects of E&S assessment • Risk scanning and preparation of relevant E&S risk management measures/tools • Specific aspects of E&S risk management practice • Stakeholder engagement and grievance mechanism (GM) • Gender equality and gender-based violence • Handling of SEA/SH complaints • Code of Conduct (CDC) • E&S monitoring and reporting (including incident and accident reporting) • Preparation, implementation and monitoring of the Resettlement Plan (RAP), Livelihoods Restoration Plan (LRP) and Ex-post Social Audit (EPSA) • Management of labor influx risks and their social impacts • Management of sensitive and confidential grievances (including SEA/SH) and effective operation of the grievance mechanism (GM)
Local Level	PMU	E&S Focal Points E&S Construction Contractors Team	• World Bank ESF Requirements • ESMF and its approach: ○ Identifying and assessing E&S risks ○ Selection and implementation of relevant E&S risk management measures/tools ○ E&S monitoring and reporting ○ Incident and accident reporting • Implementation of the ESMP, including community health and safety • Implementation of the LMP including Code of Conduct, gender equality, OSH including SEA/SH and emergency preparedness and response, labor requirements for primary suppliers. • Preparation, implementation and monitoring of the Resettlement Plan (RAP), Livelihoods Restoration Plan (LRP) and Ex-Post Social Audit (EPSA) • Implementation of SEP and complaint/beneficiary feedback mechanism • Handling of SEA/SH complaints • Proactive stakeholder engagement strategies under the Stakeholder Engagement Plan (SEP) • Labor influx management and local community safety measures in accordance with Labor Management Procedures (LMP)
Local Level	Social specialists of PMU	Resettlement focal point of the municipality/governorate responsible for land acquisition	• Preparation, implementation and monitoring of the Resettlement Plan (RAP), Livelihoods Restoration Plan (LRP) and Ex-post Social Audit (EPSA) • Implementation of the SEP and GM

Site Level	The contractor's E&S team	Sub-project workers	• Prevention of emergencies and arrangements for emergency preparedness and response, vehicle safety, safe use of vehicles, tools, machinery and equipment, OHS including working at heights, • Contractual E&S requirements (including GM) • Construction Contractor ESMP • Diverse and respectful workplaces, SEA/SH, Code of Conduct • Handling of SEA/SH complaints • Workers' Grievance Mechanism • Rules of engagement with local communities and mitigation of social cohesion risks within the scope of labor influx management • Workers' Grievance Redress Mechanism and communication channels for non-SEA/SH general grievances
Community Level	E&S Focal Points	Community members Persons whose land will be expropriated	• Community health and safety issues • SEA/SH issues, prevention, measures, handling of SEA/SH complaints • GM • Preparation, implementation and monitoring of the Resettlement Plan (RAP), Livelihoods Restoration Plan (LRP) and Ex-post Social Audit (EPSA) • Methods of access to Grievance Mechanisms (GM), feedback channels, and stakeholder rights

CHAPTER VI.

STAKEHOLDER ENGAGEMENT

VI.1 Summary of Previous Stakeholder Engagement Activities

The visit conducted as part of the ESMP social baseline took place on April 20 (see Photograph 11) and 27 (see Photograph 12), 2026, and included meetings with neighborhood council members. In this context, meetings were held with the President of the Yeşilırmak Irrigation Union, the Tokat Provincial Director of Agriculture and Forestry, the President of the Tokat Chamber of Agriculture, and the District Directors of Agriculture and Forestry for Pazar and Turhal. Information about the Sub-Project was provided, and opinions were gathered regarding the baseline conditions and potential impacts. The irrigation canal project was noted as a positive development long awaited by local residents. Each interviewee was already informed about the Sub-Project.

Overall, stakeholders expressed strong support for the Sub-Project and indicated that the rehabilitation of the irrigation infrastructure has been anticipated by local communities for many years due to the deteriorated condition and operational inefficiencies of the existing system. The consultations also confirmed that the relevant institutions were already aware of the planned Sub-Project and considered it important for improving irrigation efficiency, reducing water losses, and supporting agricultural productivity in the Kazova Plain.

The consultations highlighted the importance of maintaining effective communication with irrigation users and local communities throughout implementation, particularly regarding construction schedules, temporary interruptions to irrigation services, and access arrangements during construction works. These issues have been taken into consideration during the preparation of the stakeholder engagement approach and the grievance mechanism presented in this ESMP. Stakeholder engagement will continue throughout the construction and operation phases to ensure that emerging concerns are identified and addressed in a timely manner.



Photograph 11. Site Visit on April 20, 2026



Photograph 12. Caption Meeting with Local Authorities and Stakeholder (April 27, 2026)

VI.2 Sub-Project-Specific Stakeholder Mapping

Stakeholder mapping under the Tokat Kazova Right and Left Bank Irrigation Renovation Construction Project has been conducted in line with the World Bank Environmental and Social Standards (particularly ESS10: Stakeholder Engagement and Information Disclosure) and based on the Sub-Project -specific social risk and impact assessment. The purpose of the stakeholder mapping is to systematically identify individuals and institutions that may be directly or indirectly affected by the Sub-Project, to analyze their level of influence over the

Sub-Project and the extent to which they may be affected, and to ensure that the stakeholder engagement program is structured on the basis of this analysis.

The following criteria were applied in the stakeholder identification process:

- Sub-Project **Area of Influence (Aoi)**: Agricultural lands where irrigation rehabilitation works will be carried out and the associated settlements (Tokat center and relevant neighborhoods).
- **Level of Direct Impact**: The extent of direct exposure to construction activities, temporary access restrictions, irrigation interruptions, or changes in land use.
- **Level of Indirect Impact**: Stakeholders who may be affected in the medium or long term by Sub - project outcomes (e.g., modernized irrigation system, increased productivity, and water savings).
- **Institutional Authority and Responsibility**: Institutions and organizations with administrative, technical, or supervisory responsibilities in Sub-Project implementation.
- **Sensitivity and Vulnerability**: Groups that may be disproportionately affected by the Sub - project due to their economic, social, or demographic characteristics.

Within this framework, stakeholders have been classified into three main groups:

- **Parties directly or indirectly affected by the –Sub-Project** (e.g., farmers, landowners, irrigation association members),
- **Other interested parties** (e.g., public institutions, local administrations, professional chambers, NGOs),
- **Disadvantaged or vulnerable individuals/groups** (e.g., female heads of households, people with physical or mental disabilities, people over 65 living alone).

In conducting the stakeholder mapping, not only current users but also individuals and institutions with the potential to be affected during Sub-Project implementation (particularly during the construction phase) were included in the assessment. In addition, the impacts of structural changes resulting from the modernization of the irrigation system (e.g., water distribution regime, operation model, maintenance responsibilities) on stakeholders were also analyzed.

Through this approach, the stakeholder engagement process has been designed not only for information disclosure purposes but also to enable early identification of risks, effective grievance management, and strengthening of social acceptance during Sub-Project implementation.

The Sub-Project's stakeholders are listed in Table 14.

Table 14. Sub-Project's Stakeholders

Stakeholders	Level of Interest	Level of Influence	Potential Impact	Engagement Method
Residents of nearest settlements (TOKAT MERKEZ: Gezirlik; Güneşli; Kaleardı; Karşıyaka; Kümbet; Oğulbey; Yeniyurt; Emirseyit; Güryıldız; Akyamaç; Bakışlı; Büyükbağlar; Büyükyıldız; Çerçi; Dedeli; Gülpınar; Gümenek; Güzeldere; Kemalpaşa; Kömeç; Küçükbağlar; Söngüt; Taşlıçiftlik; Ulaş; Yeşilyurt. TURHAL: Çevlikler; Hamam; Kazımkarabekir; Pazar; Varvara; Şenyurt; Arzupınar; Ataköy; Bahçebaşı; Çarıksız; Çayıraltı; Çaylı; Dökmetepe; Gümüştop; Kalaycık; Kat; Kuşoturağı; Necip; Şatroba; Taşlıhöyük; Tatlıcak; Yeniköy. PAZAR: Erkilek; Esentepe; Merkez; Seyitali; Sinanpaşa; Üzümlören; Bağlarbaşı; Beşevler; Çayköy; Çiftlik; Dereçaylı; Dereköy; Kaledere; Menteşe; Ovayurt; Taşlık; Tatar; Tepeçay.)	High	Moderate	Temporary dust, noise, traffic, restricted access during construction; long-term benefits from improved irrigation services and agricultural productivity.	Public information meetings, announcements through mukhtars, information boards, grievance mechanism, face-to-face consultations where required.
Vulnerable groups in nearest settlements	High	Low	Risk of reduced access to information and consultation activities; temporary construction-related disturbances.	Targeted consultations, assistance through mukhtars, accessible communication methods, grievance mechanism.
Tokat Governorship	Moderate	Low	Coordination of public administration and oversight of project implementation.	Official correspondence, coordination meetings, periodic progress updates.
District Governor's Office of Turhal and Pazar	Moderate	Low	Local administrative coordination and support during implementation.	Official correspondence, coordination meetings, periodic information sharing.
Provincial Directorate of Disaster and Emergency	Moderate	Low	Coordination regarding emergency preparedness and response, if required.	Official correspondence and coordination meetings.
Provincial Directorate of Health	Moderate	Low	Monitoring of public health issues related to	Official correspondence and

			construction activities, where necessary.	coordination meetings.
Provincial Directorate of Agriculture and Forestry	Moderate	Low	Coordination regarding agricultural activities, irrigation scheduling and communication with farmers.	Technical meetings, official correspondence, periodic consultations.
Provincial Directorate of Health	Moderate	Low	Regulatory oversight and environmental compliance, where applicable.	Official correspondence and reporting.
The Ministry of Environment, Urbanization and Climate Change	Moderate	Low	Coordination regarding agricultural activities, irrigation scheduling and communication with farmers.	Regular coordination meetings, site inspections, public consultations, grievance management.
State Water Works 7th Regional Directorate	Moderate	Low	Overall implementation, supervision, stakeholder coordination and environmental and social monitoring.	Consultation meetings, information disclosure, formal correspondence.
NGO's	Moderate	Low	Monitoring of environmental and social issues and dissemination of project-related information.	

VI.3 Stakeholder Engagement Programme

Within the scope of the Tokat Kazova Right and Left Bank Irrigation Renovation Construction Project, the Stakeholder Engagement Program has been prepared in line with the World Bank Environmental and Social Standards (particularly ESS10) to ensure a transparent, timely, inclusive, and continuous process of information disclosure and consultation throughout the Sub - project life cycle. The program aims to ensure that Sub-Project -affected parties (e.g., farmers, landowners/tenants, neighborhood residents) and other interested parties (e.g., public institutions, local administrations, irrigation associations/cooperatives) have access to

Sub-Project -related information, are able to express their views and concerns, and that such feedback is systematically reflected in Sub-Project design and implementation decisions.

Stakeholder engagement is not considered as a one-off activity conducted solely during the ESMP preparation stage; rather, it is treated as a dynamic process to be sustained before construction, during construction, and throughout the operation phase, using different tools and levels of intensity. In this context, the Stakeholder Engagement Program consists of the following components: disclosure and accessibility of information; structured consultation meetings and targeted interviews; regular collection of feedback and provision of responses; resolution through the grievance mechanism; and documentation and reporting of engagement activities. In implementing the program, communication practices specific to rural neighborhoods will be taken into account, and methods such as announcements through neighborhood units, face-to-face meetings, and one-on-one consultations where necessary will be prioritized.

The core principles of the program are early information disclosure, provision of clear and accurate information, non-discrimination, and inclusion of vulnerable groups in the process, traceable recording of feedback, accountability, and continuous improvement. Within this framework, stakeholder engagement will be used as a key management tool to enable early identification and management of social risks that may arise under the Sub-Project, to strengthen social acceptance at the local level, and to ensure the effective implementation of the mitigation and monitoring measures set out in the ESMP.

TIMPİI Stakeholder Engagement Plan (SEP) will be used for this Sub-Project, and all project parties (contractor, State Hydraulic Works (DSİ) PMT, DSİ PIU included) will be responsible for ensuring compliance with the TIMPİI SEP. The Grievance Mechanism (GM) for the Tokat Kazova Right and Left Bank Irrigation Renovation Construction Project is designed in accordance with the Stakeholder Engagement Plan (SEP) of the Second Türkiye Irrigation Modernization and Water Efficiency Project (TIMPİI). The project-based GM is described in detail in Section 6 of the TIMPİI Stakeholder Engagement Plan. The steps completing the grievance mechanism and the description of this process are provided accordingly. There are specific steps comprising the complaint mechanism, and this process is detailed in Section VI.5.

VI.3.1 Purpose and Timing of the Stakeholder Engagement Program

The main goals of the stakeholder engagement program and the planned schedule for the various stakeholder engagement activities are to describe at what stages throughout the Sub-Project's life these activities will take place, and with what periodicity. Where decisions on public meetings, locations, and timing of meetings have not yet been made, information is provided on how people will be made aware of forthcoming opportunities to review information and provide their views.

The Stakeholder Engagement Program ensures preparation of an open profile of the stakeholders and clear sight of the relationships between the Sub-Project and the stakeholders. Meeting with all of the stakeholders listed in the matrixes on the underlined subject matters at the pre-determined timeline is crucially important. The frequency of the meetings can be increased when needed.

For this Sub-Project, stakeholder engagement activities will be implemented in a manner proportionate to the scale and potential impacts of the rehabilitation works. Particular emphasis will be placed on maintaining regular communication with farmers, irrigation water users, mukhtars and residents of the affected settlements prior to construction activities, before any planned irrigation interruptions, and throughout the construction period. Information on construction schedules, temporary access restrictions and mitigation measures will be disclosed through public meetings, announcements by mukhtars, information boards at the work sites and direct communication where necessary. Feedback received from stakeholders will be recorded and considered during the implementation of the Sub-Project.

The following (see Table 15) stakeholder engagement plan represents key characteristics, preferred notification means and specific needs for stakeholder groups.

Table 15. Stakeholder Engagement Plan

Project Stage	Target Stakeholders ¹	Topic of Consultation / Message	Method Used	Responsibilities	Frequency / Timeline
Preparation	• Government authorities responsible for agricultural irrigation • Coordinating institutes responsible for agricultural irrigation • Universities and research institutes • NGOs at local or national level • Practitioners of the guidelines, manuals, standard operational procedures that will be prepared	• Scope of the Project • Anticipated E&S risks and impacts of the Project • Proposed mitigation measures	• Formal meetings • Correspondence by email	DSI	Before the appraisal of the Project
	• Farmers • Water User associations • Village cooperatives/associations • Mukhtars • NGOs at local or national level • Practitioners of the guidelines, manuals, standard operational procedures that will be prepared	• Scope of the subproject	• Focus group meetings • One-on-one interviews	DSI	During the design of the subprojects
	• Communities living within the area of irrigation facilities • Communities (and businesses) living within the area of impact of the rehabilitation of irrigation infrastructure • Farmers • Water User associations • Village cooperatives/associations • Mukhtars • NGOs at local or national level	• Anticipated E&S risks and impacts of the subproject • Proposed mitigation measures	• Public participation meeting	DSI	During the design of the subprojects
Implementation	• Government authorities responsible for agricultural irrigation • Coordinating institutes responsible for agricultural irrigation • Universities and research institutes • NGOs at local or national level	• Progress of the Project • Main challenges encountered • Subprojects to be carried out next year	• Formal meetings	DSI	Annually
	• Media	• Outputs of the Project	• Press release • Website	DSI	Mid-term of the Project

VI.4 Resources and Responsibilities for the Implementation of Stakeholder Engagement Activities

In order to ensure the effective and sustainable implementation of the Stakeholder Engagement Program, institutional responsibilities have been clearly defined and the necessary administrative and financial resources have been integrated into the Sub-Project structure. This arrangement is intended to ensure that stakeholder engagement activities do

not remain solely at the planning level, but are systematically incorporated into implementation, monitoring, and reporting processes.

The overall coordination of the program will be carried out by DSI Project Management Unit (PMU). The PMU will be responsible for overseeing the implementation of the information disclosure, consultation, and feedback processes defined under the ESMP in compliance with the World Bank Environmental and Social Standards, and for ensuring that stakeholder engagement activities are included in periodic Environmental and Social (E&S) monitoring reports.

The DSI 7th Regional Directorate will assume responsibility for field-level implementation. In this context, coordination with neighborhood units, organization of information meetings, maintenance of participation records, and assessment of feedback received will be carried out by the Regional Directorate. In addition, on-site review of grievances and provision of feedback to the relevant parties will also be undertaken within this scope.

The Construction Contractor will be responsible, in particular, for information disclosure activities related to the construction phase. Notification of the work schedule and temporary impacts, installation of information boards at the construction site, and operation of the worker grievance mechanism fall within the Contractor's obligations. The Contractor will also regularly submit records of feedback and grievances received to DSI.

During the operation phase, communication with irrigation system users will be conducted through the relevant irrigation association or user organization. Disclosure of the water distribution schedule, organization of seasonal information meetings, and recording of feedback related to the operation period will be key elements of this process.

Costs related to stakeholder engagement activities have been integrated into the project budget. Expenses associated with meeting organization, printed information materials, on-site information boards, and operation of the grievance mechanism will be covered under the Contractor's contract and the DSI project budget. Human resource needs will be met through designated DSI personnel and the Contractor's Environmental and Social (E&S) specialists.

Within this framework, the implementation of stakeholder engagement activities will be supported by a clear allocation of responsibilities, adequate resource allocation, and regular monitoring; and a transparent and accountable engagement process will be maintained throughout the project duration.

VI.5 Grievance Mechanism (GM)

For this Sub-Project, grievances are expected to relate primarily to temporary irrigation interruptions, restricted access to agricultural lands, construction traffic, dust, noise, damage to crops or irrigation infrastructure, worker behaviour, occupational health and safety, and other construction-related environmental and social impacts. These issues will be monitored closely throughout the construction period, and all grievances will be managed through the Project Grievance Mechanism in accordance with the TIMPII Stakeholder Engagement Plan.

In accordance with the international requirements, a grievance mechanism was established by DSI in order to receive, resolve and follow the concerns and complaints of the project affected communities. DSI PIU will be accessible for the stakeholders and respond to all grievances (complaints, requests, opinions, suggestions) at the earliest convenience. The most important point in the grievance mechanism is to ensure that all grievances are effectively received, recorded, resolved and responded to within a predetermined timeline and on the basis of their contents, by PIU and that the corrective/regulatory action to be taken is acceptable to both parties. Such responses to the grievances would be satisfactory for both parties and activities would be followed and the complainants would be informed on the outcomes of the corrective activities. Additionally, the mechanism should be designed to allow anonymous to be addressed and handled. In addition, the project GM will include a channel to receive and address confidential complaints related with Sexual Exploitation and Abuse/Sexual Harassment with special measures in place.

The GM official who will manage the Grievance Mechanism will be knowledgeable about the guidelines prepared by the World Bank to prevent sexual exploitation, abuse and harassment cases for the projects financed under construction works. Grievances of gender-based violence, exploitation and harassment can result in a culture of silence due to negative reactions from the community. For the avoidance of this, it is highly important that the stakeholders raise the grievances involving these issues about the Sub-Project anonymously. In addition, the authorities handling the grievances should address such issues within confidence and by an unbiased approach. These grievances will be handled centrally at DSI, not only at the Contractor level. However, Contractor and DSI should still be trained and informed about the principles applicable to Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) and Gender Based Violence (GBV) cases.

In addition to DSI's communication tools, the following communication channels can be used to convey complaints.

- Points selected for grievance boxes (mainly for internal grievances) at the construction sites and for the mukhtars of the relevant neighbourhoods and/or grievance boxes,
- Direct contact with security guards and site managers at construction sites,
- Meetings and formal/informal consultations.

In the last 10 years Turkish citizens have adopted a centralized complaint system called Presidency's Communication Center (CIMER). People from all places and professions gained the habit of writing a letter of complaint by e-mail to CIMER. Therefore, it should be added to institutional grievance mechanisms. CIMER, which operates under Presidency's Directorate of Communications aim to strengthen the state-society relationship.

CIMER E Mail : www.cimer.gov.tr

CIMER Phone: Call Center 150 / +90 312 525 55 55

Foreigners Communication Center (YİMER)

YİMER has been providing a centralized complaint system for foreigners. YİMER will be available to Sub - project stakeholders as an alternative and well-known channel for conveying their Sub - project-related grievances and feedback directly to state authorities. Applications to YİMER can be made by the Internet (www.yimer.gov.tr), hotline (ALO 157), fax (+90 0312 920 0609), letter (Republic of Türkiye Directorate General of Migration Management, Çamlıca Mah. 122. Sok. No: 4 Yenimahalle/ANKARA) or personally at Republic of Türkiye Directorate General of Migration Management. The operational flow of Grievance Mechanism for the stakeholders is as follows:

1. Tools of information are prepared for grievance mechanism. Local people and stakeholders are informed. The tools are defined as follows:
 - a. Web page
 - b. E-mail address
 - c. Brochure
 - d. Public meetings
 - e. Telephone
 - f. Frequently Asked Questions (Brochure, web page, bulletin, etc.)

2. There are multiple channels for submitting grievance and concerns. Grievances can be submitted by the following channels:
 - a. Telephone (Call Center and units)
 - b. Personal visit to DSI head office/branches
 - c. Application through the grievance boxes (installed at the DSI Units)
 - d. Through concerned public administrations (district governorship, municipality, muhtars)
 - e. E-mail
 - f. Meetings
 - g. Through staff and local communication desk of DSI
 - h. By written petition to DSI
 - i. During site visits and miscellaneous
3. All the grievances received through the above channels are collected by Construction Contractor, GM Section.
4. The grievances received are recorded in the database and maintained.
5. Requests that require urgent remedy and/or support will be responded to and given support within the same day, and all outstanding grievances/requests will be recorded within 2 business days, reviewed and assessed within 10 business days, and concluded not later than 15 business days. Corrective actions will be taken to resolve the grievance.
6. Construction Contractor GM Officer prepares the draft response and submits it to the approval of Project Management.
7. A monitoring- evaluation system is established for grievances. Monitoring process of grievances is recorded in the monitoring and evaluation system.

The project will be implemented in accordance with the SEP prepared for the Turkey Second Irrigation Modernization and Water Efficiency Project (TIMP II).

Table 16. Grievance Mechanism Flow Chart

Step	Description of Process	Time Frame	Responsibility
Grievance uptake	Grievances can be submitted via the following channels: E-mail Letter Telephone Complaint form to be lodged via any of the above channels Walk-ins may register a complaint in a grievance logbook at a facility or suggestion box		Social specialist of the PMT E&S Focal Points Social specialist of the Construction Contractor
Sorting, processing	Any complaint received is forwarded to Social specialist of the PMT / E&S Focal Points / Social specialist of the Construction Contractor / Resettlement Focal Point; logged in GM table; and categorized according to the following complaint types: Improper engineering application/design Disposal of hazardous waste Disposal of non-hazardous waste Dust/Mud Impacts on the habitat Noise Random spoil piles Illegal acquisition of land Impacts on the livelihood Community health and safety Damage to personal assets Disruption of public services Esthetics Inappropriate behavior of workers Occupational health and safety Working hours Other miscellaneous grievances	Upon receipt of complaint	Social specialist of the PMT Social specialist of the Construction Contractor
Acknowledgment and follow-up	Receipt of the grievance is acknowledged to the complainant by the channel preferred by the complainant	Within 7 received days of complaints	Social specialist of the PMT Social specialist of the Construction Contractor
Verification, investigation, action	Investigation of the complaint is led by the social specialist. A proposed resolution is formulated by Complaint Committee and communicated to the complainant by the channel preferred by the complainant. A grievance close-out form will be filled.	Within 10 working days	Complaint Committee composed of Project coordinator and grievance-related specialists of the PMT and/or the department
Monitoring and evaluation	Data on complaints are collected in Project GM and reported to the World Bank every six months together with the E&S monitoring reports	Every 6 months	Social specialist of the PMT
Provision of feedback	Feedback from complainants regarding their satisfaction with complaint resolution is collected with small surveys asking their satisfaction level and is logged in the Project GM. The details of this survey will be specified in the Project Operations Manual (POM).	Concurrently with the signing of the grievance close-out form by the complainant	Complaints related to construction works: Social specialist of the Construction Contractor Complaints related to Project design: Social specialist of the PMT
Training	The project workers will be trained on the Project GM so that they can direct the complainants, or they can convey the grievances to the social experts to be logged in the Project GM. Officials of the WUAs will also be trained. When necessary, specific trainings on how to handle SEA/SH complaints will be delivered to E&S focal points and social specialist of the PMT by a consultant.	Project workers: as part of initial job training Officials of the WUAs: prior to implementation	Project workers of contractors and subcontractors trained by the social expert of the contractor (monitored by social specialist of the PMT) Officials of WUAs trained by Social specialist of the PMT

Payment of reparations	Contractors will investigate and make the reparations	Variable according to type of damage	Social specialist of the Construction Contractor will monitor
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The grievance mechanism will remain operational throughout the construction and operation phases of the Sub-Project. Periodic reviews of grievance records will be undertaken by DSI to identify recurring issues, evaluate the effectiveness of mitigation measures and improve stakeholder engagement practices where necessary.

ANNEX LIST

Annex 1. The General Layout Plan of the Sub-Project Area

Annex 2- EIA Not Required” Decision for the Borrow Pit

Annex 3 - National Environmental and Social Legal and Policy Framework

Annex 4 - Gap Analysis Between Local Regulations and the WB ESSs

Annex 5 - Biodiversity Species Lists

Annex 6 - Official Correspondence of the Ministry of Agriculture and Forestry

Annex 7 - Letter from the Tokat Regional Directorate for the Protecti

Annex 8 - Chance Find Procedure

Annex 9 - Environmental and Social (E&S) Screening Form