Türkiye Flood and Drought Management Project

(Project No: P179313)

Construction of Check Dams in Trabzon Province

(TFDMP-DSI-CSYP-CQS-03)

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

JUNE 2026

Rev. No.: 02

aqwadem

Project Information Data Sheet

Project Name	Construction of Check Dams in Trabzon Province
Contract No	TFDMP-DSI-CSYP-CQS-03
Reference No	TFDMP-DSI-CSYP-CQS-03
Project Duration	120 Calendar Days
Project Start and End Date	Start: [16.12.2025] – End: [15.04.2026]
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Document Control Page

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Project Name	: Construction of Check Dams in Trabzon Province
Financial Institution	: World Bank
Report Name	: Environmental and Social Management Plan

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List of Acronyms, Abbreviations and Definitions

Acronym	Full Name
ADNKS	Address-Based Population Registration System
AFAD	Disaster and Emergency Management Authority
Aqwadem	Akvadem Management Consulting Engineering Advisory Trade Ltd.
AoI	Area of Influence
C-ESMP	Contractor Environmental and Social Management Plan
CHS	Community Health and Safety
CİMER	Presidency's Communication Center
Consultant	Akvadem Management Consulting Engineering Advisory Trade Ltd.
CV	Curriculum Vitae
DOKA	Eastern Black Sea Development Agency
DSİ	General Directorate of State Hydraulic Works
E&S	Environmental and Social
EEA	European Environment Agency
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework (World Bank)
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMR	Environmental and Social Monitoring Report
ESS	Environmental and Social Standard
EUNIS	European Nature Information System
GIIP	Good International Industry Practice
GM	Grievance Mechanism
IBA	Important Bird and Biodiversity Areas
IFC	International Finance Corporation
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Areas

Acronym	Full Name
LMP	Labor Management Procedures
MGM	Meteorological General Directorate
MoAF	Ministry of Agriculture and Forestry
MoEUCC	Ministry of Environment, Urbanization and Climate Change
OHS	Occupational Health and Safety
OIPs	Other Interested Parties
Parent Project	Türkiye Flood and Drought Management Project
PAPs	Project Affected Parties
PCU	Project Coordination Unit
PIU	Project Implementation Unit
PM10	Particulate Matter with aerodynamic diameter ≤ 10 micrometers
PM2.5	Particulate Matter with aerodynamic diameter ≤ 2.5 micrometers
PPE	Personal Protective Equipment
RP	Resettlement Plan
RF	Resettlement Framework
SEA/SH	Sexual Exploitation and Abuse / Sexual Harassment
SEP	Stakeholder Engagement Plan
SIM	National Air Quality Monitoring Network
Sub-Project	Check Dam Construction Works in Trabzon Province
TurkStat	Turkish Statistical Institute
VDGs	Vulnerable/Disadvantaged Groups
WB	World Bank
WBG	World Bank Group
WBG EHS	World Bank Group Environmental, Health and Safety Guidelines
WWF	Worldwide Fund for Nature
YİMER	Foreigners Communication Center

Executive Summary

This Environmental and Social Management Plan (ESMP) has been prepared for the Construction of Check Dams in Trabzon Province (P179313) (the Sub-project) located in the Tonya, Of, and Dernekpazarı districts of Trabzon Province, Türkiye under the Türkiye Flood and Drought Management Project (P179313). The objective of the Sub-project is to reduce flood risk and sediment transport through the implementation of structural upstream watershed measures in streams where flood and sedimentation problems have been identified.

The Sub-project involves construction of seven (7) check dams. Key activities include in-stream works (construction of classical and permeable check dams), as well as excavation, foundation works, material transport, and temporary use of access roads and work areas. Works will be carried out on a rolling, site-by-site basis along selected stream sections in Trabzon Province, using existing quarries, batching plants, DSİ construction camps, and public roads, with no new permanent associated facilities or worker accommodation. Construction is planned to start in late 2026 or early 2027 and will be completed within approximately two (2) years.

The ESMP is prepared in accordance with applicable Turkish legislation, the World Bank (WB) Environmental and Social Framework (ESF), the Parent Project Environmental and Social Management Framework (ESMF), and the World Bank Group (WBG) Environmental, Health, and Safety (EHS) Guidelines, and defines mitigation, management, and monitoring measures to address potential environmental, social, occupational health and safety (OHS), and community health and safety (CHS) risks during the pre-construction and construction phases. Based on screening and baseline assessments, the Sub-project is classified as Moderate Risk for both environmental and social (E&S) aspects. No critical habitat is present within the Sub-project footprint, and no large-scale permanent resettlement is anticipated.

Potential impacts are expected to be localized, temporary, and reversible, including dust, noise, erosion, sediment disturbance, and temporary effects on water quality and aquatic habitats. Social risks relate mainly to temporary access restrictions, short-term livelihood disruption, limited land acquisition or temporary land use, and community health and safety risks, while occupational risks are associated with heavy machinery, in-stream works, hazardous materials, and weather conditions.

The ESMP defines mitigation and monitoring measures in line with Good International Industry Practice (GIIP), including dust suppression, erosion and sediment control, waste and wastewater management, traffic and site access management, biodiversity protection during in-stream works, and occupational and community health and safety measures. These measures are integrated into Contractor obligations and will be implemented through a Contractor Environmental and Social Management Plan (C-ESMP). The Contractor is responsible for implementing the ESMP, while the DSİ Project Implementation Unit (PIU) (DSİ Regional Directorate), shall supervise compliance, monitoring, and reporting.

Stakeholder engagement and information disclosure are carried out in line with ESS10 and the Parent Project Stakeholder Engagement Plan. A multi-channel Grievance Mechanism (GM), integrated with national systems, is operational throughout the Sub-project lifecycle and includes confidential, survivor-centered procedures for SEA/SH-related complaints. Following disclosure of this ESMP, a public consultation meeting will be conducted in the Sub-project area in accordance with ESS10 and the Parent Project Stakeholder Engagement Plan (SEP) to inform affected communities and other stakeholders about the Sub-project, its potential impacts, mitigation measures, and the operation of the grievance mechanism, and to receive stakeholder feedback.

With effective implementation of the ESMP, E&S risks are expected to remain low and manageable. The Sub-project will provide long-term benefits by reducing flood risks, improving sediment control, and enhancing resilience of local communities, infrastructure, and agricultural areas to extreme hydrological events.

1. Description of the Sub-Project

The Türkiye Flood and Drought Management Project (Parent Project) is a comprehensive program financed by the World Bank (WB) and implemented by the Ministry of Agriculture and Forestry (MoAF) through the General Directorate of State Hydraulic Works (DSİ) and the General Directorate of Water Management. The Parent Project aims to increase flood protection for communities in selected areas of Türkiye and to strengthen national capacity for flood and drought risk management.

Flood management activities are implemented under Component 1 of the Parent Project, which focuses on reducing flood risks in selected river basins through improvements to flood control infrastructure as well as flood monitoring, forecasting, and early warning systems, in line with approved Flood Risk Management Plans. Subcomponent 1.1 (Flood Control) supports the construction and rehabilitation of flood and sediment control structures by DSİ.

This ESMP has been prepared for Construction of Check Dams in Trabzon Province the (the Sub-project) under the Parent Project, which includes the construction of seven (7) check dams. The primary objective of the Sub-project is to reduce flood risk and sediment transport through the implementation of structural upstream watershed measures in streams where flood and sedimentation problems have been identified. Within the jurisdiction of the DSİ 22nd Regional Directorate, multiple watercourses (including main channels and tributaries) across seven (7) sub-basins located within Trabzon Province, in the Eastern Black Sea basins have been evaluated in terms of flood and sediment conditions. Based on the outcomes of these technical evaluations, upstream basin measures will be implemented in locations where technical need has been confirmed, in an appropriate number, size, and configuration.

The Sub-project covers the construction of sediment control structures (check dams) in selected sub-basins within Trabzon Province, located in the Eastern Black Sea Region of Türkiye and falling under the responsibility of the DSİ 22nd Regional Directorate in Trabzon Province. This Environmental and Social Management Plan (ESMP) has been prepared specifically for the construction of check dams in Trabzon Province, to be implemented by the relevant Provincial Directorate of DSİ and a contractor to be selected.

In Trabzon Province, the Sub-project will be implemented on Kalınçam Stream (Tonya District), Akköse Stream (Dernekpazarı District), and Bölümlü Stream (Of District). The planned works include the construction of five classical check dams and two permeable check dams. These check dams are expected to provide direct flood protection to approximately 6,300 people and indirect protection to approximately 33,100 people, thereby contributing to the protection of life, property, and local infrastructure.

The technical details, locations, and coordinates of the check dams planned under the Sub-Project in Trabzon Province are summarized in the table below.

Table 1-1 Technical Details of Check Dams in Trabzon Province[1]

	Province	District	Stream Name	Dam Type	Coordinate (ED50-6°)	
					X	Y
1	Trabzon	Of	Bölümlü Stream	Permeable	608218.00	4520370.00
2	Trabzon	Of	Bölümlü Stream	Permeable	608364.00	4520133.00
3	Trabzon	Of	Bölümlü Stream	Classical	609058.00	4518917.00
4	Trabzon	Of	Bölümlü Stream	Classical	609373.00	4518577.00
5	Trabzon	Tonya	Kalınçam Stream	Classical	519952.00	4511630.00
6	Trabzon	Tonya	Kalınçam Stream	Classical	519872.00	4511323.00
7	Trabzon	Dernekpazarı	Akköse Stream	Classical	607376.00	4516171.00

Check dams are small hydraulic structures constructed across stream channels to slow down flow velocity and retain transported sediments. They are used to reduce erosion and sediment delivery downstream, stabilize the channel bed and banks, and support flood risk reduction by improving overall channel stability and capacity.

Construction activities will be undertaken on a rolling, site-by-site basis, with works progressing sequentially along individual stream sections rather than concurrently across all locations. This approach will limit the spatial extent of disturbance at any given time and facilitate the effective implementation of environmental and social mitigation measures.

Associated facilities of the Sub-project include existing material supply sites (quarries), concrete batching plants in the region, existing construction camps operated by the DSİ 22nd Regional Directorate in Trabzon Province, and the transportation routes connecting these facilities to the Sub-project sites. The construction camps of the Regional Directorate are planned to be used as the primary operational base for the Sub-project. No worker accommodation will be provided. Construction personnel will be sourced locally and will not stay at the camps. The camps will only be used for operational purposes such as offices, storage, and equipment. All associated facilities are currently operational and are also used for other activities in the region. No new quarry development, construction of additional concrete batching plants, or establishment of permanent camp facilities is planned under the Sub-project.

Existing public roads will be used for transportation. Where necessary, minor local improvements or small temporary access pathways to the stream sections will be carried out. No new access roads are planned. Materials will be stored at the existing construction camps and, where required, temporarily at the check dam locations during construction activities, and all temporary storage areas will be cleared and reinstated following completion of the works.

Specific material sources (quarries and crushing–screening facilities) and concrete batching plants will be confirmed by the Contractor during procurement. Only licensed facilities holding valid permits and approvals will be used. The environmental and social risks of the selected facilities will be screened and managed through the Contractor's Environmental and Social Management Plan (C-ESMP) prior to their use. The selected facilities will be documented in the C-ESMP, including permit and Environmental Impact Assessment (EIA) status, locations, and haul routes, and will be subject to review and approval by the DSİ Project Implementation Unit prior to mobilization.

[1] Source: DSİ. 2021. Technical Report for the Check Dams in Trabzon Province. 22nd Regional Directorate, Türkiye

An indicative list of potential associated facilities in Trabzon and surrounding provinces is provided in Appendix 11.

1.1 Construction Schedule and E&S Preconditions

Tendering of the Sub-project construction works will commence only after the finalization of all Sub-project-specific E&S instruments, including the site-specific ESMP for the seven (7) check dams in Trabzon Province (i.e. completion of disclosure, stakeholder consultations, revision following consultations, and re-disclosure), and the Resettlement Plan (RP), and WB approval of these instruments. The final, consulted version of the ESMP shall be annexed to the bidding documents, and all relevant E&S requirements shall be incorporated into the tender documents and contracts.

Construction is planned to start in the fourth quarter of 2026 or early 2027 and is expected to be completed within approximately two (2) years from commencement.

Prior to the commencement of construction works (including site mobilization), all applicable E&S requirements shall be met. These include: (i) establishment and operationalization of the Sub-project-level grievance mechanism (GM); (ii) confirmation of E&S staffing and supervision arrangements; and (iii) where applicable, approval and implementation of the Resettlement Plan (RP), including completion of land acquisition, compensation payments, and any temporary land use arrangements, in accordance with ESS5 and the Parent Project Resettlement Framework (RF).

2. Baseline Data

This section presents baseline data for the Sub-project area and its Area of Influence (AoI), including environmental (physical), biological, and social environmental conditions.

2.1 Area of Influence

The Area of Influence (AoI) is defined to encompass all areas where the Sub-project will potentially result in environmental and social (E&S) impacts/risks. Defining the AoI ensures that baseline conditions are adequately characterized, potential risks and impacts are identified, and appropriate mitigation and management measures can be designed and implemented. The AoI has been defined based on the spatial extent of potential impacts (e.g., noise, dust, traffic, access restrictions) during construction, and includes all receptors potentially affected by these impacts. E&S considerations are assessed within a 250-meter buffer around each check dam, encompassing construction sites, access roads, and temporary or permanent storage and operational areas. Figure 2-1 illustrates this AoI for a sample check dam; the same buffer and assessment approach are applied to all check dams under the Sub-project in Trabzon. This buffer is considered sufficient to capture direct E&S impacts such as dust generation, noise and vibration, soil disturbance, and vegetation removal, CHS risks, impacts on vulnerable groups, land acquisition, economic displacement and potential disruptions to access, services, and community cohesion, consistent with typical impact distances observed for similar flood and sediment control projects. Detailed baseline data and analyses are presented in the Environmental (Appendix 8), Biodiversity (Appendix 9) and Social (Appendix 10) Baseline sections.

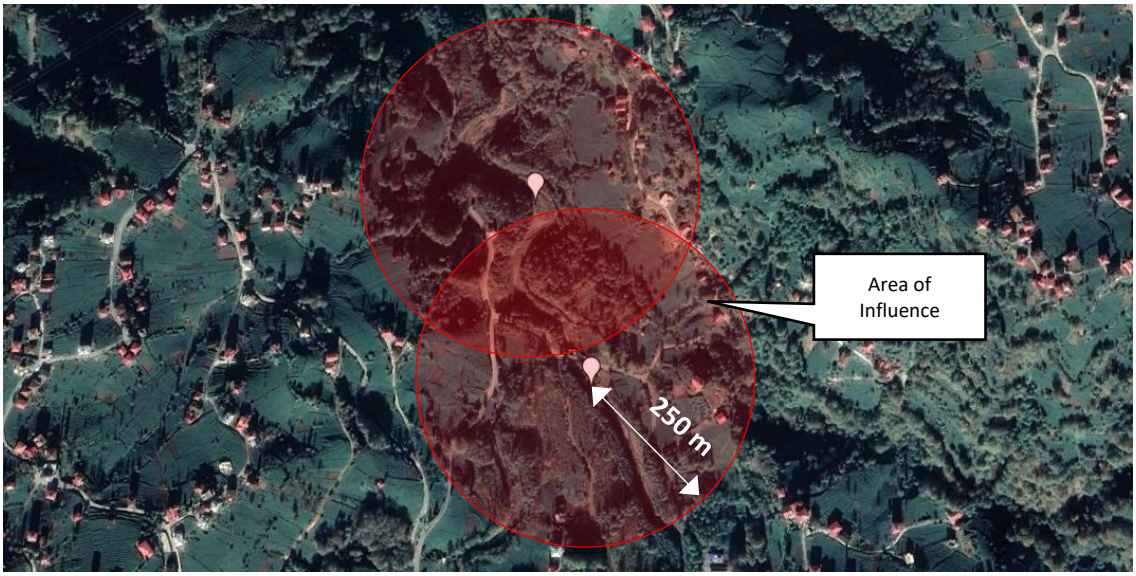

Figure 2-1 Demonstration of AoI for the Permeable Check Dams on Bölümlü Stream, Of District, Trabzon

Within this context, the settlements located within the AoI include Çataldere and Bölümlü neighborhoods in Of District, Akköse neighborhood in Dernekpazarı District, and Kalınçam neighborhood in Tonya District. These settlements comprise small rural and semi-urban neighborhoods with relatively limited population sizes, ranging from approximately 400 to 1,850 residents characterized by dispersed settlement patterns along stream corridors and valley systems. The AoI is characterized by a predominantly rural and aging population with seasonal fluctuations, agriculture-based livelihoods (mainly tea and hazelnut cultivation), and strong functional linkages between the settlements and nearby district centers, particularly Of, Dernekpazarı, and Tonya., Bölümlü and Çataldere (Of District) show semi-urban characteristics due to their proximity to the district center and regular transport connections, while Akköse (Dernekpazarı District) and Kalınçam (Tonya District) are more rural, with dispersed settlement patterns and more limited access to services (See Figure 2-2).

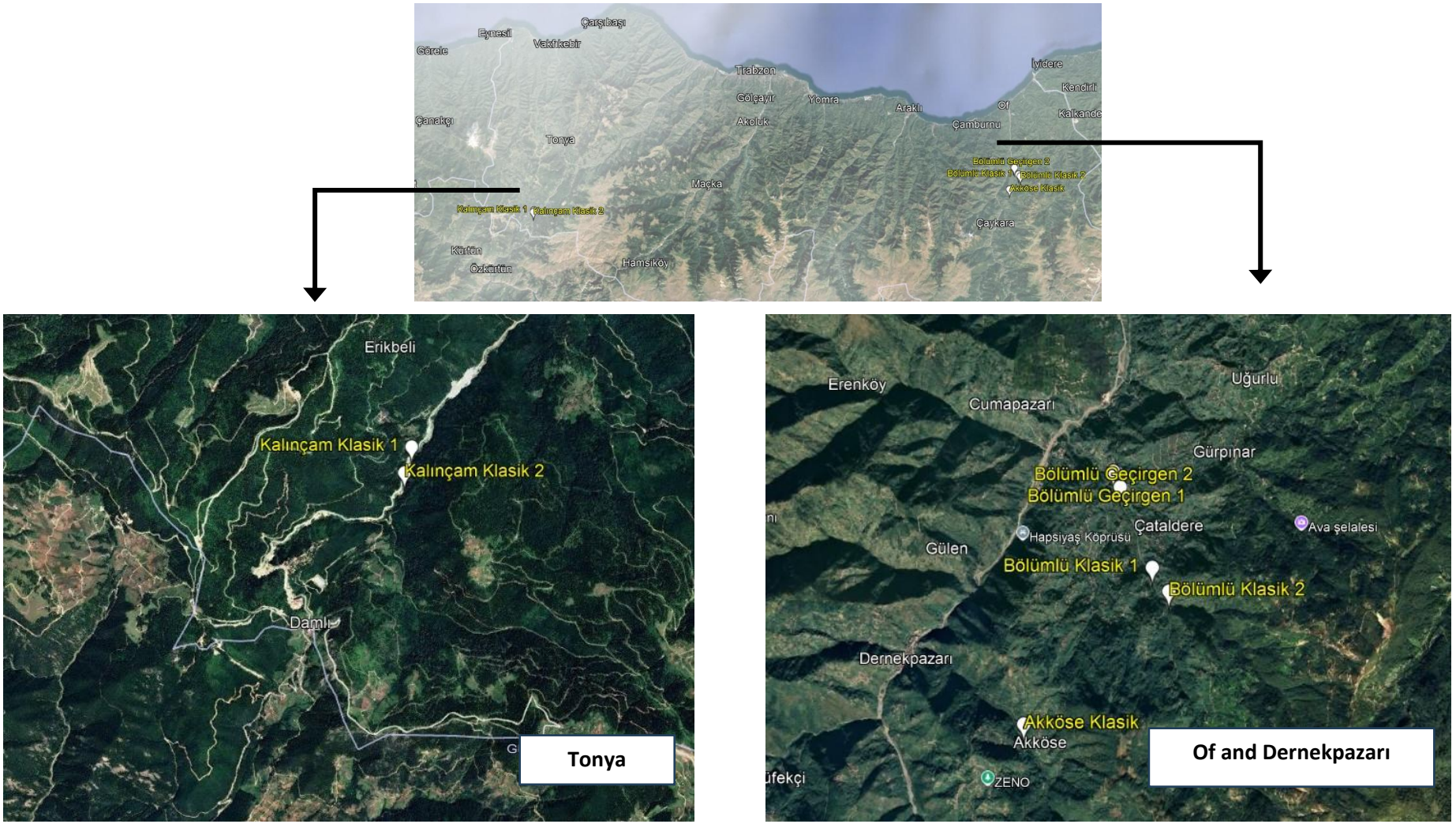

Figure 2-2 Project Components and Nearby Settlements[2]

[2] Project components are shown in white signs.
Translation → Geçirgen: Permeable, Klasik: Classical

Sensitive receptors and their proximity to Sub-project components are summarized in the table below.

Table 2-1 Sensitive E&S Receptors within the AoI

Settlement	Population[3]	Number of Households[4]	The Closest Sensitive Building and Distance[5]	Potential Impacts
Çataldere Neighborhood	398	~100	- Residential buildings: ~140 m - Primary school: ~650 m - Secondary school: ~820 m - Mosque: ~150 m	- Noise, dust, and vibration - Traffic and pedestrian safety risks - Temporary access restrictions to residences, agricultural land, and stream corridors - Limited and localized land acquisition and/or temporary land use - Temporary disturbance to agricultural activities and other household-based activities (e.g. small-scale livestock keeping, beekeeping, and garden cultivation) during construction - Community and worker health and safety risks - Temporary increase in turbidity and sediment disturbance - Localized impacts on aquatic habitats and riparian vegetation, with potentially effects on fishing activities - Risk of pollution from construction activities
Bölümlü Neighborhood	1,847	~600	- Residential buildings: ~70 m - Mosque: ~400 m	
Akköse Neighborhood	444	~100	- Residential buildings: ~80 m	
Kalınçam Neighborhood	686	~200	- Residential buildings: ~340 m	

Across the AoI, which is limited to an approximately 250 m corridor around each check dam location, residential areas, local infrastructure, and land uses are situated in close proximity to the stream sections where the works will take place. Given the small scale and site specific nature of the check dam structures, potential impacts are expected to be highly localized and confined to the immediate surroundings of each construction point. The settlements consist of rural and semi-urban neighborhoods with dispersed or semi-linear housing patterns, where residential buildings, access roads, and stream channels are closely interconnected.

At the settlement level, proximity of receptors varies. In Bölümlü, residential buildings are located as close as approximately 70 m to the proposed works, indicating relatively higher interaction potential. In Akköse and Çataldere, the closest residential buildings are approximately 80 m and 140 m, respectively, while in Kalınçam, this distance is approximately 340 m, indicating a lower level of direct interaction. Additional community receptors include mosques (e.g. ~150 m in Çataldere and ~400 m in

[3] Source: TurkStat, ADNKS, 2024.
[4] Household estimates are based on information obtained during stakeholder consultations with the settlements and neighborhood mukhtars and local residents conducted during the ESMP preparation. Household numbers are indicative and reflect typical household structures observed in the Sub-project area.
[5] Distances were estimated using Google Earth Pro.

Bölümlü) and, in the case of Çataldere, education facilities located at greater distances (~650–820 m), where direct impacts are not expected.

Settlement layout reflects a strong interaction between residential areas, local access routes, and stream corridors. While agricultural activities such as tea and hazelnut cultivation are present in the wider area, land use within the immediate footprint of the check dam structures is generally limited to stream beds, vegetated banks, and publicly owned land, with agricultural use typically located outside the direct construction footprint.

Based on the cadastral assessment, land acquisition involving privately owned land is limited to a single location (Bölümlü Permeable Check Dam-2) and involves a very small area (approximately 388 m^2), while other structures are located on forest or treasury land (approximately 18,182 m^2 forest land and 6,681 m^2 treasury/unregistered land) (See Section 3.5.6). This confirms that impacts on privately owned land are confined to one location and remain minimal in scale, and no significant impact on land use or livelihoods. These impacts will be managed through a Sub-project RP in line with ESS5 and the Parent Project RF.

The AoI also includes local access roads used for daily activities and access to services. These roads will be used during construction, creating temporary interaction between construction traffic and local communities, particularly in sections close to residential areas such as Bölümlü and Akköse.

Potential impacts are expected to be temporary and localized, including noise, dust, vibration, short term access restrictions to residences, local roads, and stream sections, and traffic related safety risks. Stream works are expected to also result in temporary increases in turbidity and localized disturbance to aquatic habitats. These impacts are expected to affect receptors located in close proximity to the works, including nearby residential buildings, local road users, land users at the single location where private land acquisition is required, and small-scale recreational or household fishing activities within the affected stream sections.

Maintaining safe and continuous access will therefore be important, particularly for vulnerable groups such as elderly persons, children, and persons with disabilities.

Vulnerable groups in the AoI include elderly and pension-dependent households, women-headed households, persons with disabilities, and economically vulnerable individuals. These groups will be more sensitive to short-term construction-related disturbances due to their reliance on local access routes and limited adaptive capacity.

Overall, the AoI reflects very localized interaction points between the Sub-project and surrounding communities, primarily limited to areas immediately adjacent to each check dam location. Residential areas, community infrastructure, and local roads within this narrow corridor are considered key social receptors and form the basis for the assessment of impacts and mitigation measures under this ESMP. The defined AoI also forms the basis for the identification of monitoring locations, stakeholder engagement activities, and grievance management processes, focusing on receptors within this corridor.

2.2 Environmental Baseline

The Sub-project is located in the Eastern Black Sea Region of Türkiye, within the Tonya, Of, and Dernekpazarı districts of Trabzon Province. The check dams are situated along tributaries of the Kalınçam, Bölümlü, and Akköse streams, which drain directly to the Black Sea (See Figure 2-3).

Figure 2-3 Satellite View of Sub-Project Area[6]

The Sub-project area is located within the Eastern Black Sea Basin and is characterized by steep mountainous topography, narrow and confined stream valleys, and short, high-gradient catchments with rapid hydrological response. Within the defined 250 m AoI, physical conditions are shaped by rugged geomorphology, volcanic and volcano-sedimentary bedrock formations, and coarse alluvial deposits along stream corridors, together with a dense drainage network that promotes rapid runoff and sediment transport.

The area experiences a humid maritime Black Sea climate with high annual precipitation and frequent short-duration, high-intensity rainfall events, resulting in active erosion, high sediment loads, and recurrent flooding in upper catchments. DSİ technical studies and field observations confirm ongoing sediment accumulation, channel infilling, bank erosion, and debris transport, which reduce channel conveyance capacity and increase flood risk for downstream settlements and agricultural lands. Vegetation cover is predominantly forested; however, steep slopes, forest openings, and agricultural use on inclines limit its effectiveness in preventing erosion during extreme rainfall events. None of the proposed check dam locations or the associated stream sections are located within designated natural heritage or protected areas. Further information is provided in Section 2.3.

Geological conditions are dominated by generally competent volcanic bedrock, providing suitable foundation conditions for in-stream structures, while alluvial valley floors and debris-prone slopes influence local ground stability and sediment supply. The region is classified as having low to moderate seismic hazard, with seismic considerations relevant primarily to the design and stability of check dams. Baseline air quality and noise conditions reflect rural to semi-rural characteristics, influenced mainly by road traffic, residential heating, and local activities, with no major industrial emission sources present.

These baseline conditions provide the reference framework for assessing potential environmental impacts and defining mitigation, monitoring, and management measures for the Sub-project. A detailed description of the environmental baseline, including methodology, data sources, and supporting technical analyses, is provided in Appendix 8.

[6] Project components are shown in red signs.
Translation → Geçirgen: Permeable, Klasik: Classical

2.3 Biological Baseline

The biological baseline for the Sub-project areas in Trabzon Province was established through a review of available literature and databases, official biodiversity inventory information, and field surveys conducted in January 2026, in line with WB ESS6 and IFC PS6 requirements.

Habitat types within the biodiversity study area were classified using the European Nature Information System (EUNIS) system and include natural running watercourses at the check dam locations, riparian broadleaved deciduous woodland (riverine and riparian variants), tea plantation areas representing modified agricultural habitats, and locally disturbed areas associated with existing access routes and small-scale land uses.

The Sub-project areas are located overlaps internationally recognized conservation designations associated with the Eastern Black Sea Mountains; however, none of the check dam locations fall within nationally designated legally protected areas, and no direct impacts on protected habitats are expected as construction activities will be confined to existing stream beds and their immediate surroundings.

Assessments of flora and fauna, including species of conservation concern and potential critical habitat triggers, indicate that no critical habitat is present within the individual check dam footprints or their immediate Areas of Influence, and that listed high-priority species are not expected to occur at the construction sites, based on January 2026 field surveys, literature screening, and official biodiversity inventory opinions.

Detailed habitat classifications, protected area screening, critical habitat assessment methodology, and supporting tables and figures for the Trabzon Sub-projects are provided in Appendix 9: Biodiversity Baseline.

2.4 Social Baseline

To ensure clarity and usability of the ESMP, a concise summary of key social baseline conditions is provided in this section. More detailed information, including consultation records and supporting data, is presented in Appendix 10.

The social baseline within the social AoI comprises a mix of rural and semi-urban settlements in Of, Tonya, and Dernekpazarı districts, characteristic of the Eastern Black Sea Region. Rural settlements exhibit dispersed or semi-linear housing patterns closely aligned with stream corridors, valley roads, and agricultural land, while neighborhoods closer to district centers display semi-urban characteristics with relatively higher population density and better access to services. Seasonal population fluctuations are observed in rural upland settlements, with reduced winter-time occupancy and increased seasonal presence linked to agricultural activities.

Livelihoods in rural areas are primarily based on small-scale agriculture, including tea and hazelnut cultivation, limited household-level fruit production, beekeeping, small-scale livestock keeping, seasonal employment, and pension income, while semi-urban settlements have more diversified livelihoods oriented toward services, trade, and wage labor linked to district centers. These livelihood systems are sensitive to temporary disruptions in access to agricultural land, stream corridors, and local roads during construction.

Land use within the social AoI is characterized by residential areas closely interwoven with small-scale agricultural plots, tea gardens, stream corridors, access roads, and utility lines. Permanent land acquisition is required at a single location (Bölümlü Permeable Check Dam-2), involving a very limited private land area, while other structures are located on forest or treasury land. Temporary land use will be required for construction activities such as access and working areas, confined to the immediate footprint of each check dam. These land-related impacts are localized and manageable and are addressed in accordance with ESS5 through the Sub-project–specific RP (see Section 3.5.6).

Community infrastructure in rural settlements is limited, with mosques and local access roads as the main receptors, while education, health, and administrative services are largely concentrated in the district centers of Of, Tonya, and Dernekpazarı. Semi-urban neighborhoods benefit from improved access to public services and function as service hubs for surrounding rural settlements. Connectivity and access are expected to be temporarily affected during periods of intense rainfall, flooding, and construction activities.

Vulnerable and disadvantaged groups (VDGs) within the AoI include elderly and pension-dependent households, low-income rural agricultural households, women-headed households, persons with disabilities, individuals with limited or informal employment opportunities, and seasonal or migrant workers, who can be more sensitive to temporary construction-related impacts. Project Affected Parties (PAPs) include residents and land users located near stream corridors and adjacent tea gardens. Potential impacts relate primarily to temporary access restrictions, localized livelihood disruptions, community health and safety risks, and limited permanent land acquisition. These will be managed in line with national legislation and the WB ESSs through subproject-specific Resettlement Plan (RP), as applicable.

Any archaeological or registered cultural heritage assets have not been specifically identified within the Sub-project footprint, and a Chance Finds Form is included in the ESMP in line with WB ESS8 (Appendix 6).

3. Environmental and Social Assessment

3.1 Overview and Assessment Approach

This section presents the assessment of potential environmental and social (E&S) impacts associated with the construction of check dams under the Sub-project in Tonya, Of, and Dernekpazarı districts, Trabzon Province. The assessment is based on approved project designs, planned construction activities, baseline E&S conditions, field observations, stakeholder consultations, applicable legislation, and WB ESSs. Potential impacts were identified and assessed using a structured approach considering activity type, receptor sensitivity, and impact magnitude. Impacts were classified as negligible, minor, moderate, or major to support risk-based mitigation planning. The detailed assessment methodology is provided in Appendix 3.

A detailed Cumulative Impact Assessment (CIA) is not required for the Sub-project components in Trabzon Province, as the proposed works are small-scale, localized, and confined to existing stream corridors. Other flood and drought management activities implemented or planned by the DSİ Regional Directorate in Trabzon, Giresun, and Rize Provinces—including check dams and other flood management works implemented under separate programs—are similar in nature and are carried out in a phased, site-specific manner along different stream sections, without significant spatial or temporal overlap. Potential construction-related impacts are temporary and reversible and can be effectively managed through standard mitigation measures defined in the ESMP. Overall, DSİ's flood and drought management interventions are expected to result in cumulative positive effects at the catchment level by reducing flood risk and improving sediment and channel management.

3.2 Scope of Assessment and Key Activities

The assessment covers in-stream works, construction and rehabilitation of hydraulic structures, operation of construction machinery, transport of materials and waste, and establishment of temporary access and work areas.

3.3 Legal, Regulatory, and World Bank E&S Requirements

The Sub-project will be implemented in compliance with applicable national legislation on environmental protection, water resources management, land acquisition, protection of cultural and natural heritage, occupational health and safety (OHS), and other relevant regulatory requirements (see Appendix 2 for the full legal framework). Under the EIA Regulation currently in force in Türkiye, reservoirs/dams are screened based on impoundment volume. Annex-1 includes dams/ponds with a lake (reservoir) volume of 10 million m^3 or more, while Annex-2 includes dams/ponds with a lake (reservoir) volume of 1 million m^3 or more. In addition, Annex-2 covers riverbed regulation works where 5 km or more of a continuously flowing stream is regulated. The proposed works under this Sub-project consist of small-scale sediment control structures (check dams) within existing stream corridors and do not create a reservoir meeting these volume thresholds; riverbed regulation, where applicable, also remains below the 5 km threshold for each continuously flowing watercourse. Accordingly, the Sub-project remains below the relevant screening thresholds of the EIA Regulation.

In addition, an official EIA opinion letter issued by the Provincial Directorate of Environment, Urbanization and Climate Change in Trabzon confirming that the Sub-project is exempt from the EIA process, is provided in Appendix 1 of this report. Nevertheless, all Sub-project activities will be carried out in accordance with the provisions of the current EIA Regulation and other applicable Turkish legislation, and environmental and social risks and impacts will be managed through this ESMP.

Furthermore, opinion letters have been received from the relevant competent authorities within the scope of the Sub-project, alongside the EIA opinion letters. These include the opinion letter of the 12th Regional Directorate of the Ministry of Agriculture and Forestry, issued within the scope of nature

protection and conservation of natural assets, and the opinion letter of the Trabzon Regional Council for the Conservation of Cultural Assets, issued within the scope of protection of cultural and archaeological heritage (Appendix 1). The opinions received do not identify any constraints, objections, or red flags that would prevent implementation of the Sub-project, provided that the specified conditions and applicable permitting requirements are duly complied with. The Sub-project works will not commence until all required permits, approvals, and written opinions have been obtained, all conditions set out in these opinions are fully complied with, and the RP has been fully implemented.

In addition to national requirements, the Project will adhere to WB ESF and its applicable Environmental and Social Standards (ESSs) and the World Bank Group (WBG) general and sector-specific Environmental, Health, and Safety (EHS) Guidelines. The ESF provides a risk-based approach to identifying and managing potential adverse E&S impacts, strengthens national E&S management systems, and builds the Borrower's capacity to manage project-related risks. Based on DSİ's E&S screening (Appendix 1), the Sub-project has been classified as "Moderate Risk" for both E&S aspects. Environmental impacts are expected to be temporary, localized, and manageable, including noise, dust, temporary increases in turbidity, and localized disturbance to vegetation and stream habitats, while social impacts are limited and include short-term access restrictions, minor traffic-related risks, and limited land acquisition at a single location. Land acquisition, temporary land use, and any associated resettlement impacts will be managed in accordance with ESS5 and the Parent Project's Resettlement Framework (RF).

The Project will also be guided by E&S instruments prepared for the Parent Project, including the Environmental and Social Management Framework (ESMF), Stakeholder Engagement Plan (SEP), Environmental and Social Commitment Plan (ESCP), Labor Management Procedures (LMP), and other related instruments. These documents define procedures, responsibilities, and implementation arrangements for E&S risk management. All Project activities will follow Good International Industry Practice (GIIP) to ensure compliance with legal and WB requirements and to mitigate E&S risks effectively throughout the Project lifecycle.

3.4 Environmental Risk and Impact Assessment

Environmental risks and impacts were assessed in relation to baseline conditions and the nature of proposed works, with emphasis on in-stream activities, earthworks, and construction traffic. Mitigation and monitoring measures corresponding to identified risks are summarized in the ESMP Matrix (Section 4)

3.4.1 Surface Water, Sediment, and Soil Impacts

Construction of check dams will involve in-stream works such as localized excavation, foundation preparation, placement of structural elements, and limited channel shaping within the stream bed. These activities are expected to result in temporary and localized disturbance of sediments, with short-term increases in turbidity and suspended solids in immediately downstream sections during active construction.

The works will be confined to existing stream channels and implemented on a site-by-site and sequential basis to minimize the spatial extent of disturbance. Considering the scale and design of the check dams, the hydrological and sediment transport characteristics of the streams, and the application of erosion and sediment control measures, impacts on surface water and soil quality are expected to be temporary, localized, and reversible. Residual impacts are therefore assessed as low in significance.

Construction activities near watercourses are sensitive to heavy rainfall events, which can increase runoff, erosion, and sediment transport. Accordingly, works will be phased, excavated materials and stockpiles will be appropriately located and protected to prevent mobilization, and construction activities will be temporarily suspended during periods of intense rainfall where there is an increased risk of uncontrolled runoff or structural instability, in line with ESMP requirements. These measures

are particularly important given the steep topography, short concentration times, and high rainfall intensity characteristic of the Eastern Black Sea catchments.

3.4.2 Aquatic Habitats and Biodiversity

Construction activities within the stream channels will temporarily disturb aquatic habitats within the active work areas. The affected stream sections in Tonya (Kalınçam Stream), Of (Bölümlü Stream), and Dernekpazarı (Akköse Stream) are characterized by seasonal flow variability, frequent sediment transport, and existing hydromorphological modification. Based on the Sub-project E&S screening and available baseline information (Appendix 9), no critical habitat has been identified within the Sub-project footprint or its immediate vicinity, and no legally protected or critical habitat-triggering aquatic species have been recorded within the planned work areas. The stream habitats within the AoI consist of small, fast-flowing freshwater systems typical of the Eastern Black Sea Region (EUNIS C2 – running waters), characterized by well-oxygenated flow and stony–gravelly substrates. These habitats support common aquatic and semi-aquatic fauna associated with riverine systems, including amphibians and aquatic-dependent species identified at the regional level (e.g. *Bufo verrucosissimus, Pelodytes caucasicus,* and *Lutra lutra* within the wider landscape), and are locally modified without exhibiting characteristics of critical or highly sensitive ecosystems.

Disturbance will be limited to the construction period and confined to the immediate check dam locations. Following completion of construction, improved channel stability is expected to contribute to more controlled flow conditions and reduced sediment mobility. Considering the scale and design of the check dams, the hydrological and sediment transport characteristics of the streams, and the application of standard mitigation measures, impacts on aquatic habitats are expected to be temporary, localized, and reversible. Overall residual impacts on aquatic habitats and biodiversity are assessed as low.

Potential interactions with local fishing practices, where relevant, were considered under the social baseline assessment and are discussed in 3.5.5.

Mitigation measures for in-stream works, including maintaining flow continuity, minimizing the duration of channel obstruction, and controlling turbidity, are detailed in the ESMP mitigation and monitoring table (Table 4-1).

3.4.3 Noise and Vibration

Temporary noise and minor vibration will be generated during construction due to the operation of heavy machinery, construction vehicles, and material handling activities. Construction works will be limited to daytime hours in accordance with national regulations and the WBG EHS Guidelines. Existing background noise levels in the project area are influenced by flowing water, local traffic, and nearby settlement activities. No blasting or piling is foreseen under the Sub-project; therefore, vibration impacts are expected to remain limited and manageable. Where construction activities are undertaken in proximity to sensitive receptors, such as residential buildings or community facilities, site-specific mitigation measures will be implemented as defined in the ESMP. Detailed noise and vibration calculations are provided in Appendix 7.

3.4.4 Air Quality

Construction-related air emissions will mainly consist of dust from excavation and material handling, as well as exhaust emissions from construction equipment. Given the limited scale of works, open terrain, and natural ventilation conditions, air quality impacts are expected to be localized and short-term. With the implementation of standard dust suppression and equipment maintenance measures, residual impacts on air quality are assessed as low and reversible. Baseline air quality data from the National Air Quality Monitoring Network indicates no pre-existing air quality constraints that would be exacerbated by construction activities. Dust control will be prioritized at locations close to residences and community facilities, particularly during dry or windy conditions. Detailed air quality impact calculations are provided in Appendix 7.

3.4.5 Hazardous Materials and Spill Prevention

Construction will involve the use and storage of fuels, oils, lubricants, and other hazardous substances that could cause localized soil and surface water contamination if spills occur or if storage is not properly managed. These risks will be controlled through designated bunded storage areas, secondary containment, availability of Safety Data Sheets, spill kits at storage and refueling locations, and worker training in spill prevention and response. With these measures in place, residual impacts are expected to be low.

3.4.6 Resource Use, Wastewater, and Waste Management

Water demand during construction will be limited to domestic use by the workforce and minor construction activities. Water will be supplied from licensed municipal systems or other authorized sources, and no abstraction from Sub-project streams is planned. No construction camps with permanent accommodation are planned. Wastewater will be managed through mobile sanitary facilities or temporary site systems and disposed of by licensed service providers. Direct discharge of untreated wastewater to surface waters will not be permitted.

Waste generation will occur only during the construction phase and will include domestic waste, packaging waste, recyclable materials, and limited quantities of hazardous waste. Hazardous wastes (e.g. waste oil, oily rags, contaminated absorbents) will be stored separately in labelled containers and transferred to licensed facilities using the required waste documentation. All waste streams will be segregated, temporarily stored in designated areas, and transferred to licensed facilities in accordance with national legislation and WBG EHS Guidelines. Impacts related to wastewater and waste management are assessed as low.

Excavated materials generated during check dam foundation works and localized in-stream activities will be managed in a controlled manner. Where technically suitable, excavated natural materials such as gravel and stone will be reused within the Sub-project, particularly for backfilling, construction of check dam structures, and associated bank stabilization and energy dissipation measures. Surplus materials that cannot be reused will be temporarily stored in designated areas within or near the construction site, ensuring that they do not obstruct natural drainage paths or access routes. Final disposal will be carried out at locations approved by the relevant authorities (e.g. municipal disposal sites), in accordance with national legislation. Measures will be implemented to prevent sediment runoff, erosion, and re-entry of materials into the stream during temporary storage, handling, and transport.

3.5 Social Risk and Impact Assessment

Social risks and impacts were assessed based on baseline social conditions, stakeholder consultations, and the nature of construction activities. The assessment is presented under the subsections on population and socio-economic conditions, employment and local economy, OHS, CHS, land use and livelihoods, land acquisition and temporary land use, labor management and labor influx, vulnerable groups and social inclusion, and cultural heritage. Mitigation measures are summarized in the ESMP Matrix (Table 4-1).

3.5.1 Population and Socio-economic Conditions

Population trends in Trabzon Province, including Tonya, Of, and Dernekpazarı districts, and the settlements in the AoI are primarily influenced by long-term socio-economic factors such as employment, education, and living conditions. While past flood events have caused localized economic losses, no significant population level change is associated with the Sub-project at the provincial or district level. The Sub-project is expected to reduce flood risk and protect residential and agricultural areas, thereby contributing positively to livelihood security at local level. The Sub-project is expected to contribute positively by reducing flood risk and protecting nearby residential and agricultural areas, and no adverse population-level impacts are anticipated. Potential short-term disturbances during

construction will be managed through the implementation of access management measures, stakeholder engagement activities, and the grievance mechanism (GM) described in the ESMP.

3.5.2 Employment and Local Economy

Up to 30 workers are expected to be employed at a single construction site during peak construction periods, reflecting the small-scale nature of the check dam works and the rolling, site-by-site implementation approach of the Sub-project. Priority will be given to local recruitment where feasible. Short-term employment opportunities and local procurement of goods and services are expected to result in positive but temporary economic effects in the project area.

No worker accommodation will be provided. Construction personnel will be sourced locally and will not stay at the camps. The camps will only be used for operational purposes such as offices, storage, and equipment. All employment practices will comply with applicable national labor legislation and the requirements of ESS2. All employment practices will comply with applicable national labor legislation and the requirements of ESS2.

3.5.3 Occupational Health and Safety

Construction activities involve inherent occupational health and safety (OHS) risks related to working near water bodies, the use of heavy machinery, manual handling, noise exposure, and adverse weather conditions. These risks will be managed through the strict adherence to national legislation and implementation of an OHS Plan prepared as part of the Contractor's Environmental and Social Management Plan (C-ESMP), in accordance with national regulations and ESS2. A task-based risk assessment will be conducted prior to construction, and contractors will be responsible for implementing preventive measures, training, supervision, and provision of personal protective equipment.

3.5.4 Community Health and Safety

In certain locations, construction activities will be carried out in close proximity to residential areas and community facilities. Potential CHS risks include traffic and pedestrian safety risks (e.g. vehicle–pedestrian interactions, particularly affecting children and elderly persons), temporary access restrictions to residential areas, agricultural lands, and community infrastructure, dust and noise exposure, and unauthorized access to construction sites, which will result in safety hazards such as injury from moving equipment, open excavations, or construction materials. These risks will be managed through the implementation of mitigation measures defined in the ESMP, including traffic management plans, physical demarcation of work areas, signage, controlled working hours, and maintenance of safe pedestrian access. With the implementation of these measures, impacts are expected to be temporary and manageable.

3.5.5 Land Use and Livelihoods

Sub-project activities are primarily confined to existing stream corridors; however, at specific check dam locations within Bölümlü and Çataldere neighborhoods (Of District), Akköse neighborhood (Dernekpazarı District), and Kalınçam neighborhood (Tonya District), minor local adjustments and short realignments of the stream bed will be undertaken in close proximity to the existing channel to facilitate the construction of small-scale check dams and associated flood protection works. Temporary land use and, where unavoidable, limited permanent land acquisition will be required for construction access, work areas, material storage, and ancillary activities associated with check dam construction. Any permanent land acquisition will be site-specific and confined to narrow strips of land immediately adjacent to the stream beds at the identified check dam locations.

In Akköse and Kalınçam as rural settlements, and Bölümlü and Çataldere with semi-urban characteristics, agricultural land use is predominantly small-scale and perennial, mainly comprising tea plantations and hazelnut orchards located on terraced slopes and typically set back from the stream corridors. In some locations, small areas of cultivated land immediately adjacent to the streams can be

temporarily affected, and in limited cases permanently affected where works extend beyond the existing channel footprint for access or structural requirements. As reflected in the social baseline and land acquisition screening, these cultivated plots and tea gardens located along stream corridors within Bölümlü, Çataldere, Akköse, and Kalınçam settlements are often already exposed to flood risk due to their proximity to stream channels.

Animal husbandry within the AoI settlements (Akköse, Kalınçam, Bölümlü, and Çataldere) is generally small-scale and supplementary, based on household-level cattle and small ruminant keeping. Grazing activities typically occur on upland pastures and non-riparian areas characteristic of the Eastern Black Sea region. As Sub-project activities are confined to existing stream corridors and do not involve grazing lands, livestock movement routes, or designated watering points, livestock-based livelihoods are not expected to be directly affected.

Small-scale recreational or household fishing activities are reported to occur in limited sections of the streams within the wider Area of Influence (AoI), particularly in parts of the Dernekpazarı and Of districts. Based on social baseline information, field observations, and stakeholder interviews, these activities have been identified in several settlements within the AoI, including Bölümlü and Çataldere (Of District) and Akköse (Dernekpazarı District), where stream corridors remain accessible to local residents. . Where present, such activities are limited in scale, seasonal in nature, and generally supplementary rather than a primary source of household income. Given the small-scale and localized nature of the check dam construction works, and the fact that works are confined to short stream sections, any disturbance to fishing activities is expected to be temporary and limited to active work areas, with no significant or long-term impacts on livelihoods.

In summary, in Bölümlü, Çataldere, Akköse, and Kalınçam settlements, expected land use and livelihood impacts are limited to temporary and localized effects, including short-term access restrictions to stream-adjacent agricultural plots and minor disturbance to agricultural activities, while fishing activities can be temporarily affected within active work areas; no direct impacts on livestock-based livelihoods are anticipated.

Any temporary land use or economic impacts—including impacts on agricultural land, structures, or livelihoods—will be managed in accordance with ESS5 through the preparation and implementation of a Sub-project–specific Resettlement Plan (RP), consistent with the Parent Project Resettlement Framework (RF) and applicable national legislation. Temporary land use will be minimized and affected land will be reinstated following construction. The limited land acquisition required does not result in physical or economic displacement and does not affect livelihoods. Compensation will be provided in accordance with ESS5 and applicable national legislation.

3.5.6 Land Acquisition and Resettlement

In accordance with ESS5, all categories of Project Affected Persons (PAPs), including formal landowners, legal users, and informal users, have been considered in the identification of land-related impacts. Informal land users will not be subject to forced eviction and will be eligible for appropriate compensation, assistance, and livelihood restoration measures, as applicable.

The Sub-project will be implemented exclusively for the construction and reconstruction of check dams within existing stream corridors. No stream rehabilitation or river training works are included under this Sub-project. Due to narrow valleys, steep slopes, and the close proximity of settlements and agricultural land to streambeds particularly in Bölümlü and Çataldere neighborhoods (Of District), Akköse neighborhood (Dernekpazarı District), and Kalınçam neighborhood (Tonya District),minor local adjustments of the stream bed will be required only at the immediate footprint of the check dam structures, in close proximity to the existing or original channel. Temporary land use and, where unavoidable, limited permanent land acquisition will be required solely for construction access, work areas, material storage, and ancillary works directly associated with the check dam structures.

Cadastral assessments conducted by the DSİ 22nd Regional Directorate indicate that land-related impacts are highly localized and limited in spatial extent, largely confined to narrow areas immediately adjacent to the check dam footprints. Based on the current screening, the Sub-project components in Trabzon Province affect a total of 10 land parcels across 7 check dam locations. Of the preliminarily identified land requirements, only one check dam requires acquisition of privately owned land, amounting to approximately 388 m². This private land requirement limited to Bölümlü Neighborhood (Of District) at the Bölümlü-2 Permeable Check Dam location, including four (4) parcels with a total private land area of 388.07 m², and does not result in significant livelihood loss (See Appendix 4).

Preliminary cadastral screening indicates that only a portion of the identified parcels is land requirements are limited to the defined footprints of the check dam structures and associated works at each location. The majority of the affected land consists of forest land (approximately 18,182 m²) and treasury/unregistered land (approximately 6,682 m²).

The cadastral screening results for the Sub-project components in Trabzon Province, including the number of affected parcels and the indicative distribution of land by ownership status (private, forest, and treasury/unregistered), are summarized in the table below.

Table 3-1 Preliminary Land Acquisition and Land Use Screening for Check Dam Sub-projects in Trabzon Province

Check Dams in Trabzon Province			No. of Parcels	Private Land (m²)	Forest Land (m²)	Treasury Land (m²)
Names of the Check Dams	1	Of / Bölümlü Neighborhood / Bölümlü-1 Permeable Check Dam	1	-	-	2,493.92
	2	Of / Bölümlü Neighborhood / Bölümlü-2 Permeable Check Dam	4	388.07	-	1,948.62
	3	Of / Bölümlü Neighborhood / Bölümlü-1 Classical Check Dam	1	-	-	2,239.19
	4	Of / Bölümlü Neighborhood / Bölümlü-2 Classical Check Dam	1	-	1,415.42	-
	5	Dernekpazarı / Akköse Neighborhood / Akköse Check Dam	1	-	2,028.09	-
	6	Tonya / Kalınçam Neighborhood / Kalınçam Damlı-1 Check Dam	1	-	5,786.46	-
	7	Tonya / Kalınçam Neighborhood / Kalınçam Damlı-2 Check Dam	1	-	8,952.53	-
	TOTAL		**10**	**388.07**	**18,182.50**	**6,681.73**

Agricultural land use in the Sub-Project area is predominantly small-scale and perennial, mainly comprising tea plantations and hazelnut orchards typically located on terraced slopes set back from the streambeds. Given that check dam works are confined to narrow footprints immediately adjacent to stream channels and that only one small private land parcel is required at a single location (Bölümlü-2), no significant or widespread impacts on agricultural land use or livelihoods occur

No construction activities requiring land acquisition, temporary land use, or access restrictions will commence until all land-related impacts are fully identified and managed through a Sub-project–specific Resettlement Plan (RP), prepared and implemented in line with the Parent Project Resettlement Framework (RF) and applicable national legislation. Permanent impacts are expected to be limited in scale and all temporarily affected land will be reinstated following construction.

3.5.7 Labor Management and Labor Influx

A Labor Management Procedures (LMP) document has been prepared for the Parent Project in accordance with ESS2 and applicable national labor legislation and will be implemented for the Sub-project works. The LMP defines employment terms and conditions, worker grievance mechanisms, codes of conduct, and monitoring arrangements to manage labor-related risks. In addition, the Contractor will prepare a site-specific Labor Management Plan as part of the C-ESMP, in line with the Parent Project LMP.

The construction site facilities are planned to include offices, storage areas, and basic utility services. No worker accommodation camp will be established under the Sub-project. Workers will be accommodated in nearby settlements or will commute daily to the work sites. Therefore, no significant labor influx is expected. As workers will be accommodated within existing settlements or commute daily, no additional pressure on local services or community infrastructure is expected, and no significant CHS risks related to worker presence are anticipated.

The workforce is expected to comprise mainly skilled and semi-skilled construction workers (e.g. operators, construction workers, engineers, and supervisors), with a limited number of unskilled workers. The total number of personnel is expected to be approximately up to 30 during peak construction. The majority of the workforce will be recruited locally, and no child or forced labor will be permitted.

Given the nature of the works and the proximity of certain construction areas to settlements and agricultural land, potential labor-related risks include:

- OHS risks associated with in-stream works, excavation, and use of heavy machinery,
- Risks of slipping, falling, or drowning due to working in and around watercourses,
- Traffic and safety risks during the movement of construction vehicles and equipment,
- Worker–community interaction risks in areas where works are carried out close to residential areas,
- Risks related to inappropriate worker behavior, including Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH), particularly in settlements located in close proximity to the works.

All labor and working conditions will be managed in accordance with the Parent Project LMP, ESS2, and national legislation. The Contractor will implement OHS procedures, provide appropriate personal protective equipment (PPE), and ensure worker training and supervision. A worker grievance mechanism will be established and maintained, and Codes of Conduct, including provisions on respectful behavior and prevention of SEA/SH, will be communicated to all workers through induction and refresher training and enforced through contractual measures. Relevant mitigation measures are included in the ESMP mitigation and monitoring framework.

3.5.8 Vulnerable Groups and Social Inclusion

The total population of the settlements within the Sub-project AoI is approximately 3,375 people, based on available data for Bölümlü, Çataldere, Akköse, and Kalınçam, derived from the most recent available TurkStat data (2024). Vulnerable groups, including elderly persons, persons with disabilities, female-headed households, and economically disadvantaged individuals, are present within these settlements.

Given the varying distances between settlements and construction areas, temporary impacts such as access restrictions to residences, agricultural land, stream corridors, and local roads, increased traffic, noise, and disturbance can affect nearby receptors, particularly in locations where residential buildings and community receptors are situated closer to the works (e.g. approximately 70–140 m in Bölümlü, Akköse, and Çataldere). In more distant locations (e.g. Kalınçam at approximately 340 m), interaction with construction activities is expected to be more limited. Potential impacts remain localized and are not expected to result in widespread or significant effects on livelihoods or access to essential services.

Accordingly, construction planning and site-specific arrangements will take into account the needs of vulnerable groups. The mitigation measures defined in the ESMP will be implemented to ensure that vulnerable groups are not disproportionately affected by Sub-project activities.

3.5.9 Cultural Heritage

The planned check dams are small-scale, in-stream structures with limited physical footprints, and no registered cultural heritage assets have been identified within the confirmed Sub-project footprints. Accordingly, no direct impacts on known tangible cultural heritage are anticipated.

Official correspondence from the Trabzon Regional Board for the Conservation of Cultural Assets (Appendix 1) provides the names of registered cultural heritage assets and protection areas within the wider provincial context. Review of this information confirms that the listed assets and their protection zones are not located within or in close proximity to the Sub-project sites, and therefore no direct interaction with known protected cultural heritage areas is expected.

Nevertheless, the correspondence confirms that site-specific verification and prior approval are required where Sub-project works can coincide with registered cultural heritage assets or their protection areas, in accordance with applicable national legislation. Construction works will not commence at any location until site-specific verification is completed and the written opinion and any conditions issued by the Trabzon Regional Board for the Conservation of Cultural Assets have been obtained and fully complied with, in line with Law No. 2863 on the Protection of Cultural and Natural Assets.

Given the nature of excavation and in-stream works, a low-probability risk of chance finds cannot be fully excluded. Any such finds would be temporary and manageable through implementation of the Chance Finds Form (Appendix 6). With these measures in place, the residual impact significance is assessed as negligible.

The Sub-project area forms part of a broader cultural landscape characterized by living intangible cultural heritage typical of the Eastern Black Sea Region. Due to the localized, short-term, and site-specific nature of the works, no impacts on intangible cultural heritage practices are expected.

4. ESMP Matrix: Risks and Impacts, Mitigation Measures, Monitoring

This section presents the ESMP Matrix, which translates the findings of the E&S risk and impact assessment into specific, actionable management and mitigation measures. The ESMP Matrix consolidates identified environmental and social risks and potential impacts associated with the Sub-project and defines the corresponding mitigation actions, monitoring measures, institutional responsibilities, performance indicators, and reporting arrangements.

The ESMP Matrix is intended to guide the effective management of E&S risks during the construction phase and to ensure that mitigation measures are implemented in a timely and verifiable manner. It functions as a practical tool for contractors, supervising engineers (DSİ Regional Directorate), and the implementing agency to support compliance with national legislation, WB ESF, and GIIP, and to integrate E&S considerations into routine construction planning, execution, and supervision.

In locations where construction works are carried out within the defined AoI and where interaction with nearby receptors can occur (e.g. Bölümlü, Akköse, Çataldere, and Kalınçam neighborhoods), site-specific mitigation and monitoring measures will be implemented through the C-ESMP. These locations include areas where residential buildings are situated at varying distances from the works, ranging from approximately 70 m in Bölümlü, 80 m in Akköse, and 140 m in Çataldere, to around 340 m in Kalınçam. The C-ESMP will define location-specific measures, including control of noise and dust, maintenance of safe and continuous access to residences and local roads, clear demarcation of construction areas, and proactive communication with nearby communities. Enhanced supervision and more frequent monitoring will be applied at locations with relatively higher interaction potential to ensure effective implementation of mitigation measures, as reflected in the table below in Table 4.1.

Table 4-1 ESMP Matrix, Risks and Effects, Mitigation Measures and Monitoring

Phase	Topic	Applicable Standard	E&S Risks / Impacts	Mitigation Measures				Monitoring and Reporting		
				Risk / Potential Impact Level	Mitigation and Management Measures	Residual Impact Significance	Responsibility	Parameter	Monitoring Period	Monitoring Responsibility
Pre-Construction	Permits and Regulatory Approvals	- WB ESF - ESS1 – Assessment and Management of Environmental and Social Risks and Impacts - ESS8 – Cultural Heritage (where applicable) - Parent Project ESMF - Applicable national legislation and secondary regulations	Commencement of construction activities without obtaining all required national and local permits and approvals can result in legal non-compliance, delays, suspension of works, reputational risks, and potential E&S harm.	Moderate	All permits, approvals, and clearances required under national legislation for the Sub-project shall be identified and obtained prior to the commencement of construction works. This includes, as applicable, environmental permits, construction-related approvals. Construction activities shall not commence until all required permits and approvals are obtained and documented. Permit conditions shall be reviewed and incorporated into the approved C-ESMP and implemented throughout construction.	Negligible	Contractor Review, approval and supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- List of required permits and approvals - Availability of valid permits prior to construction - Evidence of incorporation of permit conditions into the C-ESMP	Once, prior to commencement of construction	DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Pre-Construction	E&S Management System	- WB ESF - ESS1 – Assessment and Management of Environmental and Social Risks and Impacts - WBG EHS Guidelines - Parent Project ESMF - Turkish Environmental Law No. 2872	Inadequate identification and management of E&S risks associated with Sub-project activities.	Moderate	The Contractor shall prepare, submit to DSİ PIU for approval, and implement a site-specific C-ESMP prior to commencement of construction. The C-ESMP shall be consistent with this ESMP, applicable WB ESSs, and national legislation, and shall include at least the following site-specific management plans and procedures: - OHS management plan including risk assessment and emergency preparedness and response plan - CHS management plan including traffic management plan - Waste management plan - Transport management plan - Chance finds procedure (see Appendix 6) - Chemicals and hazardous materials management plan - Water supply and wastewater management plan - Labor Management Plan (prepared based on the LMP of the Parent Project) including Code of Conduct, Grievance mechanism (GM) including pathways for SEA/SH grievances and GM for both community and workers . No construction works shall commence until the C-ESMP is approved by DSİ PIU.	Minor	Implementation: Contractor Review, approval and supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Approval status of C-ESMP - Availability of plans	Once prior to commencement of construction and continuous	DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Pre-Construction	E&S Staffing	- WB ESF - ESS1 – Assessment and Management of Environmental and Social Risks and Impacts - ESS2 – Labor and Working Conditions - WBG EHS Guidelines - Parent Project ESMF - Parent Project LMP - Turkish Occupational Health and Safety Law No. 6331 and relevant regulations	Insufficient availability of qualified environmental, social, and OHS personnel on site.	Moderate	The Contractor shall employ at least one full-time OHS Specialist (Class A or B licence) and one Environmental Officer prior to site mobilization. CVs of the proposed personnel shall be submitted to DSİ PIU for review and approval. Social responsibilities can be assigned to the Environmental Officer only if the proposed CV fully meets the Social Officer requirements and receives written approval from DSİ PIU; otherwise, a Social Officer shall be employed on a part-time or full-time basis to ensure implementation of the ESMP's social requirements. In all cases, the Contractor's proposed personnel and organizational arrangements shall be finalized during the contract negotiation stage, prior to the award of the construction contract. Approved personnel shall be present on site throughout the construction period, and any replacement shall be subject to prior approval by DSİ PIU.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Number of E&S staff; approved CVs; site presence records	Once prior to mobilization As needed in case of staff changes	DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Pre-Construction	Seismic Risk	- WB ESF - ESS4 – CHS - WBG EHS Guidelines - Parent Project ESMF - Turkish Building Earthquake Code (2018)	Potential safety risks to workers arising from seismic events.	Minor	Temporary and ancillary facilities to be used during the Sub-project shall be designed, installed, and operated in accordance with the Turkish Building Earthquake Code (2018) and relevant national standards. Seismic risk considerations shall be integrated into the site-specific Emergency Preparedness and Response Plan, including procedures for evacuation, assembly points, and communication following an earthquake. All workers shall be informed of earthquake response procedures during induction training prior to commencement of construction.	Negligible	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Emergency plan content; training records	Once prior to commencement of construction	DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Pre-Construction	Labor and Working Conditions	- WB ESF - ESS1 – Assessment and Management of Environmental and Social Risks and Impacts - ESS2 – Labor and Working Conditions - WBG EHS Guidelines - Parent Project ESMF - Parent Project LMP - Turkish Occupational Health and Safety Law No. 6331 and relevant regulations	Inadequate management of labor conditions, including lack of formal employment terms, excessive working hours, or absence of grievance mechanisms, potentially leading to worker dissatisfaction or disputes.	Moderate	Labor and working conditions shall be managed in accordance with ESS2, national labor legislation, and the Parent Project Labor Management Procedures. A site-specific Labor Management Plan shall be prepared by the Contractor and submitted to the DSI's approval Written employment contracts shall be provided to all workers, clearly defining terms and conditions of employment. Child labor and forced labor shall be strictly prohibited. A worker-specific Grievance Mechanism shall be established and communicated to all workers prior to commencement of construction. Employment practices under the Sub-project shall be based on the principles of non-discrimination and equal opportunity, irrespective of gender, age, ethnicity, disability, or other personal characteristics, in line with ESS2 and national legislation. All workers shall be informed of the Code of Conduct, which includes provisions on respectful behavior, prevention of harassment, and prohibition of SEA/SH.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Availability of approved Labor Management Plan - Records of signed employment contracts - Establishment and functionality of worker Grievance Mechanism - Number and type of worker grievances received and resolved	Once prior to construction and periodically during construction	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)

Phase	Topic	Applicable Standard	E&S Risks / Impacts	Mitigation Measures				Monitoring and Reporting		
				Risk / Potential Impact Level	Mitigation and Management Measures	Residual Impact Significance	Responsibility	Parameter	Monitoring Period	Monitoring Responsibility
								- Records confirming prohibition of child and forced labor		
Pre-Construction	Worker Training	- WB ESF - ESS2 – Labor and Working Conditions - ESS4 – CHS - WBG EHS Guidelines - Parent Project LMP - Parent Project ESMF - Turkish Occupational Health and Safety Law No. 6331 and relevant regulations	Workers' lack of awareness of E&S, OHS, and community-related risks.	Moderate	All workers shall receive mandatory induction training prior to site mobilization, covering occupational health and safety, environmental protection, community health and safety, the Code of Conduct, and the worker Grievance Mechanism, in line with ESS2 and ESS4. Refresher trainings shall be planned and delivered periodically during construction, as required.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Training attendance lists; training materials; number of trainings	Prior to site mobilization Monthly during construction	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Pre-Construction	OHS (Planning and Documentation)	- WB ESF - ESS2 – Labor and Working Conditions - WBG EHS Guidelines - Parent Project LMP - Parent Project ESMF - Turkish Occupational Health and Safety Law No. 6331 and relevant regulations	Health and safety risks arising from absence of medical screening, hazard identification, and emergency preparedness.	Moderate	Prior to commencement of construction, a site-specific OHS Plan, risk assessment, and Emergency Preparedness and Response Plan shall be prepared and implemented throughout the life of the project, in accordance with ESS2, national OHS legislation, and the WBG EHS Guidelines. Medical fitness examinations shall be conducted for all workers before site entry.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Medical certificates; approved risk assessment; emergency plan; OHS plan	Once prior to commencement of construction	DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Pre-Construction	Land Acquisition and Access	- WB ESF - ESS5 – Land Acquisition, Restrictions on Land Use and Involuntary Resettlement - Parent Project RF - Parent Project ESMF - Turkish Expropriation Law No. 2942	Limited and localized land acquisition, temporary land occupation, and access restrictions can be required for check dam construction, access routes, storage areas, and ancillary activities within narrow stream corridors and adjacent land parcels.	Moderate	The Sub-project shall be implemented within the approved design footprint to the extent practicable. Where unavoidable, any permanent or temporary land acquisition, land use restriction, or loss of access required for the Sub-project—including impacts on agricultural lands, residential or non-residential structures, auxiliary facilities, public or private land, and associated assets—shall be managed in full compliance with ESS5, the Parent Project RF, and applicable national legislation. All affected persons, including formal landowners, legal users, and informal users or occupants, shall be identified through site-specific surveys and consultations. Informal users without formal land tenure shall not be subject to forced eviction and shall be provided with appropriate assistance and livelihood restoration measures, as applicable, in line with ESS5 principles. A site-specific RP will be prepared, disclosed, and implemented prior to commencement of construction activities requiring land entry. All affected persons, including formal landowners, legal users, and informal users or occupants, shall be identified through site-specific surveys and consultations. No construction activities requiring access to affected land shall commence until all compensation, assistance, and livelihood restoration measures defined in the approved RP have been fully implemented. Temporary access to properties, agricultural parcels, irrigation systems, and public infrastructure shall be maintained to the extent practicable during construction. All land-related grievances shall be addressed through the Sub-project-level GM.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Confirmation of approved project footprint boundaries - Identification records of affected formal landowners, legal users, and informal users - Records of consultations conducted with affected persons, including informal users - Availability and approval status of the RP - Records confirming completion of compensation, assistance, and livelihood restoration measures prior to land entry - Records of temporary land use agreements (if any) - Records of land-related grievances and resolution status	Prior to commencement of construction and throughout RP implementation, as applicable	DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Pre-Construction	Stakeholder Engagement and Information Disclosure (Pre-construction)	- WB ESF - ESS10 – Stakeholder Engagement and Information Disclosure - Parent Project SEP - Parent Project ESMF - Turkish Right to Information Law No. 4982	Inadequate stakeholder engagement prior the Sub-project works can lead to community grievances, safety concerns, misunderstandings, delays, and reduced community acceptance of construction activities.	Moderate	Stakeholder engagement activities shall be conducted during the pre-construction, construction, and operation phases in accordance with ESS10 and the Parent Project Stakeholder Engagement Plan. This shall include organizing consultation meetings and conducting regular information sharing with local authorities, mukhtars, relevant institutions, and affected communities to inform them about planned activities, construction schedules, potential impacts, and mitigation measures. A Grievance Mechanism (GM) accessible to all stakeholders shall be established prior to commencement of construction and effectively operated throughout the Project lifecycle. Information on the GM shall be disclosed to stakeholders, and effective responses shall be ensured, including for land acquisition–related issues such as land valuation or boundary disputes. All landowners or asset holders (including those related to agricultural products, trees, and structures) within the sub-project site shall be informed at an early stage, in a clear and understandable manner, about the land acquisition process, compensation entitlements, and legal rights.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Number of stakeholder engagement meetings conducted - Number of grievances and feedback received Grievance resolution rate	Prior to commencement of construction and during pre-construction phase	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)

Phase	Topic	Applicable Standard	E&S Risks / Impacts	Mitigation Measures				Monitoring and Reporting		
				Risk / Potential Impact Level	Mitigation and Management Measures	Residual Impact Significance	Responsibility	Parameter	Monitoring Period	Monitoring Responsibility
					Stakeholder views, concerns, and suggestions shall be recorded, documented, and, where feasible, integrated into Project planning and implementation.					
Construction	E&S Monitoring and Reporting	- WB ESF - ESS1 – Assessment and Management of Environmental and Social Risks and Impacts - ESS10 – Stakeholder Engagement and Information Disclosure - WBG EHS Guidelines - Parent Project ESMF - Parent Project SEP - Parent Project LMP - Turkish Environmental Law No. 2872 - Turkish Occupational Health and Safety Law No. 6331 and relevant regulations - Turkish Labor Law No. 4857	Inadequate consolidation, reporting, or review of E&S monitoring results and incidents.	Moderate	E&S performance shall be monitored throughout construction in accordance with the approved ESMP and C-ESMP. The Contractor shall prepare and submit regular (monthly) E&S monitoring reports to the DSİ PIU, summarizing compliance status, identified non-compliances, corrective actions, and stakeholder grievances. Serious incidents, including fatalities, major accidents, or significant environmental impacts, shall be reported to the DSİ PIU immediately and to WB in accordance with the Project incident reporting procedures. The DSİ PIU shall consolidate E&S monitoring information and submit quarterly E&S Progress Reports to WB in accordance with the Parent Project ESMF and WB reporting requirements.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Availability of E&S monitoring reports - Records of incident notifications - Availability and submission of quarterly E&S Progress Reports to WB	Monthly (site-level monitoring) Quarterly (project-level E&S reporting to WB)	Contractor (site-level monitoring and reporting) / DSİ PIU (consolidation and quarterly reporting to the World Bank)
Construction	Localized Riverbed Excavation at Check Dam Sites	- WB ESF - ESS1 – Assessment and Management of Environmental and Social Risks and Impacts - ESS3 – Resource Efficiency and Pollution Prevention and Management - ESS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources - WBG EHS Guidelines - Parent Project ESMF - Turkish Environmental Law No. 2872	Increased turbidity, sediment dispersion, and localized disturbance of aquatic habitats.	Moderate	Limited to localized excavation at check dam foundations only, riverbed excavation, channel modification, and construction of hydraulic structures shall be carried out strictly in accordance with approved designs and method statements. Works shall be phased and, where practicable, scheduled during low-flow periods to minimize in-stream disturbance. Temporary sediment and erosion control measures shall be implemented to limit turbidity and downstream impacts as well as transport of sediment downstream. Concrete works shall be managed to prevent contamination of surface waters, and disturbed areas shall be stabilized promptly following completion of works. Site-specific method statements for in-stream works shall be prepared and approved prior to commencement of works. This is particularly relevant for check dam locations within the AoI, where works are carried out in defined sections of stream corridors.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Excavated area (m^2) - Volume (m^3) - Turbidity observations	Weekly during construction and during active earthworks	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Construction	Surface Water Pollution and Sediment Control	- WB ESF - ESS3 – Resource Efficiency and Pollution Prevention and Management - ESS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources - WBG EHS Guidelines - Parent Project ESMF - Turkish Environmental Law No. 2872	Increased surface water pollution and sediment load in streams and downstream water bodies due to excavation, earthworks, material storage, and runoff during construction, potentially affecting water quality and aquatic habitats.	Moderate	Construction activities near streams shall be planned and implemented to minimize the risk of surface water pollution, increased sediment loads, and erosion, including risks associated with heavy rainfall events and localized flooding. Appropriate sediment and erosion control measures, such as silt fences, diversion channels, staged works, and temporary drainage arrangements, shall be applied where necessary. Excavated materials shall be stored away from watercourses, and construction activities shall be suspended during periods of intense rainfall where there is a heightened risk of runoff, erosion, or slope instability. Concrete washout and curing water shall not be discharged into watercourses. All measures shall be implemented in compliance with applicable national legislation and the WBG EHS Guidelines.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Presence and condition of sediment and erosion control measures - Evidence of sediment runoff or surface water pollution - Proper location and protection of excavated material stockpiles - Records of work suspension during heavy rainfall (if applicable)	Weekly during construction and during active earthworks After heavy rainfall events	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Construction	Aquatic Environment and In-Stream Habitat	- WB ESF - ESS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources - ESS3 – Resource Efficiency and Pollution Prevention and Management - WBG EHS Guidelines - Parent Project ESMF - Turkish Environmental Law No. 2872	Temporary disturbance of aquatic habitats and fauna due to in-stream works, sediment mobilization, flow alteration, and construction of check dams.	Moderate	In-stream construction activities shall be minimized in extent and duration and implemented in accordance with approved designs. Where practicable, works shall be scheduled during low-flow periods. Measures shall be applied to maintain continuous flow and prevent complete obstruction of the channel. Sediment control measures shall be used to limit turbidity and downstream impacts, and disturbed stream sections shall be stabilized promptly following completion of works.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Visual turbidity and sediment plume observations upstream and downstream of work areas and at downstream sensitive reaches - Continuity of flow through in-stream works and completed check dams - Evidence of uncontrolled sediment release or channel blockage - Condition and stabilization of disturbed stream sections	During active in-stream works	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)

Phase	Topic	Applicable Standard	E&S Risks / Impacts	Mitigation Measures				Monitoring and Reporting		
				Risk / Potential Impact Level	Mitigation and Management Measures	Residual Impact Significance	Responsibility	Parameter	Monitoring Period	Monitoring Responsibility
Construction	Land and Livelihood Impacts and Management Measures	- WB ESF - ESS5 – Land Acquisition, Restrictions on Land Use and Involuntary Resettlement - ESS4 – CHS - ESS10 – Stakeholder Engagement and Information Disclosure - Parent Project RF - Parent Project ESMF - Turkish Soil Conservation and Land Use Law No. 5403	Temporary and localized impacts on agricultural lands and other land parcels located along stream corridors, including impacts on crops, irrigation channels, and farm access routes, resulting in temporary disruption to agricultural production, restricted access to agricultural plots and adjacent land, and disturbance to small-scale household economic activities located near stream corridors. Temporary and localized impacts on small-scale or household-level fishing activities due to in-stream works and temporary access limitations, noting that fishing activities are limited in scale and do not constitute a primary livelihood activity within the Sub-project area.	Moderate	Construction boundaries shall be clearly defined and demarcated to prevent encroachment onto adjacent agricultural lands, structures, and livelihood assets. This is particularly relevant in settlements within the AoI, including Bölümlü, Çataldere, Akköse, and Kalınçam, where residential areas and cultivated plots are located within the defined AoI (approximately 70–340 m from the works). Access to agricultural parcels, gardens, irrigation systems, and small-scale fishing areas along the project streams shall be maintained to the extent practicable during construction. If temporary restrictions on fishing activities are unavoidable, local users shall be informed in advance and access shall be restored as soon as possible. Wherever feasible, works shall be planned to avoid peak agricultural periods, particularly for tea and hazelnut cultivation, which are the main sources of livelihood in the area. Construction works in agricultural areas shall be scheduled, to the extent practicable, outside peak cultivation and harvesting periods (e.g. tea and hazelnut seasons). Temporary impacts on land use shall be minimized in both spatial extent and duration, particularly in areas where land parcels are small and located adjacent to stream corridors. Any damage to crops, irrigation systems, land parcels, structures, or other livelihood assets resulting from construction activities shall be recorded and addressed in accordance with the Sub-project RP, prepared in line with ESS5, the Parent Project RF, and applicable national legislation. Compensation and livelihood restoration measures shall be implemented. If any previously unidentified land acquisition, temporary land use, or economic displacement impacts arise during construction, these shall be managed through the update or preparation of the RP, as appropriate, prior to continuation of the relevant construction activities. All land temporarily affected during construction shall be restored to its pre-construction condition once the works are completed. Compensation and assistance measures shall be completed before land is accessed. The implementation of the Resettlement Plan shall be monitored throughout construction to ensure that compensation has been provided prior to impacts and to address any additional land or livelihood impacts that can arise, including through the grievance mechanism. Any livelihood-related complaints or concerns shall be addressed in a timely manner through the Sub-project-level grievance mechanism.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Boundary demarcation records - Damage records - Compensation records - Access management records - Records of access arrangements maintained during construction - Livelihood-related grievances and resolution status - RP preparation, disclosure, and implementation status (where applicable) - Grievance records	Monthly and as required following complaints	DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Construction	Resource Use and Efficiency	- WB ESF - ESS3 – Resource Efficiency and Pollution Prevention and Management - WBG EHS Guidelines - Parent Project ESMF - Turkish Environmental Law No. 2872	Inefficient use of construction materials, fuel, water, and energy can result in unnecessary resource consumption, increased emissions, waste generation, and indirect environmental impacts.	Minor	Construction activities shall be planned and implemented to promote efficient use of natural resources, including water, fuel, construction materials, and energy, in accordance with ESS3 and the WBG EHS Guidelines. Unnecessary idling of equipment, excessive material losses, and uncontrolled water use shall be avoided. Material reuse and optimization shall be applied where practicable without compromising technical, environmental, or safety requirements.	Negligible	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Records of fuel and water consumption - Evidence of material loss reduction (e.g. controlled concrete use, minimized waste) - Site inspection reports of equipment idling and water use practices	Monthly during construction	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Construction	Noise and Vibration	- WB ESF - ESS4 – CHS - WBG EHS Guidelines - Parent Project SEP - Parent Project ESMF - Turkish Environmental Law No. 2872	Disturbance to nearby sensitive receptors.	Moderate	Construction activities shall be limited to daytime hours (07:00–19:00). High-noise activities shall be scheduled to avoid sensitive periods. Equipment shall be properly maintained and fitted with silencers. Advance notice shall be given to receptors located within the AoI, including residential buildings and community facilities in Bölümlü, Çataldere, Akköse, and Kalınçam settlements, prior to activities likely to generate elevated noise levels. Transportation of construction materials shall be limited to daytime hours and planned to avoid sensitive periods. Vehicle speeds shall be controlled, unnecessary idling of trucks shall be prohibited, and designated transport routes shall be used to minimize disturbance to nearby receptors. Given the separation distances between construction areas and receptors (approximately 70 m in Bölümlü, 80 m in Akköse, 140 m in Çataldere, and 340 m in Kalınçam), noise impacts are expected to be localized and limited; scheduling adjustments and standard noise control measures shall be applied as necessary. All complaints shall be addressed promptly through the Sub-project-level Grievance Mechanism (GM).	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Noise complaints - Site inspection reports	Monthly As required in response to complaints	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)

Phase	Topic	Applicable Standard	E&S Risks / Impacts	Mitigation Measures				Monitoring and Reporting		
				Risk / Potential Impact Level	Mitigation and Management Measures	Residual Impact Significance	Responsibility	Parameter	Monitoring Period	Monitoring Responsibility
Construction	Dust and Air Quality	- WB ESF - ESS3 – Resource Efficiency and Pollution Prevention and Management - ESS4 – CHS - WBG EHS Guidelines - Parent Project ESMF - Turkish Environmental Law No. 2872	Dust generation from excavation, transportation, and material handling.	Minor	Construction activities shall be managed to minimize dust and air quality impacts on workers and nearby receptors within the AoI. Exposed surfaces and access roads shall be regularly watered during dry and windy conditions, and haul roads shall be maintained to reduce dust generation. Trucks carrying construction materials shall be covered during transport, and vehicle speeds shall be limited on access roads. Material handling activities shall be avoided during strong winds, and works shall be temporarily suspended under extreme conditions. Water spraying shall be applied on unpaved roads and active work areas during dry conditions. Vehicle speeds shall be controlled to reduce dust emissions. Dust suppression shall be applied along transport routes and work areas associated with check dam construction, including locations within Bölümlü, Akköse, Çataldere, and Kalınçam settlements. Vehicles and machinery shall be properly maintained to reduce exhaust emissions, and unnecessary idling shall be avoided. All equipment shall comply with applicable emission standards, and emissions shall remain below applicable regulatory thresholds. Given the separation distances between construction areas and receptors (approximately 70 m in Bölümlü, 80 m in Akköse, 140 m in Çataldere, and 340 m in Kalınçam), dust impacts are expected to be localized and limited; dust suppression measures shall be applied throughout construction and adjusted based on site conditions. These measures shall be implemented in accordance with national legislation and the WBG EHS Guidelines.	Negligible	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Visual dust emissions; dust complaints; dust suppression logs	Daily (visual); continuous during active works	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Construction	Water Use and Wastewater Management	- WB ESF - ESS3 – Resource Efficiency and Pollution Prevention and Management - WBG EHS Guidelines - Parent Project ESMF - Turkish Environmental Law No. 2872	Pollution risks from improper management of domestic wastewater generated by the workforce.	Minor	Water required for construction activities shall be sourced from legally permitted supplies and used efficiently to avoid unnecessary consumption. No untreated wastewater, including domestic wastewater from construction camps or wash water from equipment, shall be discharged into surface waters or drainage channels. Temporary sanitation facilities shall be provided at construction sites and regularly maintained, and wastewater shall be managed in accordance with national legislation and the WBG EHS Guidelines.	Negligible	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Wastewater service records	Monthly	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Construction	Waste Management	- WB ESF - ESS3 – Resource Efficiency and Pollution Prevention and Management - WBG EHS Guidelines - Parent Project ESMF - Turkish Environmental Law No. 2872	Environmental pollution due to improper handling or disposal of domestic and hazardous waste.	Moderate	All non-hazardous and hazardous wastes generated during construction shall be managed in accordance with ESS3, national legislation, and the WBG EHS Guidelines. Waste shall be segregated at source, stored in designated and clearly labelled areas, and transported by licensed contractors to authorized treatment or disposal facilities. Open dumping and open burning of waste shall be strictly prohibited. Waste generation, storage, and disposal records shall be maintained throughout construction.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Waste transfer forms	Monthly	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Construction	Hazardous Materials Management	- WB ESF - ESS3 – Resource Efficiency and Pollution Prevention and Management - ESS2 – Labor and Working Conditions - WBG EHS Guidelines - Parent Project LMP - Parent Project ESMF - Turkish Occupational Health and Safety Law No. 6331	Soil and water contamination and worker exposure due to spills or improper storage.	Moderate	Hazardous materials, including fuels, oils, lubricants, and chemicals, shall be stored, handled, and used in accordance with ESS3, ESS2, national legislation, and the WBG EHS Guidelines. Hazardous materials shall be stored in designated, clearly labelled, and bunded areas with secondary containment. Safety Data Sheets shall be available on site, and workers shall be trained in safe handling and spill response procedures. Spill kits shall be provided at fuel storage and refueling areas, and any spills shall be promptly contained, cleaned, and reported.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Storage condition, spill records, waste manifests	Monthly	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Construction	Labor and Working Conditions	- WB ESF - ESS1 – Assessment and Management of Environmental and Social Risks and Impacts - ESS2 – Labor and Working Conditions - ESS4 – Community Health and Safety - WBG EHS Guidelines - Parent Project ESMF - Parent Project LMP - Turkish Labor Law No. 4857 - Turkish Occupational Health and Safety Law No. 6331 and relevant regulations	Inadequate accommodation conditions, ineffective grievance mechanisms, and non-compliance with working hours leads to poor labor conditions.	Moderate	All workers shall be informed about the worker grievance mechanism and shall have access to it. Employment conditions shall be applied in line with the Parent Project LMP, national labor legislation, and ESS2. All workers shall have written contracts setting out their working conditions; where needed, these shall also be explained verbally. Equal working conditions and employment rights shall be ensured for all workers, including migrant workers performing similar tasks. Facilities used for catering, toilets, showers, and other basic needs shall be regularly checked for compliance with ESS2 and ESS4. Working hours shall be monitored to prevent excessive overtime. The work schedule shall not exceed 45 hours per week, and the annual overtime limit of 270 hours shall be respected in line with national legislation. Non-compliance with labor requirements shall be subject to contractual measures, including possible termination. Child labor	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Worker grievance mechanism records (number and resolution of grievances) - Records of employment contracts - Working hours and overtime records - Inspection records of worker facilities	Monthly	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)

Phase	Topic	Applicable Standard	E&S Risks / Impacts	Mitigation Measures				Monitoring and Reporting		
				Risk / Potential Impact Level	Mitigation and Management Measures	Residual Impact Significance	Responsibility	Parameter	Monitoring Period	Monitoring Responsibility
					and forced labor are prohibited in line with national legislation and ESS2, and this shall be reinforced through worker training (e.g. toolbox talks).					
Construction	Community Health and Safety	- WB ESF - ESS4 – CHS - WBG EHS Guidelines - Parent Project SEP - Parent Project ESMF - Turkish Highway Traffic Law No. 2918	Increased risks to CHS due to construction activities, including traffic accidents, unauthorized access to construction areas, exposure to construction hazards, increased noise and dust nuisance, interactions between workers and local communities, and temporary disruption of access to public services, agricultural land, and recreational areas. Construction-related disturbance, traffic risk, and restricted access affecting sensitive receptors (Receptors within the AoI, including residential buildings and community facilities in Bölümlü, Çataldere, Akköse, and Kalınçam settlements (approximately 70–340 m from the works))	Moderate	CHS risks shall be managed in accordance with ESS4, national legislation, and the WBG EHS Guidelines. A site-specific CHS and Traffic Management Plan shall be implemented as part of the C-ESMP throughout the life of the Project. Construction areas shall be clearly demarcated and secured. Temporary pedestrian and vehicle access shall be maintained at all times through safe and clearly marked alternative routes. Supervision and routine inspections shall be carried out at all construction locations to ensure compliance with CHS measures. In locations where construction works are carried out within the AoI, including Bölümlü, Çataldere, Akköse, and Kalınçam settlements, physical barriers (e.g. fencing or equivalent) and warning signage shall be installed to separate construction areas from public access. A dedicated community liaison person shall be assigned to ensure continuous communication with affected residents during construction activities. Advance notification (minimum 3 days) shall be provided to affected households prior to commencement of works, particularly in locations where works are undertaken in sections of the stream accessible to local residents. Traffic-related risks shall be managed through implementation of a Traffic Management Plan. Transport schedules shall avoid peak hours. Speed limits (generally not exceeding 20 km/h in settlement areas) shall be enforced. Traffic flow during school start and finish hours shall be planned in coordination with school management in settlements where schools are present (e.g. Çataldere and Bölümlü). Traffic marshals shall be deployed at critical points where necessary. Measures shall be taken to minimize community exposure to construction-related hazards, including control of dust and noise, safe storage of materials, and proper housekeeping. Access to nearby properties, agricultural lands, and public services shall be maintained; where temporary restrictions are unavoidable, safe and clearly marked alternative access shall be provided and communicated in advance. Worker conduct in community interactions shall be governed by a binding Code of Conduct signed by all personnel and regularly communicated and enforced. Mandatory training shall be provided to all workers on Code of Conduct requirements, including provisions on Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH), Gender-Based Violence (GBV), and appropriate behavior in community interactions. Unauthorized access of site personnel to community facilities such as schools shall be prohibited and effectively monitored. Awareness on GBV shall also be integrated into stakeholder engagement activities. A Grievance Mechanism (GM) accessible to both workers and community members shall be implemented in accordance with principles of confidentiality and safety, and community concerns shall be addressed in a timely manner. On-site conduct and behavior shall be regularly monitored by the Contractor's management. Given the separation distances between construction areas and receptors (approximately 70 m in Bölümlü, 80 m in Akköse, 140 m in Çataldere, and 340 m in Kalınçam), CHS risks are expected to be localized and manageable; supervision and mitigation measures shall be applied consistently across all work locations. Additional supervision and access management measures will be defined and implemented through the Contractor's C-ESMP at locations where construction activities interact with local roads or community receptors, including sections within Bölümlü, Akköse, and Çataldere settlements.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Number of traffic incidents; CHS-related complaints; site safety observations	Monthly Following incidents or complaints	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)

Phase	Topic	Applicable Standard	E&S Risks / Impacts	Mitigation Measures				Monitoring and Reporting		
				Risk / Potential Impact Level	Mitigation and Management Measures	Residual Impact Significance	Responsibility	Parameter	Monitoring Period	Monitoring Responsibility
Construction	Access to educational, health, and religious facilities	- WB ESF - ESS1 – Assessment and Management of Environmental and Social Risks and Impacts - ESS4 – Community Health and Safety - WBG EHS Guidelines - Parent Project ESMF	Access to educational, health, and religious facilities is temporarily restricted due to construction activities. Construction activities in proximity to schools affect the quality of education due to noise and dust. Temporary changes to routes due to construction activities increase travel distances and safety risks. Narrowing of roads affects access to health facilities and other essential services.	Moderate	Coordination shall be established with relevant health institutions, including Of State Hospital and Tonya State Hospital, to ensure that access to emergency and health services is not affected, and any works that can influence access shall be communicated in advance. Informational and warning signs shall be placed on roads during construction. Construction schedules shall be coordinated with nearby schools, where present (e.g. in Çataldere), to limit disturbance during school hours. Temporary barriers and safety measures shall be installed near excavation areas and stream sections. Construction activities shall be managed to avoid disruption during religious practices and sensitive community periods. Noise and dust levels shall be monitored at locations within the AoI, and additional mitigation measures shall be implemented where necessary. The grievance mechanism shall be maintained and accessible, and complaints shall be addressed in a timely manner. Regular and advance communication shall be maintained with local residents and relevant institutions, including mukhtars.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Grievance Log Records	Monthly	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Construction	Changes in Social Life	- WB ESF - ESS1 – Assessment and Management of Environmental and Social Risks and Impacts - ESS4 – Community Health and Safety - WBG EHS Guidelines	Reduction in the use of open spaces due to dust and noise, temporarily affecting gathering points and the use of public spaces; disruption of recreational fishing activities during construction works.	Moderate	Community practices shall be considered. Where gathering and social interaction areas are present or used around the construction site (e.g. mosque surroundings or communal areas), access to these areas shall be maintained to the extent practicable. In-stream works shall be carried out using the minimum level of construction machinery necessary for the task. In-stream activities shall be limited in duration to reduce disturbance to stream use by local residents and fishers. Local residents, fishers, and mukhtars shall be informed in advance about the construction schedule.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Grievance records related to community disturbance - Records of community notifications and consultations - Inspection records on access management and site conditions	Monthly	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Construction	OHS (Implementation)	- WB ESF - ESS2 – Labor and Working Conditions - WBG EHS Guidelines - Parent Project LMP - Parent Project ESMF - Turkish Occupational Health and Safety Law No. 6331 and relevant regulations	Occupational health and safety risks to construction workers arising from the operation of heavy machinery and vehicles, in-stream and riverbank work, working at heights, handling and storage of hazardous materials, electrical works, and interaction with public traffic. Inadequate implementation of site-specific OHS measures result in occupational accidents, injuries, or fatalities.	Moderate	A site-specific OHS Plan shall be implemented throughout construction in accordance with ESS2, national OHS legislation, and the WBG EHS Guidelines. Site-specific hazard identification and risk assessments shall be carried out prior to commencement of works and updated as construction activities evolve, including for high-risk activities such as in-stream works, operation of heavy machinery, lifting operations, electrical works, and works at height. Construction activities shall be planned and sequenced to minimize occupational risks. Only trained, certified, and authorized personnel shall be permitted to operate machinery and equipment. Appropriate personal protective equipment (PPE) shall be provided free of charge, and its correct use shall be strictly enforced. Access to construction areas shall be controlled, and hazardous zones shall be clearly marked and secured to prevent unauthorized access. All workers shall receive mandatory OHS induction training prior to site entry, supported by regular refresher trainings and daily toolbox talks throughout construction. Workers shall be informed of site-specific hazards, emergency procedures, site rules, and grievance mechanisms. Emergency response arrangements, including first-aid facilities and trained personnel, shall be maintained on site. All accidents, incidents, and near-miss events shall be recorded and reported to the DSİ PIU (Regional Directorate). Major incidents shall be reported immediately, and other incidents shall be reported within 24 hours. Corrective and preventive actions shall be documented. For each incident, ESIRT (Environmental and Social Incident Response Toolkit) reporting shall be followed in addition to national regulations.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Number of accidents and near misses - OHS training records - PPE usage compliance rate - Daily toolbox records - OHS inspection reports	Daily site inspections Monthly reporting	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)

Phase	Topic	Applicable Standard	E&S Risks / Impacts	Mitigation Measures				Monitoring and Reporting		
				Risk / Potential Impact Level	Mitigation and Management Measures	Residual Impact Significance	Responsibility	Parameter	Monitoring Period	Monitoring Responsibility
					The DSİ PIU (Regional Directorate) shall supervise the implementation of OHS measures and ensure that corrective actions are implemented where necessary. A Labor Management Plan shall be implemented, and written contracts defining working conditions shall be provided to all workers in accordance with national labor legislation and WB ESS2 requirements.					
Construction	Emergency Preparedness and Response	- WB ESF - ESS2 – Labor and Working Conditions - ESS4 – CHS - WBG EHS Guidelines - Parent Project LMP - Parent Project ESMF - Turkish Occupational Health and Safety Law No. 6331 and relevant regulations	Delayed or ineffective response to incidents and emergencies during construction, including fires, structural failures, flooding, or hazardous material spills, which result in injury, property damage, environmental contamination, or disruption to nearby communities.	Moderate	A Sub-project–specific Emergency Preparedness and Response Plan shall be implemented throughout construction in accordance with ESS2, ESS4, national legislation, and the WBG EHS Guidelines. Emergency contact information shall be clearly posted at construction sites. Workers shall receive training on emergency procedures as part of induction and refresher trainings. Periodic emergency drills shall be conducted to test preparedness and response capacity, and lessons learned shall be documented and used to update procedures as necessary. Where construction activities can pose risks to nearby communities, relevant information on emergency response and notification mechanisms shall be communicated in advance.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Approved Emergency Preparedness and Response Plan - Number of drills conducted - Incident response time - Communication records with local authorities	Once prior to construction Every six (6) months during construction	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Construction	Security	- WB ESF - ESS4 – CHS - WBG EHS Guidelines - Parent Project ESMF - Turkish Private Security Services Law No. 5188	Security-related incidents such as theft, vandalism, trespassing, or sabotage during construction, potentially resulting in damage to property, delays to works, safety risks, and reputational impacts if security arrangements are improperly managed.	Moderate	Security arrangements during construction shall be planned and implemented in accordance with ESS4, national legislation, and good international industry practice, using a proportional and risk-based approach. The construction site shall be clearly demarcated and secured using appropriate barriers (e.g. fencing, warning tape, or equivalent). All construction materials, equipment, machinery, and waste shall be stored within the fenced area. All accidents, incidents, and near-miss events shall be recorded and reported to the DSİ PIU (Regional Directorate). Major incidents shall be reported immediately and other incidents shall be reported within 24 hours. Corrective and preventive actions shall be documented. For each incident, ESIRT (Environmental and Social Incident Response Toolkit) reporting shall be followed in addition to national regulations. The DSİ PIU (Regional Directorate) shall supervise the implementation of OHS measures and ensure that corrective actions are implemented where necessary. A Labor Management Plan shall be implemented, and written contracts defining working conditions shall be provided to all workers in accordance with national labor legislation and WB ESS2 requirements. Where security personnel or services are engaged, a site-specific security risk assessment shall be conducted. Security personnel shall be selected based on competency checks and shall receive training on the Project Code of Conduct, human rights, gender sensitivity, local context, and the appropriate use of force, limited to preventive and defensive purposes. The use of force shall be proportionate and consistent with applicable legal and ESS4 requirements. All security-related incidents shall be recorded, investigated, and reported to the DSİ PIU.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Security personnel training certificates - Security incident records - Risk assessment report	Quarterly As required following security incidents	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Construction	Vulnerable Groups	- WB ESF - ESS4 – CHS - ESS10 – Stakeholder Engagement and Information Disclosure - Parent Project SEP - Parent Project ESMF	Disproportionate impacts on vulnerable groups such as children, elderly persons, persons with disabilities, and school communities.	Moderate	Construction activities shall be planned and implemented to avoid disproportionate impacts on vulnerable groups, including children, elderly persons, persons with disabilities, school communities, and other disadvantaged individuals, in accordance with ESS4 and ESS10. Particular attention shall be given to settlements within the Area of Influence including Bölümlü, Çataldere, Akköse, and Kalınçam, where residential buildings and community receptors are located within the AoI at varying distances from the works. Information on construction schedules, locations, potential impacts, and mitigation measures shall be communicated in advance using clear, simple, and accessible methods, including face-to-face communication where necessary, and shall ensure inclusion of vulnerable individuals (e.g. elderly, visually impaired, or homebound persons). Local communities and school management, including in Çataldere where educational facilities are present, shall be informed about construction schedules and related dust and noise mitigation measures. A designated community liaison focal point shall be assigned and introduced to the local community prior to construction and shall remain available throughout construction to facilitate communication, including with vulnerable groups. A Grievance Mechanism (GM) accessible to all stakeholders shall be operational, and grievances shall be recorded, tracked, and addressed in a timely manner, with appropriate procedures in place. Updated information on the GM shall be regularly communicated to the community. Construction activities near schools, mosques, residential areas, and local access roads shall be managed to minimize disturbance during critical periods, including school hours and peak community use times. Traffic measures, including warning signs, speed limits, and advance notification to communities and schools during transport of large	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Records of targeted outreach activities (channels used, locations, dates) and feedback received from vulnerable groups - Number of awareness sessions conducted - Records of complaints from vulnerable groups	Monthly As required during works near sensitive receptors	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)

Phase	Topic	Applicable Standard	E&S Risks / Impacts	Mitigation Measures				Monitoring and Reporting		
				Risk / Potential Impact Level	Mitigation and Management Measures	Residual Impact Significance	Responsibility	Parameter	Monitoring Period	Monitoring Responsibility
					or hazardous loads, shall be implemented. No road closures or traffic arrangements that would hinder access to emergency healthcare services or daily access to residences and agricultural lands shall be implemented; where unavoidable, alternative access routes shall be planned in advance. Individuals from local communities, including those from vulnerable groups, shall be given priority for employment opportunities where feasible. Land acquisition and temporary land use requirements are limited in scope and do not result in impacts on livelihoods; however, any affected land users, including informal users, shall be identified and informed, and relevant measures shall be implemented in accordance with the Sub-project RP.					
Construction	Cultural Heritage	- WB ESF - ESS8 – Cultural Heritage - WBG EHS Guidelines - Parent Project ESMF - Law on the Protection of Cultural and Natural Assets No. 2863	Accidental damage to or loss of previously unknown archaeological remains, artifacts, or other tangible cultural heritage during excavation and earthworks.	Minor	Construction activities shall be carried out in accordance with ESS8, the Parent Project ESMF, and applicable national legislation on the protection of cultural heritage. In the event that previously unknown archaeological remains, artifacts, or other cultural heritage items are encountered during excavation or earthworks, all construction activities in the immediate area shall be suspended immediately. The DSİ Regional Branch Office and DSİ PIU (Regional Directorate) shall be notified without delay, and the approved Chance Finds Procedure shall be implemented to secure the site in accordance with Appendix 6 of this ESMP, document the find, and obtain expert assessment. Construction works shall not resume until written clearance is obtained from the competent authority, including the Erzurum Regional Directorate of the Conservation of Cultural Heritage, as applicable.	Negligible	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Presence of chance finds. - Number of chances find incidents reported	Continuous during excavation and foundation works	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)
Construction	Stakeholder Engagement and Information Disclosure (Construction)	- WB ESF - ESS10 – Stakeholder Engagement and Information Disclosure - Parent Project SEP - Parent Project ESMF - Turkish Right to Information Law No. 4982	Inadequate stakeholder engagement during construction lead to community grievances, safety concerns, misunderstandings, delays, and reduced community acceptance of construction activities.	Moderate	Stakeholder engagement activities shall be implemented throughout the construction phase in accordance with ESS10, the Parent Project Stakeholder Engagement Plan, and national legislation. Regular communication and consultation meetings shall be organized with local communities, mukhtars, shopkeepers, and other community representatives in settlements within the AoI, including Bölümlü and Çataldere neighborhoods (Of District), Akköse neighborhood (Dernekpazarı District), and Kalınçam neighborhood (Tonya District), to provide updated information on construction progress, planned activities, and potential temporary impacts associated with works along stream corridors. Engagement approaches shall be tailored to the settlement characteristics within the AoI. In rural settlements, where livelihoods are primarily based on small-scale agriculture and daily activities are linked to land use and access to stream corridors, consultations shall focus on access arrangements, timing of works in relation to agricultural activities, and potential temporary disturbances. In semi-urban areas such as Bölümlü and Çataldere, engagement shall place emphasis on construction traffic, interaction with local roads and residential areas, and management of noise, dust, and community safety risks. Continuous communication with stakeholders shall be ensured through appropriate tools such as brochures, posters, notice boards, and digital communication channels (e.g. SMS or messaging applications). Information shall be presented in a clear and understandable manner, supported by visuals where necessary. A Sub-project-level Grievance Mechanism (GM) accessible to all stakeholders shall be maintained throughout construction. Information on grievance submission and resolution procedures shall be disclosed using appropriate channels, including through mukhtars and community focal points. Particular attention shall be given to grievances related to temporary access restrictions, construction traffic along local roads, noise and dust impacts, and temporary disturbances to agricultural activities (e.g. tea and hazelnut cultivation). All grievances and feedback shall be recorded, tracked, and addressed in a timely manner. Stakeholder engagement activities shall ensure inclusion of vulnerable groups, including women, elderly persons, children, and persons with disabilities. Where necessary, targeted consultations and tailored communication methods shall be used. Stakeholder views, suggestions, and concerns shall be systematically documented and, where feasible, integrated into construction planning and implementation, including scheduling of works, traffic arrangements, and access management, to minimize disruption to daily life within the Project area.	Minor	Implementation: Contractor Supervision: DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)	- Number of stakeholder engagement meetings conducted - Number of grievances and feedback received Grievance resolution rate	Throughout construction Monthly grievance summary reporting; immediate reporting of serious grievances	Contractor / DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer)

5. Implementation Arrangements, Capacity Building and Training

The ESMP defines the mitigation, management, and monitoring measures required to address E&S, OHS, and CHS risks during the pre-construction and construction phases, ensuring compliance with applicable Turkish legislation, the WB ESF, the Parent ESMF, and the WBG EHS Guidelines. The mitigation and monitoring measures presented in the ESMP Matrix form part of the Contractor's contractual obligations and are implemented through appropriate planning, allocation of responsibilities, provision of resources, training, and ongoing supervision.

5.1 Roles and Responsibilities

Implementation of the ESMP involves the Contractor, DSİ Project Implementation Unit (PIU) and DSİ Regional Directorate. Roles and responsibilities for the Sub-project are summarized in the table below.

The Contractor is responsible for implementing all ESMP mitigation, monitoring, and reporting requirements during construction and for integrating these into construction methods, work plans, and subcontractor arrangements. Qualified environmental, OHS, and social personnel will be appointed by the Contractor and will be present on site throughout the construction phase.

DSİ, through its PIU, is responsible for overall supervision and oversight of ESMP implementation, while day-to-day monitoring is carried out by the relevant DSİ Regional Directorate. The PIU reviews monitoring results and ensures that mitigation measures are effectively implemented. In cases of non-compliance, corrective actions are required to be implemented by the Contractor within defined timeframes.

Table 5-1 Roles and Responsibilities

Responsible Party	Key Responsibilities	Role within ESMP	Reporting Line / Frequency
DSİ PIU – Central (Ankara)	- Overall responsibility for ESMP supervision and coordination - Review consolidated E&S monitoring reports - Verify compliance with national legislation and World Bank ESF requirements - Request corrective and preventive actions where non-compliance is identified - Provide guidance to Regional Directorates on ESMP implementation - Coordinate consolidated environmental and social reporting to the World Bank	Strategic Oversight and Compliance Assurance	- Receives consolidated ESMRs from DSİ Regional Directorates (monthly) - Reports to the World Bank
DSİ 22nd Regional Directorate (Trabzon)	- Day-to-day supervision of ESMP implementation at site level - Review and approval of Contractor's E&S documents (Contractor ESMPs [C-ESMPs], method statements, monitoring reports) - Conduct site inspections and compliance checks - Assign E&S, OHS and GM focal points - Prepare consolidated monthly, quarterly and semi-annual ESMP progress reports for submission to the DSİ PIU based on Contractor reports and site inspections.	Supervision and Field Compliance	- Receives monthly ESMRs from Contractor - Submits consolidated reports to DSİ PIU (monthly)
Contractor	- Implement all mitigation and monitoring measures defined in the ESMP - Prepare and implement site-specific E&S, OHS and Traffic Management Plans - Appoint qualified Environmental, Social and OHS specialists	Implementation and Site Monitoring	- Submits monthly ESMRs to DSİ 22nd Regional Directorate

Responsible Party	Key Responsibilities	Role within ESMP	Reporting Line / Frequency
	- Conduct site-level monitoring and record keeping - Monitor and record OHS, environmental and social incidents and accidents, and notify DSİ Regional Directorate in accordance with ESMP requirements. - Prepare and submit monthly environmental and social monitoring reports to the DSİ 22nd Regional Directorate. - Provide E&S, OHS and community safety training to workers - Immediately notify DSİ of incidents and accidents		- Incident reporting: immediately / within 48 hours
Environmental and Social Consultant	- Preparation of ESMP and supporting E&S documents - Support stakeholder engagement activities - Revise E&S documents based on stakeholder and authority feedback	Technical Support	- Reports to DSİ 22nd Regional Directorate (as required)

5.2 Capacity and Resources

The Contractor shall allocate adequate financial, technical, and human resources to ensure effective ESMP implementation, including qualified personnel, appropriate equipment, PPE, and monitoring tools. This shall include the appointment of qualified and dedicated site-based Environmental, OHS, and Social personnel prior to mobilization. Where appropriate, the social function can be assigned to the Environmental Officer, provided that the required qualifications are met and prior approval is obtained from the DSİ PIU (DSİ Regional Directorate). Internal procedures for monitoring, reporting, and incident management shall be established and implemented, with defined roles, reporting lines, documentation, and corrective and preventive action processes to support adaptive management. Implementation performance shall be periodically reviewed to identify any capacity gaps or operational deficiencies.

Where specialized expertise is required, the Contractor can engage qualified external specialists, subject to prior approval by the DSİ PIU (DSİ Regional Directorate), and shall implement and monitor their recommendations. Such expertise can be required for technically complex activities such as dredging management, marine environmental protection, hazardous waste handling, and emergency preparedness. The DSİ PIU (DSİ Regional Directorate) shall maintain sufficient institutional capacity for supervision of ESMP implementation, including designated E&S and OHS staff, and can mobilize additional technical support where Sub-project risks or complexity require.

5.3 Training

DSİ shall provide training to the Contractor and supervising personnel on World Bank ESF requirements and the environmental and social monitoring and reporting procedures applicable to the Sub-project.

The Contractor shall provide training to ensure that all personnel, including subcontractors, understand their roles and responsibilities and are able to perform their duties in compliance with the ESMP.

Mandatory induction training shall be provided to all personnel prior to site entry. The induction training shall, at a minimum, cover the following topics:

- Site-specific E&S risks and mitigation measures.
- Site access and orientation.Occupational health and safety hazards and use of PPE.

- Emergency response procedures.
- Code of Conduct.
- Stakeholder engagement and communication.Grievance mechanisms.
- Community health and safety considerations (including traffic and pedestrian safety)
- Awareness of SEA/SH risks.

Regular toolbox talks will be held regularly to address:

- Site-specific risks.
- Upcoming activities.
- Lessons learned from incidents or near misses.
- Changes in working conditions.

Targeted toolbox talks and technical training shall be provided for high-risk activities, including in-stream works, operation of heavy machinery, working at heights, handling of hazardous materials, and interaction with public traffic. Only trained, competent, and authorized personnel shall be permitted to operate machinery or carry out high-risk tasks.

OHS training shall be ongoing and shall include periodic refresher sessions on emergency preparedness and response, first aid, fire prevention, spill response, and safe working practices. Emergency drills shall be conducted periodically, and the outcomes shall be reviewed to identify gaps and opportunities for improvement.

The Contractor shall maintain records of all training activities, including attendance lists, training materials, and dates. These records shall be made available to the DSİ PIU (DSİ Regional Directorate) upon request. Training effectiveness shall be reviewed regularly, and additional or targeted training shall be provided where gaps are identified.

6. Stakeholder Engagement

This section explains the purpose of stakeholder engagement, its role in project design and implementation, and its alignment with WB ESF, particularly ESS10 on Stakeholder Engagement and Information Disclosure. Stakeholder engagement is intended to support informed participation, manage environmental and social risks, and strengthen project ownership throughout preparation and implementation.

6.1 Stakeholder Engagement Conducted to Date

Stakeholder engagement has been undertaken at the Parent Project level during the preparation of the Türkiye Flood and Drought Management Project Environmental and Social Management Framework (ESMF) and Stakeholder Engagement Plan (SEP), in accordance with WB ESS10. These engagements informed the overall Project approach to managing flood risks, environmental and social impacts, land-related issues, and stakeholder expectations.

At the time of preparation of this ESMP, no Sub-project–specific stakeholder consultation meetings have yet been conducted for the Trabzon Province check dam works. However, the DSİ Regional Directorate maintains regular operational interactions with local authorities and community representatives as part of its routine flood management and maintenance activities. While these interactions do not constitute formal consultations under ESS10, they provide valuable local context and will facilitate effective Sub-project–specific stakeholder engagement prior to construction, in line with the Parent Project SEP. Formal Sub-project–specific consultations will be conducted prior to construction following disclosure of the draft ESMP.

6.2 Stakeholder Engagement Responsibilities

Overall responsibility for stakeholder engagement rests with DSİ through the PIU (DSİ Regional Directorate). The Contractor will support stakeholder engagement activities during construction, particularly with respect to informing communities about construction activities, responding to site-level concerns, and implementing mitigation measures relevant to community health and safety. The Contractor shall designate a focal point responsible for communication with local communities and coordination with mukhtars. All engagement activities, including meetings, information disclosure, and responses to stakeholder concerns, shall be recorded and made available to the PIU (DSİ Regional Directorate) upon request.

6.3 Stakeholder Identification and Analysis

Stakeholders have been identified based on their potential exposure to Sub-project–related E&S risks, their level of interest in the Sub-project, and their capacity to influence or be affected by project outcomes. In line with the requirements of ESS10, stakeholders are categorized as Project Affected Parties (PAPs), Other Interested Parties (OIPs), and Vulnerable or Disadvantaged Groups (VDGs). Stakeholders have also been linked to relevant Sub-project components to support effective engagement planning, implementation, and monitoring.

1. **Project Affected Parties (PAPs)** include communities and individuals residing in or near the Sub-project area who can experience direct or indirect impacts during construction and implementation. Such impacts includes temporary disturbances, access restrictions, or land-related effects associated with flood and drought management works, rehabilitation of flood control structures, or other Sub-project interventions. This category also includes seasonal workers and local organizations whose livelihoods can be affected. Engagement with PAPs will focus on timely and accessible information regarding construction schedules, mitigation measures, safety arrangements, and mechanisms for addressing access- or land-related concerns.

2. **Other Interested Parties (OIPs)** include local and regional authorities, relevant public institutions, and civil society organizations with an interest in flood and drought management, environmental protection, and community safety. Engagement with OIPs will emphasize information disclosure, coordination, consultation, and opportunities to contribute to monitoring and reporting processes, as relevant.
3. **Vulnerable or Disadvantaged Groups (VDGs)** can face barriers to participation or can be disproportionately affected by Sub-project impacts. These groups include, but are not limited to, persons with disabilities, illiterate adults, elderly persons in need of care or social support, female-headed households, economically vulnerable or unemployed individuals, and migrants and seasonal workers. Engagement approaches for VDGs will be inclusive, accessible, and tailored to ensure equitable participation and access to information and grievance mechanisms.

Engagement methods for these groups will be tailored to overcome barriers such as literacy, mobility, language, caregiving responsibilities, or socio-economic constraints. Strategies include verbal consultations, accessible venues, gender-sensitive approaches, translation where required, and facilitation of access to the Sub-project level GM, in line with the Project SEP.

The table below is adapted from the Parent Project SEP and provides the identification and analysis of the stakeholders.

Table 6-1 Stakeholder Identification and Analysis

Stakeholder Type	Stakeholder Groups	Stakeholder Interest in the Project
Project Affected Parties (PAPs)	**Village/Neighborhood Headmen (Mukhtars) and Local Communities (Residents)** - Bölümlü Neighborhood (Of District) - Çataldere Neighborhood (Of District) - Akköse Neighborhood (Dernekpazarı District) - Kalınçam Neighborhood (Tonya District) **Other PAPs** - Individuals who serve as a potential local labor force - Landowners and land users within or adjacent to the check dam locations - Informal land users, where applicable - Individuals using stream corridors for small-scale or household purposes (e.g. limited fishing or water use) - Local workers engaged by the Project **Other Local Stakeholders** - Individuals who serve as a potential local labor force - Small businesses located within the AoI - Users of local access roads and transport routes associated with construction activities - Village/neighborhood-level community organizations and informal groups - Women and vulnerable groups within the AoI - Agricultural producers (e.g. tea and hazelnut growers) - Religious groups and local community representatives	PAPs are primarily concerned with direct and indirect construction-related impacts, including noise, dust, traffic, temporary access restrictions, and potential disruptions to daily life, livelihoods, and mobility, and therefore require timely, clear, and accessible information on construction schedules, mitigation and safety measures, and the grievance mechanism.
Other Interested Parties (OIPs)	**Public Authorities and Institutions** - Trabzon Governorship - DSİ 22nd Regional Directorate - Of Municipality - Dernekpazarı Municipality - Tonya Municipality - General Directorate of Meteorology - General Directorate of Water Management - Disaster and Emergency Management Authority	OIPs are focused on ensuring effective flood management, public safety, coordination among institutions, compliance with environmental and social requirements, and access to relevant information about project activities, local needs, and community concerns.

Stakeholder Type	Stakeholder Groups	Stakeholder Interest in the Project
	- General Directorate of Highways - Trabzon Provincial Directorate of Agriculture and Forestry - Trabzon Provincial Directorate of Environment, Urbanization and Climate Change - Local traffic police / gendarmerie units - Irrigation / water user associations **Project-Related Parties** - Suppliers, contractors, subcontractors, and their employees **Academic Institutions** - Universities and research institutes (e.g. Karadeniz Technical University) **Non-Governmental Organizations and Professional Chambers** - Chambers of commerce and industry in Trabzon / Of - Local cooperatives and small business associations - Relevant NGOs active in environment, natural resources, agriculture, and community development **Infrastructure and Utility Providers** - Electricity distribution company (e.g. Çoruh EDAŞ) - Telecommunication service providers - Water and sewerage service providers (relevant municipal units)	
Vulnerable or Disadvantaged Groups (VDGs)	VDGs include illiterate adults, persons with disabilities, elderly persons requiring care or social assistance, unemployed or economically vulnerable individuals, female-headed households, and migrants and seasonal workers. Based on field visits, stakeholder consultations (including mukhtar interviews), follow-up communications with local representatives, and available secondary data, these groups are present across all settlements within the AoI (Bölümlü and Çataldere neighborhoods in Of District, Akköse neighborhood in Dernekpazarı District, and Kalınçam neighborhood in Tonya District). During consultations and subsequent communications, mukhtars and local representatives provided information on the presence and approximate scale of vulnerable groups within their respective settlements. Although quantitative data is not systematically recorded at settlement level, the figures below reflect indicative estimates derived from these sources: - Illiterate adults (Women and Men: ≈70 each) - Persons with disabilities (Women and Men: ≈150 each) - Elderly persons in need of care and social assistance (Women: ≈260, Men: ≈220) - Unemployed or economically vulnerable persons (≈650 individuals) - Female-headed households (≈150 households) - Seasonal or temporary workers (≈120 individuals) [7]	VDGs are concerned about barriers to participation, equitable access to information, consultation, and grievance mechanisms, as well as the potential for disproportionate impacts from construction activities, requiring inclusive, accessible, and tailored engagement approaches.

[7] These figures are indicative and based on information obtained through field observations, stakeholder consultations (including mukhtar interviews), follow-up communications with local representatives, and available secondary data. They are intended to provide an overall understanding of vulnerable groups within the AoI. The identification and characterization of VDGs will be further refined, where necessary, during Project implementation through ongoing stakeholder engagement.

Stakeholder Type	Stakeholder Groups	Stakeholder Interest in the Project
	These figures are indicative and reflect current conditions across the AoI. Seasonal and temporary workers are more commonly observed in rural settlements such as Akköse and Kalınçam, while economically vulnerable groups are relatively more represented in Bölümlü and Çataldere due to higher population density.	

6.4 Stakeholder Engagement Program

Stakeholder consultation activities will be carried out throughout the pre-construction and construction phase of the Sub-project, following the principles of transparency, inclusiveness, sensitivity to gender and social differences, and the use of accessible engagement tools.

Transparency

- All project information, including potential E&S impacts, will be shared openly.
- Both positive and negative outcomes will be communicated clearly in plain language.
- Stakeholders will be able to understand the Sub-project's scope, objectives, and potential impacts.

Social Inclusion

- Engagement will take into account the needs of different communities and address barriers related to language, culture, gender, ethnicity, and geographic location.
- Participation will be facilitated by E&S Specialist of the Contractor, with support and involvement of DSİ PIU (DSİ Regional Directorate) public relations representative, to ensure equal opportunities for all groups.
- No hierarchical distinctions will be made; all stakeholders will be treated fairly.

Engagement Channels

- Public consultation meetings and workshops.
- Local offices managed by E&S Specialist of the Contractor and DSİ PIU (DSİ Regional Directorate) public relations representative.
- Disclosure of documents and incorporation of stakeholder feedback.
- Coordination with neighborhood mukhtars.
- Grievance mechanisms for raising concerns.
- Project website updates, media announcements, and direct contact via phone or email.

User-Friendly Tools

- Materials will be accessible and easy to understand.
- Written and visual materials will be supported by verbal or face-to-face communication.
- This approach ensures participation of disadvantaged, marginalized, or low-literacy groups.

Gender-Sensitive Communication

- All communications will use gender-sensitive language, avoid stereotypes, and promote equality.
- Both women and men will be engaged, considering cultural context and encouraging equal participation.

6.5 Stakeholder Engagement Methods

To maintain stakeholder ownership during pre-construction and construction phases of the Sub-project and to support positive social outcomes, the following stakeholder engagement methods will be applied. These approaches, aligned with the Parent Project SEP, will be used throughout the sub-project's lifecycle:

1. **Opening and Closing Meetings:** DSİ Regional Directorate will attend the start and end meetings, providing information on the Sub-project.
2. **Public Consultation Meetings:** They will be held after disclosure of the draft ESMP, with participation of DSİ, the contractors, local mukhtars, representatives and residents of the affected settlements (including PAPs), and any other interested parties.
3. **Disclosure Activities:** The draft ESMP will be made available for a period of 15 days on the DSİ Parent Project website[8], during which all stakeholders can provide comments, either verbally or in writing. Stakeholders will also have the opportunity to provide feedback during public consultation meetings. DSİ will notify its institutional stakeholders through email and official letters. Mukhtars will be contacted by phone and will assist in inviting local community members, while announcements can also be made at local gathering places such as mosques and neighborhood coffees. In addition, announcements will be published in one national and one local newspaper to invite the public to attend the consultation meeting.
4. **Digital and Visual Communication:** Updates on the Sub-project will be shared through digital and visual communication tools, including the Parent Project Website.
5. **Document Disclosure and Institutional Consultation:** Engagement and project documents will be made publicly available via the Parent Project website in both Turkish and English.
6. **Information and Communication**: Brochures, posters, and other information materials will be distributed through mukhtars and relevant institutions and displayed in accessible public locations. Throughout the project lifetime, information on CHS, GM, project stages, and meeting schedules will be posted in public places such as mukhtars' offices and mosques. Appropriate warning signs and markings will be installed in public and construction areas as part of CHS measures.
7. **Grievance Mechanism:** A GM will be operational throughout the project lifetime. Stakeholders can submit grievances through multiple channels, including online platforms (DSİ website), phone, face-to-face communication, CİMER, and YİMER. Standard grievance forms will be made available at DSİ Regional Directorate offices, construction camps, mukhtars' offices in affected settlements, and other public locations accessible to women and vulnerable groups (such as community centers, health units, and similar facilities). The mechanism will be managed by the DSİ PIU (DSİ PIU (Regional Project Officer, Flood Control Projects Officer and Project Coordination Officer) (see Appendix 5).
8. **Coordination with Local Communities:** During construction, stakeholder meetings will be held to provide information on construction activities, schedules, potential impacts, and mitigation measures. Direct coordination with mukhtars and affected persons will ensure their participation in Sub-project activities.

6.6 Consultation Schedule

The implementation program of the SEP is summarized in Table 6-2.

[8] https://www.dsi.gov.tr/Sayfa/Detay/1868

Table 6-2 Consultation Schedule

Time	Location	Activity	Information to be Disclosed	Method	Target stakeholders	Responsible
Disclosure of Draft ESMP (Pre-Construction)	Project Area (Trabzon Province)	Public consultation meeting on draft ESMP	• Overview of the Sub-Project and its scope • Overview of the ESMP, including its purpose, scope, and key management measures • Applicable requirements (ESSs and legislation) • Key E&S risks and mitigation measures • Stakeholder engagement process • GM and access channels	• Face-to-face public consultation meeting • Disclosure via DSİ Parent Project website[9] • Printed materials at mukhtars' offices and other public locations that are culturally appropriate and accessible to women	• PAPs • Residents of settlements within the AoI, including women and vulnerable groups • Mukhtars • VDGs • Other interested stakeholders	DSİ PIU (Regional Directorate)
Project Implementation (as needed in case of significant changes)	Affected settlements within the AoI - Bölümlü Neighborhood (Of District) - Çataldere Neighborhood (Of District) - Akköse Neighborhood (Dernekpazarı District) - Kalınçam Neighborhood (Tonya District)	Additional public consultation meetings	• Significant project developments or changes • Updated construction schedules and changes in E&S risks and mitigation measures • Information on temporary impacts • Access restrictions, and safety measures	• Face-to-face consultation meetings • Announcements through mukhtars and public notice boards located in public places accessible to women	• PAPs • Residents of settlements within the AoI, including women and vulnerable groups • Mukhtars • VDGs where relevant	DSİ PIU (Regional Directorate)
Throughout Construction Phase	Sub-Project area and nearby settlements - Bölümlü Neighborhood (Of District) - Çataldere Neighborhood (Of District) - Akköse Neighborhood (Dernekpazarı District) - Kalınçam Neighborhood (Tonya District)	Ongoing information disclosure and community communication	• Planned construction activities and schedules • Temporary disruptions, traffic arrangements, and CHS measures • Contact details for grievances and inquiries • Updates on E&S performance, where relevant.	• Public notice boards in affected settlements located in public places accessible to women • Information dissemination through mukhtars • Posters and brochures • Telephone and email communication channels.	• PAPs • Residents of settlements within the AoI, including women and vulnerable groups • Mukhtars • VDGs	DSİ PIU (Regional Directorate)

[9] https://www.dsi.gov.tr/Sayfa/Detay/1868

6.7 Grievance Mechanism

In line with ESS10 and the Parent Project SEP, a Project-level GM is in place to receive, register, assess, and resolve grievances, complaints, inquiries, and feedback related to the Sub-project in a timely, transparent, and culturally appropriate manner. The GM also allows the submission of queries, suggestions, and positive feedback related to the E&S performance of the Sub-project.

The GM operates at multiple levels and builds on existing mechanisms:

- Public GM at DSİ level, including national systems such as CİMER and YİMER.
- Project-level GM managed by the DSİ PIU at the Regional Directorate level, and implemented in line with DSİ's three-tier institutional structure (Branch, Regional and General Directorate levels) described in the Parent Project SEP.
- Contractor-level GM for issues related to construction activities.
- Workers' GM, established and implemented by contractors in line with ESS2 and the Parent Project LMP, and operating separately from the community GM.

Grievances can be submitted by any individual or group, including women, men, youth, vulnerable groups, and elderly, illiterate persons, persons with disabilities, and foreign nationals, as well as anonymous complainants, through the following channels:

- Online submissions via DSİ and national platforms (CİMER, YİMER).
- Phone calls.
- Face-to-face submissions to DSİ PIU staff or contractor representatives.
- Written submissions using grievance forms.

Walk-in complainants can also register grievances in grievance logbooks or through suggestion boxes located at publicly accessible locations.

Grievance forms and grievance boxes will be made available at construction sites, DSİ Regional Directorate offices, mukhtars' offices, coffee houses, and municipal public notice boards, DSİ branch and regional directorate buildings, and other publicly accessible locations near worksites or acquired lands, including locations accessible to women and vulnerable groups. Verbal grievances will also be accepted and formally recorded.

Grievances will be managed in accordance with the procedure outlined below:

- All grievances are received and registered by the DSİ PIU (DSI Regional Directorate) or the relevant contractor focal point and logged in a unified GM database, including grievances received through CİMER and YİMER. Each grievance record shall include the complainant's name (optional), grievance subject and request, date, and contact information.
- Acknowledgement of receipt is provided within two (2) days of receipt (immediately if possible).
- Information on the proposed actions will be provided on the proposed actions to the applicant within 7–15 days at the latest.
- Grievances are communicated to and coordinated with relevant units, and reviewed, investigated, and resolved at the lowest appropriate level within defined timelines, not exceeding fifteen (15) days. For complex complaints that require additional review or investigations, resolution can take up to 30 days .If the resolution is not satisfactory, grievances will be reviewed by a higher institutional level within DSİ's three-tier GM system.
- Feedback on the resolution is provided to the complainant. If the resolution is not satisfactory, grievances will be escalated and reviewed at a higher institutional level within DSİ's three-tier

GM system. Complainants are informed of available appeal options, including the right to legal recourse where applicable.All grievances are logged, monitored, and reported in line with SEP[10] requirements (Section 6), and summarized in E&S monitoring reports submitted to the WB. Reporting is conducted on a weekly, monthly, and quarterly basis.

SEA/SH-related complaints will be handled through confidential, survivor-centered procedures, with restricted access to information and referral to appropriate support services, in line with the Parent Project SEP. Anonymous SEA/SH complaints will be accepted, cases will be anonymized for reporting purposes, and national referral systems will be used. Criminal cases will be referred to the competent authorities.

The GM will be implemented in line with the overall ESMP institutional arrangements (Section 5.1). Roles and responsibilities for GM implementation are summarized below:

- DSİ PIU (DSI Regional Directorate) is is responsible for overall GM coordination, monitoring, and reporting, and for referring unresolved grievances to the DSİ General Directorate / PCU.
- Contractors are responsible for receiving and addressing grievances related to site-specific construction activities, maintaining contractor-level GM records, and reporting them to the PIU (DSI Regional Directorate).
- National GM systems (CİMER, YİMER) operate in parallel and are integrated into the Sub-project level GM tracking system.

Labor-related grievances will be addressed through a separate Workers' GM established by contractors in accordance with the Parent Project LMP. The Sub-project level GM will not replace or interfere with the Labor GM but will ensure coordination where relevant.

Detailed GM procedures, timelines, and reporting arrangements are provided in the Parent Project SEP. Grievance and Suggestion Submission Form, Grievance and Suggestion Record and Closure Form and Grievance and Suggestion Record System are provided in Appendix 6. Grievance mechanism contact information is given in the table below.

Table 6-3 Grievance Mechanism Contact Information

DSI General Directorate	Address	Mustafa Kemal, 06510 Çankaya/Ankara
	Phone	0312 454 54 54
	Web	https://www.dsi.gov.tr/
DSI Trabzon 22nd Regional Directorate	Address	DSİ 22nd Regional Directorate İnönü Neighborhood, Kanuni Boulevard No:14, Ortahisar – TRABZON
	Phone	0 462 230 10 00
	E-mail	dsi22@dsi.gov.tr
	Web	https://bolge2w.dsi.gov.tr/
CIMER	Phone	150
	Web	https://www.cimer.gov.tr/
YİMER	Phone	157
	Web	https://yimer.gov.tr/

[10] Türkiye Flood and Drought Management Project Stakeholder Engagement Plan (MoAF, 2024): https://cdniys.tarimorman.gov.tr/api/File/GetGaleriFile/425/DosyaGaleri/6201/ttkyp_paydas_katilim_plani_mayis_2024.pdf

In addition, project-affected individuals and communities can submit grievances directly to WB through its Grievance Redress Service[11] or the Independent Inspection Panel[12], as an alternative review mechanism, in accordance with ESS10.

6.8 Monitoring and Reporting of Stakeholder Engagement

Stakeholder engagement will be monitored throughout Project implementation to ensure consistency with the SEP and compliance with ESS10. The DSİ PIU (DSI Regional Directorate) will oversee monitoring of consultations, information disclosure, engagement with vulnerable groups, and the functioning of the grievance mechanism, in accordance with the parameters defined in the ESMP table (Section 4). Monitoring results, including key stakeholder issues and grievance resolution status, will be documented, reported to the World Bank in line with the Parent Project reporting framework, and used to inform adaptive management where necessary.

[11] World Bank's Grievance Redress Service: https://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service
[12] World Bank Inspection Panel: https://www.inspectionpanel.org/

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Appendices

Appendix 1 : Environmental and Social Screening Form and Official Letters

Appendix 2 : Legal Framework

Appendix 3 : Environmental and Social Impact Assessment Methodology

Appendix 4 : Project Area / Site Visit Photos

Appendix 5 : Grievance Forms

Appendix 6 : Chance Finds Form

Appendix 7 : Environmental Calculations

Appendix 8 : Environmental Baseline

Appendix 9 : Biodiversity Baseline

Appendix 10 : Social Baseline

Appendix 11 : Indicative List of Concrete Plants and Material Supply Source

Appendix 1 : Environmental and Social Screening Form and Official Letters

1. Sub-project Information:

Sub-project Title	Construction of Levees in Trabzon Province
Sub-project Location	**Trabzon**
Responsible Regional Unit	Trabzon DSI 22nd Regional Directorate
Estimated Cost	114,471,247 Turkish Lira
Initiation/Finalisation Date	

2. Environmental and Social Screening Surveys Questions	**Answer**		**Next steps**
	Yes	**No.**	
ESS1			
1. Is the project likely to have significant adverse environmental and social impacts that are sensitive and unprecedented that trigger the 'Ineligible Activities' and exclusion?		√	The Project does not have unprecedented Environmental and Social impacts as it is not in the World Bank Group IFC Exclusion List category as set out in Annex 4 of the Türkiye Flood and Drought Management Project Environmental and Social Framework.
2. Does the project involve construction or rehabilitation of flood control structures i.e. ponds, check dams, levees, retaining walls, embankments, bridges, culverts?	√		With the following structures to be built within the scope of the project; • Classic check dams: 5 units • Permeable check dams: 2 units. Thanks to this project, Eastern Black Sea basins within the borders of DSİ 22nd Regional Directorate are analysed in terms of flooding and sedimentation, and it is aimed to take upstream measures (afforestation, terracing, reverse levee, reclamation bench, base belt, permeable revere levees, flood traps, etc.) in the required size, number and area in the streams deemed technically necessary according to the situation of the problem. The project will protect the life and property safety of 6,300 people directly affected by floods and 33,100 people indirectly affected by floods in the region.
3. If the answer to question 2 is "Yes"; Do these flood control structures meet the treatment requirements as a large dam?		√	The Flood Control Structures to be constructed within the scope of the Project fall within the scope of small dams according to the World Bank Environmental and Social Framework, Dam Safety (ESS 4).
4. Will construction or renovation work require new borrow pits or quarries to be opened?		√	Classical and Permeable check dams to be constructed within the scope of the project will be made of concrete. If necessary, new sand and gravel will not be excavated within the scope of the project, and material will be supplied from sand and gravel quarries located near the project.
ESS2			

5. Does the sub-project involve the use of goods and equipment involving forced labour, child labour or other harmful or exploitative forms of labour?		√	Article 18 of the Constitution of the Republic of Türkiye states that "No one shall be subjected to forced labour. Slavery is forbidden." In this context, there is no forced labour in our country. Paragraph 1 of Article 50 of the Constitution of the Republic of Türkiye states: "No one shall be required to perform work unsuited to his/her age, sex and capacity." In paragraph 2 of the same article: "Minors, women and physically and mentally disabled persons shall enjoy special protection with regard to working conditions." In the Regulation on the Procedures and Principles of Employment of Child and Young Workers, the definition of child labour and the lines of work in which they can work are specified. The specified lines of work are the lines of work requiring light labour and they are not allowed to work in construction activities. In this context, child labour will not be employed in our project.
6. Does the sub-project involve the recruitment of labour, including direct, contracted or primary supply employees?	√		All phases of the project will be realised with the contractor company and its personnel.
7. Do workers need Personal Protective Equipment (PPE) relative to the potential risks and hazards associated with their work?	√		In order to prevent occupational accidents, the use of appropriate personal protective equipment (PPE) to be determined by employees according to the risk assessment report of the workplace is important and mandatory according to our legislation.
8. Is there a risk that women will be underpaid when compared to men when working on the project construction?		√	Paragraph 4 of Article 5 titled "Equal Treatment Principle" of the Labour Law No. 4857, which is in force, stipulates that "Lower wages cannot be agreed for a job of the same or equal value due to sex". In this context, no gender discrimination will occur in the wages paid to employees.
9. Does the project lead to any risks and impacts on individuals or groups who will be disadvantaged or vulnerable due to their special circumstances?[13]		√	At all stages of the Project, necessary measures will be taken to avoid any risks and adverse impacts on individuals who will be disadvantaged or vulnerable due to their special circumstances.
ESS3			
10. Is the project likely to generate solid or liquid waste that could adversely affect soils, vegetation, rivers, streams or groundwater?		√	1-Perennial shrub forms that are likely to be in the existing stream bed will be cleaned. 2- Within the scope of the project flood control structures, necessary measures will be taken for water quality and pollution in the river and stream flow direction and temporary intervention will be made to the stream flow. 3-With the measures to be taken during the construction phase, no chemical, oil and harmful substances will be allowed to spill onto

[13] "Disadvantaged or vulnerable" means individuals or groups who, for example because of their age, gender, ethnic origin, religion, physical, mental or other disability, social, civil or health status, sexual orientation, gender identity, economic disadvantage or status of ethnic peoples and/or dependence on unique natural resources, are more likely to be adversely affected by the impacts of a project and/or whose ability to benefit from the impacts of a project is more limited than others.

			the soil and reach the water resources or groundwater by surface runoff. 4- Wastes from excavations and construction will be stored in designated areas in accordance with the relevant legislation. Liquid wastes, wastes resulting from the labour force and wastes that will arise due to vehicle oil changes, etc. will be classified and disposed of according to the relevant legislation. The Contractor will make the necessary agreements with the relevant companies. All these practices will be carried out in accordance with the National Zero Waste Project, the provisions of the legislation in force and the World Bank standards.
11. Do any of the construction works involve the removal of asbestos or other hazardous materials?		√	The project does not involve the removal of asbestos or any other hazardous materials.
12. Are the works likely to cause significant adverse effects on air and/or water quality?		√	1- The works are unlikely to cause significant adverse effects on air and/or water quality. 2- Gas emissions from vehicles will cause negligible and temporary air pollution. However, it will not change the existing air pollution values. 3- Wastewater generated during the works will be integrated into the existing sewerage system. 4- If there is no sewerage system in the area where the activity site is located, wastewater will be collected in sealed septic tanks and removed from the site by municipal water trucks. 5- Provisions of "Exhaust Gas Emission Control Regulation", "Air Quality Assessment and Management Regulation" and "Industrial Air Pollution Control Regulation" shall be complied with within the scope of the project.
13. Does the activity rely on existing infrastructure (such as discharge points) that is inadequate to prevent environmental impacts?		√	The sub-project is a flood control prevention activity and does not rely on existing infrastructure.
ESS4			
14. Is there a risk of increased exposure of the community to communicable diseases (such as COVID-19, HIV/AIDS, Malaria)?		√	Required works will be carried out for accommodation, nutrition and social activities for the workers who will work during the implementation phase of the project in a location close to the construction site away from the settlement and will be isolated from the settlements in the vicinity. In addition, people in the neighbouring settlements will be informed about this issue. Therefore, there will be no risk of the community being exposed to communicable diseases (such as COVID-19, HIV/AIDS, Malaria).
15. Is there a risk of an increase in traffic accidents?	√		Yes, there is a traffic risk during the construction of the Project due to construction and the supply of equipment and vehicles. In order not to increase the risk of traffic accidents, roads that do not pass through settlements will be used and necessary warning signs will be placed. Irrigation will be

			carried out at regular intervals with irrigation vehicles to prevent dust formation on stabilised roads. Also, it will be planned to minimise the risk by informing the personnel about this issue.
16. Is an influx of workers from outside the community expected? Are labourers expected to use community health services? Will they put pressure on existing community services (water, electricity, health, recreation, others)?		√	Due to the small number of workers (around 20) that will work within the scope of the project, it will not create a pressure on existing community services.
17. Is there a risk of an increase in SEA/SH as a result of project activities?		√	Necessary works will be carried out for accommodation, nutrition and social activities for the workers who will work during the implementation phase of the project in a location close to the construction site away from the settlement and will be isolated from the settlements in the vicinity. In addition, people in the neighbouring settlements will be informed about this issue. Therefore, there will be no risk of increase in SEA/SH.
18. Will public facilities such as education, health, religious institutions be adversely affected by the construction?		√	Since there are no public facilities such as education, health and religious institutions in the project area, there will be no impact. After the implementation of the project, it will contribute to the protection of facilities such as education, health and religious institutions by reducing the flood risk.
ESS5			
19. Does the sub-project involve involuntary land acquisition?	√		A Resettlement Plan (RP) will be prepared and implemented prior to the Contractor commencing operations on the affected land.
20. Does the sub-project involve physical and/or economic displacement of people?		√	
21. Is private land required for the sub-project activity that is voluntarily donated to the project?		√	
ESS6			
22. Does the project involve construction activities in protected areas or biodiversity areas as defined in national law?	√		The project site is not within the scope of National Park, Natural Park, Natural Monument, Nature Reserve, Wildlife Development and Protection Areas. As can be seen in Annex-3, the project area located in Dernekpazarı is 18 kilometres from Uzungöl Nature Park and 50 kilometres from Altındere Valley National Park. The project area located in Kalınçam Area is 17.5 kilometres from Örümcek Forest Nature Reserve and 36.6 kilometres from Altındere Valley National Park. Construction activities will not have any negative impact on these areas. In addition, it has been determined that the area where the reversing dam will be constructed is within the boundaries of Dernekpazarı State Hunting Area, Hayrat State Hunting Area and Şalpazarı State Hunting Area within the scope of the Land Hunting Law No. 4915 and necessary measures will be taken to protect the ecosystem around the facility area. In addition, in the official letter of the 12th Regional Directorate of the Ministry of Agriculture and Forestry, it is stated that there

			is no protected area and biodiversity area in the area.
23. Does the sub-project include activities that have the potential to cause, directly or indirectly, significant loss or degradation of critical habitats[14] or adverse impacts on natural habitats?		√	As shown on the map in Annex-3, the project area is located at a distance from critical natural habitats. In the official letter of the 12th Regional Directorate of the Ministry of Agriculture and Forestry (Annex-7), it is stated that there are no National Park, Natural Park, Natural Monument, Nature Reserve, Wildlife Development and Protection Areas in the area. In addition, in the official letter of the Provincial Directorate of Environment, Urbanisation and Climate Change (Annex-6), it is stated that it is out of scope in terms of environmental impact and evaluation and that there is no natural protected area in the area.
24. Will the project involve the conversion or degradation of non-critical natural habitats?		√	The Project will not involve the conversion of non-critical habitats as the works are related to the rehabilitation of existing infrastructure.
25. Will this activity require clearing of trees, including internal natural vegetation?	√		Perennial shrub forms that are likely to be in the area where the Flood Control structures are located will be cleared. Due to the small size of the construction area, there will be no habitat fragmentation.
26. Will there be a significant impact on important ecosystems (especially those supporting rare, threatened or endangered species of flora and fauna)?		√	The Project will not have a negative impact on important ecosystems (particularly those supporting rare, threatened or endangered species of flora and fauna). In addition, in the official letter of the 12th Regional Directorate of the Ministry of Agriculture and Forestry (Annex-7), it is stated that there is no protected area and biodiversity area in the area.
ESS8			
27. Is the sub-project within or adjacent to a sensitive site (historic or archaeological or culturally significant site) or facility, i.e. historic bridges or near buildings, sacred trees or objects of sacred value to local communities (e.g. monuments, tombs or stones) or will it lead to loss of access?		√	The structures to be constructed within the scope of the Project will be built in a small area on the stream bed. For this reason, the activities to be carried out will not have any impact on areas of historical, archaeological and cultural importance. In addition, in the official letter of the Provincial Directorate of Culture and Tourism (Annex-8), it is stated that there are no areas of historical, archaeological and cultural importance in the area.
28. Does the sub-project require demolition, excavation, earth movement or flooding?	√		Construction activities in the existing stream bed will cause a small amount of excavation

[14] Critical natural habitats that are legally protected, formally proposed for protection, identified by authoritative sources for their high conservation value, or recognized as protected by traditional local communities.

			and soil movement. This amount will be kept as low as possible with the measures to be taken. In addition, thanks to the flood control structures to be constructed, floods that cause loss of life and property will be prevented.
ESS10			
Does the project result in any risks and impacts on individuals or groups who will be disadvantaged or vulnerable due to their particular circumstances?[15]	√		At the project level, SEP will be implemented in a manner that ensures adequate consultations with disadvantaged and vulnerable groups.

3. Conclusion

Based on the result obtained from the above screening, the Project's environmental and social risk category is determined as "*moderate*" and E&S risk management tools will be prepared/adopted and implemented to mitigate the risks below:

a) The potential impact of the construction works to be carried out within the scope of the Project on the environment are anticipated to be low to medium in magnitude, predominantly reversible, short-term and mostly limited to the project area and its immediate surroundings. Taking these into consideration, the project is assessed as "Moderate" risk category.
b) It is considered that the impacts of these expropriation activities can be managed through a sub-project specific ESIA and other potential environmental and social impacts and risks can be managed through an Environmental and Social Management Plan.

Status	Institution / Authorised	Name, Signature, Date
Prepared by Environmental Specialist	General Directorate of DSI	• Muhammet Hikmet SULAR • Melih KAYAL
Prepared by Social Specialist	General Directorate of DSI	• Kamile ERDEM
Prepared by Occupational Safety Specialist	General Directorate of DSI	• Cengiz ARSLAN

[15] "Disadvantaged or vulnerable" refers to those individuals or groups who, by virtue of, for example, their age, gender, ethnicity, religion, physical, mental or other disability, social, civic or health status, sexual orientation, gender identity, economic disadvantages or ethnic peoples status, and/or dependence on unique natural resources, will be more likely to be adversely affected by the project impacts and/or more limited than others in their ability to take advantage of a project's benefits.

Annex-1: Project Location on Türkiye Map

Annex-2: Project Google Earth Image

Annex-3: Distance of the Project Area to National Parks and Protected Areas

Annex-4: Türkiye Ramsar Map

Annex-5: AZE Map of Türkiye

Annex-6: Environmental Impact Assessment Out of Scope Letter and Opinion under the Law on the Protection of Cultural and Natural Heritage

T.C.
TRABZON VALİLİĞİ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

Sayı : E-99147739-220.99-10398741
Konu : Türkiye Taşkın ve Kuraklık Yönetimi Projesi hk.

DSİ 22. BÖLGE MÜDÜRLÜĞÜNE

İlgi : 09.08.2024 tarih ve 4895975 sayılı yazınız.

İlgi yazıda; Türkiye Taşkın ve Kuraklık Yönetimi Projesi kapsamında Dünya Bankası ile yapılan görüşmelerde önceliklendirilmiş olan işler arasında yer alan ve Bölge Müdürlüğünüz sorumluluk sahasında bulunan Trabzon İli Tersip Bentleri işi ile ilgili olarak Tarama Dökümanları ile Çevresel ve Sosyal Planların hazırlanmasının gerekliliği belirtilmiş olduğu ifade edilerek, Tersip Bentlerinin Tabiat Varlıkları ile Doğal Sit Alanları açısından ve ÇED Yönetmeliği açısından değerlendirilmesi istenmiştir.

İlimizde yapılması planlanan "Tersip Bentleri" faaliyeti 29.07.2022 tarih ve 31907 sayılı Resmi gazetede yayımlanarak yürürlüğe giren Çevresel Etki Değerlendirilmesi Yönetmeliği Ek-I ve Ek-II Listelerinde yer almadığından ÇED Yönetmeliği kapsam dışında değerlendirilmiştir. Bununla birlikte, inşa edilen tersip bentlerinin menba kısımlarında biriken sedimentin (rüsubat) ara ara temizlenmesine ihtiyaç duyulmakta olup, temizleme çalışmaları yapılırken 03.05.2019 tarih ve 30763 sayılı Taşkın ve Rüsubat Kontrolü Yönetmeliğinin 17. Maddesinin 3. Bendi gereği İl Müdürlüğümüze müracaat edilerek gerekli görüşün alınması, temizlik çalışması esnasında dere yatağında bulanıklık oluşmaması için gerekli tedbirlerin alınması ve Su Kirliliği Kontrolü Yönetmeliği hükümleri doğrultusunda çalışma yapılması,2872 sayılı Çevre Kanunu ile bu Kanuna istinaden çıkarılan Yönetmeliklerin ilgili hükümlerine uyulması ve diğer mer'i mevzuat çerçevesinde öngörülen gerekli izinlerin alınması, ekolojik dengenin bozulmamasına, çevrenin korunmasına ve geliştirilmesine yönelik tedbirlere riayet edilmesi gerekmektedir.

Ayrıca, temizleme çalışması esnasında çıkan malzemenin 3213 sayılı Maden kanununa göre maden değeri taşıması halinde 08.12.20227 tarih ve 26724 sayılı Kum Çakıl ve Benzeri Maddelerin Alınması ve Kontrolü Yönetmeliği ile 29.07.2022 tarih ve 31907 sayılı ÇED Yönetmeliği kapsamında ÇED Gerekli Değildir Kararı alınması gerektiği bilinmelidir.

Bununla birlikte, ilgi yazı ekinde yer alan tersip bentlerinin bulunduğu alanlarda 2863 sayılı Kültür ve Tabiat Varlıklarını Koruma Kanununun kurumumuzu ilgilendiren kapsamı bakımından herhangi bir tescilli **"Tabiat Varlığı"** veya **"Doğal Sit Alanı"** ve ilan edilmiş **"Özel Çevre Koruma Bölgesi"** olarak belirlenen bir alanın bulunmadığı tespit edilmiş olup, söz konusu alanda yapılacak faaliyetler sırasında korunması gereken herhangi bir tabiat varlığına **(göl; şelale; fosil, fosil yatağı; ağaç; mağara v.b)** rastlanılması durumunda, çalışmalar durdurularak, 2863 sayılı Kültür ve Tabiat Varlıklarını Koruma Kanunu'nun "Haber Verme Zorunluluğu" başlıklı 4. maddesi gereği, en yakın mülki idare amirliğine haber verilmesi ve Müdürlüğümüze bildirilmesi gerekmektedir.

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Bilgi için:Betül OKUYAN
Mühendis

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Bilgilerinize ve gereğini arz ederim.

Uğur KORKMAZ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürü

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TRABZON VALİLİĞİ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

Sayı : E-99147739-220.03-14738454
Konu : Tersip Benti hk.

DSİ 22. BÖLGE MÜDÜRLÜĞÜNE

İlgi : a) 12.01.2026 tarih ve 6741580 sayılı yazınız.
b) 27/01/2026 tarihli ve 228900 Referans No'lu Başvuru.

Trabzon İli, Dernekpazarı İlçesinde Akköse Deresi mevkiinde DSİ 22. Bölge Müdürlüğü tarafından yapılması planlanan Tersip Benti (1 adet) projesi , 29.07.2022 tarih ve 31907 Sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliği Listelerinde yer almadığından kapsam dışı olarak değerlendirilmiştir.

İnşa edilen tersip bentlerinin menba kısımlarında biriken sedimentin (rüsubat) ara ara temizlenmesine ihtiyaç duyulmakta olup, temizleme çalışmaları yapılırken 03.05.2019 tarih ve 30763 sayılı Taşkın ve Rüsubat Kontrolü Yönetmeliğinin 17. Maddesinin 3. Bendi gereği İl Müdürlüğümüze müracaat edilerek gerekli görüşün alınması, temizlik çalışması esnasında dere yatağında bulanıklık oluşmaması için gerekli tedbirlerin alınması ve Su Kirliliği Kontrolü Yönetmeliği hükümleri doğrultusunda çalışma yapılması,2872 sayılı Çevre Kanunu ile bu Kanuna istinaden çıkarılan Yönetmeliklerin ilgili hükümlerine uyulması ve diğer mer'i mevzuat çerçevesinde öngörülen gerekli izinlerin alınması, ekolojik dengenin bozulmamasına, çevrenin korunmasına ve geliştirilmesine yönelik tedbirlere riayet edilmesi gerekmektedir.

Ayrıca, temizleme çalışması esnasında çıkan malzemenin 3213 sayılı Maden Kanununa göre maden değeri taşıması ve bu madenin çıkarılarak ticarete konu edilmesinin planlanması halinde 08.12.2007 tarih ve 26724 sayılı Kum Çakıl ve Benzeri Maddelerin Alınması, İşletilmesi ve Kontrolü Yönetmeliği ile 29.07.2022 tarih ve 31907 sayılı ÇED Yönetmeliği kapsamında ÇED Olumlu Kararı alınması gerektiği bilinmelidir.

Bununla birlikte, ilgi yazı ekinde yer alan tersip bentlerinin bulunduğu alanlarda 2863 sayılı Kültür ve Tabiat Varlıklarını Koruma Kanununun kurumumuzu ilgilendiren kapsamı bakımından herhangi bir tescilli "**Tabiat Varlığı**" veya "**Doğal Sit Alanı**" ve ilan edilmiş "**Özel Çevre Koruma Bölgesi**" olarak belirlenen bir alanın bulunmadığı tespit edilmiş olup, söz konusu alanda yapılacak faaliyetler sırasında korunması gereken herhangi bir tabiat varlığına (**göl; şelale; fosil, fosil yatağı; ağaç; mağara v.b)** rastlanılması durumunda, çalışmalar durdurularak, 2863 sayılı Kültür ve Tabiat Varlıklarını Koruma Kanunu'nun "Haber Verme Zorunluluğu" başlıklı 4. maddesi gereği, en yakın mülki idare amirliğine haber verilmesi ve Müdürlüğümüze bildirilmesi gerekmektedir.

Bilgilerinize ve gereğini arz ederim.

Uğur KORKMAZ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürü

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TRABZON VALİLİĞİ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

Sayı : E-99147739-220.03-14738790
Konu : Tersip Benti hk.

DSİ 22. BÖLGE MÜDÜRLÜĞÜNE
(Havza Yönetimi, İzleme ve Tahsisler Şube Müdürlüğü)

İlgi : a) 12.01.2026 tarihli ve 98479566-6741580 sayılı yazınız.
b) 27/01/2026 tarihli ve 228902 Referans No'lu Başvuru.

Trabzon İli, Of İlçesinde Bölümlü Deresi mevkiinde DSİ 22. Bölge Müdürlüğü tarafından yapılması planlanan Tersip Benti (4 adet) projesi, 29.07.2022 tarih ve 31907 Sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliği Listelerinde yer almadığından kapsam dışı olarak değerlendirilmiştir.

İnşa edilen tersip bentlerinin menba kısımlarında biriken sedimentin (rüsubat) ara ara temizlenmesine ihtiyaç duyulmakta olup, temizleme çalışmaları yapılırken 03.05.2019 tarih ve 30763 sayılı Taşkın ve Rüsubat Kontrolü Yönetmeliğinin 17. Maddesinin 3. Bendi gereği İl Müdürlüğümüze müracaat edilerek gerekli görüşün alınması, temizlik çalışması esnasında dere yatağında bulanıklık oluşmaması için gerekli tedbirlerin alınması ve Su Kirliliği Kontrolü Yönetmeliği hükümleri doğrultusunda çalışma yapılması,2872 sayılı Çevre Kanunu ile bu Kanuna istinaden çıkarılan Yönetmeliklerin ilgili hükümlerine uyulması ve diğer mer'i mevzuat çerçevesinde öngörülen gerekli izinlerin alınması, ekolojik dengenin bozulmamasına, çevrenin korunmasına ve geliştirilmesine yönelik tedbirlere riayet edilmesi gerekmektedir.

Ayrıca, temizleme çalışması esnasında çıkan malzemenin 3213 sayılı Maden kanununa göre maden değeri taşıması ve bu madenin çıkarılarak ticarete konu edilmesinin planlanması halinde 08.12.2007 tarih ve 26724 sayılı Kum Çakıl ve Benzeri Maddelerin Alınması, İşletilmesi ve Kontrolü Yönetmeliği ile 29.07.2022 tarih ve 31907 sayılı ÇED Yönetmeliği kapsamında ÇED Olumlu Kararı alınması gerektiği bilinmelidir.

Bununla birlikte, ilgi yazı ekinde yer alan tersip bentlerinin bulunduğu alanlarda 2863 sayılı Kültür ve Tabiat Varlıklarını Koruma Kanununun kurumumuzu ilgilendiren kapsamı bakımından herhangi bir tescilli **"Tabiat Varlığı"** veya **"Doğal Sit Alanı"** ve ilan edilmiş **"Özel Çevre Koruma Bölgesi"** olarak belirlenen bir alanın bulunmadığı tespit edilmiş olup, söz konusu alanda yapılacak faaliyetler sırasında korunması gereken herhangi bir tabiat varlığına **(göl; şelale; fosil, fosil yatağı; ağaç; mağara v.b)** rastlanılması durumunda, çalışmalar durdurularak, 2863 sayılı Kültür ve Tabiat Varlıklarını Koruma Kanunu'nun "Haber Verme Zorunluluğu" başlıklı 4. maddesi gereği, en yakın mülki idare amirliğine haber verilmesi ve Müdürlüğümüze bildirilmesi gerekmektedir.

Bilgilerinize ve gereğini arz ederim.

Uğur KORKMAZ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürü

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TRABZON VALİLİĞİ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

Sayı : E-99147739-220.03-14738214
Konu : Tersip Benti hk.

DSİ 22. BÖLGE MÜDÜRLÜĞÜNE

İlgi : a) 12.01.2026 tarih ve 6741580 sayılı yazınız.
b) 26/01/2026 tarihli ve 228860 Referans No'lu Başvuru.

Trabzon İli, Tonya İlçesi Kalınçam Deresi mevkiinde DSİ 22. Bölge Müdürlüğü tarafından yapılması planlanan 2 adet Tersip Benti projesi, 29.07.2022 tarih ve 31907 Sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliği Listelerinde yer almadığından kapsam dışı olarak değerlendirilmiştir.

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Bununla birlikte, ilgi yazı ekinde yer alan tersip bentlerinin bulunduğu alanlarda 2863 sayılı Kültür ve Tabiat Varlıklarını Koruma Kanununun kurumumuzu ilgilendiren kapsamı bakımından herhangi bir tescilli "**Tabiat Varlığı**" veya "**Doğal Sit Alanı**" ve ilan edilmiş "**Özel Çevre Koruma Bölgesi**" olarak belirlenen bir alanın bulunmadığı tespit edilmiş olup, söz konusu alanda yapılacak faaliyetler sırasında korunması gereken herhangi bir tabiat varlığına (**göl; şelale; fosil, fosil yatağı; ağaç; mağara v.b)** rastlanılması durumunda, çalışmalar durdurularak, 2863 sayılı Kültür ve Tabiat Varlıklarını Koruma Kanunu'nun "Haber Verme Zorunluluğu" başlıklı 4. maddesi gereği, en yakın mülki idare amirliğine haber verilmesi ve Müdürlüğümüze bildirilmesi gerekmektedir.

Bilgilerinize ve gereğini arz ederim.

Uğur KORKMAZ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürü

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Trabzon Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü
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e-posta: trabzon@csb.gov.tr
KEP Adresi : trabzoncevresehircilik@hs01.kep.tr
Bilgi için:Betül OKUYAN
Mühendis

Annex-7: Opinion Letter of the 12th Regional Directorate of the Ministry of Agriculture and Forestry

T.C.
TARIM VE ORMAN BAKANLIĞI
12. Bölge Müdürlüğü

Sayı : E-93318048-045.01-15670294

Konu : Türkiye Taşkın ve Kuraklık Yönetimi Projesi (Giresun-Rize-Trabzon)

DAĞITIM YERLERİNE

İlgi : a) DSİ 22.Bölge Müdürlüğü'nün 09.08.2024 tarihli ve E-27922406-010.06.99-4895761 sayılı yazısı.
b) Giresun İl Şube Müdürlüğünün 14.08.2024 tarihli ve E-23940475-045.01-15433627 sayılı yazısı.
c) Rize İl Şube Müdürlüğünün 20.08.2024 tarihli ve E-98687707-045.01-15497847 sayılı yazısı.
ç) Trabzon İl Şube Müdürlüğünün 26.08.2024 tarihli ve E-47083137-045.01-15578740 sayılı yazısı.
d) Kaçkar Dağları Milli Park Müdürlüğü (Ayder Milli Park Şefliği)'nün 28.08.2024 tarihli ve E-12615366-045.01-15604604 sayılı yazısı.

İlgi (a) yazı'da; Türkiye Taşkın ve Kuraklık Yönetimi Projesikapsamında Dünya Bankası ile yapılan görüşmelerde önceliklendirilmiş olan işler arasında yer alan Giresun, Rize ve Trabzon illeri Tersip Bentleri çalışmaları ile ilgili olarak Kurumumuzun görüşü istenilmektedir.

Söz konusu çalışmanın yapılacağı alan; 4915 sayılı Kara Avcılığı Kanunu, 2873 sayılı Milli Parklar Kanunu, 04.04.2014 tarihli ve 28962 (Değişik: R G-23/6/2022-31875) Resmi Gazete sayılı Sulak Alanların Korunması Yönetmeliği ve Kurumumuzu ilgilendiren diğer mer'i mevzuat hükümleri açısından incelenmiştir.

Yapılan incelemeler sonucunda; bahse konu çalışmaların yapılacağı alanlar, korunan alanlarımız (Milli Park, Tabiat Parkı, Tabiat Anıtı, Tabiat Koruma Alanı, Yaban Hayatı Geliştirme ve Koruma Sahaları) kapsamında kalan yerlerden değildir. Çalışmalar sürecinde Giresun, Rize, Trabzon illerinin Mahalli Sulak Alan Komisyonu Kararlarına uyulması, biyolojik çeşitliliğin sürdürülebilirliğinin sağlanması bakımından nesli tehdit veya tehlike altında olanlar ile nadir bitki ve hayvan türlerinin korunması esas olup korunması gereken endemik, hassas tür/türlerin tespit edilmesi durumunda çalışmalara ara verilerek ilgili İl Şube Müdürlüğümüz ile iletişime geçilmesi gerekmektedir. Yaban hayvanlarının yaşamlarını tehlikeye düşürecek çalışmalardan uzak durulması, söz konusu Tersip Bentleri ile ilgili olarak, çalışmaların Kurumumuz mer'i mevzuat hükümlerine uyularak yazımız ekinde yer alan inceleme raporundaki tespit, uyarı ve değerlendirmeler doğrultusunda söz konusu alanlarda çalışmaların yapılmasında (Gerçekleştirilmesi planlanan faaliyetlere ilişkin ÇED (Çevresel Etki Değerlendirme) süreci olması durumunda, ÇED sürecinde verilecek Kurumumuz görüşleri saklı kalmak kaydıyla) Kurumumuz açısından sakınca görülmemektedir. Faaliyet alanlarının bir kısmının veya tamamının 5403 sayılı Kanun kapsamındaki (tarım, ziraat, bahçe vb.) alanlar vasfında olması durumunda, Doğa Koruma ve Milli Parklar Genel Müdürlüğünün 14.02.2024 tarihli ve 13223655 sayılı,

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Doğrulama Kodu: 79EC64BB-CD5B-4B3F-8E57-6C7889A328E8 Doğrulama Adresi: https://www.turkiye.gov.tr/tarim-ebys
İslampaşa Mah. Zincirli Cad. No:7 RİZE
Tel: (464) 214 55 47 Faks: (464) 214 59 32
Bilgi için:Özgür AKÇAY
Şube Müdürü V.

5403 Sayılı Kanun Uygulamaları konulu, talimatı kapsamında İl Tarım ve Orman Müdürlüğünün görüşünün alınması gerektiği hususunda;

Gereğini arz ve bilgilerini rica ederim.

Cüneyt ALOĞLU
Bölge Müdürü V.

Ek:
1 - Trabzon İl Şube Müdürlüğü İnceleme Raporu (2 Sayfa)
2 - Alanlara Ait Sayısal Veri

Dağıtım:

Gereği:
Dsi 22. Bölge Müdürlüğüne

Bilgi:
Giresun İl Şube Müdürlüğüne
Kaçkar Dağları Milli Park Müdürlüğüne
Rize İl Şube Müdürlüğüne
Trabzon İl Şube Müdürlüğüne

İslampaşa Mah. Zincirli Cad. No:7 RİZE
Tel: (464) 214 55 47 Faks: (464) 214 59 32
KEP: tarimveormanbakanligi@hs01.kep.tr
KEP Adresi : tarimveormanbakanligi@hs01.kep.tr

Bilgi için:Özgür AKÇAY
Şube Müdürü V.
Telefon No:(464) 214 55 47-2261

Annex-8: Opinion of Trabzon Provincial Directorate of Culture and Tourism

T.C.
KÜLTÜR VE TURİZM BAKANLIĞI
Kültür Varlıkları ve Müzeler Genel Müdürlüğü
Trabzon Kültür Varlıklarını Koruma Bölge Kurulu Müdürlüğü

Sayı : E-20816062-165.99-5764603
Konu : Türkiye Taşkın ve Kuraklık Yönetimi Projesi Hk.(28.15.31-38-58)

DSİ 22. BÖLGE MÜDÜRLÜĞÜNE
(Taşkın Kontrol Şube Müdürlüğü)

İlgi : a) 09.08.2024 tarihli ve E-27922406-010.06.99-4896258 sayılı yazınız.
b) Müdürlüğümüzün 14.08.2024 tarihli ve 5546493 sayılı yazısı.
c) 16.08.2024 tarihli ve E-27922406-769-4920632 sayılı yazınız.
ç) Müdürlüğümüzün 09.09.2024 tarihli ve E-20816062-165.99-5646597 sayılı yazısı.

İlgi ç) sayılı yazımızda özetle; Müdürlüğümüz arşivinde korunması gerekli taşınmaz kültür varlığı olarak tescilli taşınmazlar ve sit alanlarına yönelik envanter çalışmalarının devam ettiği, bahsi geçen taşınmazların kadastral bilgi ve korunma alanlarına yönelik çalışma yapıldıktan sonra sonra tarafınıza bilgi verileceği belirtilmektedir.

Trabzon Kültür ve Tabiat Varlıklarını Koruma Bölge Kurulunun 18.02.2010 tarih ve 2535 sayılı kararı ile korunması gerekli kültür varlığı olarak tescilli köprülerden Çamlıca Köprüsünün korunma alanı Trabzon Kültür Varlıklarını Koruma Bölge Kurulu'nun 27.09.2024 tarih ve 9036 sayılı kararı ile Yivdincik Köprüsünün korunma alanı 27.09.2024 tarih ve 9037 sayılı kararı ile Halkalı Köprüsünün korunma alanı 27.09.2024 tarih ve 9038 sayılı kararı ile Karabulduk Köprüsünün korunma alanı ise Trabzon Kültür Varlıklarını Koruma Bölge Kurulu'nun 27.09.2024 tarih ve 9039 sayılı kararı ile belirlenmiş olup bu alanlarda yapılacak her türlü uygulama öncesi Trabzon Kültür Varlıklarını Koruma Bölge Kurulundan izin alınması gerekmektedir.

Bilgilerinizi ve gereğini arz/rica ederim.

Yücel KUM
Koruma Bölge Kurulu Müdür V.

Ek: Kurul Kararı (8 Sayfa)

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Doğrulama Kodu: 528F60AC-AF6D-4CF6-B298-945B2E79B7E5 Doğrulama Adresi: https://www.turkiye.gov.tr/ktb-ebys

Adres:Cumhuriyet Mh. Nemlioğlu Cemal Sk. No:25 Ortahisar/TRABZON
Tel:0462 322 36 89 Fax:0462 326 29 88 Mail:trabzonkurul@ktb.gov.tr
KEP Adresi : kulturveturizmbakanligi@hs01.kep.tr

Bilgi için:Kezban KİBAR SAYGIN
Arkeolog

T.C.
KÜLTÜR VE TURİZM BAKANLIĞI
Kültür Varlıkları ve Müzeler Genel Müdürlüğü
Trabzon Kültür Varlıklarını Koruma Bölge Kurulu Müdürlüğü

Sayı : E-20816062-165.99-5646597
Konu : Türkiye Taşkın ve Kuraklık Yönetimi Projesi Hk.

DSİ 22. BÖLGE MÜDÜRLÜĞÜNE
(Taşkın Kontrol Şube Müdürlüğü)

İlgi : a) 09.08.2024 tarihli ve E-27922406-010.06.99-4896258 sayılı yazınız.
b) Müdürlüğümüzün 14.08.2024 tarihli ve 5546493 sayılı yazısı.
c) 16.08.2024 tarihli ve E-27922406-769-4920632 sayılı yazınız.

İlgi a) sayılı yazınızda; Türkiye Taşkın ve Kuraklık Yönetimi Projesi kapsamında Giresun, Rize ve Trabzon illerinde kurumumuz açısından Müdürlüğümüz mevzuatı gereğince herhangi bir konunun bulunup bulunmadığı bilgisi talep edilmektedir.

İlgi b) sayılı yazımız ile söz konusu alanlara ilişkin "ncz" formatında konum bilgilerinin gönderilmesi talep edilmiştir.

İlgi c) sayılı yazınız ve ekleri incelenmiş olup güzergah alanlarından; Giresun İli, Keşap ilçesinde ismen tescilli, Trabzon Kültür ve Tabiat Varlıklarını Koruma Bölge Kurulunun 18.02.2010 tarih ve 2535 sayılı kararı ile tescilli Karabulduk Beldesi Fatih Caddesinde yer alan köprü ve Çamlıca köyünde yer alan 2 adet köprü yer almaktadır.

Müdürlüğümüz arşivinde korunması gerekli taşınmaz kültür varlığı olarak tescilli taşınmazlar ve sit alanlarına yönelik envanter çalışmaları devam etmektedir.Yukarıda bahsi geçen taşınmazların kadastral bilgi ve korunma alanlarına yönelik çalışma yapıldıktan sonra sonra tarafınıza bilgi verilecektir.

Kültür ve Tabiat Varlıklarını Koruma Yüksek Kurulu'nun 05.11.1999 tarih ve 664 sayılı ilke kararında "... Koruma alanı belirlenmemiş sit alanı dışındaki tescilli parsellerde, bu parsele komşu olan veya aralarından yol geçse dahi bu parsele cephe veren parsellerin koruma alanı olarak kabul edilmesine, bu alanlarda gelecekte yapılacak uygulamalarda aksaklıklara neden olunmaması için Koruma Kurulundan karar alınmadan herhangi bir uygulama yapılamayacağına..." denilmekte olup alanda yapılacak hertürlü uygulama öncesi Müdürlüğümüzden izin alınması gerekmektedir.

Bilgilerinizi ve gereğini arz/rica ederim.

Yücel KUM
Koruma Bölge Kurulu Müdür V.

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Doğrulama Kodu: 80B77953-6DA7-43E6-9692-C3DA64FE11C7 Doğrulama Adresi: https://www.turkiye.gov.tr/ktb-ebys

Bilgi için:Kezban KİBAR SAYGIN
Arkeolog
Adres:Cumhuriyet Mh. Nemlioğlu Cemal Sk. No:25 Ortahisar/TRABZON
Tel:0462 322 36 89 Fax:0462 326 29 88 Mail:trabzonkurul@ktb.gov.tr
KEP Adresi : kulturveturizmbakanligi@hs01.kep.tr

Annex-9 Site Photos

Appendix 2 : Legal Framework

NATIONAL LAWS

- Environmental Law No. 2872
- Law on the Protection of Cultural and Natural Assets No. 2863
- Forestry Law No. 6831
- Groundwater Law No. 167
- Soil Conservation and Land Use Law No. 5403 (and Amendment Law No. 6537)
- Expropriation Law No. 2942 (and amendment(s), as applicable)
- Labor Law No. 4857
- Occupational Health and Safety Law No. 6331
- Public Health Law No. 1593
- Right to Information Law No. 4982
- Turkish Building Earthquake Code (Official Gazette: 18.03.2018, No. 30364)

NATIONAL REGULATIONS AND SECONDARY LEGISLATION TO CITE (MOST RELEVANT FOR THIS ESMP)

Environmental assessment / permitting / compliance

- Environmental Impact Assessment (EIA) Regulation (Official Gazette: 29.07.2022, No. 31907)
- Environmental Permit and Licenses Regulation (Official Gazette: 10.09.2014, No. 29115)
- Environmental Auditing Regulation (Official Gazette: 21.11.2008, No. 27061)
- Regulation for Starting up and Operating a Workplace (Official Gazette: 10.08.2005, No. 25902)

Air quality and emissions (construction dust, equipment)

- Regulation on Assessment and Management of Air Quality (Official Gazette: 06.06.2008, No. 26898)
- Regulation on Control of Exhaust Emissions (Official Gazette: 11.03.2017, No. 30004)
- Regulation on Control of Air Pollution from Heating (Official Gazette: 13.01.2005, No. 25699)

Noise and vibration

- Regulation on Environmental Noise Control (Official Gazette: 30.11.2022, No. 32029)
- Regulation on Environmental Noise Emission Caused by Equipment Used Outdoors (Official Gazette: 30.06.2016, No. 29758)

Water quality / wastewater

- Water Pollution Control Regulation (Official Gazette: 31.12.2004, No. 25687)
- Surface Water Quality Management Regulation (Official Gazette: 15.04.2015, No. 29327)
- Regulation on Protection of Groundwaters against Pollution and Deterioration (Official Gazette: 22.05.2015, No. 29363)
- Urban Wastewater Treatment Regulation (Official Gazette: 08.01.2006, No. 26047)
- Regulation on Wastewater Collection and Disposal Systems (Official Gazette: 06.01.2017, No. 29940)

- Regulation on Water for Human Consumption (Official Gazette: 07.03.2013, No. 28580)

Soil

- Implementation Regulation on Soil Protection and Land Use (Official Gazette: 15.12.2005, No. 26024)
- Regulation on Control of Soil Pollution and Polluted Areas by Point Sources (Official Gazette: 08.06.2010, No. 27605)

Waste (construction & domestic & hazardous)

- Waste Management Regulation (Official Gazette: 02.04.2015, No. 29314)
- Regulation on Control of Excavation Materials, Construction and Demolition Wastes (Official Gazette: 18.03.2004, No. 25406)
- Zero Waste Regulation (Official Gazette: 12.07.2019, No. 30829)
- Waste Oils Management Regulation (Official Gazette: 21.12.2019, No. 30985)
- Regulation on Control of Packaging Wastes (Official Gazette: 27.12.2017, No. 30283)

Chemicals / hazardous substances

- Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals (Official Gazette: 03.12.2014, No. 29204)
- Regulation on Classification, Labelling and Packaging of Substances and Mixture (Official Gazette: 11.12.2013, No. 28848)
- Regulation on Inventory and Control of Chemicals (Official Gazette: 26.12.2008, No. 27092)

Occupational health and safety (construction)

- Regulation on Health and Safety Signs (Official Gazette: 11.09.2013, No. 28762)
- Regulation on Use of Personal Protective Equipment at Workplaces (Official Gazette: 02.07.2013, No. 28695)
- Regulation on Health and Safety Measures in the Use of Work Equipment (Official Gazette: 25.04.2013, No. 28628)
- Regulation on Health and Safety Measures at Works Involving Chemicals (Official Gazette: 12.08.2013, No. 28733)
- Regulation on Methods and Essentials of OHS Training for Workers (Official Gazette: 15.05.2013, No. 28648)
- First Aid Regulation (Official Gazette: 29.07.2015, No. 29429)
- Communiqué on Hazard Classes List related to OHS (Official Gazette: 29.03.2013, No. 28602)

Community safety / security / traffic

- Highway Traffic Law No. 2918
- Private Security Services Law No. 5188 (and Implementation Regulation, Official Gazette: 26.09.2009, No. 27358)

International conventions and agreements (remove EU directives; keep only those listed and relevant)

Biodiversity / habitats

- Convention on Biological Diversity (Rio)
- Bern Convention on the Conservation of European Wildlife and Natural Habitats
- CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora)

- Ramsar Convention on Wetlands of International Importance

Waste / chemicals / pollution

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
- Stockholm Convention on Persistent Organic Pollutants
- Montreal Protocol on Substances that Deplete the Ozone Layer
- Vienna Convention for the Protection of the Ozone Layer
- Convention on Long-range Transboundary Air Pollution

Cultural heritage

- UNESCO World Heritage Convention (Convention Concerning the Protection of the World Cultural and Natural Heritage)
- European Convention on the Protection of the Archaeological Heritage
- European Landscape Convention

Labor / OHS (ILO)

- ILO Occupational Safety and Health Convention, 1981 (No. 155)
- ILO Occupational Health Services Convention, 1985 (No. 161)
- ILO Labour Inspection Convention, 1947 (No. 81)
- ILO Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)
- ILO Worst Forms of Child Labour Convention, 1999 (No. 182)

WORLD BANK REQUIREMENTS

World Bank Environmental and Social Framework and EHS Guidelines

- World Bank Environmental and Social Framework (ESF) (2018)
- ESS1 – Assessment and Management of Environmental and Social Risks and Impacts
- ESS2 – Labor and Working Conditions
- ESS3 – Resource Efficiency and Pollution Prevention and Management
- ESS4 – Community Health and Safety
- ESS5 – Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- ESS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources
- ESS8 – Cultural Heritage
- ESS10 – Stakeholder Engagement and Information Disclosure
- WBG General EHS Guidelines

PARENT PROJECT-LEVEL WB INSTRUMENTS AND REQUIREMENTS

- Environmental and Social Commitment Plan (ESCP)
- Environmental and Social Management Framework (ESMF)
- Stakeholder Engagement Plan (SEP)
- Labor Management Procedures (LMP)
- Resettlement Framework (RF)

Appendix 3 : Environmental and Social Impact Assessment Methodology

1. IMPACT IDENTIFICATION FRAMEWORK

Potential environmental and social impacts associated with the Sub-project were identified through a structured and iterative process, drawing on multiple information sources and assessment tools. The impact identification process included:

- Review of the approved Sub-project design, construction methods, and planned activities
- Site reconnaissance and field observations
- Review of baseline environmental and social conditions within the Area of Influence (AoI)
- Stakeholder consultations and engagement with local authorities and communities
- Review of applicable national legislation, World Bank Environmental and Social Standards (ESSs), and Parent Project ESMF requirements
- Consideration of Good International Industry Practice (GIIP), including the WBG EHS Guidelines

Identified impacts were grouped under environmental, social, occupational health and safety (OHS), and community health and safety (CHS) themes and aligned with the structure of the ESMP table.

2. IMPACT ASSESSMENT APPROACH

The assessment of impacts was carried out using a qualitative significance-based approach, consistent with ESS1 and standard ESMP practice for construction-phase activities of limited spatial extent and duration.

Each identified impact was assessed in terms of:

- Nature and characteristics of the impact (event magnitude)
- Sensitivity of the affected receptor(s)
- Effectiveness of proposed mitigation measures

The outcome of this assessment is reflected in the Residual Impact Significance column of the ESMP table.

3. EVENT MAGNITUDE

Event magnitude describes the inherent characteristics of an impact prior to the application of mitigation measures. In this ESMP, event magnitude was evaluated qualitatively by considering the following parameters:

- Spatial extent (scale): whether the impact is confined to the immediate work area, the broader AoI, or extends downstream or to nearby settlements
- Impact type: whether the impact is direct, indirect, or cumulative
- Frequency: whether the impact is temporary, intermittent, or continuous during construction
- Duration: whether the impact is short-term (construction-phase only) or can persist beyond completion of works
- Intensity: the likely severity of change relative to baseline conditions and applicable standards

Based on these parameters, event magnitude is classified qualitatively as Low, Medium, or High, considering the nature, scale, duration, frequency, and intensity of each identified risk as described in the ‘E&S Risks / Impacts’ column and reflected in the proposed mitigation measures. Event magnitude is therefore not presented as a separate column in the ESMP table but is integrated into the determination of residual impact significance.

4. RECEPTOR SENSITIVITY

Receptor sensitivity reflects the vulnerability or resilience of environmental, social, or physical receptors to change. Sensitivity was determined by considering:

- Type of receptor: environmental (e.g. water bodies, aquatic habitats), human (e.g. workers, nearby communities), or physical (e.g. cultural heritage assets)
- Proximity to the impact source: whether receptors are located within the AoI or at a greater distance
- Regulatory or conservation status: including the presence of protected areas, sensitive habitats, or legally protected cultural assets
- Capacity to absorb change: including the ability of receptors to recover once construction activities cease

Receptor sensitivity is assessed qualitatively and classified as Low, Medium, or High, based on the characteristics of the affected receptor(s) identified in the 'E&S Risks / Impacts' column. Receptor sensitivity is not presented as a standalone column in the ESMP table but is integrated into the determination of residual impact significance.

5. IMPACT SIGNIFICANCE

Impact significance was determined by combining event magnitude and receptor sensitivity, using a qualitative significance matrix. The resulting impact significance categories with color coding are:

Negligible	No discernible or very minor change from baseline conditions
Minor	Detectable but limited impacts that are temporary, localized, and easily manageable
Moderate	Noticeable impacts requiring specific mitigation and management measures
Major	Significant impacts requiring enhanced mitigation, redesign, or avoidance measures

For this Sub-project, the majority of identified impacts are associated with construction-phase activities and are expected to be Minor to Moderate prior to mitigation.

6. MITIGATION AND RESIDUAL IMPACT SIGNIFICANCE

Mitigation measures were identified in accordance with the mitigation hierarchy (avoid, minimize, mitigate, compensate) and integrated directly into the ESMP table.

The Residual Impact Significance presented in the ESMP table reflects the expected level of impact after full and effective implementation of the proposed mitigation and management measures, supervision by the DSİ PIU (DSI Regional Directorate), and application of relevant monitoring and reporting requirements.

Impacts assessed as Major prior to mitigation were reduced to Minor or Negligible residual significance through the application of site-specific controls, management plans, and oversight arrangements.

7. MONITORING AND ADAPTIVE MANAGEMENT

Monitoring parameters, frequency, and responsibilities are defined in the ESMP table to verify the effectiveness of mitigation measures and ensure compliance with applicable standards.

Where monitoring results, incidents, or stakeholder feedback indicate that mitigation measures are insufficient, corrective actions will be implemented, and management measures will be updated in line with adaptive management principles.

Appendix 4 : Project Area / Site Visit Photos

Photo 1. View of the Bölümlü Permeable 1 Check Dam Location

Photo 2. View of the Bölümlü Permeable 2 Check Dam Location

Photo 3: View of the Bölümlü Classical 1 Check Dam Location

Photo 4: View of the Bölümlü Classical 2 Check Dam Location

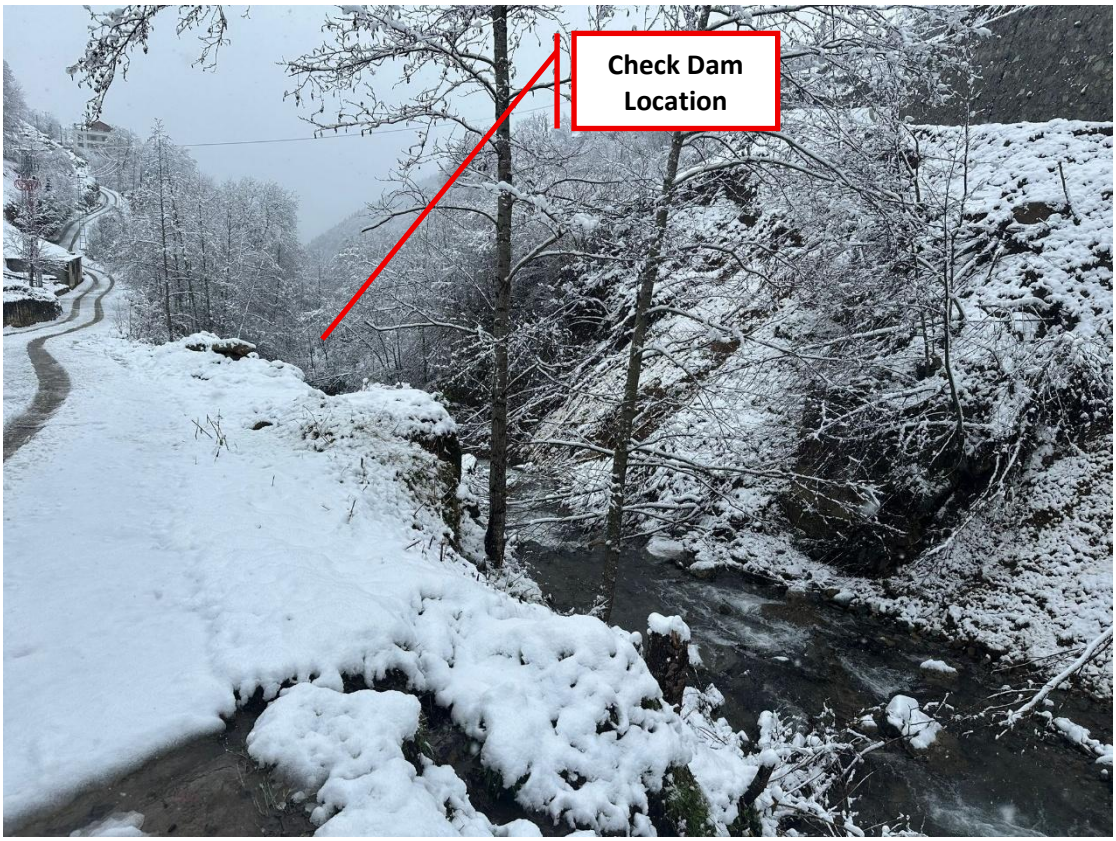

Photo 5: Upper Section View of the Akköse Classical Check Dam Location

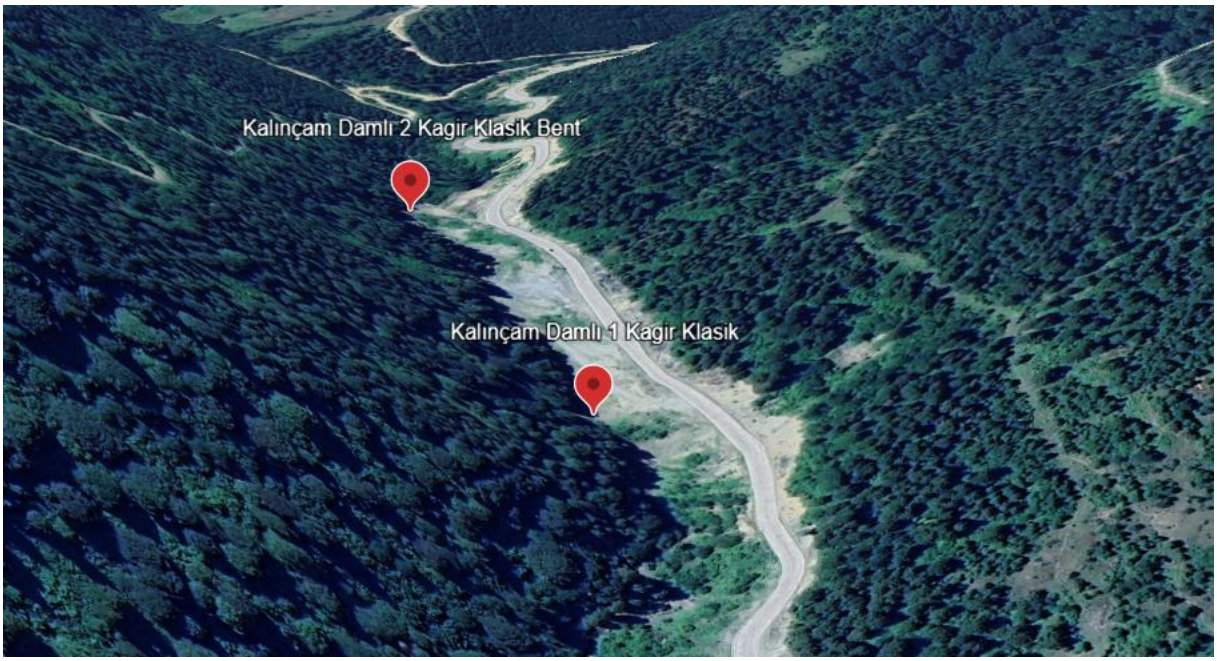

Photo 6: Illustrative Google Earth View of the Kalınçam Damlı Classical Check Dams (Representative Image)

Appendix 5 : Grievance Forms

<table>
<tr><th colspan="4">ŞİKÂYET VE ÖNERİ BİLDİRİM FORMU</th></tr>
<tr><td colspan="3">Kayıt No</td><td></td></tr>
<tr><td colspan="3">Tarih</td><td>...../...../202.....</td></tr>
<tr><td rowspan="4">Şikâyet Sahibinin</td><td colspan="2">Adı, Soyadı</td><td></td></tr>
<tr><td colspan="2">Çalışan ise çalıştığı birim</td><td></td></tr>
<tr><td rowspan="3">İletişim Bilgileri</td><td>Telefon Numarası</td><td></td></tr>
<tr><td>E-posta Adresi</td><td></td></tr>
<tr><td>Açık Adresi</td><td></td></tr>
<tr><td colspan="3">Şikâyetin tanımı (konusu, zamanı ve detayları)</td><td></td></tr>
<tr><td colspan="3">Şikâyetin Ortadan Kalkması İçin Öneriler</td><td></td></tr>
<tr><td colspan="3">Şikâyetçinin imzası</td><td></td></tr>
<tr><td rowspan="2">Şikâyet ve/veya öneriyi kayıt altına alan kişi:</td><td colspan="2">Adı Soyadı</td><td></td></tr>
<tr><td colspan="2">Görevi</td><td></td></tr>
<tr><td colspan="4">Not: Şikâyet ve/veya öneri sahibi şikâyet ve/veya önerisinin gizli olmasını istiyorsa, kişisel bilgilerini boş bırakabilir. Bu durumda, şikâyet ve/veya öneri sahibine geri bildirimde bulunulamayacaktır.</td></tr>
<tr><td colspan="4">TRANSLATION: Şikâyet ve Öneri Bildirim Formu: Grievance and Suggestion Notification Form, Kayıt No: Record No, Tarih: Date (dd/mm/yyyy), Şikâyet Sahibinin Adı, Soyadı: Complainant's Name and Surname, Çalışan ise çalıştığı birim: Department/Unit (if employee), İletişim Bilgileri: Contact Information, Telefon Numarası: Phone Number, E-posta Adresi: Email Address, Açık Adresi: Full Address, Şikâyetin tanımı (konusu, zamanı ve detayları): Description of Grievance (subject, date, and details), Şikâyetin Ortadan Kalkması İçin Öneriler: Suggestions for Resolving the Grievance, Şikâyetçinin imzası: Complainant's Signature, Şikâyet ve/veya öneriyi kayıt altına alan kişi: Adı Soyadı: Name of Person Recording Grievance/Suggestion, Görevi: Position/Title, Not: Şikâyet ve/veya öneri sahibi şikâyet ve/veya önerisinin gizli olmasını istiyorsa, kişisel bilgilerini boş bırakabilir. Bu durumda, şikâyet ve/veya öneri sahibine geri bildirimde bulunulamayacaktır.: Note: If the complainant wishes the complaint or suggestion to remain confidential, they will leave personal information blank. In this case, feedback cannot be provided to the complainant.</td></tr>
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<tr><th colspan="4">ŞİKÂYET VE ÖNERİ KAYIT VE KAPAMA FORMU</th></tr>
<tr><td colspan="3">Kayıt No</td><td></td></tr>
<tr><td colspan="3">Tarih</td><td>…../……/202…..</td></tr>
<tr><td colspan="4">Formun bu bölümü, Projenin Sosyal Uzmanı tarafından doldurulmaktadır.</td></tr>
<tr><td rowspan="5">Şikâyet sahibinin</td><td colspan="2">Adı, soyadı</td><td></td></tr>
<tr><td colspan="2">Çalışan ise çalıştığı birim</td><td></td></tr>
<tr><td rowspan="3">İletişim bilgileri</td><td>Telefon numarası</td><td></td></tr>
<tr><td>E-posta adresi</td><td></td></tr>
<tr><td>Açık Adres</td><td></td></tr>
<tr><td colspan="3">Şikâyetin detayları</td><td></td></tr>
<tr><td colspan="3">Şikâyetin iletim şekli</td><td></td></tr>
<tr><td colspan="3">Şikâyetin aciliyet durumu</td><td></td></tr>
<tr><td colspan="4">Formun bu bölümü, ilgili teknik birim tarafından doldurulmaktadır.</td></tr>
<tr><td colspan="3">Şikâyetin ana sebebi</td><td></td></tr>
<tr><td colspan="3">Alınan aksiyon</td><td></td></tr>
<tr><td colspan="3">İzleme faaliyetleri</td><td></td></tr>
<tr><td colspan="3">İsim / unvan / imza / tarih</td><td></td></tr>
<tr><td colspan="4">Formun bu bölümü, şikâyet sahibi ve Sosyal Uzman tarafından doldurulmaktadır.</td></tr>
<tr><td colspan="3">Şikâyet cevap tarihi</td><td></td></tr>
<tr><td colspan="3">Şikâyet sahibi bilgilendirilme şekli</td><td></td></tr>
<tr><td colspan="3">Şikâyet sahibi
İsim / imza / tarih</td><td>İnceleyen
İsim / imza / tarih</td></tr>
<tr><td colspan="4">TRANSLATION: Şikâyet ve Öneri Kayıt ve Kapama Formu: Grievance and Suggestion Record and Closure Form, Kayıt No: Record No, Tarih: Date, Formun bu bölümü, Projenin Sosyal Uzmanı tarafından doldurulmaktadır: This section of the form is completed by the Social Specialist, Şikâyet sahibinin: Complainant, Adı, soyadı: Name, Surname, Çalışan ise çalıştığı birim: Department if employee, İletişim bilgileri: Contact Information, Telefon numarası: Phone Number, E-posta adresi: Email Address, Açık Adres: Full Address, Şikâyetin detayları: Grievance Details, Şikâyetin iletim şekli: Grievance Submission Method, Şikâyetin aciliyet durumu: Urgency of Grievance, Formun bu bölümü, ilgili teknik birim tarafından doldurulmaktadır: This section of the form is completed by the relevant technical unit, Şikâyetin ana sebebi: Main Cause of Grievance, Alınan aksiyon: Actions Taken, İzleme faaliyetleri: Monitoring Activities, İsim / unvan / imza / tarih: Name / Title / Signature / Date, Formun bu bölümü, şikâyet sahibi ve Sosyal Uzman tarafından doldurulmaktadır: This section of the form is completed by the complainant and Social Specialist, Şikâyet cevap tarihi: Grievance Response Date, Şikâyet sahibi bilgilendirilme şekli: Method of Informing Complainant, Şikâyet sahibi: Complainant, İsim / imza / tarih: Name / Signature / Date, İnceleyen: Reviewer, İsim / imza / tarih: Name / Signature / Date</td></tr>
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ŞİKÂYET ve ÖNERİ KAYIT SİSTEMİ										
Kayıt No	**Türü (İç/Dış)**	**Tarihi**	**Şikâyet Konusu**	**İlgili Birim / Kişi**	**Önerilen Aksiyon**	**Geri Bildirim Tarihi**	**Gerçekleşen Aksiyon**	**Aksiyon Alınma Tarihi**	**Aksiyon Tamamlanma Tarihi**	**Şikâyetin Durumu**

TRANSLATION: Şikâyet ve Öneri Kayıt Sistemi: Grievance and Suggestion Record System, Kayıt No: Record No, Türü (İç/Dış): Type (Internal/External), Tarihi: Date, Şikâyet Konusu: Subject of Grievance, İlgili Birim / Kişi: Responsible Department / Person, Önerilen Aksiyon: Proposed Action, Geri Bildirim Tarihi: Feedback Date, Gerçekleşen Aksiyon: Implemented Action, Aksiyon Alınma Tarihi: Action Taken Date, Aksiyon Tamamlanma Tarihi: Action Completion Date, Şikâyetin Durumu: Grievance Status

Appendix 6 : Chance Finds Form

<table>
<tr><td colspan="4">CHANCE FINDS FORM
RASLANTISAL BULUNTU FORMU</td></tr>
<tr><td colspan="4">PART A / BÖLÜM A</td></tr>
<tr><td>Project Location (Proje Sahası):</td><td>District (İlçe):
Village (Köy):</td><td>Date (Tarih):</td><td>Form No:</td></tr>
<tr><td colspan="4">Name of person reporting chance find:
Rastlantısal buluntuyu rapor eden kişinin ismi</td></tr>
<tr><td colspan="4">Was work stopped in the immediate vicinity of the chance find?
Rastlantısal buluntunun tam çevresinde iş durduruldu mu?</td></tr>
<tr><td colspan="4">Was a buffer zone created to protect the chance find?
Rastlantısal buluntuyu korumak için tampon bölge oluşturuldu mu?</td></tr>
<tr><td colspan="4">NOTIFICATION / BİLDİRİM</td></tr>
<tr><td colspan="4">Was Project Company’s Social Specialist contacted?
Proje Şirketi’nin Sosyal Uzmanı ile irtibata geçildi mi?</td></tr>
<tr><td colspan="4">CHANCE FINDS DETAILS / RASLANTISAL BULUNTU AYRINTILARI</td></tr>
<tr><td>GPS coordinates / GPS koordinatları</td><td>Photo record
Fotoğraf kaydı</td><td colspan="2">Other records
Diğer kayıtlar

Specify (drawings, HD quality videos, etc.):
Belirtin (çizimler, HD kalite videolar, vb.)</td></tr>
<tr><td colspan="4">Description of chance find:
Rastlantısal buluntunun tanımı</td></tr>
</table>

PART B / BÖLÜM B	
NOTIFICATION OF MUSEUM DIRECTORATE ARCHAEOLOGIST MÜZE MÜDÜRLÜĞÜ ARKEOLOĞUNA BİLDİRİ	
Was museum directorate archaeologist contacted? Müze müdürlüğü arkeoloğu ile irtibata geçildi mi? Date of notification: Bildirim tarihi Name of museum directorate and Name of museum archaeologist: Müze müdürlüğü ve Müze müdürlüğü arkeoloğunun ismi Contact number of museum directorate archaeologist: Müze müdürlüğü arkeoloğunun iletişim numarası	
DECISION OF MUSEUM DIRECTORATE ARCHAEOLOGIST MÜZE MÜDÜRLÜĞÜ KARARI	
Date of site visit: İlk saha ziyaret tarihi:	
☐ Site of no significance- Construction to proceed with no further action – End of chance finds procedure Önemsiz saha – İnşaat daha fazla araştırma yapılmadan devam edilebilir – rastlantısal buluntu prosedürün sonu Date of notice to resume work: İşe başlama tarihi bildirisi	☐ Site of significance/ Major Level and/or Moderate Level - Further actions required Sahanın Önemi/Yüksek Seviye ve/veya Orta Seviye – Ek araştırma gerekmektedir Please Fill out Part C Lütfen Bölüm C'yi doldurun.
Name of museum directorate archaeologist: Müze müdürlüğü arkeoloğunun ismi Contact information: İletişim numarası	
Project Company's Sosyal Specialist contacted Proje Şirketi'nin Sosyal Uzmanı ile irtibata geçildi ☐ Yes / Evet ☐ No / Hayır	

PART C / BÖLÜM C		
FURTHER FIELD INVESTIGATION EK SAHA ARAŞTIRMASI		
Site of minor significance Önemsiz saha	Site of moderate significance Az önemli saha	Site of major significance Çok önemli saha
Describe additional work to be conducted: Yapılması gereken ek işlerin tanımları		
Date started: Başlangıç tarihi	Date completed: Bitiş tarihi	
Date of notice to resume work: İşe başlama tarihi bildirisi		
Name of museum directorate archaeologist: Müze müdürlüğü arkeoloğunun ismi: Contact information: İletişim numarası		
Construction manager contacted İnşaat müdürü ile irtibata geçildi	☐ Yes / Evet ☐ No / Hayır	

Appendix 7 : Environmental Calculations

NOISE CALCULATIONS

During the construction phase, temporary noise emissions and minor ground-borne vibration are expected to arise from the operation of construction machinery and equipment, as well as from construction-related vehicle movements along the Sub-project alignments.

The existing acoustic environment of the Sub-project area is influenced by both natural and anthropogenic sources. Streams within the Sub-project area, particularly those with steep gradients and high flow velocities, generate continuous background noise due to turbulent flow conditions during most seasons. In addition, several Sub-project components are located within rural settlements and along local access roads characterized by regular traffic flow and associated traffic noise. As a result, baseline noise levels within the Sub-project corridor are already relatively elevated.

Noise and vibration impacts associated with construction activities will be confined to active work areas and will occur only during daytime working hours, in accordance with the approved construction schedule. Construction activities will progress sequentially along stream sections rather than simultaneously across all locations, thereby limiting the spatial extent and duration of noise exposure at any given receptor. The number of machinery and equipment presented reflects a typical single active work section, consistent with the rolling, site-by-site construction approach, with only one concrete mixer operating at any given construction front.

Machinery-Equipment	Number	Expected Noise Level (dBA)
Trucks	3	95
Excavator	2	110
Concrete Mixer	1	105
Concrete Pump	1	110
Crane	1	105

Noise propagation calculations were carried out to estimate overall noise levels at varying distances from the source, taking into account the combined operation of construction equipment under a conservative scenario. Predicted noise levels were evaluated with reference to the nearest sensitive receptors and assessed against applicable national legislation and the World Bank Group Environmental, Health and Safety (EHS) Guidelines.

In accordance with the Regulation on Environmental Noise Control (Official Gazette No. 32029 dated 30.11.2022), the daytime limit value for infrastructure works, considering all noise sources together, is 65 dBA. The same regulation defines limit values of 60 dBA for the evening period and 55 dBA for the night period for industrial facilities and transportation-related noise sources.

According to the World Bank Group Environmental, Health and Safety Guidelines, noise generated by construction site activities at sensitive receptors located in industrial and/or commercial areas should not exceed an equivalent continuous sound level (LAeq) of 70 dBA during daytime (07:00–22:00) and 70 dBA during night-time (22:00–07:00), measured over a one-hour period. Noise impacts should not exceed these guideline values or result in an increase of more than 3 dBA above existing background noise levels at the nearest off-site receptor.

Noise level predictions were carried out using an octave-band sound propagation approach. Source noise levels were adjusted for distance-related attenuation, frequency-dependent atmospheric absorption, and spectral correction factors. Sound pressure levels were first calculated at varying distances from the source by applying geometrical spreading losses, represented by a 20 $\log_{10}(r)$ attenuation term, assuming point-source propagation under free-field conditions.

For each octave band (500 Hz, 1000 Hz, 2000 Hz, and 4000 Hz), atmospheric absorption losses were applied as a function of frequency and distance together with relevant frequency correction factors. The resulting octave-band sound pressure levels were combined using logarithmic energy summation to obtain total A-weighted noise levels (dBA) at each receptor distance. Calculations were performed under a conservative scenario assuming simultaneous operation of construction equipment at a single active work section.

For the conservative case, the combined source noise level was calculated assuming that all equipment listed above operates simultaneously. The combined A-weighted sound pressure level was obtained using logarithmic addition:

$L_{\text{total}} = 10\log_{10}\left(\sum_i n_i \cdot 10^{L_i/10}\right)$
where:

L_i= noise level of equipment type I (dBA),

n_i= number of units operating simultaneously.

Input values (updated scenario):

- Trucks: $n = 3$, $L = 95$dBA
- Excavator: $n = 2$, $L = 109$dBA
- Concrete mixer: $n = 1$, $L = 105$dBA
- Concrete pump: $n = 1$, $L = 109$dBA
- Crane: $n = 1$, $L = 105$dBA

Step 1 – Convert to linear sound energy and apply unit counts:

- Trucks: $3 \times 10^{95/10} = 3 \times 10^{9.5} = 9.49 \times 10^9$
- Excavators: $2 \times 10^{109/10} = 2 \times 10^{10.9} = 1.59 \times 10^{11}$
- Concrete mixer: $1 \times 10^{105/10} = 10^{10.5} = 3.16 \times 10^{10}$
- Concrete pump: $1 \times 10^{109/10} = 10^{10.9} = 7.94 \times 10^{10}$
- Crane: $1 \times 10^{105/10} = 10^{10.5} = 3.16 \times 10^{10}$

Step 2 – Sum energies:

$\Sigma = 9.49 \times 10^9 + 1.59 \times 10^{11} + 3.16 \times 10^{10} + 7.94 \times 10^{10} + 3.16 \times 10^{10}$
$\Sigma \approx 3.11 \times 10^{11}$
Step 3 – Convert back to dBA:

$L_{\text{total}} = 10(0.493 + 11) = 114.93$ dBA

Using the updated combined source level from the sample calculation (L_{1m} ≈ 114.93 dBA) and applying geometrical spreading only (conservative, no shielding), the predicted level at distance r is:

Distance where the prediction drops below 70 dBA (WBG value):

$70 = 114.93 - 20\log_{10}(r) \Rightarrow 20\log_{10}(r) = 44.93 \Rightarrow \log_{10}(r) = 2.2465 \Rightarrow r \approx 176.6$ m

So, below 70 dBA at approximately ≥ 177 m.

Distance where the prediction drops below 65 dBA (national daytime limit):

$65 = 114.93 - 20\log_{10}(r) \Rightarrow 20\log_{10}(r) = 49.93 \Rightarrow \log_{10}(r) = 2.4965 \Rightarrow r \approx 313.9$ m
So, below 65 dBA at approximately ≥ 314 m.

Based on the updated machinery set, the combined source noise level at 1 m was calculated as approximately 114.93 dBA. Applying geometrical spreading only (conservative assumption, without shielding or screening), predicted noise levels decrease below 70 dBA at approximately 177 m and below the national daytime limit of 65 dBA at approximately 314 m from the active work area. As no construction activities are planned during evening or night-time periods, the assessment has been undertaken with reference to daytime limit values only.

Given that the nearest settlement is located approximately 5 m from the active work area, construction activities will be carefully managed to minimize noise exposure through daytime-only working, a rolling construction approach, proper maintenance of equipment, and the implementation of practicable site-specific noise control measures. Considering the short duration of works at each location and existing background noise conditions, noise impacts at nearby receptors are expected to remain temporary and manageable.

With respect to vibration, construction activities will mainly involve excavation, placement of stone and concrete elements, and the operation of excavators, cranes, concrete mixers, and trucks. No blasting, pile driving, or other high-vibration-generating activities are foreseen. Accordingly, vibration levels are expected to remain low and well below thresholds associated with structural damage or significant disturbance to nearby receptors.

Overall, noise and vibration impacts associated with the Sub-project are expected to be temporary, localized, and of low to moderate significance, and can be effectively managed through the application of standard good construction practices and site-specific mitigation measures.

AIR QUALITY CALCULATIONS

Air quality impacts during construction were evaluated using activity-based emission calculations consistent with Good International Industry Practice, with consideration given to fugitive dust (PM_{10}) generated by excavation, material handling, and transportation activities, as well as exhaust emissions from construction machinery.

Calculations were undertaken for a single active work section, reflecting the rolling, site-by-site construction approach adopted for the Sub-project. This approach represents a conservative yet realistic scenario for peak construction activity while avoiding overestimation of emissions across the entire project corridor.

Dust emissions associated with construction activities were estimated using standard emission factor–based methods for unpaved road travel and material handling, as presented in internationally recognized guidance documents (e.g. US EPA AP-42). In practice, transportation-related activities were selected as the primary source for quantitative assessment, as vehicle movements occur more regularly, extend beyond the immediate work front, and typically represent the dominant and most conservative contributor to fugitive dust emissions. Other construction activities, such as excavation, stone placement, and concrete works, are intermittent, short-term, and largely confined to the stream corridor, where higher surface moisture levels reduce dust generation potential. These activities are therefore addressed through the application of standard dust control measures.

The general calculation approach applied is as follows:

$E = EF \times A$

where:

- E= dust emission rate (kg/h),
- EF= emission factor (kg/unit activity),
- A= activity rate (e.g. vehicle distance travelled per hour or material throughput).

Based on the quantities of materials used under the Sub-project, expected truck movements at a single active work section, and controlled emission factors reflecting the implementation of dust suppression measures, the total controlled dust emission rate at the construction site was estimated at approximately 0.78 kg/h.

In accordance with the Regulation on the Control of Industrial Air Pollution, detailed atmospheric dispersion modelling is not required where dust emission rates remain below 1 kg/h. The calculated controlled dust emission rate for the construction site is therefore below the applicable regulatory threshold.

Considering that construction activities will be carried out in an open valley environment with natural air circulation, and that works will be temporary and localized at each section, the incremental impact of construction-related dust on ambient air quality is expected to remain limited.

Appendix 8 : Environmental Baseline

1) INTRODUCTION AND PURPOSE OF THE ENVIRONMENTAL BASELINE

This section presents the environmental baseline conditions within the Sub-project's AoI and provides the foundation for the assessment of potential environmental risks and impacts during the pre-construction and construction phases. The environmental baseline focuses on physical and natural environmental conditions that are directly relevant to the proposed works and influence, or be influenced by, Sub-project activities.

The purpose of this section is to describe the existing environmental setting of the Sub-project area, including topography and geomorphology, geology and seismicity, soil and ground conditions, hydrology and drainage characteristics, climate and meteorology, and flood and sediment dynamics. These baseline conditions provide a reference point against which potential environmental impacts are identified, assessed, and managed, and form the basis for defining appropriate mitigation, monitoring, and management measures in subsequent sections of this ESMP.

To ensure clarity and usability of the ESMP, a concise summary of the key environmental baseline conditions is provided in the main text (see Section 2.2). Where relevant, more detailed technical information, including hydrological analyses and supporting studies, is referenced in this annex. This approach allows readers to understand the environmental context of the Sub-project without relying solely on annexed materials, while avoiding unnecessary duplication of information already addressed under the Parent Project framework documentation.

The environmental baseline has been prepared in accordance with applicable Turkish legislation and WB ESF. It is based on a review of existing studies and official data sources, field observations, and Sub-project–specific technical assessments conducted with focus on priority locations in Of, Dernekpazarı and Tonya districts, including Bölümlü, Akköse and Kalınçam Stream sections.

2) ENVIRONMENTAL AREA OF INFLUENCE

For the purposes of the environmental baseline and impact assessment, the AoI is defined as the area within which physical and natural environmental receptors can be directly or indirectly affected by the Sub-project during the pre-construction and construction phases. The environmental AoI has been delineated to ensure that baseline conditions are assessed at a spatial scale appropriate to the nature, extent, and magnitude of potential environmental impacts associated with the Sub-project.

In line with the ESMP framework, the environmental AoI is defined as a 250-meter buffer around all Sub-project components, including construction areas, access roads, and temporary or permanent storage and operational areas (see Section 2.1). This buffer is considered sufficient to capture direct and localized environmental effects, such as soil disturbance, vegetation removal, dust emissions, noise and vibration, changes in surface runoff, sediment mobilization, and potential impacts on aquatic and riparian environments.

The environmental AoI encompasses stream corridors, adjacent slopes, riparian vegetation, agricultural land, and undeveloped areas located within the defined buffer. Environmental receptors within this AoI include surface water bodies, channel beds and banks, soils, geological formations, vegetation cover, and downstream receiving environments that can be affected by construction-related activities.

The delineation of the environmental AoI reflects the physical footprint of the Sub-project and the spatial extent over which construction-related disturbances are reasonably expected to occur. Environmental baseline conditions within this AoI form the basis for the identification and assessment of potential environmental impacts and for the definition of appropriate mitigation, monitoring, and management measures presented in subsequent sections of this ESMP.

3) METHODOLOGY AND DATA SOURCES

The environmental baseline presented in this ESMP has been prepared using a combination of site-specific field observations, review of existing technical studies, and desk-based analysis of secondary data from official sources. The methodology was designed to ensure that baseline conditions relevant to the Sub-project and its defined environmental AoI are adequately characterized, in accordance with national legislation and WB ESF.

Primary data were collected through field visits conducted during the ESMP preparation phase, focusing on basins of the streams, which can be visited, and its tributaries, associated channel sections, adjacent slopes, and surrounding land within the environmental AoI. During these visits, observations were made on topography, geomorphology, geological conditions, soil characteristics, drainage patterns, channel morphology, sediment accumulation, vegetation cover, and evidence of erosion or flooding. These observations supported the identification of environmentally sensitive features and areas prone to construction-related disturbance.

Secondary data were obtained through a review of existing DSİ technical documentation, including flood and sediment control exploratory reports and hydrology studies prepared for the stream catchment. These documents provided information on hydrological characteristics, flood behavior, sediment dynamics, and catchment-level physical conditions relevant to the Sub-project.

Additional secondary sources included official data from the Turkish State Meteorological Service (MGM) for climate and meteorological conditions, geological and seismic information from national mapping and reference sources, and publicly available environmental data relevant to the Trabzon province. These sources were used to establish baseline conditions for climate, geology, seismicity, and regional environmental setting.

Baseline air quality conditions were reviewed using secondary data from the National Air Quality Monitoring Network operated by MoEUCC to support the characterization of regional background air quality within and around the Sub-project AoI.

4) TOPOGRAPHY AND GEOMORPHOLOGY[16]

The Sub-project area lies within the Eastern Black Sea Basin, characterized by steep mountainous terrain, short and high-gradient catchments, and narrow valleys draining rapidly to the Black Sea.

Topography in the Sub-project districts is predominantly rugged and highly dissected. Valley bottoms are narrow and typically host settlements, local roads, agricultural parcels and existing flood protection elements, while upper catchments include steep forested slopes and highland pasture areas. Stream corridors often run through confined valleys, and channel gradients are generally high, supporting the mobilization and transport of coarse sediment during storm events.

Geomorphological conditions reported in the technical study indicate active fluvial processes, including bed and bank erosion, channel narrowing due to sediment deposition, and localized channel constrictions caused by accumulated material and vegetation. In several surveyed reaches, streambeds are described as being filled by both transported stream material and debris derived from valley sides, reflecting the combined influence of steep terrain, mass wasting and high runoff response.

5) VEGETATION AND LAND COVER[17]

Land cover across the basin is dominated by forest ecosystems and pasture, with agriculture and settlements concentrated in lower-gradient valley sections and near stream corridors. The technical report emphasizes that the integrity of forest cover is critical in reducing erosion risk and sediment production, particularly in steep upper catchments prone to flood, landslide and debris movement.

Basin-level land use data reported for the basin indicate that forest cover (productive forest and degraded forest) forms a substantial portion of the basin, with additional areas comprising OT/forest

[16] Source: DSİ. 2021. Technical Report for the Check Dams in Trabzon Province. 22nd Regional Directorate, Türkiye.
[17] Source: DSİ. 2021. Technical Report for the Check Dams in Trabzon Province. 22nd Regional Directorate, Türkiye.

openings, pasture, agriculture and settlement. The report highlights pressure on forest lands driven by settlement expansion and agricultural use (including hazelnut cultivation in steep areas), which can increase erosion susceptibility and sediment delivery if not managed carefully.

Within stream corridors, riparian vegetation is present locally; however, in-channel vegetation and bank growth can contribute to hydraulic constriction where sediment accumulation has already reduced channel capacity.

6) GEOLOGY AND SEISMOTECTONIC SETTING[18]

The Sub-project area lies within the East Pontid tectonic unit and is characterized by a complex stratigraphy including Mesozoic and Cenozoic volcanic/volcano-sedimentary formations and intrusive bodies. Regional geology compilations referenced in the technical report indicate the presence of multiple formations in Trabzon Province, including units such as Çatak, Çağlayan and Kabaköy formations (andesite/basalt lavas and pyroclastics) and intrusive rocks including the Kaçkar granitoid/granodiorite.

At the local scale, the technical report notes that stream corridors in surveyed areas commonly cut through hard, generally stable volcanic bedrock (andesite/basalt and associated pyroclastics) and locally through other volcanic lithologies (e.g., rhyodacite/dacitic units in specific sub-basins). These bedrock conditions generally provide competent foundation conditions for in-stream structures, while fracturing and valley-side processes still contribute to debris supply and channel infilling.

7) SOIL AND GROUND CONDITIONS[19]

Ground conditions vary by geomorphological setting. Along valley floors and streambeds, deposits are dominated by coarse alluvial materials (gravel, cobbles and boulders) with local accumulation of sand and silt. The technical report confirms that transported material in many surveyed channels is predominantly gravel-sized, with observed zones of finer sediment deposition and significant infill by debris derived from valley sides.

On steep slopes and upper catchments, soils are typically thinner and overlie volcanic or intrusive bedrock. The report identifies erosion risk as a key issue, especially in degraded forest areas, forest openings, and certain agricultural and pasture areas, where vegetation cover is insufficient to protect soil from rainfall erosivity and runoff.

8) HYDROLOGY AND DRAINAGE CHARACTERISTICS[20]

Catchments within the Eastern Black Sea Basin show rapid hydrological response due to steep slopes, short concentration times and limited natural storage capacity. The climate regime is humid with frequent rainfall; short-duration high-intensity storm events are a key driver of flash flood dynamics.

The technical report notes that flood events in the basin are often associated with high sediment loads and debris transport. Dense drainage networks and steep tributaries contribute significant runoff and sediment delivery over short periods, particularly during intense precipitation events and when upper catchment conditions favor erosion and mass movement.

9) FLOOD RISK AND SEDIMENT DYNAMICS[21]

Flood and sediment risks are central characteristics of the Sub-project setting. The technical report documents that Trabzon upper catchments experience sediment transport, flood events, and bank/bed erosion, with frequent occurrence of disaster-type events such as flash floods, landslides and debris movement in steep terrain.

[18] Source: Source: DSİ. 2021. Technical Report for the Check Dams in Trabzon Province. 22nd Regional Directorate, Türkiye.
[19] Source: Source: DSİ. 2021. Technical Report for the Check Dams in Trabzon Province. 22nd Regional Directorate, Türkiye.
[20] Source: Source: DSİ. 2021. Technical Report for the Check Dams in Trabzon Province. 22nd Regional Directorate, Türkiye.
[21] Source: Source: DSİ. 2021. Technical Report for the Check Dams in Trabzon Province. 22nd Regional Directorate, Türkiye.

Sediment dynamics are described as active and ongoing. Streams transport coarse material (gravel, cobbles, boulders) and also convey woody debris (branches, trunks, roots) during high flows, which can block culverts and constrict channels. Sediment deposition and debris accumulation reduce conveyance capacity and increase the likelihood of overtopping and local damage to settlement areas and agricultural lands along valley bottoms.

These baseline conditions justify the need for sediment and debris control measures, including a combination of classical check dams and permeable check dams/debris traps (including different permeable types designed to trap boulders and woody debris while allowing finer material to pass under controlled conditions), together with complementary upper catchment measures (afforestation, terracing and slope stabilization practices).

10) SEISMICITY[22]

Trabzon Province is located approximately 160 km north of the North Anatolian Fault Zone, and older national classifications place Trabzon (city center reference) within a lower seismic zone classification. Under the current national seismic hazard framework, seismic design is based on site-specific parameters derived from the national earthquake hazard map and the applicable Turkish Building Earthquake Code.

For the Sub-project, seismic considerations are relevant primarily for the design and stability of check dams and in-stream structures, including foundation performance in alluvial valley floors and potential secondary effects (e.g., localized slope instability and ground deformation) in steep terrain.

11) CLIMATE AND METEOROLOGY[23]

The Sub-project is located in Trabzon Province (Of, Tonya and Dernekpazarı districts) within the Eastern Black Sea climatic zone. Baseline climatic and meteorological conditions are defined based on long-term records published by the Turkish State Meteorological Service (MGM) and the DSİ technical assessments for the Eastern Black Sea Basin upper catchments.

Trabzon and its districts are characterized by a humid, maritime climate controlled by the Black Sea and strong orographic effects created by the coastal mountain range. Moist air masses frequently rise over steep terrain, resulting in high precipitation totals and short-duration, high-intensity rainfall events that are key drivers of flash flooding and high sediment transport in small, steep catchments.

Official MGM long-term statistics for Trabzon indicate an annual mean air temperature of 14.4°C and an annual total precipitation of 802.7 mm. Rainfall is distributed throughout the year and the area experiences frequent wet days (annual average 141.3 rainy days). MGM records also indicate high daily precipitation potential (maximum daily precipitation value reported as 87.6 mm in the published statistics), consistent with the region's flood-generating rainfall patterns.

Within the Sub-project districts, local climatic conditions vary over short distances due to elevation and valley orientation. Of represents the more maritime/coastal setting with relatively mild winters and high humidity, while Dernekpazarı and Tonya (more inland and higher-elevation settings) are expected to experience cooler conditions, a greater share of precipitation as snow in winter, and stronger seasonality in temperature compared to the coastal belt. These microclimatic differences are relevant for construction scheduling, erosion and sediment control, and winter working conditions,

[22] Source: Source: DSİ. 2021. Technical Report for the Check Dams in Trabzon Province. 22nd Regional Directorate, Türkiye.
[23] Source: Source: DSİ. 2021. Technical Report for the Check Dams in Trabzon Province. 22nd Regional Directorate, Türkiye.
Source: Republic of Türkiye Ministry of Environment, Urbanization and Climate Change, Turkish State Meteorological Service (MGM). Provincial and District Climate Statistics – Trabzon Province, long-term temperature, precipitation and rainy-day averages for Trabzon, Of, Tonya and Dernekpazarı.
Source: Turkish State Meteorological Service (MGM). Climate Classification Studies (Aydeniz, Erinç, De Martonne, Thornthwaite methods), Trabzon regional and district meteorological stations.
Source: Turkish State Meteorological Service (MGM). Trabzon Province Climate and Extreme Rainfall Assessments, including regional rainfall characteristics and documented extreme daily and sub-daily precipitation events.
Source: Turkish State Meteorological Service (MGM). Monthly and Annual Meteorological Observation Data, Trabzon regional and district meteorological stations.

but they do not change the overall characterization of the Sub-project area as humid, and precipitation driven.

These climatic and meteorological baseline conditions are directly relevant to the Sub-project, as they explain the recurring flood and sediment problems identified in the DSİ technical report for the basin upper catchments and provide the justification for sediment retention and energy dissipation measures (construction of check dams) planned in Of, Tonya and Dernekpazarı.

12) AIR QUALITY AND NOISE[24]

Baseline air quality in the Sub-project area is informed by data from the Turkey National Air Quality Monitoring Network operated by the Ministry of Environment, Urbanization and Climate Change (MoEUCC). Continuous monitoring in Trabzon Province indicates that overall air quality in the provincial capital and surrounding districts (including Of, Tonya and Dernekpazarı) is typically in the "good to moderate" range for key pollutants, with spatial and temporal variation influenced by local emission sources, topography and meteorological conditions. Pollutants routinely tracked include particulate matter ($PM_{2.5}$, PM_{10}), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone (O_3) and carbon monoxide (CO).

Recent national network data and independent air quality indexes show that annual and real-time average concentrations in the Trabzon area generally remain within acceptable limits, with observed moderate levels of $PM_{2.5}$ and PM_{10} typical of coastal and valley settings influenced by residential heating and road traffic. For example, recent compiled monitoring outputs report $PM_{2.5}$ concentrations around 9 µg/m³ and PM_{10} around 22.4 µg/m³, with other pollutants (NO_2, O_3, SO_2, CO) measured at relatively low levels consistent with background urban and semi-urban environments in Trabzon.

Air quality can degrade locally during specific meteorological conditions (e.g., temperature inversions, low wind speed) or periods of increased combustion emissions (e.g., winter heating), but available network indicators do not show widespread or persistent exceedances of national limit values. Real-time air quality index (AQI) assessments for Trabzon frequently fall within the "good" to "moderate" categories for health impacts, reflecting generally satisfactory conditions for the resident population.

Baseline noise levels in the Sub-project area are characteristic of rural and semi-rural settings, primarily associated with road traffic, local activities and settlement noise. No strategic noise maps have been prepared for the province to date, and detailed systematic noise monitoring is not part of the national environmental baseline reporting for the districts within the Sub-project area.

At the check dam locations, which are primarily situated in rural upper catchments of Tonya, Of, and Dernekpazarı districts, baseline air quality and noise conditions are characteristic of low-intensity natural and semi-rural environments. These areas are generally distant from major roads, urban centers, and industrial activities, and are subject to limited traffic and human activity. As a result, ambient air quality is expected to reflect regional background conditions, and baseline noise levels are typically low, dominated by natural sounds and occasional local vehicle movements. No permanent air quality or noise monitoring stations are located at the check dam sites; however, provincial monitoring data are considered adequate for baseline characterization, and no existing air quality or noise constraints have been identified that would restrict construction activities, provided standard mitigation measures are applied during works.

[24] Source: Republic of Türkiye, Ministry of Environment, Urbanization and Climate Change. *Trabzon Province 2024 Environmental Status Report* (National Air Quality Index and ambient air quality monitoring framework for PM_{10}, $PM_{2.5}$, SO_2, NO_2, CO, and O_3).
Source: Republic of Türkiye, Ministry of Environment, Urbanization and Climate Change. *Trabzon Province 2022 Environmental Status Report* (Description of the five-pollutant Air Quality Index and criteria pollutant categories including PM_{10}, CO, SO_2, NO_2, and O_3).
Source: Republic of Türkiye, Ministry of Environment, Urbanization and Climate Change. *Turkish National Air Quality Monitoring Network* datasets (ambient air quality measurements and station-based monitoring results).

Appendix 9 : Biodiversity Baseline

1) INTRODUCTION AND PURPOSE OF THE BIODIVERSITY BASELINE

This Appendix presents the biodiversity baseline for the Sub-project Area of Influence (AoI) and provides the inputs used to screen biodiversity risks in line with WB ESS6 and IFC PS6. The baseline is based on a review of available literature and databases, field surveys conducted in January 2026, and expert opinion.

2) HABITAT

The European Nature Information System (EUNIS) provides a standardized framework for identifying and classifying habitat types. In this Appendix, EUNIS is used to describe the habitat mosaic within the Sub-project Area of Influence (AoI) in a consistent, internationally comparable manner and to support biodiversity risk screening under WB ESS6 and IFC PS6. Where relevant, EUNIS habitat information is also used to support interpretation against other international conservation reference systems (e.g., the EU Habitats Directive Annex I habitat typology and the European Red List of Habitats) for the purpose of critical habitat screening.

Habitats within the Biodiversity Study Area were evaluated in accordance with the EUNIS classification, which is useful not only for linking national habitat classifications to the international level, but also for relating EUNIS habitats to those listed in Annex I of the Habitats Directive for the purpose of identifying “special areas of conservation,” as well as to the European Red List of Habitats (Janssen, 2016) for critical habitat assessment.

The Sub-project area planned for check dam construction on streams in Trabzon Province represents a mosaic landscape where natural and anthropogenic habitats coexist. The stream within the Sub-project site is a lotic freshwater ecosystem characterized by perennial flow, typically well-oxygenated, and a stony–gravelly substrate and is therefore classified under EUNIS C2 – Running waters.

Riparian vegetation developed along the stream reflects natural riverine forest habitats composed of water-dependent tree and shrub species formed under the region’s high precipitation regime and humid microclimatic conditions. These habitats are generally classified under EUNIS G1 – Broadleaved deciduous woodland (riparian variants) and are of high ecological importance due to their roles in sediment retention, flood regulation, microclimate formation, and provision of ecological corridors for fauna.

In contrast, tea plantations (*Camellia sinensis*) present within the Sub-project area represent anthropogenic production systems that have replaced natural vegetation and are maintained through regular management practices such as pruning, cultivation, and harvesting. These areas are classified under EUNIS I – Cultivated agricultural habitats and, depending on plant structure and management regime, can functionally resemble FB.1 – Shrub plantations for whole-plant harvesting.

Overall, the Sub-project area comprises a mixed landscape consisting of natural river and riparian forest habitats alongside human-modified permanent agricultural plantations, where ecological processes are shaped both by natural hydrological regimes and by ongoing human management practices.

3) PROTECTED AREAS

WB ESS6 and IFC PS6 define two different types of protected areas: Legally Protected Areas and Internationally Recognized Areas. As defined under PS6 (Performance Standard 6), Legally Protected Areas are those that meet the IUCN (International Union for Conservation of Nature) definition of a protected area. Internationally Recognized Areas, on the other hand, are defined exclusively as UNESCO World Heritage Sites, UNESCO Man and the Biosphere Reserves, Key Biodiversity Areas (KBAs), and wetlands designated under the Ramsar Convention.

If a project is located within a legally protected area or an internationally recognized area, ESS6 and PS6 require compliance with the following additional requirements, in addition to those related to critical habitats:

- Demonstrate that the proposed development is legally permitted within the area.
- Act in accordance with government-recognized management plans for the protected area.
- Conduct appropriate consultations regarding the proposed Sub-project with protected area sponsors and managers, affected communities, Indigenous Peoples, and other relevant stakeholders.
- Implement additional programs to promote and enhance the conservation objectives and effective management of the area.

In line with this approach, areas that have been granted protected status under Türkiye's protected areas system, as well as areas designated as Important Nature Areas (INA), Important Bird Areas (IBA), and Important Plant Areas (IPA), have been examined within the scope of this study.

Legally Protected Areas

The International Union for Conservation of Nature (IUCN) proposes the following definition of protected areas, which is widely used globally today and is also accepted by ESS6 and PS6 as the definition of legally protected areas (IUCN, 2017): "A protected area is a clearly defined geographical space, recognized, dedicated, and managed through legal or other effective means, in order to achieve the long-term conservation of nature, together with associated ecosystem services and cultural values. Legally protected areas play a significant role in terms of ecosystem services through the ecological functions they provide, in addition to efforts aimed at conserving biodiversity. In Türkiye, the development and implementation of national biodiversity conservation policies and action plans, the designation of protected areas, and many other related responsibilities are carried out by the central and local directorates of the Ministry of Agriculture and Forestry.

The IUCN Protected Area Management Categories (Dudley et al., 2013) were adopted in 2006 within the scope of the Biodiversity and Natural Resources Management Project carried out by the General Directorate of Nature Conservation and National Parks of the Ministry of Agriculture and Forestry, with the aim of restructuring the Protected Areas System in Türkiye (Thomas, 2006). The IUCN Protected Area Management Categories constitute a global framework developed to create a common understanding of protected areas within and among countries, and they are also recognized by the Convention on Biological Diversity. The categories are based on the following principles:

- The assignment of a site to a particular category is not a judgement on management effectiveness,
- The category system is international; national designations of protected areas can vary,
- All categories are important and represent different levels of human intervention.

Accordingly, legally protected areas in Türkiye have been reclassified under the six protected area management categories defined in the IUCN Guidelines, as listed below:

I. Strict protection (Ia) Strict Nature Reserve and (Ib) Wilderness Area

II. Ecosystem protection and conservation (e.g. National Park)

III. Conservation of natural features (e.g. Natural Monument)

IV. Conservation through active management (e.g. Habitat/Species Management Area)

V. Landscape/Seascape protection and recreation (e.g. Protected Landscape/Seascape)

VI. Sustainable use of natural resources (e.g. Managed Resource Protected Area)

The legally protected areas in the vicinity of the Sub-project area and their corresponding IUCN protected area categories are presented in Table 1. Protected areas within the Sub-project area are shown in Figure 1.

Table 1. Legally Protected Areas in the Vicinity of the Sub-project Area

Legally Protected Areas	Distance	IUCN Protected Area Categories
Uzungöl Special Environmental Protection Area	17.70 km	II, IV
Altındere Valley National Park	36.01 km	II, IV
Isırık Nature Park	22.33 km	VI
Sis Dağı Nature Park	12.50 km	VI
Kadıralak Nature Park	14.86 km	VI
Beşik Dağı Nature Park	30.00 km	VI
Camili Nature Park	17.21 km	VI
Kayabaşı Nature Park	19.50 km	VI
Sera Gölü Nature Park	40.01 km	VI
Çamburnu Nature Park	12.06 km	VI
Görnek Nature Park	12.30 km	VI
Uzungöl Nature Park	18.04 km	VI

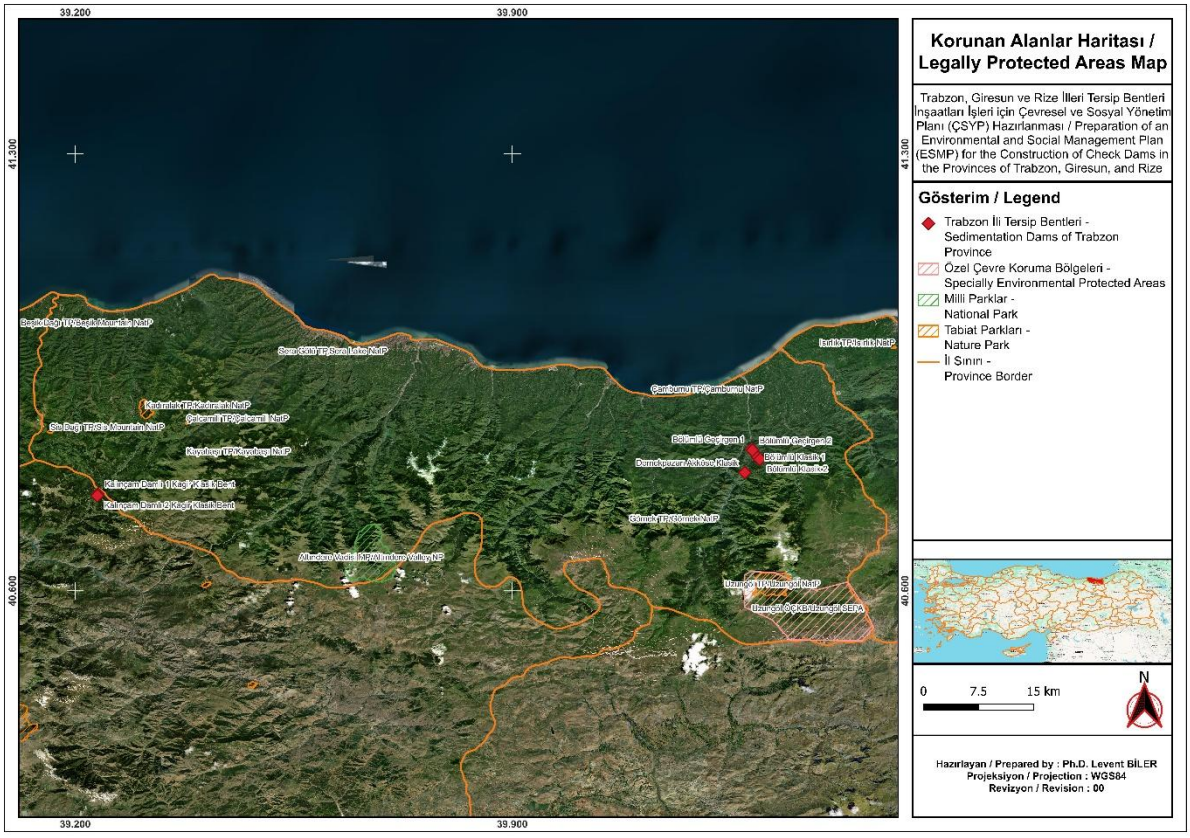

Figure 1. Legally Protected Areas

The Sub-project area does not fall within the influence zone of any local registered protected area.

Internationally Recognized Areas

World Bank Environmental and Social Standard 6 (ESS6) and IFC Performance Standard 6 (PS6) define Internationally Recognized Areas as areas that are recognized for their importance to biodiversity conservation but are not necessarily legally protected under national legislation. These areas include UNESCO Natural World Heritage Sites, UNESCO Man and the Biosphere Reserves, Wetlands of International Importance designated under the Ramsar Convention, and Key Biodiversity Areas (KBAs).

ESS6 and PS6 further note that internationally recognized areas with high biodiversity value are often treated as Critical Habitat for the purposes of biodiversity risk management, particularly where such areas meet the criteria of IUCN Protected Area Management Categories Ia, Ib, or II, or where they are designated based on globally significant biodiversity values, such as those identified under the KBA framework.

In Türkiye, biodiversity identification, assessment, and conservation planning are undertaken not only by the Ministry of Agriculture and Forestry through its central and provincial directorates, but also by a wide range of non-governmental organizations, academic institutions, and independent experts. These efforts have contributed to the development of nationally and internationally recognized biodiversity inventories and spatial frameworks that support conservation prioritization and biodiversity screening.

One of the most important initiatives in this regard is the inventory of Important Nature Areas (INAs) and Key Biodiversity Areas (KBAs) prepared by Doğa Derneği in 2006 (Eken et al., 2006), in cooperation with the Ministry of Environment and Forestry. This inventory represented the first national-scale application of the KBA/INA approach in Türkiye and was developed using standardized criteria and expert judgment, building on the principles established under BirdLife International's Important Bird Areas (IBA) programme. A key objective of the inventory was defined as providing a scientific basis for identifying sites and species that require targeted conservation actions in order to prevent biodiversity loss and extinction.

In parallel, Important Plant Areas (IPAs) have been identified as sites of national and/or international importance for plant diversity, hosting rare, endemic, and threatened plant species and/or threatened vegetation types. IPAs play a critical role in defining botanical conservation priorities and supporting the long-term sustainability of plant diversity.

Similarly, Important Bird Areas (IBAs) are sites of national and international importance for avifauna, identified based on their role in supporting key stages of bird life cycles, including breeding, wintering, migration, and feeding. IBAs are particularly significant for the conservation of threatened species, range-restricted species, and species that congregate in large numbers during specific periods.

Key Biodiversity Areas (KBAs) represent the primary internationally recognized biodiversity designation relevant under ESS6 and PS6. KBAs are globally significant sites identified using standardized, internationally accepted scientific criteria, under the guidance of IUCN and BirdLife International, and are designated based on the presence of biodiversity features of global importance, including threatened species, geographically restricted species, and unique or irreplaceable ecosystems. In many cases, KBA boundaries integrate or overlap earlier biodiversity frameworks such as INAs, IPAs, and IBAs.

Within this context, internationally recognized biodiversity areas that surround and/or overlap the Sub-project AOI but are not formally designated as legally protected areas under national legislation, have been identified and are presented in Table 2. These areas are shown spatially in Figure 2.

Table 2. Internationally Recognized Areas in the Vicinity of the Sub-project Area

Internationally Recognized Areas	Distance
Eastern Black Sea Mountains KBA (overlapping INA/IBA/IPA frameworks)	Within the area

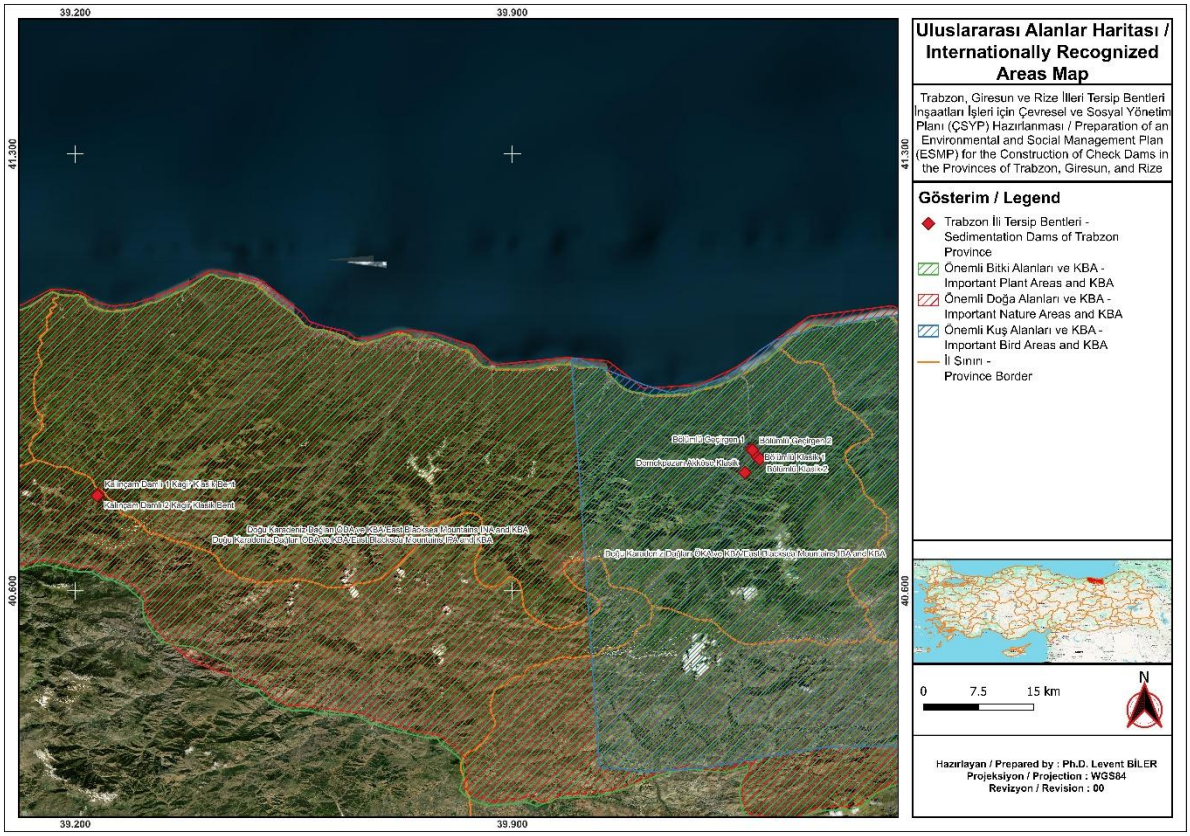

Figure 2. Internationally Recognized Areas

The proposed check dam Sub-projects are located within the broader boundaries of the Eastern Black Sea Mountains Important Nature Area (INA), Important Plant Area (IPA), and Important Bird Area (IBA), which together form part of the Eastern Black Sea Mountains Key Biodiversity Area (KBA). However, no material or significant residual adverse impacts on the biodiversity values underpinning these designations are anticipated, as Sub-project activities are confined to the existing river channel and its immediate margins, involve a limited physical footprint, and do not result in the conversion or degradation of intact terrestrial habitats. Potential impacts and the application of avoidance and mitigation measures are assessed further in the relevant sections below.

Eastern Black Sea Mountains Important Nature Area (Eken et al., 2006)

The Eastern Black Sea Mountains constitute Türkiye's largest priority conservation area in terms of surface extent, encompassing the Eastern Black Sea coastline and a mountain range extending approximately 250 km parallel to the coast. The area is bounded by the Harşit River to the west, the Çoruh River to the southeast, and the Karçal Mountains and the Georgian border to the east.

The INA supports a wide diversity of habitats, including rocky coastal ecosystems, river systems with humid riparian vegetation, agricultural landscapes, lowland deciduous forests (beech, hornbeam, chestnut, alder), higher-elevation coniferous forests (oriental spruce, Eastern Black Sea fir, Scots pine), mixed montane forests, Rhododendron-dominated shrublands, peatlands, alpine meadows, high-altitude lakes, and steep rocky cliffs.

The area supports 159 plant taxa meeting INA criteria, including 21 endemic species restricted globally to this region, reflecting its high botanical importance. In addition, the INA—together with the Çoruh Valley—functions as a globally important migration corridor for soaring raptors and supports regionally significant populations of Caucasian black grouse (Tetrao mlokosiewiczi) and several large raptor species.

The region also supports a range of mammal and herpetofauna species of conservation interest, including wild goat (*Capra aegagrus*), marbled polecat (*Vormela peregusna*), the endemic subspecies of hazel dormouse (*Muscardinus avellanarius trapezius*), and range-restricted reptiles and amphibians such as the Caucasian salamander (*Mertensiella caucasica*) and Pontic viper (*Vipera pontica*).

Eastern Black Sea Mountains Important Plant Area (IPA) (Özhatay et al., 2005)

The Eastern Black Sea Mountains IPA extends approximately 250 km parallel to the Black Sea and merges with the Caucasus Mountains in Georgia. The mountain range includes numerous peaks exceeding 3,000 m, including the Kaçkar Mountains (3,932 m). Vegetation diversity is exceptionally high and includes extensive deciduous and coniferous forests, Rhododendron shrublands, alpine meadows, and high-altitude rocky habitats. The flora comprises approximately 300 nationally rare taxa, of which 79 are endemic, and includes several Tertiary relict species of high phytogeographical significance.

Eastern Black Sea Mountains Important Bird Area (IBA) (Kılıç & Eken, 2004)

The Eastern Black Sea Mountains IBA integrates the former Kaçkar Mountains and Eastern Black Sea IBAs and lies along a major migratory corridor for birds, particularly raptors. The area encompasses extensive forest and alpine habitats and supports the entire Turkish breeding populations of several priority raptor species, including the bearded vulture (*Gypaetus barbatus*), griffon vulture (*Gyps fulvus*), cinereous vulture (*Aegypius monachus*), and golden eagle (*Aquila chrysaetos*).

Eastern Black Sea Mountains (including Karçal Mountains) Key Biodiversity Area (KBA)

The Eastern Black Sea Mountains (including Karçal Mountains) KBA integrates multiple biodiversity frameworks, including INAs, IPAs, and IBAs, and is recognized as a globally significant site under the Global Standard for the Identification of Key Biodiversity Areas. The KBA designation reflects the presence of biodiversity features of global importance at the landscape scale. Species associated with the KBA, and their current IUCN conservation status are presented in the table below.

Table 3. KBA-Associated Species of Conservation Interest Reported for the Wider Region (Reference List)

Taxonomic Group	Species	Common Name	KBA	IUCN 2024	IUCN 2025-2	Habitat
Amphibia	*Bufo verrucosissimus*	Caucasian Warty Toad	Eastern Black Sea Mountains [and Karçal Mountains]	NT	LC	Forest, Shrubland, Grassland, Inland Wetlands, Artificial/Terrestrial, Artificial/Aquatic & Marine
Amphibia	*Pelodytes caucasicus*	Caucasian Parsley Frog	Eastern Black Sea Mountains [and Karçal Mountains]	NT	LC	Forest, Shrubland, Inland Wetlands
Aves	*Aegypius monachus*	Cinereous Vulture	Black Sea Mountains	NT	NT	Forest, Shrubland, Grassland
Aves	*Aquila chrysaetos*	Golden Eagle	Black Sea Mountains	LC	LC	Forest, Shrubland, Grassland, Rocky areas (e.g., cliffs, mountain peaks), Desert

Taxonomic Group	Species	Common Name	KBA	IUCN 2024	IUCN 2025-2	Habitat
Aves	*Falco naumanni*	Lesser Kestrel	Eastern Black Sea Mountains [and Karçal Mountains]	LC	LC	Savanna, Grassland, Rocky areas (e.g., cliffs, mountain peaks), Desert, Artificial/Terrestrial
Aves	*Grus grus*	Common Crane	Black Sea Mountains	LC	LC	Savanna, Grassland, Inland Wetlands, Intertidal, Artificial/Terrestrial, Artificial/Aquatic & Marine
Aves	*Gypaetus barbatus*	Bearded Vulture	Black Sea Mountains	NT	NT	Shrubland, Grassland, Rocky areas (e.g., cliffs, mountain peaks), Artificial/Terrestrial
Aves	*Gyps fulvus*	Griffon Vulture	Black Sea Mountains	LC	LC	Shrubland, Grassland, Rocky areas (e.g., cliffs, mountain peaks), Artificial/Terrestrial
Aves	*Hieraaetus pennatus*	Booted Eagle	Black Sea Mountains	LC	LC	Forest, Shrubland, Desert, Coastal Intertidal, Artificial/Terrestrial
Aves	*Larus cachinnans*	Yellow-legged Gull	Black Sea Mountains	LC	LC	Inland Wetlands, Neritic Marine, Intertidal, Coastal Intertidal, Artificial/Terrestrial, Artificial/Aquatic & Marine
Aves	*Lyrurus mlokosiewiczi*	Caucasian Black Grouse	Black Sea Mountains	NT	NT	Forest, Grassland
Aves	*Melanitta fusca*	Velvet Scoter	Black Sea Mountains	VU	VU	Forest, Grassland, Inland Wetlands, Neritic Marine
Aves	*Montifringilla nivalis*	Snow Finch	Black Sea Mountains	LC	LC	Rocky areas (e.g., cliffs, mountain peaks)
Aves	*Neophron percnopterus*	Egyptian Vulture	Black Sea Mountains	EN	EN	Savanna, Shrubland, Grassland, Inland Wetlands, Rocky areas (e.g., cliffs, mountain peaks), Desert, Artificial/Terrestrial
Aves	*Prunella collaris*	Alpine Accentor	Black Sea Mountains	LC	LC	Shrubland, Grassland, Rocky areas (e.g., cliffs, mountain peaks), Artificial/Terrestrial
Aves	*Pyrrhocorax graculus*	Alpine Chough	Black Sea Mountains	LC	LC	Grassland, Rocky areas (e.g., cliffs, mountain peaks), Artificial/Terrestrial

Taxonomic Group	Species	Common Name	KBA	IUCN 2024	IUCN 2025-2	Habitat
Aves	*Tetrao mlokosiewiczi*	Caucasian Blackcock	Eastern Black Sea Mountains [and Karçal Mountains]	NT	NT	Forest, Grassland
Aves	*Tetraogallus caspius*	Caspian Snowcock	Black Sea Mountains	LC	LC	Grassland, Rocky areas (e.g., cliffs, mountain peaks)
Aves	*Tichodroma muraria*	Wallcreeper	Black Sea Mountains	LC	LC	Rocky areas (e.g., cliffs, mountain peaks)
Mammalia	*Barbastella barbastellus*	Barbastelle Bat	Eastern Black Sea Mountains [and Karçal Mountains]	NT	NT	Forest, Shrubland, Rocky areas (e.g., cliffs, mountain peaks), Caves & Underground Habitats (non-aquatic)
Mammalia	*Capra aegagrus*	Wild Goat	Eastern Black Sea Mountains [and Karçal Mountains]	VU	NT	Forest, Shrubland, Grassland, Rocky areas (e.g., cliffs, mountain peaks), Desert
Mammalia	*Lutra lutra*	Eurasian Otter	Eastern Black Sea Mountains [and Karçal Mountains]	NT	NT	Forest, Shrubland, Grassland, Inland Wetlands, Neritic Marine, Intertidal, Coastal Intertidal, Artificial/Aquatic & Marine
Mammalia	*Myotis bechsteinii*	Bechstein's Bat	Eastern Black Sea Mountains [and Karçal Mountains]	NT	NT	Forest, Shrubland, Caves & Underground Habitats (non-aquatic), Artificial/Terrestrial
Mammalia	*Rhinolophus euryale*	Mediterranean Horseshoe Bat	Eastern Black Sea Mountains [and Karçal Mountains]	NT	NT	Forest, Shrubland, Caves & Underground Habitats (non-aquatic), Artificial/Terrestrial
Mammalia	*Rhinolophus hipposideros*	Lesser Horseshoe Bat	Eastern Black Sea Mountains [and Karçal Mountains]	LC	LC	Forest, Shrubland, Grassland, Caves & Underground Habitats (non-aquatic), Artificial/Terrestrial
Mammalia	*Ovis orientalis*	Wild Sheep	Eastern Black Sea Mountains [and Karçal Mountains]	NT	NT	Forest, Shrubland, Grassland, Rocky areas (e.g., cliffs, mountain peaks), Artificial/Terrestrial
Pisces	*Acipenser persicus*	Persian Sturgeon	Eastern Black Sea Mountains [and Karçal Mountains]	CR	CR	Inland Wetlands, Neritic Marine
Pisces	*Acipenser stellatus*	Stellate Sturgeon	Eastern Black Sea Mountains [and Karçal Mountains]	CR	CR	Inland Wetlands, Neritic Marine

Taxonomic Group	Species	Common Name	KBA	IUCN 2024	IUCN 2025-2	Habitat
Pisces	*Huso huso*	Beluga Sturgeon	Eastern Black Sea Mountains [and Karçal Mountains]	CR	CR	Inland Wetlands, Neritic Marine
Reptile	*Darevskia clarkorum*	Clark's Lizard	Eastern Black Sea Mountains [and Karçal Mountains]	EN	EN	Forest, Rocky areas (e.g., cliffs, mountain peaks), Artificial/Terrestrial
Reptile	*Mertensiella caucasica*	Caucasian Salamander	Eastern Black Sea Mountains [and Karçal Mountains]	VU	NT	Forest, Shrubland, Grassland, Inland Wetlands
Reptile	*Vipera kaznakovi*	Caucasian Viper	Eastern Black Sea Mountains [and Karçal Mountains]	EN	EN	Forest, Rocky areas (e.g., cliffs, mountain peaks), Artificial/Terrestrial
Reptile	*Vipera pontica*	Pontic Viper	Eastern Black Sea Mountains [and Karçal Mountains]	EN	EN	Shrubland, Rocky areas (e.g., cliffs, mountain peaks)

Although the Sub-project area overlaps the internationally recognized protected areas, no significant adverse impacts are expected, provided that the activities will be carried out solely within the river system and no damage will occur to forested areas. Care will be taken to prevent increased turbidity and sediment release beyond the immediate work areas through the implementation of standard in-stream mitigation measures.

4) BIODIVERSITY VALUES

Scientific studies previously published, reports on habitats and species, field surveys conducted in January 2026, and expert opinions were used as the basis for this assessment, carried out in accordance with the provisions of WB ESS6 and IFC PS6 standards. Fieldwork was conducted using methodologies targeting different animal and plant groups, taking into account the region's priority habitats, species of high conservation concern, and protected areas.

Biodiversity values subject to mitigation measures and management strategies under this ESMP are listed in Table 4.

Table 4. Potential Critical Habitat Trigger Species/Habitats in the Wider Landscape (Screening List)

Natural Habitats	High-Priority Flora Species	*High-Priority Fauna Species*
C2.2 - Permanent non-tidal, fast, turbulent watercourses G1.6 - Fagus woodland	*Aethionema sintenisii* *Alchemilla ancerensis* *Alchemilla cimilensis* *Alchemilla elevitensis* *Alchemilla hemsinica* *Alchemilla ikizdereensis* *Alchemilla kackarensis* *Alchemilla trabzonica* *Astragalus arakliensis* *Barbarea integrifolia* *Epigaea gaultherioides* *Erodium hendrikii*	*Acipenser persicus* *Acipenser stellatus* *Aegypius monachus* *Aquila chrysaetos* *Barbastella barbastellus* *Bufo verrucosissimus* *Capra aegagrus* *Darevskia clarkorum* *Falco biarmicus* *Falco naumanni* *Gavia arctica* *Grus grus*

	Festuca pontica *Galanthus koenenianus* *Geranium davisianum* *Onobrychis lasistanica* *Rhamphicarpa medwediewii* *Rhodothamnus sessilifolius* *Rhodothamnus sessilifolius* *Salix rizeensis* *Sempervivum furseorum* *Senecio ovatifolius* *Symphytum savvalense* *Verbascum decursivum*	*Gypaetus barbatus* *Gyps fulvus* *Hieraaetus pennatus* *Huso huso* *Larus cachinnans* *Larus michahellis* *Lutra lutra* *Lyrurus mlokosiewiczi* *Melanitta fusca* *Mertensiella caucasica* *Montifringilla nivalis* *Muscardinus avellanarius trapezius* *Myotis bechsteinii* *Natrix megalocephala* *Neophron percnopterus* *Ovis orientalis* *Pelodytes caucasicus* *Prunella collaris* *Pyrrhocorax graculus* *Rhinolophus euryale* *Rhinolophus hipposideros* *Testudo graeca* *Tetrao mlokosiewiczi* *Tetraogallus caspius* *Tichodroma muraria* *Vipera barani* *Vipera kaznakovi* *Vipera pontica* *Vormela peregusna*

Based on the field surveys conducted, efforts were made to identify the species listed above, including their distribution areas and nesting sites. Literature reviews were conducted to assess the potential presence of these species, and their known distribution ranges were overlaid with the Sub-project area. Considering that the check dams will be constructed within the riverbeds, it was determined that these species were not recorded during January 2026 surveys and are considered unlikely within the footprint/immediate AoI due to habitat constraints; potential presence in the wider landscape is addressed through mitigation and chance observations. Additionally, evaluation of the literature data confirmed that the listed flora species do not occur within the Sub-project site. This conclusion is further supported by the official opinion of the Trabzon Provincial Directorate of the Ministry of Agriculture and Forestry, which confirmed that no endemic or threatened species were identified within the Sub-project area based on terrestrial and inland water ecosystem biodiversity inventory data, and provided implementation recommendations to avoid impacts on wildlife and migratory birds (Appendix 1 of the ESMP).

5) CRITICAL HABITAT ASSESSMENT

Concept of Critical Habitat

Modified habitats are, in the broadest sense, areas that have been altered in various ways, including agricultural lands. While some modified habitats can have completely lost their natural characteristics, it is still necessary to minimize any further impacts in these areas.

Natural habitats consist largely of locally native plant and/or animal species and have not been significantly altered by human activities to the extent that their ecological functions or species composition are changed. In areas where natural habitats occur, compensatory measures must be implemented to prevent biodiversity loss.

Critical habitats are areas with high biodiversity value. Both natural and modified habitats can possess biodiversity values that qualify them as critical habitats. Although habitat types are defined based on the degree of human-induced modification, this alone is not a direct indicator of biodiversity value according to WB ESS6 and IFC PS6. The criteria forming the basis for critical habitat assessment under ESS6 and PS6 are as follows:

Criterion 1: Critically Endangered (CR) and/or Endangered (EN) species

Criterion 2: Endemic or geographically restricted species

Criterion 3: Migratory or congregatory species

Criterion 4: Highly threatened and/or unique ecosystems

Criterion 5: Key evolutionary processes

ESS6 and PS6 allow a Borrower (client) to carry out Sub-project activities in areas of critical habitat only if all of the following conditions are met:

- All necessary processes for permitting Sub-project activities within or adjacent to critical habitat under international obligations or national law have been completed.
- Potential adverse impacts, or the possibility of such impacts, do not cause a measurable net decline or detrimental change in the biodiversity values that led to the designation of the critical habitat.
- The Sub-project is not expected to cause a net reduction over a reasonable timeframe in populations of Critically Endangered (CR), Endangered (EN), or geographically restricted species.
- The Sub-project does not involve significant conversion or degradation of critical habitats. If the Sub-project includes new or renewed forestry or agricultural plantations, it must not result in conversion or degradation of any critical habitat.
- The Sub-project's impact mitigation strategy aims to achieve net gains in the biodiversity values that justified the critical habitat designation.
- A robust, appropriately designed long-term biodiversity monitoring and evaluation program intended to assess the status of the critical habitat is integrated into the Borrower's management program.

It should also be noted that the Critical Habitat Assessment is independent of the potential impacts of a Sub-project on biodiversity values within its Area of Influence or a broader landscape. The outcome of a Critical Habitat Assessment does not indicate a specific impact from Sub-project activities nor the need for a mitigation measure. Instead, it provides a comprehensive analysis of the existing biodiversity values in a given area and helps determine the applicability of ESS6 and PS6 requirements. For Sub-project-related impacts, a mitigation hierarchy should be applied, and necessary measures should be defined for the different phases of the Sub-project.

Critical Habitat Methodology

To determine the status of species identified based on field surveys and literature data, and assessed through expert opinion, the IUCN Red List of Threatened Species was used as the primary reference for identifying Critically Endangered (CR) and Endangered (EN) species. However, other criteria were also considered where applicable for the Critical Habitat assessment.

When identifying "highly threatened and/or unique ecosystems," the IUCN Red List of Ecosystems categories were used as the main reference.

International, and even European-level biodiversity assessments, do not always cover habitats and species in Türkiye. Therefore, expert opinions were frequently consulted to interpret the data and to derive conclusions regarding the current status of biodiversity components. Since there are no officially established or widely recognized national assessments of species and habitat threats and conservation status in Türkiye, local expert knowledge was also incorporated into this process.

Criterion 1: Critically Endangered (CR) and/or Endangered (EN) Species

As a result of the biodiversity assessments conducted, no species meeting the triggering criteria were identified within the Sub-project area. In other words, No Critically Endangered/ Endangered (CR/EN) species were recorded within the Sub-project footprint and immediate AoI during the January 2026 surveys and literature screening. Additionally, no endemic or limited-range species were observed within the Sub-project area. Accordingly, no critical habitat for biodiversity conservation has been identified in the Sub-project area. Assessments of the current populations and distribution of species indicate that the Sub-project is expected to have minimal adverse impact on existing biodiversity values.

Key points under this criterion:

a. Only species officially listed as CR or EN by the IUCN Red List are considered.

b. The assessment includes evaluating the distribution, population size, and habitat dependency of these species within the Sub-project or surrounding area.

c. Areas hosting CR or EN species are subject to strict impact avoidance and mitigation requirements to prevent measurable declines in the species' populations.

Criterion 2: Endemic and/or Restricted-Range Species

The updated version of GN 6 (2019) defines the term "endemic" as "restricted-range" and refers to a limited distribution area (EOO – Extent of Occurrence) as follows:

- For terrestrial vertebrates and plants, restricted-range species are defined as those with an EOO less than 50,000 km².
- For marine systems, restricted-range species are temporarily considered as those with an EOO less than 100,000 km².
- For coastal, riverine, and other aquatic species, restricted-range species are defined as those whose habitat does not exceed 200 km in width at any point, with a global distribution of 500 km or less.

A site can be designated as Critical Habitat if it supports ≥10% of the global population and ≥10 breeding units of a species.

Terrestrial species detected in the Biodiversity Study Area were assessed in terms of their distribution (EOO) and population size based on the IUCN Red List, IUCN European assessments, and expert opinions.

Criterion 3: Migratory or Congregatory Species

Migratory species are defined as species whose significant proportion of individuals move cyclically and predictably from one geographic area to another (which can occur within the same ecosystem).

Congregatory species are those whose individuals gather in large groups based on a specific cycle or on a regular and/or predictable basis (according to PS6). The threshold values are as follows:

(a) Areas that cyclically or regularly support ≥1% of the global population of a migratory or congregatory species at any point in its life cycle.

(b) Areas that predictably support ≥10% of the global population of a species during periods of environmental stress.

The main groups of migratory and congregatory species that could potentially trigger critical habitat in the area are birds. Migration and breeding surveys have been conducted, and assessments for Criterion 3 are presented in the following sections.

Criterion 4: Highly Threatened and/or Unique Ecosystems

To identify highly threatened or unique ecosystems, the World Bank requires the Borrower to use the IUCN Red List of Ecosystems (RLE). In cases where official assessments have not been conducted, evaluations using systematic national or regional-level methods carried out by government agencies, recognized institutions, and/or other relevant qualified organizations should be applied. The thresholds are as follows:

(a) Areas representing ≥5% of a given ecosystem type's global extent that meet the IUCN criteria for CR (Critically Endangered) or EN (Endangered) status.

(b) Other areas not yet assessed by the IUCN but identified as high priority for protection under regional or national systematic conservation planning.

Criterion 5: Key Evolutionary Processes

Evolutionary processes are defined as the structural characteristics of a region, such as its topography, geology, soil composition, temperature, and vegetation. The combination of these variables can influence evolutionary processes that shape the regional structure of species and ecological traits. The importance of structural features affecting evolutionary processes should be determined on a case-by-case basis, and the identification of habitats triggering this criterion must be based on scientific evidence.

Examples of spatial features associated with evolutionary processes include landscapes with high spatial heterogeneity, ecotones, soil interfaces, connections between habitats, and areas important for species or ecosystems to adapt to climate change.

Triggering of Critical Habitat Biodiversity Features

Criterion 1: Critically Endangered (CR) and/or Endangered (EN) Species and Criterion 2: Endemic and/or Limited Range Species

As a result of the biodiversity assessments conducted, no species meeting the triggering criteria were identified within the Sub-project area. In other words, none of the species present in the Sub-project area are classified as Critically Endangered (CR) or Endangered (EN) on the IUCN Red List. Additionally, no endemic or limited-range species were observed within the Sub-project area. Accordingly, no critical habitat for biodiversity conservation has been identified in the Sub-project area. Assessments of the current populations and distribution of species indicate that the Sub-project is expected to have minimal adverse impact on existing biodiversity values.

Criterion 3: Migratory or Congregatory Species

The Sub-project area and its surrounding survey zones have been assessed based on direct observations and literature reviews under Criterion 3: Migratory or Congregatory Species, and it does not meet the critical habitat thresholds. This criterion targets areas that support a significant portion of the global population of migratory species during specific life cycle stages or periods of environmental stress. The assessments indicate that, although the area lies along the main migratory routes for birds, it does not regularly host ≥1% of the global population of any migratory species, nor

does it support ≥10% of populations during periods of environmental stress. Therefore, the Sub-project area is not considered critical habitat under Criterion 3.

Criterion 4: Highly Threatened or Unique Ecosystems

According to the assessment, the Sub-project area does not host more than 5% of any ecosystem type that is globally threatened or unique. Furthermore, the area where Sub-project activities will take place does not include ecosystems that have yet to be assessed by IUCN or those identified as high priority for conservation. In addition, since the Sub-project activities will occur in a limited, confined area, it will not result in significant ecosystem transformation and therefore will not trigger Criterion 4. This indicates that the Sub-project area does not meet the requirements of Criterion 4, as it does not have adverse impacts on broader ecosystems, nor does it contain ecosystem types classified as globally highly threatened.

Criterion 5: Significant Evolutionary Processes

The Biodiversity Study Area is not associated with significant evolutionary processes. The area does not host plant and/or animal species with unique evolutionary histories, nor does it contain populations that exhibit phylogenetic distinctions from other known populations.

Appendix 10 : Social Baseline

1) INTRODUCTION AND PURPOSE OF THE SOCIAL BASELINE

This section presents the social baseline conditions within the Sub-project's AoI and provides the foundation for the assessment of potential social risks and impacts during the pre-construction and construction phases. The social baseline focuses on conditions that are directly relevant to the proposed works and influence or be influenced by Sub-project activities.

The purpose of this section is to describe the existing social environment, including population characteristics, settlement patterns, livelihoods, vulnerable groups, community infrastructure, and sensitive social receptors located within or in close proximity to the AoI. The information presented enables a clear understanding of baseline conditions against which potential impacts are assessed, and appropriate mitigation and monitoring measures are defined in the subsequent sections of this ESMP.

The social baseline has been prepared in line with Turkish legislation and the WB ESF and reflects information collected through desk review, field observations, and stakeholder interactions and informal consultations.

2) SOCIAL AREA OF INFLUENCE

For the purposes of the social baseline and impact assessment, the AoI is defined as the geographic area within which communities, social receptors, and local stakeholders can interact with or be exposed to the Sub-project during the Sub-project works.

The AoI is determined based on an approximately 250 m buffer applied to each check dam location and the extension of this boundary to include sensitive receptors and areas functionally connected to the Sub-project, as described in Section 2.1, including areas potentially affected by construction related impacts such as noise, dust, traffic, access restrictions, and temporary disturbances to land use and daily activities.

Within this AoI, potential impacts include noise, dust, and vibration; traffic and pedestrian safety risks; temporary access restrictions to residences, agricultural land, and stream corridors; limited and localized land acquisition and temporary land use; temporary disturbance to agricultural activities and other household-based income sources; community and worker health and safety risks; and temporary increases in turbidity and sediment disturbance at check dam locations and adjacent stream sections.

The social AoI includes nearby residential areas, villages, and dispersed households located in the vicinity of check dam locations, including Bölümlü and Çataldere neighborhoods (Of District), Akköse neighborhood (Dernekpazarı District), and Kalınçam neighborhood (Tonya District), as well as community facilities such as schools (where present), mosques, local businesses, agricultural lands, and commonly used access roads and pedestrian routes. Transportation corridors used by local residents and construction traffic, including local access roads and material transport routes, are also considered part of the social AoI where they intersect with daily community activities.

In rural sections of the AoI (e.g. Akköse and Kalınçam neighborhoods), settlements are more dispersed, and interactions with Sub-project components are generally associated with agricultural land, garden plots, and local access roads located near check dam locations and stream crossings. In these areas, potential impacts are primarily related to temporary access restrictions, minor disturbances to agricultural activities, and localized changes in mobility patterns. These characteristics have been taken into account in defining the AoI and in developing mitigation measures focused on maintaining access to land and infrastructure, minimizing disruption to agricultural activities, and ensuring safe movement of local residents.

In several locations within the AoI, including Bölümlü and Çataldere neighborhoods, check dam structures are located at defined points along stream corridors in interaction with nearby residential areas, local roads, and community infrastructure. This localized spatial interaction has been considered in defining the AoI and forms the basis for identifying site-specific risks related to access restrictions,

noise, dust, and community health and safety. Accordingly, mitigation measures have been developed to address these localized interactions directly within the ESMP.

The AoI includes stream sections in interaction with settlements, which can be used for limited, small-scale, or household-level activities (e.g. occasional fishing or water use) in Bölümlü, Çataldere, Akköse, and Kalınçam neighborhoods. These activities are limited in scale and are undertaken by a small number of households located in proximity to stream corridors. These activities are supplementary in nature and do not constitute a primary source of income for the majority of households within the AoI.

Vulnerable groups within the AoI—such as children, elderly persons, persons with disabilities, and economically disadvantaged households—are identified as part of the baseline to understand sensitivity to potential project interactions. The delineation of the social AoI reflects actual community presence and use of space, within the defined AoI boundary and its extensions to functionally connected areas, including transport routes and locations where indirect interactions with construction activities can occur, as described in Section 2.1.

Sensitive social receptors identified within the AoI are presented in the table below and form the basis for the social baseline description and subsequent impact assessment.

Table 1: Sensitive E&S Receptors within the Area of Influence

Settlement	Baseline Conditions	The Closest Sensitive Building and Distance[25]	Potential Impacts
Çataldere Neighborhood	Due to their proximity to the Of district center, these settlements display semi-urban characteristics while retaining rural features typical of the Eastern Black Sea Region. Settlement patterns consist of dispersed and semi-linear low-rise housing along valley floors and stream corridors, where residential areas, tea gardens, access roads, and watercourses are closely interlinked. Primary and secondary education services are available within Bölümlü, while higher-level education, health, and administrative services are accessed primarily in the Of district center, with daily commuting common due to short travel distances and regular transport connections. Small-scale recreational or household fishing occur seasonally in nearby streams but is informal and not a primary livelihood source. Local livelihoods are dominated by small-scale agriculture, particularly tea cultivation, supplemented by hazelnut production, small-scale fruit cultivation (including citrus such as mandarin and lemon, as well as other garden fruits), limited livestock keeping, beekeeping, pension income, and wage labor linked to the Of district center. Community receptors include residences, mosques, local roads, and tea gardens located near stream channels.	- Residential buildings: ~140 m - Primary school: ~650 m - Secondary school: ~820 m	- Noise, dust, and vibration - Traffic and pedestrian safety risks - Temporary access restrictions to residences, agricultural land, and stream corridors - Limited and localized land acquisition and/or temporary land use - Temporary disturbance to agricultural activities and other household-based activities (e.g. small-scale livestock keeping, beekeeping, and garden cultivation) during construction - Community and worker health and safety risks - Temporary increase in turbidity and sediment disturbance - Localized impacts on aquatic habitats and riparian vegetation, with potentially effects on fishing activities - Risk of pollution from construction activities
Bölümlü Neighborhood		- Residential buildings: ~70 m - Mosque: ~400 m	
Akköse Neighborhood	Akköse is a predominantly rural settlement characterized by dispersed low-rise housing along steep valley slopes and narrow stream corridors. Access to education and health services is provided mainly through facilities located in the Dernekpazarı and Of district centers, with school-age children typically attending transported education systems. Livelihoods rely mainly on agriculture, particularly tea cultivation, supported by hazelnut production, limited household-level fruit cultivation (garden fruits), small-scale livestock keeping, beekeeping, and pension income. Limited household-level fishing can occur seasonally in certain stream sections, primarily for personal use and not as a main economic activity. Community receptors consist mainly of residences, mosques, local access roads, and tea gardens located near stream channels.	- Residential buildings: ~80 m	
Kalınçam Neighborhood	Kalınçam is a rural settlement with dispersed low-rise housing set within an agricultural and forested highland landscape typical of the Eastern Black Sea Region. Education and primary public services are accessed through Tonya district facilities, with service use shaped by rural settlement patterns and longer travel distances compared to coastal districts. Local livelihoods are based on small-scale agriculture, including tea and hazelnut cultivation, limited household fruit production adapted to highland conditions, limited livestock keeping, beekeeping, and pension income, with limited commuting to the Tonya district center. Community receptors mainly include residences, mosques, local roads, and agricultural parcels near stream corridors. Fishing activity in local streams, where present, is limited, seasonal, and supplementary.	- Residential buildings: ~340 m	

[25] Distances are approximate and were derived from field observations (where accessible) and/or preliminary layout information and satellite-based measurements. They will be verified in C-ESMP and updated during detailed design and prior to construction.

3) METHODOLOGY AND DATA SOURCES

The social baseline for the Trabzon Sub-projects was prepared based on a combination of desk-based review of official secondary data, site visits, and supplementary information provided by the General Directorate of State Hydraulic Works (DSİ). Secondary data were obtained from official and publicly available sources, including the Turkish Statistical Institute (TurkStat), relevant provincial and district-level public institutions, and available documentation from previous flood and sediment control projects implemented by DSİ.

Site visits were carried out along accessible Sub-project streams and adjacent settlements to observe settlement patterns, land use, access conditions, proximity of sensitive receptors, and community infrastructure, supporting the identification of potential social risks and sensitivities. During these visits, informal discussions were also held with local residents encountered in the field, providing supplementary insights into daily use of stream corridors, access conditions, and community-level concerns related to flooding and construction activities.

For Sub-project locations that could not be physically accessed due to adverse winter conditions and terrain constraints, information on site conditions, settlement proximity, and land use characteristics was obtained through consultations with DSİ technical staff familiar with the areas. In addition, phone-based communications were conducted with local representatives to confirm settlement characteristics, access conditions, and the presence of sensitive receptors, supporting the completion of settlement-based baseline information for these locations.

For other Sub-project locations in Tonya district that could not be physically accessed due to winter conditions and terrain constraints, information on settlement characteristics, access conditions, and land use was obtained through consultations with DSİ technical staff familiar with the sites and, where feasible, phone-based communications with local representatives.

Given seasonal population movements in rural areas and the timing of the site visits, opportunities for broader or structured consultations were limited. The social baseline therefore relies on direct field observations, information obtained from mukhtars, DSİ inputs, and official secondary data. Formal Sub-project–specific stakeholder engagement activities will be conducted prior to construction in line with the Parent Project Stakeholder Engagement Plan (SEP) and ESS10 requirements.

The main limitations of the data collection process include restricted winter access to upland areas, seasonal absence of residents, and the preliminary level of technical design at the time of assessment. These limitations do not prevent the identification of key social conditions and risks relevant to the preparation of this ESMP, and the information collected is considered sufficient for impact assessment and mitigation planning at this stage.

4) DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS[26]

According to TurkStat 2024 population data, Trabzon Province has an estimated population of approximately 822,270 residents, with a distinguished gradient between densely populated coastal districts and sparsely populated mountainous upland areas. The proposed check dams are located within Tonya, Dernekpazarı, and Of Districts. Tonya and Dernekpazarı are predominantly rural with low population densities, while Of District includes both a relatively populous coastal urban area and sparsely populated upstream rural neighborhoods. Seasonal demographic dynamics are a defining feature in these districts, with rural upland settlements experiencing reduced winter-time occupancy due to climatic conditions and temporary out-migration for work, education, and service access.

[26] Source: Republic of Türkiye, Turkish Statistical Institute (TurkStat). Address-Based Population Registration System and Neighbourhood-level population data based on latest available TurkStat ADNKS data
Source: Republic of Türkiye, Turkish Statistical Institute (TurkStat). Education Status Database, literacy rates and educational attainment indicators. Available at: https://nip.tuik.gov.tr/?value=EgitimDurumu
Source: Eastern Black Sea Development Agency (DOKA). Regional socio-economic and demographic profiles for Trabzon Province and the Eastern Black Sea Region, compiled from TurkStat datasets.

Within the wider area, Bölümlü neighborhood (Of District) has an estimated population of approximately 1,847 residents, while Çataldere neighborhood (Of District) has around 398 residents, Kalınçam neighborhood (Tonya District) has about 686 residents, and Akköse (Dernekpazarı District) has approximately 444 residents, based on the most recent available settlement-level data from TurkStat and ancillary sources. Across these communities, upstream rural settlements generally exhibit: an aging demographic profile; a declining share of working-age residents driven by long-term out-migration to larger urban centers; and pronounced seasonal fluctuations, with significantly lower winter-time residency.

The local labor force in these districts is closely linked to small-scale agricultural and land-based livelihoods. Rural households rely primarily on tea and hazelnut cultivation, supplemented by limited livestock keeping, beekeeping, and pension income, while younger adults increasingly seek wage employment, trade, or service-sector jobs in nearby district centers. Daily commuting to urban centers, particularly from Bölümlü and Çataldere to the Of district center, is common due to short travel distances and available transport services. Education in rural settlements is supported by local primary or transported schooling arrangements; for example, Bölümlü hosts primary and secondary education facilities, while students from more remote areas such as Akköse and Kalınçam typically travel to district centers for schooling.

These upland communities exhibit close spatial integration between residential areas, agricultural and tea gardens, local access roads, and stream corridors, and seasonal population variation is linked to agricultural cycles and climatic conditions. Small-scale recreational or household fishing activity occur intermittently in nearby stream sections, but it is generally informal, limited in scale, seasonal, and supplementary rather than a primary source of household income.

Overall, demographic and socio-economic conditions reflect stable but gradually declining rural populations, diversified but predominantly small-scale livelihood strategies, and strong functional linkages between river valley settlements and nearby district centers.

5) LAND USE AND SETTLEMENT CHARACTERISTICS[27]

Trabzon Province is characterized by rugged mountainous terrain, narrow valleys, and settlement patterns that are strongly influenced by topography, hydrology, and transportation corridors. Settlements are typically distributed along valley floors, stream corridors, and local access roads, with residential areas closely interwoven with agricultural land, forested slopes, and watercourses. This spatial pattern is particularly pronounced in upland and upstream catchments, where the availability of flat land is limited and land use is highly fragmented.

Within the Sub-project AoI, settlement patterns reflect a combination of semi-urban neighborhoods located closer to district centers and predominantly rural settlements situated in upstream valleys. In Of District, settlements such as Bölümlü and Çataldere display semi-urban characteristics due to their proximity to the district center and regular transport connections, while still retaining rural land-use features typical of the Eastern Black Sea Region. In Tonya and Dernekpazarı districts, settlements such as Kalınçam and Akköse exhibit a predominantly rural character, with dispersed low-rise housing aligned along steep valley slopes and narrow stream corridors.

Rural settlements within the AoI (Akköse in Dernekpazarı District and Kalınçam in Tonya District) generally consist of dispersed or semi-linear housing clusters located along streams and local road networks. Land use in these areas is dominated by small-scale agricultural activities, particularly tea cultivation, supplemented by hazelnut gardens, small pasture plots, and surrounding forested areas. Community infrastructure in rural settlements is typically limited to mosques, local roads, and basic communal facilities, while access to education, health, and administrative services is primarily provided through district centers via regular or transported access systems.

[27] Source: Eastern Black Sea Development Agency (DOKA). Regional socio-economic and demographic profiles for Trabzon Province and the Eastern Black Sea Region, compiled from TurkStat datasets.

Semi-urban neighborhoods within the AoI (Bölümlü and Çataldere neighborhoods in Of District) exhibit relatively higher settlement density and a more compact spatial structure, with mixed residential and limited commercial land use. These areas benefit from closer access to public services, schools, and markets located in the district center and function as service and employment nodes for surrounding rural settlements, while maintaining agricultural land uses in peripheral areas.

The Sub-project interventions involve the construction of check dams and related works within existing stream corridors and their immediate surroundings. Given the close proximity of residential plots, agricultural land, access roads, and utility corridors to the streams, the Sub-project require limited permanent land acquisition and/or temporary land use during construction. Permanent land acquisition will be required for the footprint of check dam structures and associated protection works, while temporary land use can occur for construction access, material storage, and work areas. These land-related impacts are expected to be localized and limited in scale; however, they are relevant in the local context due to small landholding sizes and the reliance of households on agricultural plots and gardens for livelihoods.

According to the cadastral study of DSİ Regional Directorate, majority of the affected land consists of forest land (approximately 18,182 m²) and treasury/unregistered land (approximately 6,682 m²).

Overall, land-related impacts are localized and manageable due to no anticipated physical displacement and no significant or long-term effects on household livelihoods. The scope and extent of these impacts have been confirmed through cadastral assessment and will be managed in accordance with ESS5. Mitigation measures defined under this ESMP and the Sub-project RP, to be prepared in line with the Parent Project RF, will be implemented, including compensation, restoration of temporarily used land, and continued stakeholder engagement, residual social impacts are therefore limited and manageable.

6) COMMUNITY INFRASTRUCTURE AND SERVICES[28]

Trabzon Province has a well-developed network of public infrastructure supporting education, health, transportation, and community services, concentrated primarily in district centers and coastal urban areas. Education services are provided through public primary and secondary schools, vocational institutions, and higher education facilities located mainly in district and provincial centers, while health services are delivered through state hospitals, district hospitals, family health centers, and outpatient clinics. Transportation infrastructure consists of regional highways, district roads, and local access roads connecting upland settlements to district centers; however, in mountainous and upstream areas these roads are susceptible to disruption due to intense rainfall, flooding, landslides, and winter weather conditions.

Within the Sub-project AoI, access to social infrastructure is largely mediated through the district centers of Of, Tonya, and Dernekpazarı. Of District functions as a key service hub for nearby semi-urban and rural settlements, hosting district-level education facilities, health services, administrative offices, and markets that are regularly accessed by surrounding neighborhoods such as Bölümlü and Çataldere through short-distance daily commuting. Tonya and Dernekpazarı districts provide more limited but essential services to their rural catchments, with residents of settlements such as Kalınçam and Akköse relying on district centers for education, health care, administrative services, and market access.

At the settlement level, infrastructure availability varies by location and degree of urbanization. Rural settlements typically do not host full-scale education or health facilities; instead, school-age children rely on transported education systems to reach primary and secondary schools in district centers or larger settlements, and residents access health services through district hospitals and family health units. Mosques are present in all settlements and serve as key community and social focal points. Local access roads play a critical role in daily life, supporting agricultural transport, school access,

[28] Source: Eastern Black Sea Development Agency (DOKA). Regional socio-economic and demographic profiles for Trabzon Province and the Eastern Black Sea Region, compiled from TurkStat datasets.

commuting, and access to services; however, these roads are often narrow and vulnerable to seasonal weather-related disruptions.

Semi-urban neighborhoods closer to district centers benefit from improved access to public services, including schools, health facilities, municipal services, public transport routes, and local markets. These neighborhoods function as intermediate service nodes for surrounding rural settlements, while still maintaining agricultural land uses and residential areas in close proximity to stream corridors.

Across the Sub-project AoI, community infrastructure—including roads, schools, religious buildings, and service facilities—is often located near stream channels due to topographic constraints. This spatial relationship increases sensitivity to flooding and construction-related access disruptions. Accordingly, the ESMP considers the need to maintain safe access to education, health services, and community infrastructure during construction, minimize temporary disruptions to transport routes, and ensure continued connectivity for residents throughout the implementation of the check dams.

7) LIVELIHOODS AND ECONOMIC ACTIVITIES

Within the Sub-project Area of Influence (AoI), livelihoods are primarily based on small-scale, land-based economic activities typical of the Eastern Black Sea Region. Rural households rely largely on agriculture, dominated by tea cultivation, which represents the principal perennial crop and income source. This is supplemented by hazelnut production, small-scale fruit cultivation (including citrus such as mandarin and lemon where climatically suitable, as observed during site visits), limited livestock keeping, beekeeping, and pension income. Fruit production is generally practiced at household or small commercial scale, often integrated within tea gardens or on terraced plots, and contributes to livelihood diversification rather than constituting a primary income source.[29]

In settlements with semi-urban characteristics within the AoI, particularly those located closer to district centers, livelihoods are less dependent on agriculture and include employment in services, trade, small-scale commerce, transportation, and public-sector jobs. Nevertheless, peripheral areas of these settlements can still include tea gardens, household fruit trees, and small agricultural plots, maintaining functional linkages with the surrounding rural economy.

Seasonal agricultural labor is an important component of local economic activity, particularly during tea harvesting periods. The AoI hosts seasonal migrant workers, primarily from Georgia and Arab countries, who are temporarily employed in tea cultivation, horticulture, and related agricultural activities. These workers are typically engaged on a short-term basis and reside in rented, shared, or employer-provided accommodation during the harvest season.

The Sub-project is expected to generate temporary employment opportunities during the construction phase, particularly in construction-related works, material handling, transport, and auxiliary services. These opportunities can provide short-term income benefits for local residents within the AoI, including both rural households and semi-urban settlements.

Construction activities can result in temporary and localized impacts on livelihoods, particularly in rural areas, due to short-term restrictions on access to agricultural land, stream corridors, or local roads, as well as nuisance effects such as noise, dust, and traffic-related safety risks. In semi-urban areas, potential impacts are limited to temporary access constraints and localized traffic disruption. These impacts will be managed through mitigation measures defined in the ESMP, including careful scheduling of works to avoid critical agricultural periods, maintenance of safe access routes, and implementation of dust and noise control measures. Compensation for any temporary land use, access restrictions through the Sub-project specific RP to be prepared in accordance with WB ESS5 and the Parent Project's RF.

Overall, while construction activities will result in short-term disturbances, the localized nature of check dam construction activities and the presence of receptors within the AoI require the

[29] Source: Eastern Black Sea Development Agency (DOKA). Regional socio-economic and demographic profiles for Trabzon Province and the Eastern Black Sea Region, compiled from TurkStat datasets.

implementation of mitigation measures to manage temporary disturbance to access and daily activities.

8) VULNERABLE AND DISADVANTAGED GROUPS

Within the AoI, there are several population groups that can experience greater sensitivity to changes in economic and social conditions and can be more susceptible to negative effects from Sub-project activities. Vulnerable and Disadvantaged Groups (VDGs) have been identified based on demographic, economic, and social characteristics of Trabzon Province and Sub-project districts, as well as observations during site visits.

Based on field visits, stakeholder consultations (including mukhtar interviews), follow-up communications with local representatives, and available secondary data, these groups are present across all settlements within the AoI (Bölümlü and Çataldere neighborhoods in Of District, Akköse neighborhood in Dernekpazarı District, and Kalınçam neighborhood in Tonya District). Although quantitative data is not systematically recorded at settlement level, the figures below reflect consolidated estimates derived from these consultations:

- Illiterate adults (Women and Men: ≈70 each)
- Persons with disabilities (Women and Men: ≈150 each)
- Elderly persons in need of care and social assistance (Women: ≈260, Men: ≈220)
- Unemployed or economically vulnerable persons (≈650 individuals)
- Female-headed households (≈150 households)
- Seasonal or temporary workers (≈120 individuals)

- **Older residents and pension-dependent households:** Rural and semi-rural settlements within Of, Dernekpazarı, and Tonya districts exhibit ageing population structures, with a relatively high proportion of residents aged 65 and over. Many elderly residents rely primarily on pension income and experience mobility limitations, particularly in steep terrain and during winter months. These households will be more sensitive to temporary access disruptions, construction traffic, or changes to local access routes.
- **Lower socio-economic status households:** Official socio-economic indicators indicate that while coastal districts of Trabzon Province are relatively developed, rural and upland settlements include households with limited and unstable income sources. Some households within the AoI depend on subsistence farming, small-scale agriculture, or informal and seasonal employment, increasing their vulnerability to temporary livelihood disruptions.[30]
- **Rural agricultural households:** A significant share of AoI residents rely on small-scale agriculture, including tea cultivation, hazelnut production, small-scale fruit cultivation (including citrus such as mandarin and lemon where climatically suitable), beekeeping, and limited livestock keeping. These households are highly dependent on continued access to land, water, and local roads and will be particularly sensitive to temporary access restrictions during construction.
- **Women-headed households and those with limited formal employment:** According to TurkStat labor statistics for Trabzon Province, women represent a substantial share of informal and seasonal employment, particularly in agriculture and household-based activities. Women-headed households and households relying on seasonal or informal work will face additional economic sensitivity. ESMP mitigation measures include inclusive engagement and equitable access to temporary employment opportunities.[31]
- **Households at risk of relative poverty:** Regional income and living conditions statistics indicate that certain households in rural areas of Trabzon Province face elevated risk of poverty or

[30] Source: Eastern Black Sea Development Agency (DOKA). Regional socio-economic and demographic profiles for Trabzon Province and the Eastern Black Sea Region, compiled from TurkStat datasets.
[31] Source: Turkish Statistical Institute (TurkStat). Labour Force Statistics by Province and Gender, Trabzon Province.

social exclusion, particularly those with limited landholdings or income diversification. These households will be more sensitive to temporary land use or access restrictions.

- **Illiterate or low-literacy adults:** Although literacy levels in Trabzon Province are generally high, older age groups in rural settlements will have lower levels of formal education. For individuals with limited literacy, project information and updates will be provided through verbal communication and face-to-face interactions, in line with WB ESS10.[32]
- **Persons with Disabilities:** Settlement-level disability data are limited; however, persons with physical mobility constraints are present within the AoI, particularly among elderly residents. Steep terrain, narrow roads, and limited pedestrian infrastructure increase sensitivity to construction-related disturbances.
- **Elderly Persons Requiring Care or Social Assistance:** Rural settlements within the AoI have a relatively high share of elderly residents, some of whom live alone or rely on pensions and family support. Priority communication and responsive grievance handling are included in ESMP implementation to address the needs of this group.
- **Unemployed and Economically Vulnerable Individuals:** Provincial labor statistics indicate moderate unemployment and limited diversification of rural employment in upland districts. Households relying on pensions, subsistence agriculture, or seasonal work are particularly sensitive to short-term disruptions.[33]
- **Seasonal and Migrant Workers:** Seasonal workers, including migrant labor engaged in tea harvesting and agricultural activities, will be present in parts of the AoI during peak seasons. Contractors will apply the Parent Project LMP and prepare Sub-project–specific Labor Management Plan to ensure safe working conditions and access to grievance mechanisms.

Construction activities will result in temporary and localized disturbances—such as restricted access to agricultural fields, increased dust and noise, or changes in traffic patterns—as well as limited and localized land acquisition and/or temporary land use in a single location, which require specific attention to ensure that vulnerable and disadvantaged groups are not adversely affected.

The ESMP therefore incorporates mitigation measures including clearly demarcated construction boundaries, maintenance of safe and continuous access routes, targeted communication and grievance mechanisms, and inclusive outreach for temporary employment opportunities. Where land acquisition or livelihood impacts occur, affected vulnerable households will be identified and supported through measures defined under ESS5, including compensation, assistance, and livelihood restoration as applicable.

Site-specific consultation findings and land acquisition screening have been used to refine these measures and to identify particularly sensitive households and locations requiring focused attention during Sub-project implementation.

9) PROJECT AFFECTED PARTIES

PAPs within the Sub-project AoI include individuals, households, and communities who can experience temporary and localized effects arising from the implementation of check dam structures within existing stream corridors. This primarily includes residents and land users in Bölümlü and Çataldere neighborhoods (Of District), Akköse settlement (Dernekpazarı District), and Kalınçam settlement (Tonya District), as well as users of adjacent agricultural lands, streambanks, and local access roads within the AoI.

Potential impacts on PAPs include:

[32] Source: Turkish Statistical Institute (TurkStat). Literacy Rates by Age Group and Gender, Trabzon Province.
[33] Source: Turkish Statistical Institute (TurkStat). Labour Force Statistics by Province, Trabzon Province (unemployment rate, labor force participation, sectoral employment).

Land and property access restrictions: Temporary occupation or restricted access to agricultural plots, stream corridors, and local roads during construction, potentially affecting access to tea gardens, hazelnut orchards, household plots, and small gardens.

Livelihood disruptions: Temporary and localized potential impacts on livelihoods can occur due to construction activities and potential land acquisition, including interruption or loss of access to small-scale agricultural lands used for tea and hazelnut cultivation, small-scale fruit production (including limited household citrus production where climatically suitable), limited livestock keeping, and seasonal or informal work linked to agriculture and construction. Any livelihood impacts associated with land acquisition or access restrictions will be addressed in accordance with WB ESS5 through the Sub-project–specific RP.

Community health and safety risks: Exposure to dust, noise, construction traffic, and temporary increases in turbidity or changes in stream conditions, which can affect daily activities, local water use, and small-scale fisheries or trout-related activities where present.

Physical and economic impacts: The Sub-project requires limited permanent land acquisition and temporary land use in a narrowly defined location immediately adjacent to check dam footprints. Cadastral screening confirms that these impacts are highly localized and limited in scale.

No construction activities involving land acquisition, temporary land use, or access restrictions will commence until all land-related impacts are fully identified and managed through a Sub-project–specific RP, prepared and implemented in line with the Parent Project RF, WB ESS5, and applicable national legislation.

Most structures potentially affected are located within flood-prone stream corridors and are already exposed to recurrent flood risk. The Sub-project provides long-term safety benefits through flood risk reduction. Any land acquisition or compensation measures will ensure that affected persons are not worse off and, where feasible, benefit from improved safety and resilience.

Given the localized nature of impacts and the availability of established mitigation and compensation mechanisms, physical and economic displacement risks are manageable. Temporary land use will be minimized, all temporarily affected land will be reinstated following construction, and particular attention will be given to vulnerable households and informal land users during implementation.

10) CULTURAL HERITAGE

The Sub-project has been assessed in accordance with applicable national legislation and WB ESS8. The planned check dams are small-scale, in-stream structures with very limited physical footprints, located entirely within existing stream channels. Each intervention affects a confined area, and construction will be implemented on a site-by-site basis, further limiting the spatial extent of potential impacts.

Preliminary site surveys and desk-based reviews conducted during Sub-project/ESMP preparation did not identify any critical cultural heritage issues or known registered cultural heritage assets directly within the planned check dam footprints.

Official correspondence from the Trabzon Regional Board for the Conservation of Cultural Assets (Appendix 1) confirms that registered immovable cultural heritage assets exist within the wider provincial context and provides the names of such assets and their protection areas. Review of this information indicates that the listed cultural heritage assets and their protection zones are not located within or in close proximity to the Sub-project sites. Nevertheless, the correspondence confirms that site-specific verification is required prior to construction, in accordance with applicable national legislation.

Accordingly, cultural heritage is treated as a potential but manageable risk. During the detailed design and pre-construction phase, the exact locations of check dams will be verified against the most up-to-date cultural heritage inventories and protection areas. Any works that can affect a registered cultural heritage asset or its protection area will be subject to prior written approval from the Regional Board

for the Conservation of Cultural Assets, in line with Law No. 2863 on the Protection of Cultural and Natural Assets. No construction activities will commence at such locations without the required permits and decisions.

Although the likelihood of encountering cultural heritage remains low, excavation and in-stream works carry a residual risk of chance finds. A Chance Finds Form has therefore been included in the ESMP (Appendix 6) and will be implemented by the Contractor. This procedure requires immediate suspension of works, protection of the find, notification of the competent authorities, and resumption of works only after formal clearance.

This approach ensures that cultural heritage risks associated with the Sub-project are appropriately managed while allowing the implementation of necessary flood and sediment control measures.

In addition to tangible cultural heritage, the Sub-project area forms part of a broader cultural landscape characterized by living intangible cultural heritage typical of the Eastern Black Sea Region, including traditional social practices, music, and community customs. While no UNESCO-inscribed intangible cultural heritage elements are known to be uniquely or specifically associated with the limited footprints of the planned check dams, traditional cultural expressions—such as folk music and instruments including the “kemençe” and “tulum”—remain integral to local community life. Given the small scale, short duration, and spatially confined nature of the works, the Sub-project is not expected to interfere with intangible cultural heritage practices.

Cultural heritage management requirements, including permit acquisition, coordination with cultural heritage authorities, and implementation of the Chance Finds Procedure, are reflected in the ESMP mitigation and monitoring framework and will be binding on the Contractor through the C-ESMP.

11) SUMMARY OF SOCIAL BASELINE FINDINGS

The social baseline assessment describes the existing social, demographic, and economic conditions within the Sub-project AoI in Trabzon Province, based on desk review of official secondary data, site observations, and supplementary stakeholder inputs. The assessment provides the basis for identifying potential social impacts and defining appropriate mitigation and management measures under the ESMP.

Population and Settlements: The AoI includes rural and semi-urban settlements within Of, Tonya, and Dernekpazarı districts, characterized by dispersed or semi-linear housing patterns typical of the Eastern Black Sea Region and strong spatial alignment with stream corridors and local access roads. Settlements closer to district centers exhibit semi-urban characteristics and better access to services, while upstream rural neighborhood display lower population density and seasonal population fluctuations linked to agricultural cycles and out-migration.

Livelihoods and Economic Activities: Livelihoods in rural settlements are predominantly based on small-scale agriculture, particularly tea and hazelnut cultivation, supplemented by limited fruit production, beekeeping, small-scale livestock keeping, seasonal agricultural labor, and pension income. In semi-urban areas, livelihoods are more diversified and include employment in services, trade, and the public sector. Construction activities are expected to result in temporary and localized disturbance to agricultural and other household-based activities, primarily due to short-term access restrictions, which will be managed through ESMP mitigation measures.

Community Infrastructure: Community infrastructure within the AoI varies between rural and semi-urban areas. Rural settlements rely largely on district centers for education, health care, and administrative services, while mosques and local access roads serve as key community facilities at the settlement level. Transport infrastructure is critical for daily life and economic activity but remains vulnerable to flooding and extreme weather events, underscoring the importance of flood and sediment control measures.

Vulnerable and Disadvantaged Groups: VDGs within the AoI include elderly and pension-dependent households, rural agricultural households with limited landholdings, households with low or unstable

income sources, women-headed households, persons with disabilities, illiterate or low-literacy adults, unemployed individuals, and seasonal or migrant workers. These groups will be more sensitive to temporary construction-related impacts such as access restrictions, noise, dust, and traffic disturbances. The ESMP incorporates targeted mitigation and engagement measures in line with WB ESS10 and ESS5.

Project Affected Parties and Land-Related Impacts: PAPs include residents and land users located along stream corridors and adjacent lands within the AoI. The Sub-project requires limited and localized permanent land acquisition and temporary land use in a single location. Cadastral assessments confirm that these impacts are localized and limited in scale and will be addressed through a Sub-project–specific RP…and will be addressed through a Sub-project–specific RP prepared in line with the Parent Project RF and WB ESS5.

Cultural Heritage: The Sub-project area has been reviewed in accordance with national legislation and WB ESS8. No known registered cultural heritage assets have been identified within the planned check dam footprints. The area forms part of a broader cultural landscape characterized by living intangible cultural heritage typical of the Eastern Black Sea Region; however, given the small scale and confined footprint of the works, no impacts on such practices are anticipated. A Chance Finds Form (Appendix 6) is included in the ESMP to manage any unexpected discoveries.

Conclusion: The Sub-project AoI comprises rural and semi-urban settlements with livelihoods closely linked to small-scale agriculture and local services and with high exposure to flood and sediment risks due to their proximity to stream corridors. Flood and sediment control structures are therefore of critical importance for protecting lives, livelihoods, and infrastructure. While construction activities are expected to result in temporary disturbances and limited land-related impacts, these are localized and manageable through the implementation of ESMP mitigation measures in line with WB requirements.

Appendix 11 : Indicative List of Concrete Plants and Material Supply Sources

This appendix provides an indicative and non-exhaustive list of existing ready-mix concrete plants and aggregate/material supply sources that are commonly used for infrastructure works in Trabzon, Giresun, and Rize Provinces.

The list is provided for information purposes only and does not constitute approval, endorsement, or pre-selection of any facility.

Final selection of associated facilities shall be undertaken by the Contractor during procurement and shall be subject to verification of valid permits, environmental approvals, operational licenses, and compliance with national legislation and World Bank ESF requirements, as documented in the Contractor's C-ESMP.

A. Ready-Mix Concrete Plants

No.	Facility Name (Indicative)	Location	Notes
1	OYAK Beton – Trabzon Ready-Mix Concrete Plant	Ortahisar District, Trabzon Province	Operates regionally in the Eastern Black Sea; commonly used for DSİ and public infrastructure works
2	Aşkale Çimento – Trabzon Ready-Mix Concrete Plant	Trabzon Province	Regional supplier with experience in hydraulic and road infrastructure projects
3	Karadeniz Hazır Beton	Akçaabat District, Trabzon Province	Local supplier; transport distance suitable for upland basin works
4	Akyüz Beton	Trabzon Province	Ready-mix concrete and crushing–screening activities; verification required
5	OYAK Beton – Kalkandere Ready-Mix Concrete Plant	Kalkandere District, Rize Province	Regional supplier; frequently used for flood and sediment control works
6	Cevahir Hazır Beton	Rize Province (Central District)	Local supplier serving Rize basin projects
7	Aşkale Çimento – Tirebolu Ready-Mix Concrete Plant	Tirebolu District, Giresun Province	Suitable transport distance for Giresun and Trabzon upland works
8	Makro Yol Yapı – Giresun Ready-Mix Concrete Plant	Giresun Province	Commonly used for public infrastructure projects
9	Local ready-mix concrete suppliers	Trabzon, Giresun and Rize Provinces	Small- to medium-scale plants; availability subject to capacity and permitting

B. Aggregate, Stone, and Material Supply Sources

No.	Facility Type	Location (Indicative)	Notes
1	Makro Yol Yapı A.Ş. – Trabzon Crushing and Screening Plant	Araklı District, Trabzon Province	Existing licensed facility used for public infrastructure works; permit and EIA status to be verified prior to use

No.	Facility Type	Location (Indicative)	Notes
2	Akyüz Beton – Crushing and Screening Facility	Araklı District, Trabzon Province	Integrated with ready-mix concrete operations; quarry license, EIA decision, and operational permits to be verified
3	Makro Yol Yapı A.Ş. – Giresun Crushing and Screening Plant	Giresun Province	Regional aggregate supplier for DSİ and public works; verification of permits required prior to use
4	Licensed stone quarries (various operators)	Trabzon, Giresun and Rize Provinces	Existing licensed quarries; exact facility to be selected by Contractor and verified for legal compliance

C. Use and Management of Associated Facilities

- Only existing, licensed, and legally operating facilities shall be used as associated facilities under the Sub-project.
- No new quarry development, new concrete batching plant construction, or expansion of existing facilities is planned under the Sub-project.
- The Contractor shall prepare an Associated Facilities Register as part of the C-ESMP, including:
  - Facility name, address, and coordinates
  - Copies of valid permits, licenses, and environmental approvals
  - Haul routes and transport distances
  - Confirmation of compliance with national legislation and WB ESF
- Environmental, social, OHS, and CHS risks related to associated facilities (e.g., traffic, dust, noise, waste, hazardous materials) shall be managed through the measures defined in the ESMP and C-ESMP.