



REPUBLIC OF TURKEY
MINISTRY OF TRANSPORT
AND INFRASTRUCTURE



**ÇUKUROVA REGION AND İSKENDERUN BAY RAILWAY
CONNECTION PROJECT
ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN
CNR-ADN-ESMP-002
Final**

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ABBREVIATIONS & DEFINITIONS

AMP	Aggregate Management Plan
BMP	Biodiversity Management Plan
CCTV	Closed Circuit Television
CHA	Critical Habitat Assessment
CHA-BMP	Critical Habitat Assessment and Biodiversity Management Plan
CHMP	Cultural Heritage Management Plan
CHSMP	Community Health and Safety Management Plan
CIMER	The Presidential Communication Center
CIMP	Construction Impacts Management Plan
CLO	Community Liaison Officer
CRF	Complaint Register Form
CRMP	Community Relations Management Plan
DGII	Directorate General of Infrastructure Investments
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EPRP	Emergency Preparedness and Response Plan
ESCP	Environmental and Social Commitment Plan
ESIA	Environmental and Social Impact Assessment
ESIA Consultant	Çınar Engineering Consultancy Inc.
ESIRT	Environment and Social Incidence Response Toolkit
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
ESS	Environmental and Social Standards
ETP	Employment and Training Plan
Km	Kilometer
LM Plan	Labor Management Plan
LMP	Labor Management Procedure
MCP	Management of Change Process
MoTI	Ministry of Transport and Infrastructure
OHSMP	Occupational Health and Safety Management Plan
PIU	Project Implementation Unit
PPP	Pollution Prevention Plan
PTC	Positive Train Control
RP	Resettlement Plan
RCA	Root Cause Analysis
SEP	Stakeholder Engagement Plan

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TCDD	Republic of Türkiye State Railways
TTMP	Traffic (Transportation) Management Plan
WB	World Bank
WMP	Waste Management Plan



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APPENDICES

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Appendix-2	Community Health and Safety Management Plan
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1 INTRODUCTION

The World Bank's Board of Executive Directors approved a loan for the Türkiye Rail Logistics Improvement Project (RLIP) on 30.06.2020. The project is implemented by the Ministry of Transport and Infrastructure (MoTI) through its Directorate General of Infrastructure Investments (DGII), aims to increase rail freight efficiency in Türkiye by improving last-mile infrastructure connectivity (LMC), enhancing the operational efficiency of rail-enabled logistics centers, and strengthening institutional capacity in the rail intermodal and freight logistics sector.

The project development object is to reduce transport costs in selected rail freight corridors and to strengthen institutional capacity at the MoTI to deliver rail freight connectivity and manage rail-enabled logistic centers.

The project is developed around three main components:

- Component 1: Construction of Railway Branch Lines and Multimodal Connections at Priority Network Nodes,
- Component 2: Feasibility studies, detailed engineering designs, environmental and social documentation, and construction supervision for rail last-mile infrastructure connectivity at additional freight nodes,
- Component III – Phase 2 Covid-19 response support, institutional strengthening, capacity building, and project implementation support.

Within the scope of the 1st Component of the Project for Improving Railway Connections, it is planned to construct a railway connection line to the industrial facilities in Çukurova Region and İskenderun Bay - Yumurtalık Free Zone industrial centers and ports. The main purpose of the Çukurova Region and İskenderun Bay Railway Connection Sub-Project (the Project) is to make the transportation of raw materials and products economical by making infrastructure connection (such as OIZ - Port connection, OIZ - Main line connection) between the industrial areas. The railway connection line will connect the existing Osmaniye OIZ, Ceyhan OIZ and Ceyhan Energy Specific OIZ to the existing Toprakkale - İskenderun railway line at the existing Erzin Station.

The risk classification of the project is assessed as "Substantial" according to the World Bank Environmental and Social Framework (ESF). As a result, although the sub-projects have an exemption on Environmental Impact Assessment (EIA) according to the national legislation, Environmental and Social Impact Assessment (ESIA), Resettlement Plan (RP), Stakeholder Engagement Plan (SEP), and Environmental and Social Management Plan (ESMP) have been prepared in compliance with the World Bank Environmental and Social Framework (ESF), and Environmental and Social Standards (ESSs) for the Project. The Labor Management Procedures (LMP) has also been prepared for the RLIP to be implemented for this Project, and the Contractor will prepare a Labor Management Plan (LM Plan) in compliance with this procedure.

The World Bank Group (WBG) General Environmental, Health, and Safety (EHS) Guidelines and Industry Sector EHS Guidelines for Railways, Toll Roads, and Electric Power Transmission and Distribution have been applied for the identification of measures to address the Environmental and Social risks. Furthermore, additional 12 sub-management plans were prepared for the Project as a part of this ESMP:

- Construction Impacts Management Plan,
- Community Health and Safety Management Plan,
- Community Relations Management Plan,
- Employment and Training Plan,
- Aggregate Management Plan,
- Traffic (Transportation) Management Plan,

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- Cultural Heritage Management Plan,
- Pollution Prevention Plan,
- Waste Management Plan,
- Emergency Preparedness and Response Plan,
- Occupational Health and Safety Management Plan, and
- Critical Habitat Assessment and Biodiversity Management Plan.

A contract was signed between DGII and ÇINAR Engineering Consultancy Inc. (ÇINAR) in December 2019, for preparing the Environmental and Social Impact Assessment Report together with ESMP and sub-management plans listed above for the Project according to the World Bank standards. The ESIA site studies were completed by ÇINAR in January and February 2020, and the ESIA Reports were disclosed in May 2020. The mentioned activities are defined as Phase-1 of the Project. During Phase-1 studies; environmental, social, and culturally sensitive areas in the project impact area were specified in the ESIA reports, and mitigation measures were proposed.

Within the framework of the Environmental and Social Commitment Plan (ESCP), the whole ESIA package is being revised and updated in line with the World Bank standards, where necessary, and this process is mentioned as Phase-2 of the Project. ÇINAR has been contracted as a Consultant to carry out the Phase-2 studies with the Contract was signed between DGII (the Client) and ÇINAR on August 4, 2022 (Contract No. AYGM-DAN-2020-WB 10).

Therefore, the railway route was revised addressing the issues specified in ESCP, and the studies and measurements that could not be performed due to the seasonal restrictions were carried out at Phase-2.

At Phase-2, the anticipated environmental and social risks and impacts arising from the Project have been assessed, and necessary measures have been introduced to manage impacts in accordance with national legislation, WB ESF, international standards, and guidance documents, and through the adoption of good international industry practices. The ESIA Report consists of the following key components, each of which is described in detail:

- Description of the project
- Institutional and legal framework
- Environmental and social baseline
- Environmental and social impact assessment
- Analysis of alternatives
- Stakeholder engagement

Environmental and Social Management Plan, which is one of the documents submitted within the scope of the ESIA package, describes the measures and controls developed in line with the mitigation hierarchy for the management of the impacts identified in the impact assessment, determines the implementation schedule, roles, and responsibilities, reporting and monitoring requirements. Each of the management plans included in the annexes of the ESMP, defines in detail the environmental and social mitigation measures and management controls to be implemented to ensure compliance with the Project Standards presented under ESIA Report on relevant environmental and social issues.

ESMP is a document that lives open to regular review and update due to changes in environmental and social conditions as the project progresses. DGII and all contractors / sub-contractors are responsible for the implementation of the ESMP, and the general principles presented within the scope of the ESMP, as well as for the implementation of more detailed plans and procedures.

1.1 Purpose and Scope

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The primary objective of the ESMP is to establish a comprehensive instrument that details the mitigation measures/actions to be taken during the pre-construction, construction and operation phases of the Project to eliminate or offset adverse E&S impacts or to reduce them to acceptable levels by identifying the actions required to implement these measures. Additionally, it serves as a means to equip project management with the essential tools required to ensure adherence to the Project's standards while striving to attain the environmental and social goals outlined within the Environmental and Social Impact Assessment (ESIA). Furthermore, in addition to fulfilling the legal and institutional prerequisites necessary for the effective execution of pertinent management strategies, the ESMP also delineates the respective roles and responsibilities of DGII, and the contractor/sub-contractors involved in the project. The main objectives of ESMP are as follows:

- To provide an overview of the environment, health and safety (EHS), socio-economic and cultural heritage policies, standards and legal legislation that the Project is obliged to comply with,
- To provide guidance on how to manage EHS, risks in the construction phase of the Project by identifying mitigation, monitoring and institutional measures to eliminate adverse E&S risk and impacts offset them, or reduce them to acceptable levels in compliance with WB ESF, national EHS policies, standards, and legal regulations and to ensure that Project commitments are fulfilled,
- To determine the roles and responsibilities of DGII and contractors to ensure compliance with above EHS requirements during the construction phase of the project,
- To establish a framework for capacity building and training to ensure effective implementation of the EHS requirements throughout the lifecycle of the sub-project,
- To ensure that construction activities are properly checked to ensure that the Project is in compliance with WB ESF and national EHS policies, standards and legal regulations,
- Ensure reporting systems are developed and streamlined to deliver EHS compliance performance,
- Enabling ongoing development and EHS compliance coverage.

ESMP sets out the approach planned by the Project, i.e. DGII and its consultants and contractors, to prevent or reduce the identified environmental and social impacts. Sub-management plans within the ESMP, covering the construction and commissioning phases, have been prepared and will be updated in line with the changing conditions as the Project progresses and the outputs regarding the stakeholder engagement process. In the operational phase of the Project, if the conditions determined in the ESIA process differ, the risks and impacts arising from the Project will be re-evaluated. At this stage, a new ESMP may be prepared to manage the activities, adapted to the new conditions.

1.2 Environmental and Social Management Plan Structure

Subjects covered within the scope of the ESMP are presented in Table 1.

Table 1. Subjects Covered within the Scope of ESMP

1. Introduction
Definition the process that forms the basis of the preparation of the ESMP, the purpose, scope and objectives of the Plan.
2. Project Definition
Summary information about project activities, duration, and cost of the project.



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3. Project Standards

National legislation, WB standards and guidance documents, corporate commitment of DGII regarding its environmental and social responsibilities.

4. Management Plans

The framework and scope of environmental and social management plans presented in the Appendixes section of the ESMP.

5. Implementation of the Environmental and Social Management Plan

Roles and responsibilities for the implementation of the plan, stakeholder engagement process, grievance mechanism and monitoring and reporting requirements.

6. Implementation Schedule and Cost Estimates

Identifications of the mitigation measures to be taken for the environmental and social risks identified during the ESIA process of the Project; the general framework of the environmental and social monitoring plan, which was set out to monitor the effectiveness of management controls and which will be detailed in the pre-construction period; capacity development and training requirements

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2 PROJECT DEFINITION

Çukurova Region and İskenderun Bay Railway Connection Project is located within the boundaries of Yumurtalık District and Ceyhan District in Adana Province and Erzin District of Hatay Province, in the south of Türkiye.

There are 4 lines to be implemented within the scope of the project; Erzin Station-TAYSEB Connection line, Osmaniye OIZ- Erzin Port (OIZ-Port) line, and two (2) other connection lines named as Osmaniye OIZ-Yukarıburnaz Station (OIZ-Yukarıburnaz) line and Yukarıburnaz Station – Erzin Port (Yukarıburnaz-Port) line. The total line length is approximately 44 km with the branch lines. According to the land assets data of the Ministry of Agriculture and Forestry, there are shrubs, pasture areas, fallow dry farming areas, irrigated farming areas, coastal dunes, insufficient irrigated farming areas and abandoned lands on the railway connection lines construction area.

Most of the lines within the scope of the project are within the boundaries of Hatay province, and 2.5 km of the line is located in Adana province (see Figure 1).

The construction of the railway route is planned to start in the second half of 2024 and will take approximately 24 months. Construction is planned to be completed by 2026.

The consolidation and expropriation of the lands corresponding to the railway and road route planned within the scope of the Çukurova Region and İskenderun Bay Railway Connection Project will be done in accordance with the applicable national laws and regulations as well as ESS 5 of the WB ESF. The land acquisition will be carried out in compliance with procedures, plans and standards defined in the Resettlement Plan (RP) of the project.

The main activities to be carried out within the scope of the project's land preparation and construction phase will include the following:

- Completion of topographic measurements, preparation of implementation projects and preparation and execution of expropriation plans,
- Topsoil stripping and storage,
- Construction of hydraulic structures (culverts, underpasses and overpasses, drainage pipes and ditches),
- Traffic sign, road marking, railing,
- Construction of the stations, and
- Installation of security systems such as lighting, emergency communication facilities, wire fence.

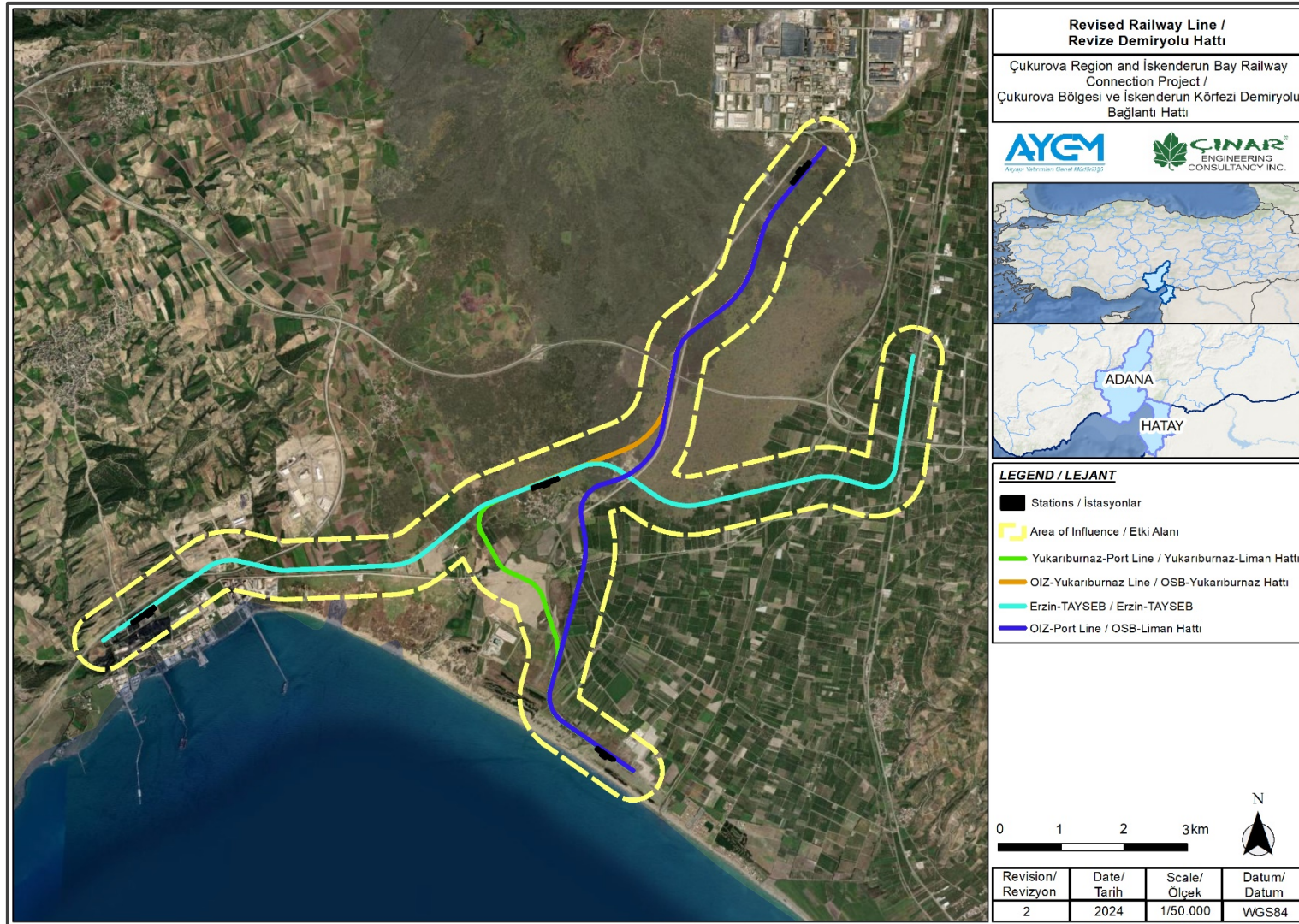


Figure 1. Project Route and Area of Influence (Aol)



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3 PROJECT STANDARDS

The Çukurova Region and İskenderun Bay Railway Connection Project will be carried out in accordance with the ESIA commitments according to the following national legislation and the requirements of international standards and guideline documents:

- Turkish laws, regulations, obligations under international conventions and laws as well as other legal provisions regarding all environmental, health, safety, socio-economic, cultural heritage, and biodiversity issues covered by ESIA,
- WB Environmental and Social Standards (ESSs),
- WBG General EHS Guidelines,
- WBG EHS Guidelines for Railways,
- Corporate commitments in ESIA and other related documents.

3.1 National Environmental and Social Legislation

Turkish Environmental Law No. 2872, which was issued in the Official Gazette No. 18132 on August 11, 1983, describes the fundamental principles required to protect the environment in accordance with sustainable development and sustainable environmental goals. The Environmental Law provides a legal framework for the development of environmental regulations in accordance with national and international standards.

In addition to Environmental Law and associated regulations, several laws in relation with environmental protection, pollution prevention and control, the human rights and safety are listed below:

Law	Law Number
Agricultural Reform Law on Land Rearrangement in Irrigated Areas	3083
Electricity Market Law	6446
Energy Efficiency Law	5627
Expropriation Law	2942
Forestry Law	6831
Groundwater Law	167
Highway Traffic Law	2918
Labor Law	4857
Law on Conservation of Cultural and Natural Assets	2863
Law on Soil Conservation and Land Use	5403
Mining Law	3213
Municipality Law	5393
National Parks Law	2873
Occupational Health and Safety Law	6331
Pasture Law	4342
Public Health Law	1593
Settlement Law	5543



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3.2 International Environmental and Social Standards

Project standards have been established within the framework of the policies and procedures developed by international financial institutions for evaluating and managing the environmental and social impacts of financed projects. The current environmental and social policies of the World Bank outline mechanisms for addressing environmental and social issues throughout a project's lifecycle, including design, implementation, and operation, as well as frameworks for engaging with affected communities and stakeholders. The World Bank's Environmental and Social Framework (ESF), applicable to investment project financing since 2018, mandates integrating these standards into project planning, design, and implementation to promote sustainable development, minimize adverse impacts, and enhance overall social and environmental performance. To effectively manage environmental and social risks, the ESF specifies Environmental and Social Standards (ESSs) that the projects must meet.

ESS1: Assessment and Management of Environmental and Social Risks and Impacts

This Standard sets out Borrower's responsibilities for assessing, managing, and monitoring environmental and social risks and impacts related with each phase of the project supported by the World Bank through Investment Project Financing (IPF), to accomplish environmental and social results consistent with the Environmental and Social Standards (ESSs).

ESS1, paragraph 26 states that all relevant environmental and social risks and impacts as the result of the project should be covered in the assessment, including:

1. Environmental Risks and Impacts covering the following issues:

- The ones defined by Environmental Health and Safety Guidelines (EHSG)
- Community safety concerns
- Climate change and other transboundary or global risks and impacts
- Materials threat to the protection, conservation, maintenance and restoration of natural habitats and biodiversity
- Ecosystem services and the use of living natural resources (fisheries, forests etc.)

2. Social Risks and Impacts covering the following issues:

- Threats to human security,
- Risks that project impacts fall disproportionately on individuals or groups who, because of their particular circumstances, may be disadvantaged or vulnerable,
- Any prejudice or discrimination toward individuals or groups in providing access to development resources and project benefits, particularly in the case of those who may be disadvantaged or vulnerable,
- Negative economic and social impacts relating to the involuntary taking of land or restrictions on land use,
- Risks or impacts associated with land,
- Impacts on the health, safety and well-being of workers and project-affected communities,
- Risks to cultural heritage.

The Project's Environmental and Social Impact Assessment aims to comprehensively evaluate the railway construction activities' potential environmental and social ramifications. This assessment encompasses various aspects, including habitat destruction, air and noise pollution, and the implications for local communities, all within the framework delineated by Environmental and Social Standard 1 (ESS1).

ESS2: Labor and Working Conditions

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ESS2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. By treating workers fairly and providing safe and healthy working conditions, borrowers can promote sound worker-management relationships and enhance a project's development benefits.

The project will ensure that workers engaged in project activities receive safe working conditions, fair wages, and access to grievance mechanisms in accordance with the provisions outlined in ESS2, the LMP prepared for the Project and the LM Plan to be prepared by the Contractor.

ESS3: Resource Efficiency and Pollution Prevention and Management

ESS3 points out the requirements to highlight resource efficiency, and pollution prevention and management with a holistic approach to project implementation. Throughout the project implementation, strict adherence to these requirements will minimize project-related pollution while ensuring sustainable utilization of resources.

ESS4: Community Health and Safety

ESS 4 emphasizes health, safety, and security concerns, focusing on the potential risks and impacts posed to communities by project activities, and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts. The borrower must particularly address the needs of vulnerable individuals affected by these project-related impacts.

ESS5: Land Acquisition, Restrictions on Land Use & Involuntary Resettlement

This standard emphasizes that involuntary resettlement should be avoided. If it is unavoidable, it should be minimized and appropriate measures to mitigate adverse impacts on displaced people will be carefully planned and implemented. The project will prepare a Resettlement Plan, identifying the affected people and the scale of impact, the appropriate mitigation measures such provision of fair compensation and resettlement assistance to affected communities as part of the land acquisition process for railway infrastructure, and the legal and institutional arrangements required for effective implementation hereof.

ESS6: Biodiversity Conservation & Sustainable Management of Living Natural Resources

Protection and conservation of biodiversity and sustainability of natural resources are the fundamental components of sustainable development. Biodiversity supported by ecological functions including forests should be protected.

This standard also points out to sustainable management of primary production and harvesting of living natural resources and recognizes the need to consider the livelihood of project-affected parties, including Indigenous Peoples, whose access to, or use of, biodiversity or living natural resources may be affected by a project.

Biodiversity conservation standard would help minimize impacts on natural habitats and ecosystems along the railway route.

ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

This standard is not relevant for Çukurova Region and İskenderun Bay Railway Connections Project as there are no Indigenous Peoples in Türkiye, who meet the definition of this standard.

ESS8: Cultural Heritage

This standard recognizes that cultural heritage provides continuity in tangible and intangible forms between past, present and future. It sets out general provisions on risks and impacts to cultural heritage from project activities. The project prepares a Cultural Heritage Management Plan and a Chance Find Procedures in accordance with relevant national law and this ESS.

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ESS9: Financial Intermediaries (FIs)

This standard is not relevant for Çukurova Region and İskenderun Bay Railway Connections Project since the project does not involve any financial intermediaries.

ESS10: Stakeholder Engagement and Information Disclosure

Importance of open and transparent engagement between Borrower and stakeholders are emphasized as it is a necessary element of good international practice. Effective and inclusive stakeholder engagement contributes to the projects in terms of improvement of environmental and social sustainability, enhancement of project acceptance and successful project design.

The EHS Guidelines of the WBG have been prepared as reference documents containing general and industry specific Good International Industry Practice (GIIP) guidelines. The EHS Guidelines are acceptable for the World Bank Group and include the expected performance ratings and measures to be implemented by customers. Guidance documents that guide the evaluation and management of the environmental and social impacts of the project are listed below:

Environmental, Health, and Safety Guidelines for Railways	2007
General Environmental, Health, and Safety Guidelines	2007
Environmental, Health, and Safety Guidelines for Construction Materials Extraction	2007
Environmental and Social Management System Implementation Manual: General	2015
Environmental and Social Management System Implementation Manual: Construction	2014
Contractor's Environmental and Social Performance Management Good Practice Rating	2017
Cumulative Impact Assessment and Management Good Practice Guide	2013
Introduction to Health Impact Assessment	2009
IFC and EBRD - Guide to Workers' Accommodation: Processes and Standards	2009
Good Practice Handbook on Using Security Forces	2017
Stakeholder Engagement Handbook	2007
Handbook on Project Migration Problems	2009
Good Practice Score on Complaints from Communities Affected by the Project	2009

3.3 Corporate Commitment

DGII is responsible for the implementation of all environmental and social plans in the ESMP and within its structure and ensuring the implementation of related mitigation measures and management controls by consultants / contractors. DGII is committed to providing the necessary institutional capacity and resource allocation for the implementation of the relevant plans. The ESMP has been prepared in accordance with the Turkish legislation, WB ESF together with international standards and will be implemented and monitored accordingly. In case of any inconsistency, necessary measures will be taken. The basic principles of DGII's environmental and social policy framework are as follows.

- Respect for national culture and intercultural sensitivities and universal human rights and natural resources and contribute to social and environmental protection measures and improve the quality of life in areas where DGII operates,
- Adopting the concept of corporate social responsibility,
- To comply with the UN Declaration of Human Rights,
- To measure, evaluate and supervise E&S performance according to national standards, World Bank standards and industry best practices to ensure continuous development,

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- Attaching great importance to maintaining an active and open dialogue with stakeholders to improve the corporate image and thus create trust between the DGII Organization and the Project Affected Communities, and
- Encouraging ethical business practice and good corporate image in the Project by ensuring that ESIA commitments are fulfilled including adequate compensation and timely response to complaints.

4 MANAGEMENT PLANS

The management sub-plans prepared for the purpose of successful implementation of the ESMP along with the management of the risks and impacts related to all environmental and social issues identified in the ESIA are presented in Appendices section. Each sub-plan includes mitigation measures specific to the issues they are addressing and sets out the framework for other plans and procedures that may be developed later in the Project. As there might be some differences in the structure of the sub-plans depending on the environmental and social issues they cover, the general structure of the plans is as follows:

- Purpose and Scope
- Objectives
- Roles and Responsibilities
- Legal Framework
- Mitigation Measures and Management Controls
- Training, Reporting and Monitoring

The management sub-plans presented within the scope of ESMP, and their contents are given in Table 2. Construction contractor(s) will develop and implement their own site-specific sub-management plans by considering these plans as frameworks. Similarly, TCDD will prepare their project specific management sub-plans prior to start of operation phase and implement them accordingly during the operational activities.

Table 2. Sub-Management Plans

Document Code	Sub-Management Plan	Scope
CNR-ADN-CIMP-002	Construction Impacts Management Plan	It includes general measures to be taken during the land preparation and construction phases to manage the impacts of the Project activities including permits to be taken, soil erosion etc. and special measures to be implemented in line with the environmental component or the needs of the local people.
CNR-ADN-CHSMP-002	Community Health and Safety Management Plan	It determines the measures to be taken for the management of risks and impacts on the health and safety of the affected communities and the strategies to be applied to increase the awareness of the local people.
CNR-ADN-CRMP-002	Community Relations Management Plan	It sets out the requirements for community relations activities that will be carried out in order to ensure the participation of local people, institutions and groups and other stakeholders that are likely to be affected by the project in the project processes.
CNR-ADN-ETP-002	Employment and Training Plan	It sets out the principles to be applied to maximize local employment, to make recruitment processes transparent, open to public and non-discriminatory.
CNR-ADN-AMP-002	Aggregate Management Plan	It includes the impacts and mitigation measures resulting from the activities of providing aggregate material to be used in the construction of different components of the project including quarry and borrow pit management.
CNR-ADN-TTMP-002	Traffic (Transportation) Management Plan	It determines the framework of the management plans that the contractors will prepare to manage the risks associated with the increase in traffic load during the land preparation and construction stages.
CNR-ADN-CHMP-002	Cultural Heritage Management Plan	It sets out effective plans and procedures to protect the archaeological and cultural heritage and to minimize Project impacts by including Chance Find Procedure and relevant forms.
CNR-ADN-PPP-002	Pollution Prevention Plan	It outlines the actions taken to prevent or minimize air, water, noise and soil pollution during the implementation of the project.
CNR-ADN-WMP-002	Waste Management Plan	It includes identification of waste and waste management activities, including minimizing, recycling, collection, storage,

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Document Code	Sub-Management Plan	Scope
		treatment, and disposal of waste that will occur during the land preparation, construction and operation phases of the project.
CNR-ADN-EPRP-002	Emergency Preparedness and Response Plan	It defines the activities and procedures to be implemented for planned intervention in order to prevent emergencies during the construction and operation phases of the project or to minimize potential damages that may arise due to emergencies.
CNR-ADN-CHA-BMP-002	Critical Habitat Assessment and Biodiversity Management Plan	It aims at explicitly introducing the necessary measures and methods to manage possible impacts on biodiversity.
CNR-ADN-OHSMP-002	Occupational Health and Safety Management Plan	It determines requirements for an adequate workplace environment by setting out necessities of the occupational health and safety in terms of risk assessment methodology, hazard prevention and site security.

It is important to mention that the Resettlement Plan, Stakeholder Engagement Plan and Labor Management Procedure have been prepared as separate plans within the scope of the Project.



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5 IMPLEMENTATION OF THE ENVIRONMENTAL & SOCIAL MANAGEMENT PLAN

The ESMP will be implemented with an adaptive management approach to respond to changes occurring at different stages of the Project and, as a living document, will be updated to reflect the current status of the Project and site features and management requirements when necessary.

DGII is obliged to implement the ESMP with adequate and qualified personnel working under an appropriate organizational structure, in line with Project standards, in line with stakeholder participation and information sharing requirements, and to ensure that contractors / subcontractors adopt management controls.

5.1 Organizational Structure

DGII is a public institution affiliated to the MoTI with a special budget for finance. To prepare and approve the plans and projects of railways, logistic villages, centers or bases, ports, shelters, coastal structures, airports to be built by the state and to construct and / or have these transportation infrastructures handed over are among the roles and responsibilities of DGII. Çukurova Region and İskenderun Bay Railway Connection Project will be handed over to Republic of Türkiye State Railways (TCDD) General Directorate after the completion of construction. TCDD General Directorate will include the Project in its environmental and social management system within the scope of railway management.

With the Project Implementation Unit (PIU) established within DGII, the Construction Contractor, who will be responsible for the execution of the land preparation and construction works within the scope of the Project, will be able to manage environmental and social issues and natural resources within the scope of the ESMP, by taking consultancy both from within its organizational structures and by obtaining consultancy from outside.

DGII Real Estate and Expropriation Department will be the main authority in the preparation of the expropriation plans and the realization of the expropriation process.

In addition, the implementations within the scope of the RP, the implementation of the RP and ensuring the compliance of the project with the RP are the responsibility of DGII PIU and this entire process will be carried out under the management and monitoring of this unit. During the implementation process, the activities to be carried out within the Project AoI will be carried out by the construction main contractor, but the management of the entire process will again be coordinated by DGII PIU.

The Contractor undertakes to receive consultancy service from the experts on the following subjects regarding the implementation of the management controls determined within the scope of the ESMP, when necessary:

- Environmental Experts
- Cultural Heritage Specialists
- Ecological / Biological Experts
- Soil / Landscape Experts
- Social / Stakeholder Relations Specialists
- Environmental and Social Trainers

The Contractor will be responsible for all of its staff (including contractor and subcontractor staff) to have E&S responsibility awareness to ensure that E&S requirements are implemented smoothly on site.

A Design & Supervision Consultant will be contracted by DGII and they will be responsible from reviewing the final design of the project including the engineering structures, conducting

necessary additional environmental and social studies such as environmental and social assessment of other project components (energy transmission line, access roads, borrow pits etc.) which could not be assessed in the scope of ESIA since the layout and design of these facilities were not determined, preparation of expropriation plans etc. before the start of construction activities.

The ESMS structure to be executed by DGII and the Construction Contractor will be managed with the organizational structure defined in Figure 2.

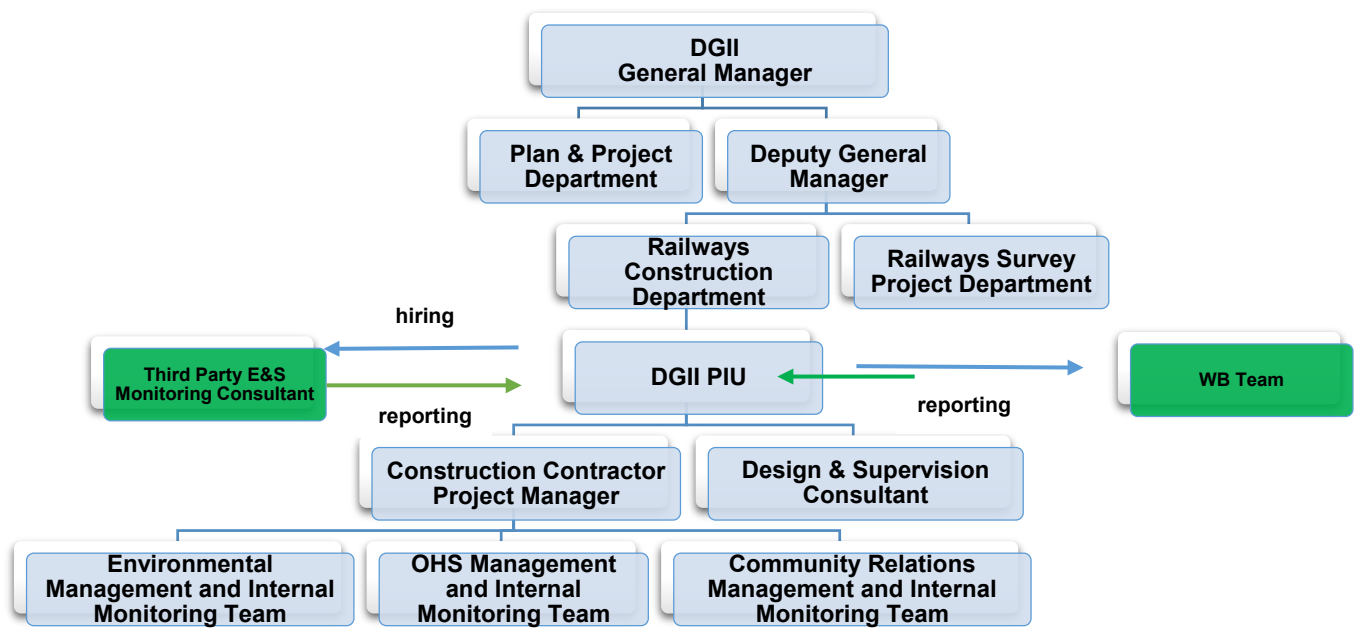


Figure 2. ESMS Organizational Structure

5.2 Roles and Responsibilities

As the project owner, it is the responsibility of DGII to manage the environmental and social issues of the project and to ensure that the necessary mechanisms are developed and implemented by the Contractor. A framework regarding the roles and responsibilities of DGII PIU and the Construction Contractor is presented in Table 3.

Table 3. Roles and Responsibilities Regarding the Implementation of the ESMP

Responsible Party	Roles and Responsibilities
DGII PIU	<ul style="list-style-type: none"> Implementation of ESMP and related management plans and sub-plans and fulfillment of all commitments within the scope of ESCP. Sharing the ESMP and management sub-plans with the Contractor, guiding the Contractor in preparing the implementation plans, approving these plans. Updating the ESMP when necessary and sharing additional commitments with the Contractor. Quarterly reporting to the Bank regarding the implementation of the ESMP and the management sub-plans.

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	<ul style="list-style-type: none"> ▪ Employment of competent Environmental, Social and OHS staff and external experts to work on the project. ▪ Providing training in ESMP and sub-plans to all Project staff. ▪ Social and Environmental review, monitoring and audits related to ESMP practices, evaluation of results. ▪ Auditing contractor activities in line with ESMP requirements. ▪ Ensuring compliance with project standards, making necessary emergency corrections in case of non-compliance. ▪ Stopping work in any situation that threatens environment and human health and safety. ▪ Providing follow-up and analysis of environmental, social and occupational health and safety accidents. ▪ Ensuring stakeholder engagement , implementing the grievance mechanism, ensuring continuous information transfer through open communication. ▪ Promptly notify the Bank of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers including but not limited to; incidents and accidents encountered during construction works, environmental spills, etc. ▪ Provide sufficient detail regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. Ensure the incident report is in line with the WB's Environment and Social Incidence Response Toolkit (ESIRT). ▪ Subsequently, as per the Bank's request, prepare a report on the incident or accident and propose any measures to prevent its recurrence. ▪ Coordination of the actions and assessments if a change due to engineering/design changes, route/location changes, applicable legislation changes related to environmental and social issues, authority provision changes, any new environmental/social data is introduced, construction/operation strategy changes or stakeholders influence the project.
Construction Contractor	<ul style="list-style-type: none"> ▪ Fulfillment of all requirements of the ESMP and management and management sub-plans. ▪ Implementation of additional commitments determined by DGII. ▪ Ensuring compliance with project standards, obtaining all relevant permits and licenses. ▪ Monitoring construction activities (including subcontractor activities) and taking measures within the scope of the ESMP. ▪ Development of implementation and monitoring plans / procedures in line with the ESMP structure, implementation after the approval of DGII. ▪ Employment of competent E&S and OHS staff within the scope of the project. ▪ Providing the necessary trainings to the contractor and sub-contractor staff on environmental and social (including occupational health and safety) issues. ▪ Providing follow-up and analysis of environmental, social occupational health and safety accidents. ▪ Environmental inspections, monitoring and audits related to ESMP practices, periodic reporting to DGII. ▪ Prompt notification of accident and incidents and keeping an incident register at construction site throughout the Project life. ▪ Carrying out the management of change process via filling the Management of Change Process (MCP) Form (Appendix-13) and informing DGII and WB about the details and the results of the process including at the final design stage.
Design & Supervision Consultant	<ul style="list-style-type: none"> ▪ Monitor the contractor's compliance with national environmental and social laws and World Bank ESF. ▪ Supervise and ensure that the ESMP, RP, and other project-specific environmental and social documents are implemented correctly. ▪ Verify that the contractor has obtained all required environmental and social permits and approvals. ▪ Conduct regular inspections of construction sites to ensure adherence to environmental and social safeguards. ▪ Identify non-compliance issues and recommend corrective actions to contractors. ▪ Prepare and submit regular environmental and social monitoring reports to the DGII. ▪ Support stakeholder engagement activities and ensure contractor addresses community concerns. ▪ Monitor the implementation of the Grievance Mechanism and ensure complaints are resolved promptly.



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	<ul style="list-style-type: none"> Facilitate communication between the DGII, contractor, communities, and other stakeholders.
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5.3 Management of Change Process

The Project changes and the changes in key control documents which impact the conditions and commitments stated in ESIA are subject to the management of change process.

This management of change process is applied when:

- Engineering/Design changes,
- Route/location changes,
- Applicable legislation changes related to environmental and social issues,
- Authority provision changes,
- Any new environmental/social data is introduced,
- Construction/operation strategy changes,
- Stakeholders influence the project.

The Facilitator of the Change who is any person within the Project Implementation unit (PIU) at DGII, which shall be responsible for the coordination of the actions and assessments of a deviation from scope of works ensures that the ESIA Specialist in the PIU is informed of any change, as specified above, which could have a potential environmental and social impacts.

5.3.1 The initial assessment of the Change

Prior to the implementation of the proposed change, the Facilitator of the Change, together with relevant technical experts assesses the potential impacts of the proposed change.

The Management of Change Process Form (MCP Form) given in Appendix 13, is used to specifically describe potential environmental issues associated with the proposed change. If the potential environmental issues are identified from this process, the Project Director shall be notified by delivering the MCP data for evaluation.

5.3.2 Coordination of the Change

Subsequently, after receiving the MCP data from the Facilitator of Change, the Project Director coordinates with the ESIA Specialist, Community Liaison Officer (CLO), and Stakeholder Management Specialist. The CLO, responsible for implementing on-site community relations tasks, and the Stakeholder Management Specialist, responsible for monitoring the Grievance Mechanism (GM) and overseeing the stakeholder engagement program, review the MCP data together. The CLO's role complements the responsibilities of the Stakeholder Management Specialist as outlined in the Stakeholder Engagement Plan (SEP), ensuring effective engagement at the community level. The SEP outlines the broader stakeholder engagement strategy, while the Community Relations Management Plan (CRMP) works in tandem to provide additional focus on managing community relations in response to changes. Together, these instruments ensure coordinated efforts to engage stakeholders and implement necessary mitigation measures related to project changes.

Project Director ensures that the feedback of ESIA Specialist, CLO and Stakeholder Management Specialist are reflected in MCP form and delivered to the Facilitator of the Change together with the evaluation results of ESIA Specialist, CLO and Stakeholder Management Specialist.

5.3.3 Evaluation of the Change

The Project Director ensures that any potential environmental and social impacts associated with the change which are not within the scope of ESIA studies are evaluated using the similar

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impact assessment methodology used in the ESIA. If a significant environmental or social impact is determined, the Project Director will:

- Identify whether the change requires an "EIA", or preparation of a "Project Description File" is required by Ministry of Environment, Urbanization and Climate Change,
- Identify the environmental standards and objectives to be attained,
- Outline the way that the environmental and social impacts are managed and mitigated e.g., physical controls or the development of additional management systems i.e., environmental guidelines, procedures, or training requirements,
- Detail the required human and financial resources,
- Document and communicate the above in the MCP data form, for the evaluation of this data by the "Facilitator of the Change".

The changes associated with Route and Facility Location

If the change is associated with route or site facility changes, then the Facilitator of the Change subsequently notifies the Project Director (e.g. by MCP form in Annex 13). The Project Director ensures that environmental and social assessment studies as well as the formal process are initiated. The ESIA Specialist checks whether the change requires an additional environmental permit and/or approval.

The changes associated with Design

If the change is associated with the engineering or design development, the Facilitator of the Change identifies what type of new aspects such as new emission types, changes in noise, vibration levels, energy consumption etc. are expected due to such changes and reports in MCP data form. The MCP form in Appendix 13 will be used for such an evaluation. The findings then are forwarded to Project Director. Project Director starts environmental and social assessment studies if a new aspect is identified. The ESIA Specialist checks whether the change requires an additional environmental permit and/or approval.

The changes associated with Authority Provision and Legislation

If the change is due to a change in Construction/Operation Execution Strategy (e.g. need for blasting, intermittent operation) or a Management Strategy (e.g. change of organization, resources), then the Project Director ensures that the new strategy is evaluated and identifies if additional studies, assessments, or mitigations are required and, if required, starts the environmental and social assessment studies accordingly.

The changes associated with new environmental and social data

If the change is due to any new environmental and social data obtained through the implementation of SEP, the Project Director ensures that the new data is evaluated and identify if the change impacts the outcomes of the completed studies and assessments. Project Director ensures that additional environmental and social assessment studies are implemented if required.

5.3.4 Proceed Notification for the Change

The MCP data form evaluated and completed by ESIA Specialist (in coordination with Community Liaison Specialist and Stakeholder Management Specialist) will be reviewed by the Facilitator of the Change, and advice shall be given, if the change is feasible, to proceed with the defined actions. Upon receipt of proceed notification, these specialists shall act accordingly and start environmental and social assessment studies, public consultation, permitting processes or other actions required for implementation of the change.

5.3.5 Change Implementation

The Project Director reviews progress against implementation of the proposed change, as required, to verify that the environmental considerations have been fully addressed and

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environmental and social assessment studies, public consultation, permitting processes are completed as necessary and necessary revisions are performed in the ESMP and sub-management plans.

5.4 Stakeholder Engagement

The Project specific SEP and GM Procedure are one of the essential documents that contain Project-specific conditions and were developed in parallel with the Project's ESIA and ESMP documents. SEP and GM (CNR-ADN-SEP-002) were developed to keep stakeholders informed in an appropriate and timely manner about potential the environmental and social risks and impacts of the project, and to establish effective and inclusive stakeholder relationships, providing stakeholders with a means to express their concerns and grievances and have them responded to in a timely and adequate manner. The SEP is an important tool in the stakeholder management.

The SEP and GM will be functioning during all Project phases and will be updated with necessary revisions on Project and improvements as required. These updates will also ensure that all risks of the Project are managed in consultation with stakeholders, in parallel with the revisions of the environmental and social management required by the Project.

5.5 The 3rd Party Environmental and Social Monitoring Activities

The ESMP of the Project includes a series of management sub-plans and mitigation measures to minimize the potential negative impacts before, during and after construction and operational period of the Project. DGII, Construction Contractor and Design and Supervision Consultant are responsible for ensuring that the relevant measures are implemented during pre-construction and construction phase.

The 3rd Party Environmental and Social Monitoring Consultant will provide DGII with an independent third party environmental and social monitoring services to ensure that all site construction activities are efficiently monitored, non-conformities with the ESMP obligations as well as the ESIA requirements, are detected and managerial decisions are developed adequately to mitigate these deficiencies and give recommendations to overcome the identified deficiencies.

Environmental and social monitoring studies are the main part of the project management in relation to the context of the sustainable development. These studies determine the possible environmental and social effects of the project and suggest necessary mitigation measures to prevent environmental pollution.

The documents given in the ESMP will be the main but not the only documents that will be used by 3rd Party Environmental and Social Monitoring Consultant during the monitoring studies.

The Context of the monitoring studies will cover all of the ESIA Report, Resettlement Plan, its appendices and any other additional documents that were referenced within the ESIA report. The construction works conducted by the Contractor, should take all mitigation measures stated in this ESMP and the ESIA Report.

As a result of that it could be stated that the DGII, Construction Contractor and Design and Supervision Consultant will fulfill all the obligations stated in the ESIA Report, finally 3rd Party Environmental and Social Monitoring Consultant will monitor the environmental and social activities of the Contractors in the light of ESIA Report and ESMP. In any types of conflicts that might arise during the services conducted, ESIA Report will be the guide.

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A term of reference (ToR) will be prepared for the 3rd party monitoring consultant by DGII, which will be subject to the WB's review and consent. ToR will be prepared after the completion of final design studies.

5.6 Monitoring, Reporting and Evaluation

Regular internal audits, environmental and social monitoring and corresponding reporting (see Table 7, Table 8 and Table 9) will be carried out by DGII and the Contractor in order to monitor the implementation and effectiveness of the ESMP, as described in the ESIA Report, ESMP and related management sub-plans. In line with the general framework of audits and monitoring, the following issues should be controlled:

- Quality and effectiveness of implementation of environmental and social management plans and Contractor implementation plans by all personnel,
- Verifying compliance with the national legislation, the WB ESF and relevant WBG guidelines, which form the project standards,
- Identifying non-compliances with national legislation and international standards and ESMP through E&S monitoring studies and reporting, and outlining corrective measures to ensure compliance;
- Verifying that Project activities are carried out in a way that meets ESCP commitments and ESMP objectives.

DGII PIU (with the support of Design and Supervision Consultant) and the Contractor are obliged to carry out the relevant reporting by conducting the internal monitoring/audit activities required by the Project activities they perform. Weekly, monthly, and quarterly follow-up reports, which will be prepared following daily inspection and monitoring activities in all project areas during the construction phase, will be submitted to DGII. In addition, Environmental and Social Monitoring reports will be prepared quarterly regarding the work carried out by the 3rd Party Environmental and Social Monitoring Consultant and relevant experts, and the World Bank will be informed about the operation of the Project and the management of environmental and social issues (see Figure 3). The framework of the environmental and social monitoring program, which will be detailed with additional works before construction, is given in Chapter 6.

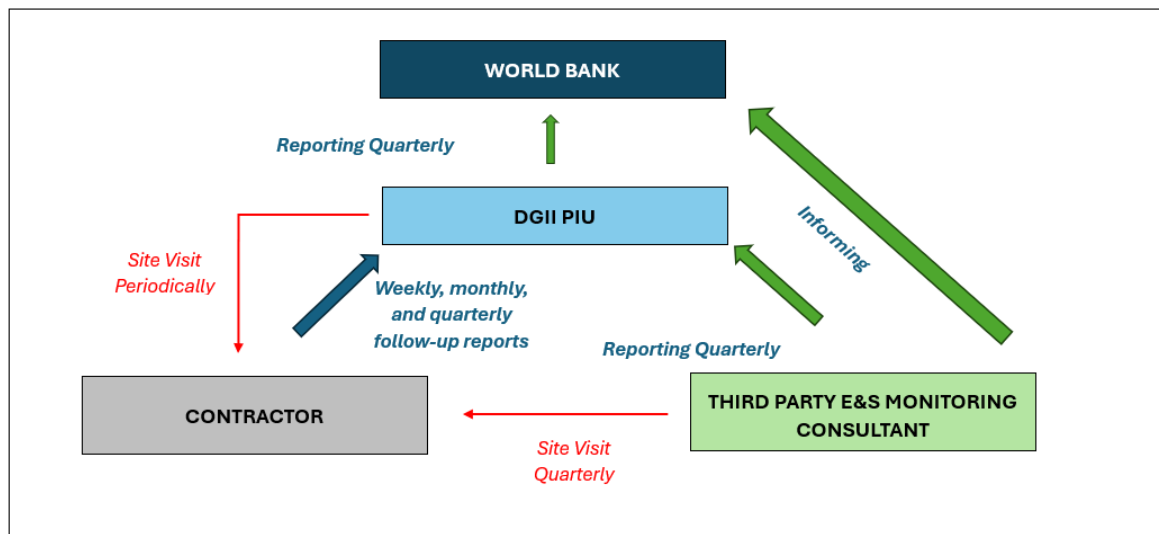


Figure 3. Reporting Process on the ESMP Implementation

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6 IMPLEMENTATION SCHEDULE AND COST ESTIMATES

6.1 Environmental And Social Mitigation Plan

This section describes the relevant environmental and social risks identified during the ESIA process of the Project. Since ESMP needs to serve as an active tool, additional risks identified during project implementation will be included as defined.

Table 4. Environmental and Social Mitigation Plan – Pre-Construction

Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
Land Use, Soil, and Geology				
Impacts on arable lands	<ul style="list-style-type: none"> Resettlement Plan (RP) will be implemented. DGII, as the main land rights authority will implement the RP and compensate the affected land users in accordance with the RP. DGII will ensure that land access will not be granted to contractor without necessary compensation is provided (either paid or booked under the name of the user). A grievance mechanism will be established to ensure any complaints/comments regarding the Project will be received and responded to in a timely manner, providing solutions, and taking corrective measures as appropriate. 	RP Stakeholder Engagement Plan (SEP)	DGII with support from the Design and Supervision Consultant	Included in RP budget. Included in Stakeholder Engagement Plan Budget:
Impacts on Pastures	<ul style="list-style-type: none"> The RP will cover any livelihood losses caused by project impacts on pastures The grievance mechanism established will ensure any complaints/comments regarding the Project will be received and responded to in a timely manner, providing solutions, and taking corrective measures as appropriate. 	RP SEP	DGII with support from the Design and Supervision Consultant	Budget: USD 320,000
Seismicity	<ul style="list-style-type: none"> All engineering structure and superstructures (fill, cut) in the project closure will be designed and constructed taking into account the earthquake resistant design parameters and criteria. 	Emergency Preparedness and Response Plan (EPRP)	DGII with support from Design and Supervision Consultant	Included in Design and Supervision Consultancy services: USD 500,000
Land use intersect	<ul style="list-style-type: none"> Prior to the construction works, DGII will obtain the permit from the Ministry of Energy and Natural Resources for the railway design at the intersection point of the two planned solar power plant projects, Erzin-1 and Erzin-2, located in the project area. This permit will also cover the connection road and the designed transition structure. 	ESIA	DGII with support from Design and Supervision Consultant	No additional cost
Noise				

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
Noise	<ul style="list-style-type: none"> The grievance mechanism established will ensure any complaints/comments regarding the Project will be received and responded to in a timely manner, providing solutions, and taking corrective measures as appropriate. 	SEP	DGII with support from Design and Supervision Consultant	Included in Stakeholder Engagement Plan Budget
Air Quality				
Air Quality	<ul style="list-style-type: none"> The grievance mechanism established will ensure any complaints/comments regarding the Project will be received and responded to in a timely manner, providing solutions, and taking corrective measures as appropriate. 	SEP	DGII with support from Design and Supervision Consultant	Included in Stakeholder Engagement Plan Budget
Water Resources and Wastewater Management				
Impacts on Groundwater	<ul style="list-style-type: none"> The official approval from DSI for Burnaz Spring Group Groundwater Reserve and Protection Area will be obtained. The Contractor shall not carry out mobilization to Site (e.g. limited clearance for haul roads, site accesses and work site establishment, geotechnical investigations or investigations to select ancillary features such as quarries and borrow pits) and commence any construction works unless permit is available for the existing railway alignment design from DSI with regard to the Burnaz Springs Protected Area. 	Construction Impact Management Plan (CIMP) Pollution Prevention Plan (PPP) Waste Management Plan (WMP) EPRP	DGII with support from Design and Supervision Consultant	No additional cost
Cultural Heritage				
Cultural Heritage	<ul style="list-style-type: none"> Consent of Hatay Cultural Heritage Conservation Regional Board must be obtained for the intersection point of the proposed railway route with Issus Ancient Waterway and the overlapping area of the connection line with the borders of the Ancient City of Issus. The Contractor shall not carry out mobilization to Site (e.g. limited clearance for haul roads, site accesses and work site establishment, geotechnical investigations or investigations to select ancillary features such as quarries and borrow pits) and commence any construction works unless permits are available for the existing railway alignment design from the Ministry of Culture and Tourism with regard to cultural heritage sites - ancient City of Issus, Issus waterway and historical Erzin train station. For all additional project designs, project revisions and construction implementations to be conducted at the ancient waterway and the surrounding area and within the borders of Issus Ancient City (including implementations designed as protection measures), the opinion of Hatay Cultural Heritage Conservation Regional Board shall be requested as 	Cultural Heritage Management Plan (CHMP) Chance Find Procedures	DGII with support from Design and Supervision Consultant	Included in Design and Supervision Consultancy services: USD 500,000

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
	per Law No. 2863 and the planned works shall be conducted in line with the related decisions of the Conservation Board.			
Intangible cultural heritage	<ul style="list-style-type: none"> A grievance mechanism will be established to ensure any complaints/comments regarding the Project will be received and responded to in a timely manner, providing solutions, and taking corrective measures as appropriate. 	Cultural Heritage Management Plan (CHMP) SEP	DGII with support from the Design and Supervision Consultant	No additional Cost

Socio-Economic Environment

Physical and Economic Displacement	<ul style="list-style-type: none"> Land acquisition of the project will be in accordance with RP and in compliance with national laws and WB ESS5, When displacement cannot be avoided, appropriate compensation for loss of assets will be provided through project-specific measures to be developed for displaced communities and individuals. These forms of compensation will be planned within the scope of RP. Impacts on public pasture lands reserved for these activities will also have an impact on livelihoods. For this reason, these areas should also be taken into consideration in compensating losses and will therefore be covered by RP. Permanent limitation of both the connections between the villages and the lands used and the possibilities of transition from one part of the divided land to another may result in additional costs. To prevent this, safe and appropriate crossing points should be determined in consultation with stakeholders. Consultations within the scope of the SEP and the sound operation of the grievance mechanism are also of great importance in the good management of the impacts on land, other assets, and hence the economic structure. 	RP SEP Community Relations Management Plan (CRMP)	DGII will take full responsibility, with support from the Design and Supervision Consultant	Included in RP Budget
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Table 5. Environmental and Social Mitigation Plan – Land Preparation & Construction

Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
Land Use, Soil, and Geology				
Impacts on arable lands	<ul style="list-style-type: none"> Land preparation and construction works will be conducted at designated sites that will be visibly and appropriately marked. Training will be provided to the construction personnel so that they maintain the pre-established construction boundaries. Implement Project Grievance Mechanism. If any comment related with arable lands is received through the Grievance Mechanism, evaluate the complaint and where necessary plan and implement corrective actions. DGII will ensure that necessary corrective measures are taken by the Contractor from its own budget, in case of direct or indirect damage to adjacent properties that are state-owned or private property due to project-related activities. 	SEP including GM CRMP	Contractor (for implementation) DGII PIU (for supervision, including all process monitoring)	Included in Stakeholder Engagement Plan Budget:
Impacts on Pastures	<ul style="list-style-type: none"> Agricultural / meadow underpasses and culverts will be present or constructed on the entire Project route to reduce fragmentation impacts. Land preparation and construction activities will be carried out in designated areas that will be visible and properly marked. Trainings will be provided to the personnel working in the construction, and they will be ensured to stay within the construction limits already determined. Implement Project Grievance Mechanism. If any comment related with pastures is received through the Grievance Mechanism, evaluate the complaint and where necessary plan and implement corrective actions. Trainings and timely and regular information sharing will be performed with community members who are using pastureland during land preparation before construction. In case of direct or indirect damage to adjacent properties that are state or private property due to the activities related to the project, Contractor will take necessary corrective measures from its own budget. 	SEP including GM CRMP	Contractor (for implementation) DGII PIU (for supervision, including all process monitoring)	USD 320,000 and RP Budget Additional Training Cost: USD 10,000
Topsoil stripping	<ul style="list-style-type: none"> Strip fertile topsoil along the Project area including the railway route, quarries/material borrow sites, storage sites at a sufficient depth suitable for local soil conditions prior to construction activities. Store topsoil separately from subsoil at designated topsoil storage areas along the route and other work sites at suitable conditions so as to preserve its vegetative properties. Do not carry out stripping when soil is wet, so that soil compaction is avoided. Provide drainage at topsoil storage areas by open channels. If storage of topsoil will last longer than three months, plant upper part of fertile soil temporarily so that the organic content is conserved. Select proper species and seed mixture ratios. 	CIMP WMP	Contractor	Assignment of a Soil Expert at site: USD 85,000

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
	<ul style="list-style-type: none"> Apply organic or inorganic materials on the topsoil to improve quality and avoid erosion, desiccation, or invasion of wild species. Reuse topsoil stored at suitable conditions for the rehabilitation of temporary construction sites after the completion of construction activities, for the finalization of side slopes and in landscape activities. Loosen topsoil to a depth of 15 cm before reinstatement (Increase depth of loosening up to 40-50 cm for compact heavy clay soils) Keep depth of topsoil for areas to be planted suitable for side slopes, shrub plantation areas, tree roots etc. Conduct grading operation in line with the natural slope and drainage conditions following the reinstatement of topsoil. 			
Soil Erosion	<ul style="list-style-type: none"> Before the onset of land preparation and construction works, erosion control measures like drainage channels, settling structures, etc. will be implemented. In order to eliminate the risk of erosion in periods of excessive rainfall, the waters from the project surroundings and slopes will be separated from surface run-off by directing through temporary channels and soil embankments. Erosion control measures will be implemented following the completion of excavation works, also at the culvert outlets, and slopes will be improved. Around the excavated material stored at designated storage sites, dikes will be established to prevent loss of soil. All of the disturbed sites will be restored to the most possible extent in a timely manner following the completion of stripping and excavation works. 	CIMP WMP	Contractor	Included in soil expert assignment cost
Soil Contamination	<ul style="list-style-type: none"> Discharge of materials into soil that would cause contamination will be prohibited. Accidental spills and leakages will be managed through implementation of the Emergency Preparedness and Response Plan. Solid wastes, hazardous wastes, and wastewater to be generated as a result of land preparation and construction activities along the Project route will be further managed through implementation of the related management plans (Waste Management Plan, and Pollution Prevention Plan). Soil sampling will be conducted twice a year during the land preparation and construction phase, or in case of a complaint. 	CIMP PPP WMP EPRP	Contractor	Included in soil expert assignment cost
Geological and geotechnical Risks (bearing capacity, liquidization, slope stability)	<ul style="list-style-type: none"> All slope slopes will be created with 2Y / 1D slope along the railway routes. 3Y / 2D slope will be created with the fillings to be made along the routes, materials from the basalt pits and materials from the borrow quarry consisting of basalts. In cuts and fillings with a height of H> 10 meters, a 5-meter-wide palette will be created every 8 or 10 meters, depending on the maximum height. Ground improvement will be made with rock fill material (basalt) that will be removed by digging 4 m and brought to the borrow quarry at OIZ-Port Line Km: 9 + 700-10 + 560. During 	EPRP	Contractor	Included in construction service

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	<p>the ground improvement at this intersection of the route, after the on-site determinations by the expert engineer, the weak ground layer to be removed will be checked and the ground improvement depth will be determined again, if necessary, with the approval of the control engineer. Also, in this section, the groundwater level is very close to the surface, and since the slope of the land is not too high, drainage measures will be taken in order to prevent water accumulation on the surface in rainy seasons, to decrease the groundwater level and to remove it from the filling body.</p> <ul style="list-style-type: none"> Units belonging to Kızıldere formation consisting of mudstone, claystone, siltstone, sandstone, marl units that will come out of the cuts are not in compliance with the filling material standards. Only the materials that will come out of the basalt cuts comply with the filling material standards and will be used as filling material. 			
Seismicity	<ul style="list-style-type: none"> The structures planned for construction within the project will strictly comply with regulations outlined in two official publications. These include the "Regulation Regarding Buildings to be Constructed in Disaster Zones" issued by the Emergency Management Presidency of Türkiye published in the Official Gazette dated 18.03.2018, and the "Earthquake Building Regulation" of the Ministry of Public Works and Settlement, published in the Official Gazette dated 14.07.2007. 	EPRP	Contractor	
Landslide Risk	<ul style="list-style-type: none"> During the construction phase in the cracked rocks of Kızıldere formations, special attention will be given, and precautions should be taken against the landslides that may develop locally, by observing excavations, sprayed concrete, wireframe, rock bolt, etc. 	EPRP	Contractor	
Noise				
Increase in noise levels	<ul style="list-style-type: none"> All construction activities will be carried out in compliance with the provisions of ENCR and noise limit values specified in the ENCR and WBG General EHS Guidelines. Implement Project Grievance Mechanism. If any comment related with noise is received through the Grievance Mechanism, evaluate the complaint and where necessary plan and implement corrective actions. Carry out construction activities only during the day. Prefer machinery, equipment and vehicles with lower sound power levels and sound reduced models. Use newer and electrically driven models. Conduct maintenance of construction vehicles regularly by means of a regular vehicle maintenance and repair program which is also recommended by the manufacturer. Define and obey speed limitations for construction vehicles. Carry out relevant trainings and provide instructions to drivers/operators of construction vehicles on the driving speed limits. Avoid driving of construction vehicles through settlements where possible. Use designated site access roads. Evaluate construction of access roads where required to avoid traffic through residential areas. Prohibition of construction vehicles keeping running while waiting on the construction site. 	<p>CIMP PPP Traffic (Transportation) Management Plan (TTMP)</p> <p>SEP including GM</p>	Contractor	<p>Included in Stakeholder Engagement Plan Budget.</p> <p>Assignment of personnel (1 Environmental Expert at site): USD 100,000 Additional training budget: USD 5,000</p>

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	<ul style="list-style-type: none"> Carry out noise monitoring quarterly during the construction phase and also upon complaint by means of noise measurements in accordance with both national legislation and the WBG EHS Guidelines. Implement additional noise mitigation measures (such as use of noise barrier structures/panels, etc.) if noise measurements conducted are above noise limit values. Provide site personnel with necessary environmental training that aims at reducing noise caused by Project activities. When necessary, in order to protect the employees from the noise caused by machinery and equipment; Work will be carried out in accordance with the provisions of the "Occupational Health and Safety Law No. 6331" and necessary measures will be taken to protect workers from risks that may arise from health and safety, especially hearing risks, as a result of exposure to noise. In order to keep the noise level to a minimum, the provisions of the Environmental Noise Control Regulation entered into force with the Official Gazette dated 30.11.2022 and No. 32029 will be complied with. Notification of communities/settlements about the noise levels that may be created during construction phase due to heavy machinery use. Pollution Prevention Plan will be implemented. 			
Air Quality				
Decrease in Air Quality	<ul style="list-style-type: none"> Maximize the use of excavation material in fill operations. Store excess or unsuitable excavated materials at designated storage sites within the construction corridor, ensuring sufficient capacity. Ensure that all excavation activities are implemented in line with the cut and fill program to minimize excavation waste. In order to minimize the dust and potential impacts that may occur in soil stripping and cut and fill works during the land preparation and construction phase of the project; measures such as water spraying at emission source, filling and unloading operations without tossing, covering vehicles with tarpaulin during material transportation and keeping the upper part of the material at 10% humidity will be taken. During the whole activity, the project site will be regularly moistened with water truck. In accordance with the "Exhaust Gas Emission Control and Gasoline and Diesel Quality Regulation" published in the Official Gazette No. 28837 dated 30.11.2013; vehicles with traffic inspections, exhaust gas emission measurements will be used, and vehicles that need maintenance will be taken into maintenance after routine checks and other vehicles will be used until their maintenance is completed. Employees will be ensured to work in accordance with the Traffic Law, and special attention will be paid to make loading according to loading standards. Adopt procedures to limit the drop height of falling materials. 	CIMP PPP Workers' GM Stakeholder GM	Contractor	<p>Included in Stakeholder Engagement Plan Budget and employment of environmental team.</p> <p>Additional training budget: USD 5,000</p>

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	<ul style="list-style-type: none"> Apply dust suppression methods such as watering with water trucks; applying non-toxic anti-dust chemicals etc. at construction sites, service roads, and quarries/material borrow sites and material storage sites. Apply water suppression, pressurized distribution or spraying systems to minimize dust where and when necessary, on paved or unpaved road surfaces. Carry out loading and unloading of materials without throwing and scattering. Cover excavated materials with nylon canvas or with materials with grain size larger than 10 mm during transportation. Prefer local licensed quarries and material borrow sites for the reduction of transportation distance of materials. Where necessary, place wind shields or barriers around material storage sites to prevent spreading of dust emissions where necessary. Upgrade and ensure maintenance of access roads (both to construction camp sites, construction sites, quarries/material borrow sites and material storage areas) where necessary. Avoid driving of construction vehicles through settlements where possible. Implement Project Grievance Mechanism. If any comment related with dust and air quality is received through the Grievance Mechanism, evaluate the complaint and where necessary plan, and implement corrective actions. Implement traffic management plan and pollution prevention plan. PM10, PM2,5 and settled dust will be monitored during the land preparation and construction phase quarterly or in case of a complaint. 			
Water Resources and Wastewater Management				
Wastewater Generation	<ul style="list-style-type: none"> Since there is no wastewater (sewage) system in the field of activity and its immediate surroundings, wastewater generated will be deposited in septic tank that will be impervious, in accordance with "Regulation on Pit Opening Where Sewer System Construction is not Applicable" being published in Official Gazette No.13783 dated 19.03.1971. When the pits are filled, wastewater will be removed by sewage trucks, and disposal will be provided within the scope of the protocol to be made with the municipality that has a licensed wastewater infrastructure system. 	CIMP PPP WMP	Contractor	<p>Included in employment of environmental team.</p> <p>Opening and maintaining of the septic tanks USD 1,000</p>
Impacts on Surface Water Flow and Flood Risk	<ul style="list-style-type: none"> During the construction phase, surface waters will be crossed with appropriately designed art structures and techniques. In the event that it is necessary to provide road crossings on the flows and dry streams in the project area and its surrounding areas or rehabilitation of existing bridges, the necessary projects will be made in line with the principles of 'Disaster Regulation for Roadway 	EPRP	Contractor	Included in construction service and employment of

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	<p>Engineering Structures', and a hydraulic compliance opinion will be obtained from the 6th Regional Directorate of SHW and will be built in line with.</p> <ul style="list-style-type: none"> All works related to streams will be carried out within the knowledge of SHW, and construction works will be carried out under the knowledge and supervision of Hatay SHW 63rd Branch Office and SHW ACO (Ceyhan) Branch Office. Within the scope of the project, the drainage measures (concrete underground drainage, head ditch) to be used for the control of surface waters and groundwater to ensure the stability of the cuts and fillings to be produced along the routes and to remove them from the fill body will be provided. All wastes that may result from the project activities will be managed in line with the related management plans; including the excavation materials to be stored periodically / temporarily, as well as fuel, oil, oil, cement, etc. that may be accidentally released into a receiving environment. Any spill/leak of hazardous materials into the irrigation channel with seasonal / continuous flowing streams where the project routes intersect will be taken under control immediately and surface waters will be protected against pollution. In order to monitor the water quality of the surface waters within the project study area, periodically at least 2 times a year (rainy and dry periods), the water sources will be evaluated at the points to be determined by taking into consideration the locations of the pollutant sources. 			environmental team.
Impacts on irrigation project sites	<ul style="list-style-type: none"> All works related to the irrigation project area that the project routes pass through and the transitions of the art structures belonging to this area will be carried out within the knowledge of SHW and transition projects will be prepared and approved by SHW. All works in the construction works of the transition projects approved by SHW will be carried out under the knowledge and supervision of Hatay SHW 63rd Branch Directorate, and SHW Ceyhan Branch Directorate. 	CIMP SEP including GM	Contractor	Included in employment of environmental team.
Impacts on Groundwater	<ul style="list-style-type: none"> The Contractor shall not carry out mobilization to Site (e.g. limited clearance for haul roads, site accesses and work site establishment, geotechnical investigations or investigations to select ancillary features such as quarries and borrow pits) and commence any construction works unless permit is available for the existing railway alignment design from DSİ with regard to the Burnaz Springs Protected Area. All construction works will commence after the required permit is obtained and will comply with the announcement conditions of the Burnaz Resource Group Groundwater Reserve and Protection Area, as published in the Official Gazette on 03.06.2011 with number 27953. A bridge will be constructed to pass through the overlapping areas of the proposed railway with the strict protection area. Within the scope of the project, drainage measures (concrete underground drainage, head ditch) to be used for the control of surface waters and groundwater to ensure the stability of 	CIMP PPP WMP EPRP	Contractor	Included in employment of environmental team.

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	<p>the cuts and fillings to be produced along the routes and to remove them from the fill body will be provided.</p> <ul style="list-style-type: none"> While determining the locations of temporary fuel or oil storage areas, the locations of water resources will be taken into consideration and dangerous material spills / leaks such as fuel, oil, oil, cement etc. will be taken under control immediately. To monitor the water quality from the resources and groundwater wells within the project study area, periodically at least 2 times a year (rainy and dry periods), the groundwater samples will be monitored by taking the groundwater samples at the points to be determined by considering the locations of possible pollution sources. Implementation of the Pollution Prevention Plan and Emergency Preparedness and Response Plan that covers management of hazardous and chemical substances. 			
Resource and Waste Management				
Possible impacts from storage of excavation material	<ul style="list-style-type: none"> Maximize the amount of excavation use in fill works. Store excess/unsuitable excavated materials at designated storage sites located within the construction corridor and having sufficient capacity. Ensure that all excavation activities are implemented in line with the cut and fill program to minimize excavation waste. 	CIMP PPP WMP	Contractor	Included in employment of soil expert. Design and construction of storage area: USD 10,000
Waste Management	<ul style="list-style-type: none"> Develop and implement the Project-specific Waste Management Plan. Submit official waste declarations for all waste generated to the online system of MoEUCC. Comply with the requirements of applicable waste management regulations for the management of all waste generated as a result of the project activities. Segregate wastes (i.e. hazardous / non-hazardous, recyclable / non-recyclable) and store them temporarily in designated storage areas. Ensure that waste storage areas meet the standards set by the relevant legislation: <ul style="list-style-type: none"> Determining sufficient and appropriate storage areas and ensuring that conditions such as container types, labels and classifications are appropriate in these areas, Ensuring impermeability on the grounds of storage areas against possible contamination of soil and groundwater, The top and four sides of the storage area will be covered to prevent the entrance of precipitation into the area, Sufficient ventilation of the area under conditions where volatile wastes need to be stored, Establishing a suitable drainage system against leaks, 	CIMP PPP WMP Aggregate Management Plan (AMP)	Contractor	Included in employment of environmental team Additional cost on design and construction of waste storage area: USD 10,000

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	<ul style="list-style-type: none"> Restriction of physical access to waste storage areas (through gates, fences, etc.); ensuring that only authorized persons can enter the storage areas, Placing warning signs and panels with the name and contact number of authorized personnel in storage areas, In order to response in case of emergency such as spills and fire immediately, keep absorbent materials, fire extinguishing equipment, etc. ready at a close location, Quick identification of any possible spillages / leaks by periodically performing visual checks in hazardous waste storage areas, <ul style="list-style-type: none"> Ensuring that wastes are not spilled out of areas other than those reserved for this purpose and providing all necessary waste management training and periodic repetition of these trainings, Provide basic waste management trainings (e.g. waste reduction, general waste management and housekeeping) to all personnel and repeat periodically. No waste should be disposed of or burned at the construction site, Marking waste explosives and used explosive containers as explosive waste. Storage of explosive wastes separately in storage areas reserved for this purpose, where only authorized personnel can work. Delivery of these wastes to construction sites should be provided by licensed companies. Ensuring that the Contractors' and subcontractors' Waste Management Plan and the measures specified in this ESIA are implemented. 			
Additional load on the waste management facilities of the region	<ul style="list-style-type: none"> Construct and use excavated material storage sites of sufficient number and capacity and store all the excavated materials at designated storage sites located within the construction corridor and having sufficient capacity. Ensure related waste recycling/recovery/disposal agreements done with the authorized municipality or licensed recovery/disposal firms for the management of hazardous and non-hazardous wastes. 	CIMP PPP WMP	Contractor	Included in employment of environmental team Additional cost on having a licensed firm for waste management: USD 25,000
Biodiversity				
Habitat loss / fragmentation	<ul style="list-style-type: none"> Critical Habitat Assessment and Biodiversity Management Plan will be implemented. The Project personnel will be informed on the sensitivity of the habitats and the Directorate General of Infrastructure Investments (DGII) will train internal staff to be able to provide advice to contractors with input and advice, if required, and enable an informed overview of the biodiversity input from the contractors. Workers will be made aware of the ecological sensitivities of the areas and will be trained in mitigation for unforeseen events, including the 	CHA-BMP (Critical Habitat Assessment and Biodiversity Management Plan) SEP including GM	Contractor	Assignment of personnel (1 Biodiversity Specialist): USD 85,000

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	<p>presence of uncommon habitats and species. Health and safety recommendations regarding poisonous or otherwise dangerous plants or animals will also be provided by Biodiversity Specialists through toolbox talks and trainings. Emergency numbers will be provided in case of attacks or injuries that may occur by wildlife.</p> <ul style="list-style-type: none"> ▪ Indirect impacts on the grey dune and dune heath habitats, as well as <i>Echinops dumanii</i>, <i>Astragalus antiochianus</i> and <i>Acanthodactylus schreiberi</i> populations they support, and also on the mesotrophic lake habitat will be avoided in line with the related environmental management plans (waste management plan, pollution prevention plan). ▪ No project related activities will be performed in the defined Critical Habitat and necessary precautions (such as marking the critical habitat, fencing or any other as appropriate) will be taken in this respect. Storage of any project related waste and/or machinery in Critical Habitat will be avoided. ▪ Statuses of habitats and associated species populations will be monitored throughout land preparation and construction. Where necessary, habitat and species-specific measures will be developed and implemented with an adaptable management approach. ▪ <i>Sternbergia pulchella</i>, <i>Cyclamen persicum</i>, and <i>Hyacinthella millingenii</i> population were determined in and outside the Aol. In order to reduce the pressure on the species and the population, <i>Sternbergia pulchella</i> specimen bulbs (33 bulbs), <i>Cyclamen persicum</i> specimen bulbs (131 bulbs), and <i>Hyacinthella millingeni</i> specimen bulbs (185) were collected and re-located to areas outside the Aol in April 2023 for in-situ protection. The re-located specimen will be monitored every year in April. ▪ Land preparation and construction activities will be limited to designated work areas. ▪ Impacts on natural habitats outside the Project route will be prevented. ▪ Vegetation clearance at reedbed habitats will be minimized. ▪ There will be no tree cutting/vegetation clearance other than in areas required for the Project. ▪ Mitigation measures related to land use and soil quality will be taken in line with the related management plans ensuring conservation of natural habitats. ▪ The project personnel will be informed on the sensitivity of critical and natural habitats and species, conservation priorities. Any direct impact on plant and animal species will be prevented. ▪ In setting up a schedule for land preparation activities, breeding seasons of animals will be considered to prevent direct mortality and also conserve the next generation of their populations in the area. ▪ Project-related impacts on air, soil and water in natural habitats will be avoided. ▪ In line with the characteristics of the target species, it will be decided in consultation with experts whether passages planned within the scope of the Project would be sufficient for wildlife. 			

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	<ul style="list-style-type: none"> Where necessary, in order to ensure no net loss in populations of fauna species new structures will also be considered in areas that are identified to be significant for animal passages. Passages that will also enable human and cattle passage and provide access to graze lands will be identified through consultations within the scope of the Stakeholder Engagement Plan (SEP). In order to minimize animal mortality, locations along the route where animal passage will be prevented and methods that will be used to prevent passage of target species (fencing, sound signals, chemical repellents, lights and reflectors, etc.) will also be identified. To reduce the impacts on reptile species, especially <i>Testudo graeca</i> fencing and turtle stuck will be installed. If any bird nest is encountered during the work, the work in that area will be restricted and after the chicks fly out of the nest, the nest will be moved to a suitable place and the work will continue. Bird migration monitoring will be performed. 			
Use of machinery and equipment	<ul style="list-style-type: none"> Trainings will be organized for the Project personnel to inform them about the on-site speed limits and also importance of animal passages. Machinery and equipment that arrive in work areas will be checked for presence of invasive alien species. All machinery and equipment will be subject to regular maintenance and will not be used out of purpose. Use of machinery and equipment will be limited to designated work areas. Impacts related to noise and vibration will be controlled in line with the Project standards. 	CHA-BMP TTMP	Contractor	
Invasive alien species	<ul style="list-style-type: none"> Natural vegetation will be conserved to the best possible extent during land preparation, and native species will be used in restoration after completion of the construction phase. Vehicles and equipment entering the site will be checked for invasive alien species. If identified, necessary measures will be taken in line with the Project standards to eradicate the species. Instead of using herbicides, which would destroy the natural vegetation and enable introduction of invasive alien species, different vegetation management methods will be considered as appropriate spatially and temporally. During the land preparation and construction phase biodiversity monitoring studies, potential for presence of invasive alien species in the area will also be monitored. The separately prepared Invasive Alien Species Procedure will be implemented (see Appendix-11). 	CHA-BMP	Contractor	
Indirect impacts (dust, air emissions, noise, waste,	<ul style="list-style-type: none"> In order to control dust emissions, vegetation clearance will only be undertaken in pre-determined activity areas, and habitats will be rehabilitated upon completion of construction activities. All related dust suppression measures will be taken to ensure prevention of indirect impacts on biodiversity features. 	CHA-BMP PPP WMP	Contractor	

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and impacts on water and soil quality)	<ul style="list-style-type: none"> On-site speed limits will be enforced to avoid direct mortality of animals. There will be no direct discharge into water resources. Project-related wastes will be collected at designated waste storage areas, and periodically removed from work areas. Hunting of fauna species will be prohibited. In case of illegal hunting activities, authorities will be notified. Solid wastes and wastewater that will result from land preparation and construction activities of the Project will be managed through implementation of the related management plans. 			
Cultural Heritage				
Impacts on Cultural Heritage	<ul style="list-style-type: none"> Contractor shall conduct the works in the area of influence defined in the ESIA during the construction phase of the project. At least one archaeologist (Cultural Heritage / Archaeological Monitoring Expert) shall be present at the site during any construction activities that require physical intervention to the soil. All activities that require physical intervention to the soil shall be monitored and reported by these experts. During the construction phase of the project, all personnel on duty especially in excavation/filling works (including heavy construction equipment operators and assistant teams) shall receive training by cultural heritage/archaeological monitoring expert(s) about protection of Cultural Heritage and alternative works shall be conducted to raise awareness before the initiation of site works. These works will be recorded and archived. Works will be repeated periodically in line with a time schedule. During the construction phase of the project, below listed works will not be allowed in anyway in the vicinity of Issus Ancient Water Way and within the borders of Issus Ancient City: <ul style="list-style-type: none"> Blasting, Camp site construction for the accommodation of workers, Concrete plant construction, Explosive material warehouse construction, Service road construction, Fill material extraction and storage, Waste collection center establishment, Chemical material storage, Opening of water wells and other drilling activities. As part of the project, an "Explosion Excavation Design Based on Risk Analysis" report shall be commissioned in case an explosion is planned within 1 km of the archaeological sites. During the construction phase of the project, Hatay KVKBKM will be informed in advance in case of situations that require excavation works 1.5 meters or more in depth in the vicinity of Issus Ancient Water Way and within the borders of Issus Ancient City. If required, these 	CHMP Chance Find Procedures SEP	Contractor	Assignment of personnel (1 Archeologist at site): USD 75,000

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	<p>excavations will be conducted under supervision of expert archaeologist assigned by the project and in coordination of Hatay KVKBKM.</p> <ul style="list-style-type: none"> In case a cultural heritage is encountered during any works in the site, the works shall be immediately stopped as per the 4th Article of the Law no. 2863 and the closest Local Authority or Museum Directorate shall be informed. Following the reviews of the relevant Museum Directorate, necessary arrangements will be implemented, such as determining the boundaries of the archaeological / cultural heritage / area, measures to be taken for its protection, and informing the employees to prevent any physical intervention. In case any remains/finds are revealed during the works, all works in the site shall be stopped and Chance Find Procedure presented in the Cultural Heritage Management Plan shall be implemented. During construction works, Hatay KVKBKM shall conduct "Vibration Measurement and Test" and report these as frequently as it deems necessary and at the locations of its choosing. "Survey" and survey related other documentation (aerial photos, orthophotograph, GIS database, 3D scanning, etc.) will be prepared for the sections of Issus Ancient Water Way which intersect with the Projects. If required by the Hatay KVKBKM, the contractor will prepare "Consolidation, restorations, Conservation Reports" and will make the implementations accordingly. If required by the Hatay KVKBKM, scientific archaeological "Drill Excavations" will be conducted under the supervision of Hatay KVKBKM before the required physical works to be conducted inside the archaeological sites. If required, the costs of all mitigation methods committed above shall be financed by the Project. For all additional project designs, project revisions and construction implementations to be conducted at the ancient water way and the surrounding area (including implementations designed as protection measures), the opinion of Hatay KVKBKM shall be requested as per the Law no. 2863 and the planned works shall be conducted in line with the related decisions of the Conservation Board. Information on cultural heritage protection measures will be made public with settlements. 			
Socio-Economic Environment				

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Impacts on Population Change	<ul style="list-style-type: none"> ▪ Establishing a stakeholder grievance mechanism and a Workers' grievance mechanism is crucial. These are mechanisms that fosters trust and minimizes conflict by adeptly addressing disputes. ▪ Integrating social dynamics insights into laborer orientation is recommended. Providing knowledge of local culture and promoting nonviolent communication aids interactions. Informing workers about project environmental and social policies enhances communication with local communities. ▪ Engaging local communities in employment not only enhances project reception but also mitigates potential socio-cultural conflicts due to population growth. Aligning external laborers' cultural attributes with the region's culture promotes a harmonious environment for construction. ▪ Prioritizing local businesses in procurement amplifies local benefits and bolsters project perception. ▪ People and settlements whose livelihoods are affected by the Project's AF activities will be given priority in Project employment and service procurement. ▪ Accommodation of workers will be provided in accordance with IFC and EBRD standards. ▪ In order to limit the interaction of non-local workers with the local communities coming to work on the project, the basic needs of the workers will be met in the camping areas-accommodation areas. ▪ The imperative of addressing gender-based violence and instances of sexual harassment and abuse underscores the need for supplementary measures: ▪ The Workers' Code of Conduct will be prepared and applied to all workers and subcontractors, including the following; <ul style="list-style-type: none"> ○ GBV/SEA/SH issues, ○ violent behavior and physical aggression, ○ Intentional damage to the property and interests of others or the environment, ○ violating provisions aimed at preventing the spread of sexually transmitted diseases and AIDS, ○ harm or damage to the environment, population or property, ○ drug use, including the use of cannabis, entering local people's property without the permission of land owners or users. ○ The Code of Conduct will identify non-compliance that requires disciplinary action, and will include that repeated non-compliance may result in immediate dismissal, or depending on the risks these situations may pose. ▪ The Code of Conduct will include reprisal measures in case of violations ▪ Prioritizing gender sensitivity in the recruitment of Community Liaison Officer(s) for on-site roles. ▪ Ensuring comprehensive awareness and, when necessary, training for CLO(s), Stakeholder Management Specialist and other relevant staff concerning GBV/SEA/SH concerns. 	CHSMP ETP SEP	Contractor (for implementation) DGII PIU (for supervision, including all process monitoring)	Included in Stakeholder Engagement Plan and RP Budget.
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	<ul style="list-style-type: none"> ▪ Integrating GBV considerations into the training of Project workers, encompassing dimensions of socio-cultural consciousness, nonviolence, and the multifaceted dynamics of GBV. This training should encompass: ▪ Articulation of violence against women within the framework of national and international sociopolitical mandates. ▪ Exploration of diverse manifestations of violence (physical, sexual, economic, emotional) as shaped by social contexts. ▪ Equipping workers with an understanding of national legal provisions that criminalize sexual harassment and gender-based violence, subject to legal proceedings. The Project should uphold regulations concerning drug abuse and smuggling that are deeply intertwined with societal dynamics. ▪ Establishing an Stakeholder Grievance Mechanism (GM) in SEP that ensures universal accessibility while safeguarding the confidentiality of personal information. ▪ Disclosure of external GM to all local settlements and stakeholders ▪ Making it accessible by disclosing it on the website and local settlements ▪ Orchestrating focused group gatherings within settlements to empower women with insights about GM. These sessions should encompass: <ul style="list-style-type: none"> ▪ Women can directly communicate all their complaints and concerns to the Project, ▪ Provision of self-protection and empowerment strategies in scenarios of violence and sexual abuse. ▪ Women's access channels and potential opportunities to employment opportunities arising within the scope of the Project, ▪ Provision of emergency contact information for immediate intervention. ▪ Dissemination of details about accessible institutions and organizations offering multifaceted support, acknowledging their socio-structural significance. <p>In line with the Worker Code of Conduct, the following training will be provided for all workers and subcontractors:</p> <ul style="list-style-type: none"> • GBV/SEA/SH content and potential risks within the scope of the Project, • Violent behavior and physical aggression and prohibited behavior, • Project measures aimed at preventing the spread of sexually transmitted diseases and AIDS, • Communication and interaction limitations with local people, • Social and cultural harmony, • Non-compliances requiring disciplinary punishment, ▪ Operation of the grievance mechanism regarding GBV/SEA/SH. 			
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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
Impacts on Infrastructure	<ul style="list-style-type: none"> When choosing roads for construction, prioritizing routes that bypass settlements and minimize interactions with adjacent road networks will be used. DGII will take full responsibility, with support from the Contractor for developing and implementing of the Livelihood Restoration Plan and Resettlement Action Plan. Potential livelihood losses from olive groves and perennial trees will be included within the Livelihoods Restoration Resettlement Action Plan Budgets. Temporary housing and structures that facilitate the processing of products such as citrus and bananas and serve seasonal agricultural workers will be monitored for safety and health, and necessary measures will be taken to prevent negative impacts caused by dust and traffic. The interaction of forage crops in supporting livestock farming and income generation will be evaluated and included in the LRP. Losses incurred in grazing areas vital to small livestock farming across rural and arid terrains merit monetary valuation. The consideration of annual turnover losses borne by large-scale enterprises is of significance. Proactive communication, particularly during the pre-construction phase, ensuring a minimum two-day notice for activities proximate to settlements is pivotal. The initiation of the resettlement process prior to land acquisition is recommended. Adequate advance notice, a minimum of two days prior, is essential, particularly concerning pre-construction preparations in the vicinity of public beaches. Proactive communication, at least two days ahead of construction commencement, is imperative to address potential environmental pollution concerns within the region. 	CIMP CHSMP WMP RP LRP	Contractor (for implementation) DGII PIU (will audit the developing and implementing, the RP/LRP including all process monitoring)	
Local Economy and Employment	<ul style="list-style-type: none"> In order to ensure minimum negative impact and maximum positive impact on the local economy, SEP consultations and grievance mechanism will be operated in accordance with the procedure. Local employment will be given priority in the employment opportunities of the project, and women and vulnerable groups will be included. As explained in the scope of RP/LRP, village headmen and district municipalities will be considered as institutions that will cooperate in an inclusive employment process that will also include women employment. At the beginning of the construction phase of the project, cooperation and partnerships will be developed with local professional organizations and NGOs working on the employment of vulnerable groups. Local purchasing and service procurement will be given priority to meet needs such as food, cleaning, maintenance, services and goods procurement. 	SEP CRMP LMP	Contractor	

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
	<ul style="list-style-type: none"> The capacity of local producers of cooperatives within the Project AoI will be informed in advance about appropriate service provision and conditions and supported with training when necessary. It will be implemented in line with the objectives explained above and by establishing a local procurement procedure according to WB ESS2. During the work process, equal employment conditions will be prepared for the recruited personnel, and the job requirements and qualifications of the sought-after personnel will be defined in a non-discriminatory, fair, understandable and clear manner. In order to ensure that the job opportunities and benefits created within the scope of the project are equally beneficial, adequate information will be provided to vulnerable groups and women, primarily those affected by the project. In order to provide equal opportunities to women, the selection of new employees will be evaluated based on the level of knowledge and experience required for the job, assessment measures and competency assessments. During the work process, employment conditions will be prepared for the recruited personnel, and the job requirements and qualifications of the sought-after personnel will be defined in a non-discriminatory, fair, understandable and clear manner. <p>A worker grievance mechanism will be established and operated to ensure that any complaints/comments regarding the project are received and responded to in a timely manner, solutions are provided and corrective measures are taken as appropriate.</p>			
GBVH requirements for workers	<ul style="list-style-type: none"> Employment of Project workers will be based on the principles of non-discrimination and equal opportunity. There will be no discrimination with respect to any aspect of the employment relationship, such as recruitment, salary, working and employment conditions, access to training, promotion or termination of employment. Recruitment procedures are transparent, open to the public, and will not discriminate on the grounds of ethnicity, race, religion, gender, disability, political beliefs, or any other grounds contained in the Labor Law. Records will be kept of workers working in tasks with an increased risk of injury and harm to health. Contractor and Project workers will comply with the LMP, which serves as the basis for LM Plan to be prepared by the Contractor, and also national laws prohibiting and sexual harassment and sexual exploitation and abuse. Project personnel will be trained according to the LMP. Legal notice periods will be followed. Local recruitment will be given priority. The Contracts of the Construction (CoC) Workers must include sanctions for noncompliance, including specific policies related to gender-based violence, sexual exploitation and sexual harassment (e.g., termination). 	SEP CRMP LMP RP	Contractor	

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
	<ul style="list-style-type: none"> A copy of the CoC shall be displayed in a location easily accessible to the community and program affected people. Contractors must address the risk of gender-based violence, through: <ul style="list-style-type: none"> Mandatory training and awareness-raising for the workforce about refraining from unacceptable conduct toward local community members, specifically women. Training may be repeated; Informing workers about national laws that make sexual harassment and gender-based violence a punishable offense which is prosecuted; Adopting a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence. Employers are obliged to provide adequate personal protective equipment free of charge to workers, including community workers A workers grievance mechanism will be established to ensure any complaints/comments regarding the Project will be received and responded to in a timely manner, providing solutions, and taking corrective measures as appropriate. 			
Child Labor and Forced Labor	<ul style="list-style-type: none"> The minimum working age will be 18. Employment of Child Labor is prohibited according to Turkish law, its commitments to ILO conventions, and according to ESS2. In this context, the personnel files and identity information of all employees will be kept within the scope of the Project's LMP and Contractor's LM Plan. It will be stated in the contracts of all workers and sub-contractors that child labor is prohibited. Forced labor will be strictly prohibited. A workers' grievance mechanism will be established to ensure any complaints/comments regarding the Project will be received and responded to in a timely manner, providing solutions, and taking corrective measures as appropriate. 	LMP	Contractor	
Discrimination	<p>Discrimination is prohibited according to Turkish law, its commitments to ILO conventions, and according to ESS2. In this context, code of conducts of all workers and sub-contractors addressed the non-discrimination in line with Project's LMP and Contractor's LM Plan.</p> <p>Employment of Project workers will be based on the principles of non-discrimination and equal opportunity. There will be no discrimination with respect to any aspect of the employment relationship, such as recruitment, salary, working and employment conditions, access to training, promotion or termination of employment. Recruitment procedures will be transparent, open to the public, and will not discriminate on the grounds of ethnicity, race, religion, gender, disability, political beliefs, or any other grounds contained in the Labor Law.</p>	SEP LMP	Contractor	

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
	<ul style="list-style-type: none"> A workers' grievance mechanism will be established to ensure any complaints/comments regarding the Project will be received and responded to in a timely manner, providing solutions, and taking corrective measures as appropriate. 			
Impacts on Livelihoods	<ul style="list-style-type: none"> Technical and feasible measures will be explored to provide access to pastures, forests and agricultural lands, and proper passages will be provided to restore access. In case of restrictions on passage to areas where agricultural and livestock activities are carried out; Information meetings will be held for local people on the duration, reason and alternative crossings of these restrictions, and they will be announced to the villages with written posters. Complaints or concerns of the local people will be proactively received in order to prevent the food production process from being disrupted, with regular consultation meetings during the months when agricultural activities are busy, and relevant units and project employees will be informed on this issue. The Grievance Mechanism will be strengthened and operated along the entire line and in the entire Project area, all complaints will be recorded and resolved in accordance with the GM procedure. Following measures will be implemented in accordance with RP/LRP by DGII PIU with support from the Contractor: <ul style="list-style-type: none"> If access to the pasture lands cannot be provided during the construction period, land users whose livelihood is highly dependent on livestock and pasture use will be provided feed support during the days of the restriction. This support can be provided in the form of direct provision and distribution of fodder in cooperation with cooperatives and related institutions. If the access to pasture areas is provided through passage gaps; there is no need to compensate the herders if the passage to pastures is open and safe for human and animal health. However, if the partial transition is far from traditional use and it poses a danger to human and animal health, the feed support specified in the previous bullet will be partially provided. Animal losses due to construction activities are compensated by the Contractor. In case of any damage to PAPs' products or lands, activities within the scope of husbandry, or PAPs' assets located on the lands, all damages will be compensated. 	SEP RP CIMP	Contractor (for implementation) DGII PIU (for supervision, including process monitoring)	Included in RP
Impacts on Vulnerable Groups	<ul style="list-style-type: none"> Temporary or permanent employment opportunities especially cleaning, chauffeur, security, cookery etc. during the construction and operation period will be offered to Vulnerable PAPs. Priority in livelihood restoration measures will be provided to VG. Priority in livelihood restoration measures will be provided by DGII in accordance with RP/LRP. Vulnerability assistance will be provided by the Contractor in accordance with RP/LRP. 	SEP CRMP PPP CIMP TTMP	DGII will take full responsibility, with support from the Contractor while	Included in RP

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
	<ul style="list-style-type: none"> Face-to-face engagement activities will be preferred for the vulnerable groups in necessary conditions. RP/LRP and GM implementation assistance will be provided aimed at the constitution of their participation in the project so that their awareness of and input to the overall process are commensurate to those of the other stakeholders. Vulnerable groups will be informed on following issues: <ul style="list-style-type: none"> A straightforward explanation of the activity and the Stakeholder Engagement Plan Grievance Mechanism Procedure Procedures for addressing grievances related to both the project and contractor employees Ongoing updates regarding the project Information regarding the land acquisition process <ul style="list-style-type: none"> Information about the land acquisition process, its impacts, and entitlements 		<p>implementing the RP/LRP</p> <p>Contractor (for implementation)</p>	
Labor and Working Conditions				
Impacts on Labor and Working Conditions	<ul style="list-style-type: none"> All workers, direct, contracted and others in the supply chain should have the right to organize. In this regard, grievance mechanism has an important part. A secure grievance mechanism system should be established that workers of all levels can benefit from. A fair and transparent employment procedure should be adopted. Positive discrimination should be practiced for disadvantaged groups. In case all measures are taken, remaining impact would be negligible. Ensure compliance with Workers' accommodation: processes and standards for accommodation; including clean and safe areas that ensure the minimum space requirements, air-conditioning and ventilation that is appropriate for the existing climatic conditions, gender-based accommodation and sanitary facilities, etc.) Ensure compliance with Workers' accommodation: processes and standards for onsite facilities (canteen, sanitary facilities, adequate amenities for socialization and resting, etc.). Survey accommodation facilities to be provided off-site (if any) and ensure they are also in compliance with Project standards. Ensure drinking and utility water to be supplied meet the requirements of the Turkish Regulation on Water Intended for Human Consumption and WHO Guidelines for Drinking Water Quality. Provide all accommodation sites with sufficient emergency response equipment such as first aid kits and fire-fighting equipment and conduct periodic checks to ensure they are in working condition. 	ETP Labor Management Plan (to be developed by Contractor as per DGII's Labor Management Procedures)	Contractor	Assignment of personnel (CLO at site): USD 85,000

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
	<ul style="list-style-type: none"> Provide trainings to personnel on general waste management, housekeeping, first aid practices and communicable diseases. Conduct visual checks on site to ensure proper housekeeping. Ensure proper first aid equipment is kept on site, at various related locations. Conduct periodic medical checks for personnel and provide vaccination and/or other mitigating measures when required. Establish adequate medical rooms at the camp sites, provide sufficient human resources and keep a suitable patient transport vehicle on site. Ensure construction phase personnel's retrenchment is conducted in compliance with all applicable legal requirements and WB ESS2. Ensure contractual requirements are fulfilled during the process. Ensure the personnel are aware of the process and dates (through appropriate and transparent information dissemination). To the extent possible, ensure personnel that may also be employed during the operation phase (e.g. security personnel) are not included in the scope of retrenchment at the end of construction phase. Workers will be able to maintain a good standard of hygiene. Contamination and the spread of diseases which are caused by insufficient sanitary facilities must be avoided. Sufficient medical facilities should be reached to sustain workers' health and adequate responses should be ensured in the matter of health emergency situations. Workers' Grievance Mechanism should be established and be provided to workers to report their grievances. All Project employees will sign a written employment contract that includes a description of the terms of employment, wages, working hours, rights and duties, Code of Conduct. In addition to the regular salary, employees are provided with overtime, holidays, weekends, etc. Specific working conditions or absence periods will be defined and necessary information will be provided in writing. Employees are given rest periods specified in the law regarding working hours, weekly rest and annual holidays. Records will be kept of workers working in tasks with an increased risk of injury and harm to health. The Contractor Workforce Management Plan will cover all these risks regarding Labor and define the necessary measures for social compliance, and will be implemented by the Contractor within the scope of the Project and monitored by Borrower. <p>Employers are obliged to provide adequate personal protective equipment free of charge to workers, including community workers.</p>			

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
OHS	<ul style="list-style-type: none"> Development of a site specific OHS risk assessment and management plan. Implementation of OHS Management Plan. Risk assessment study within the scope of every activity to be conducted for the project will be conducted before commencing the works. Employees will be aware of any possible OHS risks and will be trained against them properly. Contractor must ensure immediate response to and timely reporting, analysis and communication of all incidents to DGII. All incidents shall be recorded in the approved incident reporting system, and be analyzed to a level commensurate with the actual consequence or potential risk rating, whichever is higher. Contractor is committed to return workers to meaningful and productive employment at the earliest possible time. Contractor employees will undergo a medical assessment to ensure they are medically fit to perform their role before commencing the works and these controls will be repeated annually. Contractor must ensure that health assessments are carried out in respect of all personnel who engage in specific tasks with the potential for occupational exposure. Contractor recognizes that fatigue may arise from hours and patterns of work and activities, and travel/commute time. Contractor acknowledges the risk associated with project area operations, and provides for the reporting and rectification of hazards. Where personnel are required to work alone, the activities and conditions shall be risk assessed and a safe system of work developed. Where a manual handling task is required a risk assessment shall be completed to identify the hazards. The risk of injury should be assessed for each hazard, and appropriate controls implemented, including manual handling training as appropriate. Contractor must supply suitable facilities for personnel. Contractor must ensure commitment to monitoring and reporting of occupational health hazards and hazardous occupational environments, and implement controls to reduce risk in accordance with all applicable regulations and, wherever practicable, with regard to accepted best practices. Contractor must ensure the safe control of hazardous substances and reduce the level of exposure to personnel, property and the environment in accordance with the ESIA Requirements. Contractor must ensure that all personnel and visitors wear or use personal protective equipment provided if it is necessary to protect them from harm. Contractor must ensure that sufficient safety signs are posted in workplaces and travel ways to prevent incidents, identify hazards. 	OHSMP	Contractor	Assignment of personnel (HS Expert at site): USD 100,000

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
	<ul style="list-style-type: none"> Contractor must ensure that all personnel undertaking activities where there is a risk of a person falling from one level to another do so in a controlled manner to reduce the risk of personal injury. Task specific hazard identification will be done for each activity. Access to the project area will be restricted by the Contractor and necessary precautions will be taken such as fencing the area and placing relevant signs etc. Site inductions will be carried out by the contractor. Inspections of the project site should be carried out weekly. Contractor will undertake weekly inspections of the whole work site. Contractor is obliged to provide adequate personal protective equipment free of charge to workers, including community workers (if any). Workers' GM will be implemented to resolve any complaints related to OHS issues. 			
Community Health and Safety				
Risk on traffic and pedestrian safety due to construction traffic	<ul style="list-style-type: none"> Implement the Traffic Management Plan, Implement the Stakeholder Engagement Plan, Investigate all construction areas and construction access routes for potential community interaction (with a particular attention to schools, children parks, etc.) with Project construction phase traffic. Based on results, develop and implement site specific measures (i.e. improve signage, visibility) and driver/operator trainings prior to initiation of any construction work. Implement access restriction at construction areas and access routes, by specifying restricted zones, (i.e. dangerous routes), fencing, barriers, etc. Install signs, signals, markings and other appropriate traffic regulation devices, including reflective and flashing signage for nighttime traffic safety, at all required sites. Avoid passage of construction traffic through the settlements, whenever alternative roads are present. Where passage through existing settlements is unavoidable, take all necessary measures (i.e. speed limits, traffic signs, driver trainings) to prevent safety risks on local communities, engage with community representatives to plan the traffic by taking the daily life of the communities into account (i.e. selection of routes, school transportation hours, market days, etc.) and inform the communities about the construction schedule, activities to be conducted and safety measures taken, through appropriate means such as meetings and leaflets, notices, signs, etc. Allow only drivers/operators with valid licenses specific to each construction phase vehicle to drive/operate vehicles. Provide driving skills improvement trainings in consideration of the requirements of specific vehicles, machinery, etc. Implement speed limits at all construction sites. 	TTMP SEP EPRP CHSMP OHSMP	Contractor (for implementation) DGII PIU (for supervision, including process monitoring)	Assignment of personnel (HS Expert at site): USD 100,000 Assignment of personnel (CLO at site): USD 85,000

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
	<ul style="list-style-type: none"> Conduct periodic medical checks for drivers/operators. Conduct periodic vehicle maintenance. Initiate construction only after relevant permits are obtained and all required measures such as signage, barriers, fencing, lighting, etc. are taken. Prioritize selection of material borrow sites and quarries in the areas that does not interact with public. Use only licensed firms for explosives delivery to ensure safety along the existing roads to be used for transport of explosives. Provide information and awareness raising activities with stakeholders, communities including women, children and also disabled. 			
Emergency Preparedness and Response	<ul style="list-style-type: none"> Develop and implement a project-specific Emergency Preparedness and Response Plan for the construction phase covering the risks on local communities. Develop measures/systems for collaboration with the local communities and other external parties including local governmental agencies, media, etc. where necessary. Notify local communities by using appropriate tools (e.g. telephone call lists, vehicle mounted speakers) in case of emergencies arising from the Project work/construction sites may pose risk on them. Where necessary, communicate the details of the nature of the emergency, protection options, etc. through trained community liaison officer(s). DGII will cooperate with related authorities both for prevention of emergencies and during emergency situations, where necessary. Communicate to the media through qualified, trained persons and/or by using appropriate tools (i.e. press releases), where necessary. 	EPRP	Contractor DGII	
Security Personnel	<ul style="list-style-type: none"> Ensure that the security personnel to be employed are screened that they have not been involved in past abuses Train the security personnel in terms of applicable law, code of conduct, gender based harassment and violence, cultural sensitivities of the region, stakeholder engagement procedure in accordance with the ESS4. Conduct legal inquiries during the hiring process of security personnel (or the company the security service is procured from) to check competency and existence of any former abuse incidents. In accordance with the ESS4, Security Personnel will be trained adequately (or determine that they are properly trained) in the use of force (and where applicable, firearms) and appropriate conduct toward workers and affected communities; and (iii) require them to act within the applicable law and any requirements. Provide trainings on code of conduct, gender sensitivities and local cultural sensitivities to security personnel or ensure that the company the security service is procured from provides its personnel with similar trainings. The trainings will ensure force is used only for preventive and defensive purposes and in proportion to the threat. 	ETP	Contractor	Included in Security Personnel assignment

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost
	<ul style="list-style-type: none"> Employment of armed security necessitates additional training provisions. Provide necessary identification, communications devices, and any other equipment required for the job to the security personnel to ensure maximum efficiency. The security personnel will not be allowed to carry firearms. Investigate any grievance from local communities regarding inappropriate conduct of security forces immediately. Ensure appropriate conduct of security personnel through document and incident report reviews, as well as review of grievances received. Ensure all measures are included in contractual agreements. When security personnel is used, the Borrower will be guided by the principles of proportionality and Good International Industry Practice, and by applicable law (in accordance with the Law No. 5188 On Private Security Services, Regulation On The Implementation of the Law on Private Security Services, ESS2 and relevant ILO conventions), in relation to hiring, rules of conduct, training, equipping, and monitoring of such security workers. 			
Community exposure to health problems	<ul style="list-style-type: none"> In order to avoid the spread of diseases among the workforce of the project, air conditioning and ventilation will be provided in accordance with the current climate conditions, minimum space requirement, etc. ensuring compliance with the processes and standards related to the housing of workers involving issues. Training of all staff on health and general hygiene and cleaning. Conduct periodic medical checks of staff, provide vaccination and / or develop other mitigation measures developed, when required. Develop and implement appropriate waste and wastewater management plans, Carrying out health awareness raising activities involving local communities. 	CHSMP	Contractor	No additional cost

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Table 6. Environmental and Social Mitigation Plan – Operation

Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost *
Land Use, Soil, and Geology				
Seismicity	<ul style="list-style-type: none"> By carrying out periodic control and maintenance activities along the routes, additional durability and structural measures will be developed and implemented in cuts and fills when necessary. (cracks, breaks, slips, deformations etc. of engineering structures that could happen especially after natural disasters) 	EPRP	TCDD	Yearly maintenance cost: USD 100,000
Noise				
Increase in noise levels	<ul style="list-style-type: none"> Noise monitoring will be conducted once in three months in the first year of the operation, after one year, monitoring will be done in every two years. Noise monitoring will also be conducted upon complaint. Optimizing the average speed of trains by 50 km/h. Installation of physical barriers, such as sound walls or acoustic fencing, along the railway corridor should be installed to block or absorb sound waves, if deemed required according to the noise monitoring results and/or noise-related complaints. The use of natural barriers like earth berms or vegetation to help reduce noise transmission. Continuous welded rail should be used to reduce the noise generated by train wheels passing over joints in the track. Tracks should be maintained regularly to minimize irregularities that can contribute to increased noise levels. The use of noise-reducing track materials, such as noise-dampening rail pads, should be explored to mitigate vibrations and sound propagation. Measures should be implemented to reduce wheel and rail friction, such as applying friction modifiers or using lubricated track. It should be ensured that wheels and rails are regularly inspected and maintained to prevent excessive noise due to wear and tear. Implementing speed restrictions in sensitive areas to reduce the noise generated by trains, particularly during nighttime hours when noise impacts can be more pronounced. Regular and timely engagement with local communities, in compliance with the SEP of the Project, will be performed to understand their concerns and gather feedback on noise-related issues. 	PPP	TCDD	Included in annual maintenance cost
Water Resources and Wastewater Management				

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost *
Wastewater Generation	<ul style="list-style-type: none"> Since there is no wastewater (sewage) system in the field of activity and its immediate surroundings, wastewater generated will be deposited in septic tank that will be impervious, in accordance with "Regulation on Pit Opening Where Sewer System Construction is not Applicable" being published in Official Gazette No.13783 dated 19.03.1971. When the pits are filled, wastewater will be removed by sewage trucks, and disposal will be provided within the scope of the protocol to be made with the municipality that has a licensed wastewater infrastructure system. In addition to the domestic wastewater to be generated during the operation phase, there will be industrial effluents due to rail car maintenance and refurbishment activities. To prevent, minimize, or control the industrial effluents generated in the rail car maintenance areas; <ul style="list-style-type: none"> Ultrafiltration will be used to extend the life of washing solutions for aqueous parts or alternatives to water cleaning (e.g. dry cleaning by wire brush or bake oven) will be used; Discharge of industrial wastes to septic systems, drain fields, dry wells, cesspools, pits, or separate storm drains or sewers will be prevented; The wastewater from the service bays and the floor drains in maintenance areas will be kept out of the storm drains and will be collected separately; The effluents from the service bays and the floor drains in maintenance areas will be pretreated to reduce contaminant concentrations before collection in septic tanks. Pretreatment systems typically consist of oil / water separators, biological and chemical treatment, and activated carbon systems. 	PPP WMP	TCDD	Included in annual maintenance cost
Resource and Waste Management				
Waste Management	<ul style="list-style-type: none"> Develop and implement a project-specific Waste Management Plan. Submit official waste declarations for all waste generated to the online system of MoEUCC. Obtain Zero Waste Certificate as appropriate. Conduct visual control of waste and garbage spilled along the railway route and periodic collection of these garbage, separation of these wastes according to their recyclability, storage of separated wastes in separate containers and disposal according to the Waste Management Regulation. Using lead-free paints for maintenance work. 	PPP WMP	TCDD	Included in annual maintenance cost

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost *
	<ul style="list-style-type: none"> Collecting the garbage that will occur at the stations from the collection areas to be placed in the station and forwarding them to the proper solid waste storage facility with the garbage trucks of the relevant Municipality. 			
Biodiversity				
Habitat loss / fragmentation Habitat loss / displacement	<ul style="list-style-type: none"> Natural habitat will be restored upon completion of construction activities, enabling species to re-inhabit these areas. Statuses of habitats and associated species populations will be monitored throughout operation. Where necessary, habitat and species-specific measures will be developed and implemented with an adaptable management approach. To establish coherence between newly formed and natural habitats, conserve fauna species, prevent introduction of invasive alien species, and ensure secure transportation, integrated vegetation management strategies will be developed and implemented. Animal mortality will be kept under control through implementation of methods to prevent animal passage and strategies related to use of existing passages / construction of new ones, based on habitat use of target species that will be identified pre-construction and monitored throughout construction. In order to prevent animals being attracted to vegetation along the route, to limit the time animals spend near the railway, and increase their visibility and also vision, appropriate vegetation schemes will be implemented within the scope of the integrated vegetation management. Bird migration monitoring will be performed. Critical Habitat Monitoring will be performed and reported. <i>Sternbergia pulchella</i>, <i>Cyclamen persicum</i>, and <i>Hyacinthella millingenii</i> re-located populations will be monitored and reported. 	CHA-BMP	TCDD	<p>Included in annual maintenance cost</p> <p>Additional cost on ecological services: USD 50,000</p>
Invasive alien species	<ul style="list-style-type: none"> To avoid development of alien species along the railway route, natural plants will be used in restoration, and regular maintenance will continue throughout the operation phase. To take necessary measures against the risk of invasive alien species being transferred by the trains, there will be periodical controls and if identified, necessary measures will be taken in line with the Project standards to avoid spread of invasive alien species. During the operation phase biodiversity monitoring studies, potential for presence of invasive alien species in the area will also be monitored. 	CHA-BMP	TCDD	

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost *
Indirect impacts (dust, air emissions, noise, waste, and impacts on water and soil quality)	<ul style="list-style-type: none"> Use of chemicals for maintenance will be limited. Wastes will be recycled and disposed on a regular basis to prevent pollution of receiving environment due to operational activities. Noise barriers will be used to minimize impacts on animals. Measures to minimize risk of erosion will be taken within the scope of integrated vegetation management. Necessary measures will be taken to minimize risk of erosion during integrated vegetation management. To identify and respond to any hazard related to erosion, landslide, etc., verges and sloped will be checked periodically. Solid wastes, hazardous wastes, and wastewater that will result from operation activities will be managed through implementation of related management plans. 	CHA-BMP PPP WMP	TCDD	
Labor and Working Conditions				
Impacts on Labor and Working Conditions	<ul style="list-style-type: none"> Equitable treatment of employees, non-discrimination and equal opportunity To maintain and improve the employee-management relationship To protect sensitive employees such as non-Turkish speaker staff, migrant workers, personnel supplied by third parties To provide safe and healthy working conditions To meet necessary health requirements Preventing child labor, and forced labor. These requirements should be monitored on third parties works. All workers, direct, contracted and others in the supply chain should have the right to organize. In this regard, grievance mechanism has an important part. A secure grievance mechanism system should be established that workers of all levels can benefit from. A fair and transparent employment procedure should be adopted. Positive discrimination should be practiced for disadvantaged groups. In case all measures are taken, remaining impact would be negligible. Mandatory training and awareness-raising for the workforce about refraining from unacceptable conduct toward local community members, specifically women. Training may be repeated; Informing workers about national laws that make sexual harassment and gender-based violence a punishable offense which is prosecuted; Adopting a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence. All workers, direct, contracted and others in the supply chain should have the right to organize. In this regard, grievance mechanism has an 	ETP	TCDD	No additional cost

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost *
	<p>important part. A secure grievance mechanism system should be established that workers of all levels can benefit from.</p> <ul style="list-style-type: none"> A fair and transparent employment procedure should be adopted. Positive discrimination should be practiced for disadvantaged groups. In case all measures are taken, remaining impact would be negligible. Provide all accommodation sites with sufficient emergency response equipment such as first aid kits and fire-fighting equipment and conduct periodic checks to ensure they are in working condition. Provide trainings to personnel on general waste management, housekeeping, first aid practices and communicable diseases. Ensure contractual requirements are fulfilled during the process. Workers' Grievance Mechanism should be established and be provided to workers to report their grievances. All Project employees will sign a written employment contract that includes a description of the terms of employment, wages, working hours, rights and duties, Code of Conduct. In addition to the regular salary, employees are provided with overtime, holidays, weekends, etc. Specific working conditions or absence periods will be defined and necessary information will be provided in writing. Employees are given rest periods specified in the law regarding working hours, weekly rest and annual holidays. Records will be kept of workers working in tasks with an increased risk of injury and harm to health. Employers are obliged to provide adequate personal protective equipment free of charge to workers, including community workers. 			
OHS	<ul style="list-style-type: none"> Development of a site specific OHS risk assessment and management plan. Implementation of OHS Management Plan. Major railway failures that can lead accidents such as broken wheel or axle and broken rail or track buckle will be controlled via control train and OHS personnel of TCDD monthly. Suitability of the signalization system will be controlled in a daily manner. No personnel will be working without having necessary trainings. Level crossings will be controlled daily. Operation will be stopped immediate if any factor that may lead accidents is reported. 	OHSMP SEP including GM	TCDD	No additional cost
Community Health and Safety				

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost *
Emergency Preparedness and Response	<ul style="list-style-type: none"> Develop and implement a project-specific Emergency Preparedness and Response Plan for the operation phase of the railway. Regular controls of the route safety. Cooperation with related authorities (for emergency prevention and during emergencies). Emergency response begins as soon a rail emergency is identified or reported. When it is notified of a rail emergency, they will immediately make notifications per TCDD protocols. <p>If a railway emergency occurs:</p> <ul style="list-style-type: none"> The first responder on scene makes a preliminary assessment and notifies relevant authorities (Fire Department, police etc.) with all information available. The first arriving Fire Officer becomes the Incident Commander and will command and direct all emergency response actions until relieved by the senior official having legal or assigned responsibility. The Incident Commander assesses the need for additional resources. Together with the Incident Commander, law enforcement will set up security and establishes access and traffic control. The TCDD Branch Director shall appoint supervisors to emergency response Divisions/Groups. The Incident Commander will instruct emergency response personnel not to move property and debris associated with the wreckage unless there is imminent danger of items being destroyed, or unless they inhibit access to passenger rescue. The health service officers are responsible for the identification, movement and/or removal of the dead bodies. In the event a body has been moved prior to the health service officers' approval, personnel moving the body shall make careful note of the location and condition of the body. The Ministry of Interior Disaster and Emergency Management (AFAD), Police Department, Fire brigade, TCDD, and other officials shall contact the Mayor. The TCDD will be in constant communication with the Command Post. 	EPRP	TCDD	Included in annual maintenance cost
General railway operational safety	<ul style="list-style-type: none"> Implement railway operational safety procedures, such as a positive train control (PTC) system, aimed at reducing the likelihood of train collisions. Unless the full PTC system is considered practical, where manual trusses are located, reporting is made when the train passes from the mainline to the 	CHSMP	TCDD	Included in annual maintenance cost

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Impact Description	Mitigation Measures	Implementation Plan	Responsibility	Cost *
	<p>side road in the absence of signaling, and that this information is returned to all employees and train officers on the train.</p> <ul style="list-style-type: none"> Regular inspection and maintenance of railway lines and facilities to operate in accordance with national and international railway line safety and standards. Implement a general safety management program equivalent to internationally recognized railway safety programs. 			
Level crossing safety	<ul style="list-style-type: none"> Regular inspection / maintenance to ensure automatic doors installation and smooth operation in all level crossings. 	CHSMP	TCDD	Included in annual maintenance cost
Pedestrian safety	<ul style="list-style-type: none"> Put clear and distinctive warning signs at entry points (e.g. stations and level crossings). Installation of fences or other barriers at the end of the station and other areas and preventing unauthorized access to the rails. Providing trainings about not entering the area without permission, especially for local youth. Providing regular information on road safety/ traffic and awareness raising activities to local communities especially schools, neighboring villagers including women before construction, To ensure that the specified route is safe, clearly determined, and easy to use. Establishment of closed-circuit security cameras and monitoring systems (CCTV) to monitor railway stations, and an emergency announcement system to prevent violations in other areas where intruders are frequent. 	CHSMP	TCDD	Included in annual maintenance cost

** It should be noted that, cost of annual maintenance of the project is estimated via expert judgement considering similar previous projects. On the other hand, as the railway will be handed over to TCDD after completion of construction activities, TCDD will develop and implement its own ESMS system. Thus, the costs given in this table should be reconsidered.*

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6.2 Monitoring Plan and Reporting Requirements

The overall objective of environmental and social monitoring is to monitor compliance with ESMP and other E&S management sub-plans, measure effectiveness of mitigation measures qualitatively and quantitatively, and develop appropriate responses to non-compliance with Project standards, and emerging environmental and social issues. A comprehensive plan for monitoring activities and thresholds are provided in this chapter of ESMP to be further developed as more information becomes available before the onset of land preparation and construction phase. Monitoring will be carried out to ensure that all Project activities and mitigation measures comply with the ESMP and other E&S sub-plans, national legislation and the World Bank ESF, and that DGII and the Construction Contractor meet their commitments and requirements of this ESMP in terms of periodical audits and reporting. The main objectives of the monitoring plan are to;

- Control that all mitigation measures are in place,
- Measure effectiveness of the mitigation measures,
- Enable timely action to be taken when unexpected environmental and social incidents are encountered.

Mitigation measures for each E&S component of the Monitoring Plan are provided within the scope of the ESMP (see Section 6.1). Parameters, locations, frequencies, methods, thresholds values, key performance indicators for the monitoring studies are identified along with identification of the responsible parties, reporting frequencies and corresponding budget in the Monitoring Plans for pre-construction, land preparation/construction and operation phases (see Table 7, Table 8 and Table 9, respectively). To determine whether monitoring outcomes comply with the Project standards, implementation of mitigation measures will be observed and measured, effectiveness of measures will be verified, all results will be recorded and monitored. In addition to the monitoring responsibilities outlined in Section 5.6, it should be noted that during the pre-operation period, the Construction Contractor's activities will be periodically monitored by DGII and/or reported to DGII with the support of the Design and Supervision Consultant, who will serve as a bridge/liaison between the Construction Contractor and DGII and actively participate on-site.

The 3rd Party Environmental and Social Monitoring Consultant and experts, who will take part in monitoring the compliance and performance of the project activities with the ESMP requirements, will be responsible for conducting relevant assessments, developing corrective actions and presenting them to the DGII and the Construction Contractor.

In addition to the impacts identified in the ESIA report, if there is an unforeseen change in the Project phases or if an additional environmental and social study is required, the World Bank will be informed about the changed status and the ESMP will be revised according to the Chapter 5.3 Management of Change Process.

Plans prepared by the contractor will be reviewed and updated at least quarterly periods to reflect the changing conditions or the requirements of the DGII and the World Bank. Any revisions to be made in the ESMP and related management plans will be submitted to the approval of the DGII first, and the Contractor personnel will be provided with access to the updated versions of the ESMP.

Table 7. Monitoring Plan – Pre-construction Phase

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator/Target	Reporting Frequency	Implementation Cost
Establishing Project's Grievance Mechanism	Implementation status of the GM	All project areas along with Aol	DGII Contractor	Pre-cons	Documentation	-	ESS1: Assessment and Management of Environmental and Social Risks and Impacts ESS10: Stakeholder Engagement and Information Disclosure	Informing external stakeholders about the functioning/operation of grievance mechanism	Monthly	Additional cost on preventive corrective actions
RP preparation and Stakeholder Engagement Activities	Quality, quantity and effectiveness of the stakeholder engagement activities Implementation status of the SEP and RP	All project areas	DGII and/or E&S Consultant	Pre-Cons.	Documentation	-	Expropriation Law ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement ESS10: Stakeholder Engagement and Information Disclosure	SEP and RP are prepared prior to construction Stakeholder List is prepared prior to construction Resolution of issues collected through the GM Fulfillment of the issues outlined in the RP	Monthly	Assignment of the E&S Consultant Cost: USD 250,000
Permission Regarding Non-Agricultural Use of Agricultural Areas	Non-agricultural use permit	All project areas	DGII	Pre-Cons.	Documentation	-	Soil Conservation and Land Use Law	Obtaining all necessary permits before starting construction activities	Monthly	No additional cost
Determination of the camp site, access roads and excavation storage areas and obtaining the necessary permissions	Site selection process for camp site, access roads and excavation areas and relevant approval letters and/or permits	All project areas	DGII Contractor	Pre-Cons.	Documentation	-	ESIA Report Expropriation Law ESS1: Assessment and Management of Environmental and Social Risks and Impacts ESS3: Resource Efficiency and Pollution Prevention and Management ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement ESS10: Stakeholder Engagement and Information Disclosure	Obtaining all necessary permits before starting construction activities	Monthly	Included in Construction Cost
Ensuring Ground Safety	Resilience/Durability of the structures	Project Route and all Engineering Structures	DGII	Pre-Cons.	Documentation Visual observations at site	-	Regulation on Structures to be Built in Disaster Areas	Compliance of the structures with design standards	Monthly	No additional cost
Preparation of Site-specific Management Plans and Procedures	Site-specific management plans and procedures	Office	Contractor	Pre-cons.	Documentation	-	ESS1: Assessment and Management of Environmental and Social Risks and Impacts ESS3: Resource Efficiency and Pollution Prevention and Management Pollution Prevention Plan	Number of site specific management plans and competence	-	Included in Construction Cost-
Obtaining the official approval from DSI for Burnaz Spring Group Groundwater Reserve and Protection Area	Approval letters and/or permits	Office	DGII	Pre-cons	Documentation	-	Environmental Law ESS1: Assessment and Management of Environmental and Social Risks and Impacts	Obtaining all necessary permits before starting construction activities	Monthly	No additional cost

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator/Target	Reporting Frequency	Implementation Cost
							ESS3: Resource Efficiency and Pollution Prevention and Management Pollution Prevention Plan			
Obtaining the official approval from MoENR regarding the railway design at the intersection point of the two planned solar power plant projects, Erzin-1 and Erzin-2, covering both the connection road and the designed transition structure	Approval letters and/or permits	Office	DGII	Pre-cons	Documentation	-	ESS1: Assessment and Management of Environmental and Social Risks and Impacts ESS10: Stakeholder Engagement and Information Disclosure	Obtaining all necessary permits before starting construction activities	Monthly	No additional cost
Obtaining permits for the existing railway alignment design from the Ministry of Culture and Tourism with regard to cultural heritage sites - ancient City of Issus, Issus waterway and historical Erzin train station (including for all additional project designs, project revisions and construction implementations to be conducted at the ancient waterway and the surrounding area and within the borders of Issus Ancient City)	Approval letters and/or permits	Office	DGII	Pre-cons	Documentation	-	Law on Preservation of Cultural and Natural Assets Convention on the Protection of the World Cultural and Natural Heritage UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage ESS1: Assessment and Management of Environmental and Social Risks and Impacts ESS8: Cultural Heritage Cultural Heritage Management Plan with attached Chance Find Procedure	Obtaining all necessary permits before starting construction activities	Monthly	No additional cost

Table 8. Monitoring Plan – Land Preparation and Construction Phase

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
Soil Contamination	Existence of soil contamination BTEX, TPH, TVOCs, pH, Oil-Grease, Cadmium, Mercury, Zinc, Copper, Nickel, Chromium, Lead, Selenium, Arsenic, Antimony, Molybdenum, Titanium, Tin, Barium, Beryllium, Boron, Uranium, Vanadium, Cobalt, Thallium, Silver	Points to be selected to represent near stations which were selected during ESIA Report	Contractor	Every six months and in case of a complaint/spill incident or leakage to soil	On-site visual observations/ inspections Soil sampling and analysis (by accredited and competent firms) Documentation: Training records, incident reports	Baseline measurement results specified in the ESIA Report	Regulation on Soil Pollution Control and Point Source Contaminated Sites Pollution Prevention Plan ESS3: Resource Efficiency and Pollution Prevention and Management	Number of leakages/spill incidents Number of the non-compliances with the applicable standards (Target: Zero non-compliance) Amount of contaminated soil Number and percent of the personnel trained regarding emergency response to spills and leaks	Monthly	Included in Construction Cost Additional cost on Soil Sampling and Analysis: USD 5,000
Impacts on Arable Lands	Grievance records Preventive corrective measures taken Livelihood restoration supports to be provided RP compensation payments records Trainings for workers Information provided to local PAPs	All Project construction areas and project access roads	Contractor DGII	Monthly	On-site visual observations/ inspections Grievance records Stakeholder/ PAP information records Training records RP implementation reports	RP and ESIA requirements	SEP including GM RP/LRP ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement ESS10: Stakeholder Engagement and Information Disclosure	Number of grievance records on impacts on arable lands Number and amount of Livelihood restoration supports to be provided Number and amount of RP compensation payments records Number of trainings provided to workers Number of information provided to local PAPs	Monthly	Included in SEP Budget: USD 320,000 and RP Budget Additional Training Cost: USD 10,000
Impacts on Pastures	Grievance records Preventive corrective measures taken Livelihood restoration supports to be provided RP compensation payments records Trainings for workers	All Project construction areas and project access roads	Contractor DGII	Monthly	On-site visual observations/ inspections Grievance records Stakeholder/ PAP information records Training records RP implementation reports	RP and ESIA requirements	SEP including GM RP/LRP S5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement ESS10: Stakeholder Engagement and Information Disclosure	Number of grievance records on impacts on Pastures Number and amount of Livelihood restoration supports to be provided Number and amount of RP compensation payments records Number of trainings provided to workers Number of information provided to local PAPs	Monthly	Included in SEP Budget: USD 320,000 and RP Budget Additional Training Cost: USD 10,000

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
	Information provided to local PAPs									
Increase in Noise Level	Noise	Baseline measurement points determined within the scope of ESIA Studies / Closest settlement in case of complaint	Contractor	Quarterly and if there is a complaint	On-site visual observations/ inspections Noise level measurements (at least 48 hours of uninterrupted noise measurements by accredited and competent firms) Documentation: Training records, grievance records, correspondence with the relevant stakeholders, measurement reports	Baseline measurement results specified in the ESIA Report Legislative and WBG EHS Guidelines limit values	Regulation on Environmental Noise Control Pollution Prevention Plan ESS3: Resource Efficiency and Pollution Prevention and Management	No exceedance of noise limit values observed in the noise measurements Number of noise related community grievances Number and percent of the personnel trained on noise management	Monthly	Included in Construction Cost Additional cost on Noise Measurement and Analysis: USD 10,000 / Year
Air Quality	Settled Dust PM10 PM2.5	Baseline measurement points determined within the scope of ESIA Studies / Closest settlement in case of complaint	Contractor	Quarterly and if there is a complaint	On-site visual observations/ inspections Settled Dust, PM10, and PM2.5 measurements (by accredited and competent firms) Documentation: Training records, grievance records, measurement records	Baseline measurement results specified in the ESIA Report Legislative and WBG EHS Guidelines limit values	Regulation on Control of Industrial Source Air Pollution IFC - WHO - Outdoor Air Quality Guidelines Pollution Prevention Plan ESS3: Resource Efficiency and Pollution Prevention and Management	No exceedance of air quality limit values observed in air quality measurements Number of air quality related grievances Number and percent of the personnel trained on air quality	Monthly	Included in Construction Cost Additional cost on Air Quality Measurement and Analysis: USD 15,000 / Year
Air Quality	Vehicle emissions	Construction equipment and vehicles	Contractor	Daily	Documentation: Vehicle and equipment maintenance records On-site visual observations/ inspections	-	Regulation on Control of Exhaust Gas Emission and Gasoline and Diesel Oil Quality	The ratio of maintained vehicles and equipment to the total number	Monthly	Included in Construction Cost
Wastewater Generation	Wastewater	Construction Site	Contractor	Daily	On-site visual observations/ inspections Documentation: Wastewater disposal records, grievance records on wastewater issues	-	Implementing Regulation on Pits to be Made in Sedimentation Areas Where Construction is Not Possible Water Pollution Control Regulation WBG General EHS Guidelines	Existence of wastewater collection system (impermeable septic tanks) and appropriate disposal of wastewater	Monthly	Included in Construction Cost
Surface Water Quality	pH, Oil-Grease, Color, Conductivity, Dissolved Oxygen, Chemical	Baseline measurement points determined	Contractor	Every 6 months and if there is a complaint	Sampling and analysis (by accredited and competent firms)	The limit values specified in Annex-5, Table-2 (Quality Criteria of Inland Surface Water	Surface Water Quality Regulation Pollution Prevention Plan	Compliance with the surface water quality standards	Monthly	Included in Construction Cost Additional cost on Water Quality

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
	Oxygen Demand, Biochemical Oxygen Demand, Ammonium Nitrogen, Nitrate Nitrogen, Total Kjeldahl Nitrogen, Total Nitrogen, Ortho Phosphate Phosphorus, Total Phosphorus, Fluoride, Manganese, Selenium, Sulfur	within the scope of ESIA Studies			Documentation: Grievance records	Resources According to Their Classes in Terms of General Chemical and Physicochemical Parameters) of the Surface Water Control Regulation along with WBG EHS Guidelines	ESS3: Resource Efficiency and Pollution Prevention and Management WBG EHS Guidelines	Number of water quality related grievances		Measurement and Analysis: USD 5,000 / Year
Groundwater Quality	pH, Conductivity, Dissolved Oxygen, Oxygen Saturation, Salinity, Suspended Solids, Total Cyanide, Sulphate, Chloride, Nitrate, Arsenic, Boron, Mercury, Cadmium, Lead, Trichloroethylene, Phosphate, Ammonium, Total Pesticide, Mineral Oil and Derivatives	Baseline measurement point (GW-1) determined within the scope of ESIA Studies	Contractor	Every 6 months and if there is a complaint or in case of soil contamination	Sampling and analysis (by accredited and competent firms) Documentation: Grievance records	-The limit values specified in Regulation on Water Intended for Human Consumption and WHO Drinking Water Guidelines	Regulation on Water Intended for Human Consumption WHO Drinking Water Guidelines Pollution Prevention Plan ESS3: Resource Efficiency and Pollution Prevention and Management WBG EHS Guidelines	Compliance with the groundwater quality standards Number of groundwater quality related grievances	Monthly	Included in Construction Cost Additional cost on Groundwater Quality Measurement and Analysis: USD 5,000 / Year
Seismicity resistance of the built structure	Project components following large seismic events occurred (to check in terms of their resilience/ durability)	Project route and all engineering structures	Contractor	After an earthquake	Visual observations at all routes and structures Documentation: Building permits and certificates	-	Regulation on Structures to be Built in Disaster Areas Türkiye Building Earthquake Regulation Emergency Preparedness and Response Plan ESS4: Community Health and Safety WBG EHS Guidelines	Number of related accidents/incidents recorded Effective implementation of the Emergency Preparedness and Response Plan Damage situation after the earthquake	Monthly	Included in Construction Cost
Waste Management	Excavation Waste	Project Route and Excavation Storage Areas	Contractor	Continuously during excavations	Visual observations at site Documentation: Waste records on reuse and disposal	-	Regulation on Control of Excavation Soil, Construction and Debris Wastes Pollution Prevention Plan ESS3: Resource Efficiency and Pollution Prevention and Management WBG EHS Guidelines	Amount of excavation material and amount of excavated material reused	Monthly	Included in Construction Cost
Soil Management	Topsoil	Project Route and Excavation Storage Areas	Contractor	Continuously during excavations	Documentation and visual observations at site	-	Regulation on Control of Excavation Soil, Construction and Debris Wastes Pollution Prevention Plan	Topsoil adequately stripped, temporarily stored at designated areas and appropriately reused	Monthly	Included in Construction Cost

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
							ESS3: Resource Efficiency and Pollution Prevention and Management WBG EHS Guidelines			
Waste Management	Solid Waste and Packaging Waste	Project working areas during construction work	Contractor	Daily	Visual observations at site Documentation: Waste generation and disposal records, notifications on Integrated Environment Information System/Waste Management Application (Waste Declaration System), training records, contracts/protocols regarding waste shipment	-	Waste Management Regulation Regulation on Control of Packaging Wastes Pollution Prevention Plan ESS3: Resource Efficiency and Pollution Prevention and Management WBG EHS Guidelines	Ratio of reused/recycled/recovered wastes to total wastes generated All types of wastes transferred to the relevant recycling/disposal facilities Number of incidents related to soil contamination due to improper waste management Number and percent of the personnel trained on waste management	Monthly	Included in Construction Cost
Waste Management	Non-Hazardous and Inert Wastes	Project working areas during construction work	Contractor	Daily	Visual observations at site Documentation: Waste generation and disposal records, notifications on Integrated Environment Information System/Waste Management Application (Waste Declaration System), training records, contracts/protocols regarding waste shipment	-	Waste Management Regulation Pollution Prevention Plan ESS3: Resource Efficiency and Pollution Prevention and Management WBG EHS Guidelines	Ratio of reused/recycled/recovered wastes to total wastes generated All types of wastes transferred to the relevant recycling/disposal facilities Number and percent of the personnel trained on waste management	Monthly	Included in Construction Cost
Waste Management	Hazardous Wastes	Project working areas during construction work	Contractor	Daily	Visual observations at site Documentation: Waste generation and disposal records, notifications on Integrated Environment Information System/Waste Management Application (Waste Declaration System), training records, contracts/protocols regarding waste shipment	-	Waste Management Regulation Pollution Prevention Plan ESS3: Resource Efficiency and Pollution Prevention and Management WBG EHS Guidelines	Ratio of reused/recycled/recovered wastes to total wastes generated Wastes separately stored depending on their hazardous class and type of the waste All types of wastes transferred to the relevant recycling/disposal facilities Number of incidents related to soil contamination due to improper waste management	Monthly	Included in Construction Cost

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
								Number and percent of the personnel trained on waste management		
Waste Management	Medical Wastes	Infirmary	Contractor	Daily	Visual observations at site Documentation: Waste generation and disposal records, notifications on Integrated Environment Information System/Waste Management Application (Waste Declaration System), training records, contracts/protocols regarding waste shipment	-	Medical Waste Control Regulation Pollution Prevention Plan ESS3: Resource Efficiency and Pollution Prevention and Management WBG EHS Guidelines	Wastes separately stored depending on their hazardous class and type of the waste All types of wastes transferred to the relevant recycling/disposal facilities Number and percent of the personnel trained on waste management	Monthly	Included in Construction Cost
Waste Management	Vegetable Oils	Camp Site (Kitchen)	Contractor	Daily	Visual observations at site Documentation: Waste generation and disposal records, notifications on Integrated Environment Information System/Waste Management Application (Waste Declaration System), training records, contracts/protocols regarding waste shipment	-	Regulation on Control of Vegetable Waste Oils Pollution Prevention Plan ESS3: Resource Efficiency and Pollution Prevention and Management WBG EHS Guidelines	Wastes separately stored depending on their hazardous class and type of the waste All types of wastes transferred to the relevant recycling/disposal facilities Number and percent of the personnel trained on waste management	Monthly	Included in Construction Cost
Waste Management	Waste Batteries and Accumulators	Construction Site	Contractor	Daily	Visual observations at site Documentation: Waste generation and disposal records, notifications on Integrated Environment Information System/Waste Management Application (Waste Declaration System), training records, contracts/protocols regarding waste shipment	-	Regulation on Control of Waste Batteries Pollution Prevention Plan ESS3: Resource Efficiency and Pollution Prevention and Management WBG EHS Guidelines	Wastes separately stored depending on their hazardous class and type of the waste All types of wastes transferred to the relevant recycling/disposal facilities Number and percent of the personnel trained on waste management	Monthly	Included in Construction Cost
Waste Management	End of Life Tires	Construction Site	Contractor	Daily	Visual observations at site	-	Regulation on Control of End-of-Life Tires Pollution Prevention Plan	Wastes separately stored depending on	Monthly	Included in Construction Cost

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
					Documentation: Waste generation and disposal records, notifications on Integrated Environment Information System/Waste Management Application (Waste Declaration System), training records, contracts/protocols regarding waste shipment		WBG EHS Guidelines ESS3: Resource Efficiency and Pollution Prevention and Management	their hazardous class and type of the waste All types of wastes transferred to the relevant recycling/disposal facilities Number and percent of the personnel trained on waste management		
Biodiversity (Habitat Monitoring)	Critical and Natural Habitats (Grey dunes, coastal dune heaths and ponds)	Burnaz dunes (Critical habitat)	Contractor in supervision of DGII	Twice a year (in spring and autumn)	Whether or not the habitat will be impacted by the works to be done will be determined through observation and reported once completed by a Botanist. (In this context, if any habitat impact is observed as a result of construction, appropriate precautions will be taken.)	Habitat statuses	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Habitat quality Species diversity and population trends	Biannual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in Construction Cost along with additional cost on Ecological Survey USD 5,000
Biodiversity	<i>Sternbergia pulchella</i> population	36,9468°-36,04646° collected area; re-located area 36,94652°-36,02756° (100 m radius)	Contractor in supervision of DGII	Once a year (in March)	The area where the species is distributed and the re-located area will be monitored and reported by a Botanist. (If the population in the re-located area decreases according to the monitoring results, the bulbs will be collected and the study will be repeated.)	Population statuses of species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Species diversity and population trends	Annual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in Construction Cost along with additional cost on Ecological Survey USD 5,000
Biodiversity	<i>Cyclamen persicum</i> population	36,94758°-36,04908° collected area; re-located area 36,94602°-36,02680° (50 m radius)	Contractor in supervision of DGII	Once a year (in March)	The area where the species is distributed and the re-located area will be monitored and reported by a Botanist. (If the population in the re-located area decreases according to the monitoring results, the bulbs will be collected and the	Population statuses of species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Species diversity and population trends	Annual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in Construction Cost along with additional cost on Ecological Survey USD 5,000

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
					study will be repeated.)					
Biodiversity	<i>Hyacinthella millingenii</i> population	36,92351°-36,97144° collected area; re-located area 36,92085°-36,9665° (50 m radius)	Contractor in supervision of DGII	Once a year (in March)	The area where the species is distributed and the re-located area will be monitored and reported by a Botanist. (If the population in the re-located area decreases according to the monitoring results, the bulbs will be collected and the study will be repeated.)	Population statuses of species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Species diversity and population trends	Annual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in Construction Cost along with additional cost on Ecological Survey USD 5,000
Biodiversity	<i>Echinops dumanii</i> population	Burnaz dunes (Critical habitat)	Contractor in supervision of DGII	Once a year (between May-June)	The species is located within critical habitat. No work will be carried out in this area. But in case of an accident, the population of the species in the area will be counted and its seeds will be collected and delivered to the gene bank. Monitoring studies will be carried out by a Botanist.	Population statuses of species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Species diversity and population trends	Annual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in Construction Cost along with additional cost on Ecological Survey USD 5,000
Biodiversity	<i>Astragalus antiochianus</i> population	Burnaz dunes (Critical habitat)	Contractor in supervision of DGII	Once a year (between May-June)	The species is located within critical habitat. No work will be carried out in this area. But in case of an accident, the population of the species in the area will be counted and its seeds will be collected and delivered to the gene bank. Monitoring studies will be carried out by a Botanist.	Population statuses of species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Species diversity and population trends	Annual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in Construction Cost along with additional cost on Ecological Survey USD 5,000
Biodiversity	<i>Invasive alien species</i>	Project area and Aol	Contractor in supervision of DGII	Yearly once in vegetation period	Invasive alien species monitoring studies will be carried out and reported annually by a Botanist. (In this context, if any invasive species is detected, the necessary measures	Introduction of invasive alien species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Absence of AIS	Annual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in Construction Cost along with additional cost on Ecological Survey USD 10,000

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
					for eradication will be recommended and the process will be carried out.)					
Biodiversity	<i>Testudo graeca</i> population	Project area and Aol	Contractor in supervision of DGII	Between April and September once a month	Fencing and turtle stuck (suggested to be installed) will be monitored, and <i>Testudo graeca</i> specimen in the construction area will be removed and re-located outside the construction area.	Population statuses of species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Species diversity and population trends	Biannual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in Construction Cost along with additional cost on Ecological Survey USD 10,000
Biodiversity	<i>Acanthodactylus schreiberi</i> population	Burnaz dunes (Critical habitat)	Contractor in supervision of DGII	Between April and September once a month	Monitoring of <i>Acanthodactylus schreiberi</i> species by an Expert Herpetologist.	Population statuses of species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Habitat quality Species diversity and population trends	Biannual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in Construction Cost along with additional cost on Ecological Survey USD 10,000
Biodiversity (Bird Migration Monitoring)	Migratory Birds	Burnaz Spring Groundwater Protection Area	Contractor in supervision of DGII	Twice a year (in spring and autumn)	Carrying out and reporting of at least 15-day/period bird migration monitoring studies by an Ornithologist and his/her assistant during migration periods. (The results will be evaluated and if there are any further measures need to be taken, they will be reported and the current BMP will be updated)	Population statuses of species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Species richness Population abundance	Biannual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in Construction Cost along with additional cost on Ecological Survey USD 20,000
Chemical and Hazardous Materials	Fuel,oil and hazardous materials (storage and transportation)	Project working areas during construction work	Contractor	Daily	Visual observations at site Documentation: Driver training certificate	-	Labor Law and Regulation on Classification, Labeling and Packaging of Substances and Mixtures Regulation on the Transport of Dangerous Goods by Road ESS4: Community Health and Safety Emergency Preparedness and Response Plan	Number of leakages/spill incidents Number of OHS related incidents Number of the non-compliances with the applicable standards (Target: Zero non-compliance)	Monthly	Included in Construction Cost
Local Economy and Employment	Records of local employment and women employment Employment opportunities information provided to local settlements	All project working areas	Contractor	Monthly	Documentation, Training Records, Percentage of local people, women etc. groups among employees GM records	-	Labor Law and Regulation on Classification, Labeling and Packaging of Substances and Mixtures ESS2 Labor and Working Conditions Employment and Training Plan	Local employment rate Female employment rate Number of employment opportunities notifications made to local settlements Local procurement rate	Monthly	Included in Construction Cost

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
	local procurement Mukhtar information Vulnerable groups inclusion							Headman information number Vulnerable groups project opportunities, information, number of engagement activities		
GBVH requirements for workers	Safety working conditions Training records. Preventive corrective measures taken Internal audit records Trainings Contracts Code of Conduct GM records	All project working areas	Contractor	Monthly	Documentation, (contracts, code of conducts) Training Records, GM records		Labor Law and Regulation on Classification, Labeling and Packaging of Substances and Mixtures ESS2: Labor and Working Conditions Labour Management Plan Workers GM	Number of complaints collected via Workers' GM and resolving rate Number of complaints related to SEA/SH from local community directed against project workers, and recorded in stakeholder SEP	Monthly	Included in Construction Cost
Child Labour and Forced Labour	Safety working conditions Training records. Preventive corrective measures taken Internal audit records Trainings Contracts Code of Conduct GM records	Trainings Contracts Code of Conduct GM	Contractor	Monthly	Documentation, (contracts, code of conducts) Training Records, GM records		Labor Law and Regulation on Classification, Labeling and Packaging of Substances and Mixtures ESS2: Labor and Working Conditions Labour Management Plan Workers GM	Number of complaints collected via Workers' GM and resolving rate	Monthly	Included in Construction Cost
Discrimination	Safety working conditions Training records. Preventive corrective measures taken Internal audit records Trainings Contracts Code of Conduct GM records	All project working areas	Contractor	Monthly	Documentation, (contracts, code of conducts) Training Records, GM records		Labor Law and Regulation on Classification, Labeling and Packaging of Substances and Mixtures ESS2: Labor and Working Conditions Labour Management Plan Workers GM	Number of complaints collected via Workers' GM and resolving rate Number of relevant cases submitted through Stakeholder GM	Monthly	Included in Construction Cost
Impacts on Livelihoods	Engagement records.	Residential areas directly or indirectly affected by the project	Contractor	Monthly	On-site visual observations/ inspections	RP and ESIA requirements	SEP including GM RP/LRP	Number of grievance records on impacts on livelihood	Monthly	Included in Stakeholder Engagement Plan Budget:

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
	Preventive corrective measures taken Trainings for workers GM records				Grievance records Stakeholder/ PAP information records Training records RP implementation reports		ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement ESS10: Stakeholder Engagement and Information Disclosure	Number and amount of Livelihood restoration supports to be provided Number and amount of RP compensation payments records Number of trainings provided to workers Number of information provided to local PAPs		USD 320,000 and RP Budget Additional Training Cost: USD 10,000
Impacts on Vulnerable Groups	Fulfillment of all VG consultations and notifications defined in the SEP document. All preventive corrective measures information will be provided to the VGs. All workers will be trained on the VGs in the Project Aol. All VG complaints are resolved in a timely manner or closed to mutual satisfaction in GM records	Residential areas directly or indirectly affected by the project	Contractor	Monthly	On-site visual observations/ inspections Grievance records Stakeholder/ PAP information records Training records RP implementation reports	RP and ESIA requirements	SEP including GM RP/LRP ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement ESS10: Stakeholder Engagement and Information Disclosure	Number of grievance records from VGs Number and amount of Livelihood restoration supports to be provided Number and amount of RP compensation payments records Number of trainings provided to workers Number of information provided to local PAPs	Monthly	Included in Stakeholder Engagement Plan Budget: USD 320,000 and RP Budget Additional Training Cost: USD 10,000
OHS Management	OHS	All project working areas	Contractor	Daily	On-site visual observations/ inspections (safety working conditions on-site) Documentation: Training records, internal HS audit records, occupational accident records/reports, OHS documents, grievance records, non-compliance reports	-	Labor Law and Regulation on Classification, Labeling and Packaging of Substances and Mixtures ESS2: Labor and Working Conditions Occupational Health & Safety Management Plan SEP including GM	Number of accident-free days (Target: Zero accident) Compliance rate with OHS Performance criteria Number of trainings provided on OHS Participation rate of employees in OHS training Number of complaints collected via Workers' GM and resolving rate	Monthly	Included in Construction Cost
Community Health and Safety	Training records Grievance records Information gathered through Public Consultation	Project working areas during construction work	Contractor	Monthly	Monitoring at site, Training Records Grievance Records	-	ESS4: Community Health and Safety Emergency Preparedness and Response Plan Community Health and Safety Management Plan SEP including GM	Number of community safety activities implemented, Number of community safety trainings and GBVH&SEA/SH performed	Monthly	Included in Construction Cost

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
								Number of grievance recorded Project health and safety information provided to the local PAPs and vulnerable groups		
Traffic (Transport) Management	Training records Grievance records Information gathered through Public Consultation	Office, project working areas during construction work	Contractor	Monthly	Documentation	-	ESS4: Community Health and Safety Community Health and Safety Management Plan Traffic (Transportation) Management Plan SEP including GM	Number of complaints about traffic problems, Number of traffic training provided to workers Road safety and traffic measures information provided to the local PAPs and vulnerable groups	Monthly	Included in Construction Cost
Cultural Heritage	Chance finds	Project area	Contractor	Daily	On-site visual observations / inspections Documentation: Chance find records, correspondence with relevant institutions, records on stakeholder engagement	-	Law on Preservation of Cultural and Natural Assets Convention on the Protection of the World Cultural and Natural Heritage UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage ESS1: Assessment and Management of Environmental and Social Risks and Impacts ESS8: Cultural Heritage Cultural Heritage Management Plan	Number of chance finds Number of personnel trained on chance find	Monthly	Included in Construction Cost
Population Influx Impact on the social and economic daily life of the affected settlement	Local employment SEP activities records GM records The Workers' Code of Conducts Workers trainings	Residential areas directly or indirectly affected by the project	Contractor	Monthly	Stakeholder Engagements Regular information / consultation with the Aol communities GM records	-	ESS1: Assessment and Management of Environmental and Social Risks and Impacts Community Relations Plan Stakeholder Engagement Plan	% of local employment SEP activities records GM records The Workers' Code of Conducts Workers trainings given Participants of the trainings	Monthly	Included in Construction Cost
Infrastructure	Permissions SEP activities on community information GM Records	Project affected settlements	Contractor	Quarterly	Stakeholder Engagements Regular information / consultation with the Aol communities GM records	-	ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement ESS10: Stakeholder Engagement and Information Disclosure Resettlement Action Plan Stakeholder Engagement Plan Community Relations Plan	Permission number SEP activities on community information numbers GM Records on infrastructure	Monthly	Included in Construction Cost
Livelihoods	Local employment Provided RP/LRP livelihood supports	Residential areas directly or indirectly affected by the project	Contractor	Monthly	Regular information / consultation with the public affected by the project, field	-	ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement ESS10: Stakeholder Engagement and Information Disclosure	Local employment rate Provided number and amount of RP/LRP livelihood supports	Monthly	Included in Construction Cost

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
	GM records on livelihood issues				reports prepared on RP implementation		Resettlement Action Plan Stakeholder Engagement Plan Community Relations Plan	GM records on livelihood issues		
Impact on Vulnerable Groups	Local employment information to VG VG SEP activities Provided RP/LRP supports GM records from VGs	Residential areas directly or indirectly affected by the project	Contractor	Monthly	Regular information / consultation with the Aol communities GM records	-	ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement ESS10: Stakeholder Engagement and Information Disclosure Resettlement Action Plan Stakeholder Engagement Plan Community Relations Plan	Number of local employment information to VG VG SEP activities records Number and amount of provided RP/LRP supports GM records from VGs	Monthly	Included in Construction Cost

* In addition, quarterly reports will be prepared by the third-party E&S consultant and submitted to DGII PIU for further submission to the World Bank (see Figure 3).

Table 9. Monitoring Plan – Operation Phase

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
Increase in Noise Levels and Vibration	Noise and Vibration	Baseline measurement points determined within the scope of ESIA Studies / Closest settlement in case of complaint	TCDD	Quarterly for the first year of operation, every 2 years afterwards or in case of a complaint	Noise level measurements (by accredited and competent firms) Documentation: Grievance records, measurement reports	Baseline measurement results specified in the ESIA Report	Regulation on Environmental Noise Control Site specific Pollution Prevention Plan to be prepared ESS1: Assessment and Management of Environmental and Social Risks and Impacts SEP including GM	No exceedance of noise/vibration limit values observed in noise/vibration measurements Number of noise related community grievances	Quarterly for the first year & Annually after	Additional cost on Noise Measurement and Analysis: USD 10,000 / Year
Quality of the engineering structures considering the occurrence of natural disasters	Maintenance records Incident records	Project route and all engineering structures	TCDD	After a earthquake or other natural disasters	Visually in all routes and engineering structures Documentation: Maintenance records, incident records	-	Regulation on Structures to be Built in Disaster Areas Türkiye Building Earthquake Regulation Emergency Preparedness and Response Plan ESS1: Assessment and Management of Environmental and Social Risks and Impacts	Number of related incidents/accidents recorded Number of maintenance and repairs performed per year No significant damage observed situation after an earthquake or other natural disasters	Annually	No additional cost Included in the operation costs
Waste Management	Solid Waste and Packaging Waste	Stations	TCDD	Daily	Visual monitoring at site Documentation: Waste generation and disposal records, notifications on Integrated Environment Information System/Waste Management Application (Waste Declaration System), training records, contracts/protocols regarding waste shipment	-	Waste Management Regulation Regulation on Control of Packaging Wastes Site specific Pollution Prevention Plan to be prepared Site specific Waste Management Plan to be prepared ESS3: Resource Efficiency and Pollution Prevention and Management WBG EHS Guidelines	Ratio of reused/recycled/recovered wastes to total wastes generated All types of wastes transferred to the relevant recycling/disposal facilities Number of incidents related to soil contamination due to improper waste management Number and percent of the personnel trained on waste management	Quarterly	Included in the operation costs
Waste Management	Non-Hazardous and Inert Wastes	Stations	TCDD	Daily	Visual monitoring at site Visual control of waste and garbage spilled along the railway route and periodic collection of these garbage, separation Documentation: Waste generation and disposal records, notifications on Integrated Environment Information System/Waste Management Application (Waste	-	Waste Management Regulation Site specific Pollution Prevention Plan to be prepared Site specific Waste Management Plan to be prepared ESS3: Resource Efficiency and Pollution Prevention and Management WBG EHS Guidelines	Ratio of reused/recycled/recovered wastes to total wastes generated All types of wastes transferred to the relevant recycling/disposal facilities	Quarterly	Included in the operation costs

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
					Declaration System), training records, contracts/protocols regarding waste shipment					
Waste Management	Waste Batteries and Accumulators	Stations	TCDD	Daily	Monitoring at site\ Documentation: Waste generation and disposal records, notifications on Integrated Environment Information System/Waste Management Application (Waste Declaration System), training records, contracts/protocols regarding waste shipment	-	Regulation on Control of Waste Batteries Site specific Pollution Prevention Plan to be prepared Site specific Waste Management Plan to be prepared ESS3: Resource Efficiency and Pollution Prevention and Management WBG EHS Guidelines	Wastes separately stored depending on their hazardous class and type of the waste All types of wastes transferred to the relevant recycling/disposal facilities	Quarterly	Included in the operation costs.
Emergency Preparedness and Response	Emergency situations Corrective preventive actions taken Correspondence with relevant stakeholders	All project areas	TCDD	Weekly	Regular controls of the Route Safety Regular inspection / maintenance to ensure automatic doors installation and smooth operation in all level crossings	-	ESS4: Community Health and Safety WBG EHS Guidelines Community Health and Safety Management Plan Traffic (Transportation) Management Plan	Number of emergency situations Number of corrective prevention actions	Quarterly	Included in the operation costs.
OHS Management	OHS	All project areas	TCDD	Daily	On-site visual observations/ inspections Documentation: Training records, internal HS audit records, grievance records	-	Labor Law and Regulation on Classification, Labeling and Packaging of Substances and Mixtures ESS2 Labor and Working Conditions WBG EHS Guidelines Employment and Training Plan	Number of the health issues (Target: Zero health issues) Compliance rate with OHS Performance criteria Number of grievances recorded	Quarterly	Included in the operation costs
Biodiversity (Habitat Monitoring)	Critical and Natural Habitats (Grey dunes, coastal dune heaths and ponds)	Burnaz dunes (Critical habitat)	TCDD	Twice a year (in spring and autumn) for one year in operation phase Following the one-year study, the need for ongoing monitoring of the areas will be re-assessed	Following the construction, observation studies will be conducted twice a year (in spring and autumn) to determine whether there has been any impact on the habitat by a Botanist.	Habitat statuses	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Habitat quality Species diversity and population trends	Biannual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in the operation costs
Biodiversity	<i>Sternbergia pulchella</i> population	36,9468°-36,04646° collected area; re-located area 36,94652°-	TCDD	Once a year (in March) for one year in operation phase	The area where the species is distributed and the re-located area will be monitored	Population statuses of species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Species diversity and population trends	Annual (Monitoring Reports in line with the Biodiversity Monitoring	Included in the operation costs

Issue	Monitoring Parameter	Monitoring Location	Responsible Party for Implementation	Monitoring Frequency / Timing	Monitoring Method	Threshold Values (when available)	Management Plan detailing Monitoring Requirements / Relevant Legislation - Standard	Key Performance Indicator	Reporting Frequency	Implementation Cost
		36,02756° (100 m radius)			and reported by a Botanist. (If the population in the re-located area decreases according to the monitoring results, the bulbs will be collected and the study will be repeated)				and Evaluation Program)	
Biodiversity	<i>Cyclamen persicum</i> population	36,94758° - 36,04908° collected area; re-located area 36,94602° - 36,02680° (50 m radius)	TCDD	Once a year (in March) for one year in operation phase	The area where the species is distributed and the re-located area will be monitored and reported by a Botanist. (If the population in the re-located area decreases according to the monitoring results, the bulbs will be collected and the study will be repeated)	Population statuses of species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Species diversity and population trends	Annual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in the operation costs
Biodiversity	<i>Hyacinthella millingenii</i> population	36,92351° - 36,97144° collected area; re-located area 36,92085° - 36,9665° (50 m radius)	TCDD	Once a year (in March) for one year in operation phase	The area where the species is distributed and the re-located area will be monitored and reported by a Botanist. (If the population in the re-located area decreases according to the monitoring results, the bulbs will be collected and the study will be repeated)	Population statuses of species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Species diversity and population trends	Annual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in the operation costs
Biodiversity	<i>Invasive alien species</i>	Project area and Aol	TCDD	Once for one year in operation phase	Once the project is put into operation, annual invasive species monitoring will be carried out for one year to determine whether there are any impacts resulting from the project.	Introduction of invasive alien species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Absence of AIS	Annual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in the operation costs
Biodiversity (Bird Migration Monitoring)	Migratory Birds	Burnaz Spring Groundwater Protection Area	TCDD	Twice a year (in spring and autumn) for one year in operation phase	Carrying out and reporting of at least 15-day/period bird migration monitoring studies by an Ornithologist and his/her assistant during migration periods for one year.	Population statuses of species	Biodiversity Management Plan ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Species richness Population abundance	Biannual (Monitoring Reports in line with the Biodiversity Monitoring and Evaluation Program)	Included in the operation costs

6.3 Capacity Development and Training

The Project Owner is set to implement an ESMP training and awareness program that will focus on the identified social and environmental risks, along with the measures in place to prevent, minimize, and mitigate any adverse impacts.

The organizational chart of DGII and the E&S capacity requirements of the contractor to be appointed are provided in Section 5.1.

The training, which is stated in Terms of Reference (ToR) document, provided to all PIU personnel in previous periods as part of the project is shown in Table 10.

Table 10. Information on Trainings

Training and Content	Date
Biodiversity and Cultural Heritage Aspects of Linear Projects <ul style="list-style-type: none"> Environmental risk assessment methods National and international legislations Risk assessment in linear infrastructure projects Assessment of impacts on biodiversity in linear infrastructure projects and mitigation measures Assessment of impacts on environment in linear infrastructure projects and mitigation measures Assessment of impacts on cultural heritage in linear infrastructure projects and mitigation measures 	29.05.2023
Road Safety and Traffic Safety <ul style="list-style-type: none"> Defensive driving theoretical and on-site training Training on management of driving fatigue process Night driving training 	23.05.2023 24.05.2023
Accident Investigation and Root Cause Analysis <ul style="list-style-type: none"> Accident investigation techniques Accident investigation with root cause analysis Case studies 	31.05.2023

In particular, the capacity of the PIU team needs to be strengthened to take more effective actions on social issues. In this context, a social specialist was included in the DGII PIU in October 2024.

The training program/modules for the sub-project will encompass a comprehensive range of topics to ensure that all project participants are well-informed and equipped to handle their roles effectively and responsibly. The curriculum will include, but is not limited to, the following subjects:

- **Purpose of the Environmental and Social Management Plan (ESMP):** Understanding the role and importance of the ESMP in relation to the project activities.
- **Management Plan Requirements and Monitoring Activities:** Details on the requirements specified in management plans and the monitoring activities to be conducted within the scope of these plans.
- **Environmental and Social Sensitivities:** Recognizing and understanding the sensitive environmental and social receptors within and around the project area.
- **Awareness of Potential Risks and Impacts:** Raising awareness about the possible risks and impacts associated with the project activities.

- **Grievance Mechanism:** Information on the grievance mechanism developed for the project, including its process, procedures, service standards, contact channels, and employee rights.
- **Occupational Health and Safety, First Aid, and Emergency Preparedness:** Training in health and safety at the workplace, first aid techniques, and preparedness for emergencies.
- **Code of Conduct:** Instructions on the professional code of conduct.
- **Community Communication:** Techniques and principles for effective communication with the local community.
- **Training on Gender-Based Violence and Harassment:** Training that includes aspects of gender-based violence (GBV), sexual exploitation and abuse/sexual harassment (SEA/SH).
- **Traffic and Road Safety Principles:** Training on principles of traffic and road safety, particularly relevant to the project area.
- **Waste Management Training:** Instruction aimed at the sorting, storage, and environmental planning of waste.
- **Training on Pollution Prevention and Resource Efficiency:** Understanding pollution sources and types and the importance of pollution prevention in environmental protection along with concepts of resource efficiency and sustainability.
- **Training on Biodiversity:** The value of biodiversity for ecosystems, economies, and human well-being and the role of biodiversity in maintaining ecosystem health and function.
- **Training on Cultural Management:** The importance of cultural heritage and contemporary culture and conservation/preservation techniques for tangible and intangible cultural heritage.

This training program is designed to cover a wide array of critical topics, ensuring that all project participants are well-prepared to contribute to the project's success while adhering to the highest standards of safety, ethics, and environmental stewardship.

Details of the trainings prepared for the Contractor and the DGII within the scope of requirements of this ESMP are also presented in Table 11.

Table 11. Consolidated Training Program

Training Items	Specific Training Topics	Responsible Party	Target Group	Period	Budget
Induction Training	<ul style="list-style-type: none"> Introduction to the organization Workplace Culture and Environment Role specific training Compliance and legal requirements Introduction to teams and departments 	Contractor	<ul style="list-style-type: none"> Newly recruited Personnel Personnel of newly contracted subcontractor-service provider 	Whenever needed	No additional cost
Environmental Management	<ul style="list-style-type: none"> Pollution Prevention and Resource Efficiency Waste Management Requirements of the National Legislation and Project Standards along with the ESMP 	Contractor DGII	Project all personnel	Once before the commencement of construction activities and quarterly throughout the lifecycle of the sub-project	No additional cost
OHS Management	<ul style="list-style-type: none"> Introduction to Occupational Health and Safety 	Contractor DGII	Project all personnel	Once before the commencement of construction activities and	No additional cost

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Training Items	Specific Training Topics	Responsible Party	Target Group	Period	Budget
	<ul style="list-style-type: none"> Workplace Hazards and Risk Assessment Emergency Procedures Personal Protective Equipment (PPE) Construction and Site-Specific Safety Incident Reporting, Root Cause Analysis and Investigation 			whenever needed	
Biodiversity Management	<ul style="list-style-type: none"> Introduction to biodiversity Threats to Biodiversity Sustainable Practices 	Contractor DGII	Project all personnel	Once before the commencement of construction activities and quarterly throughout the lifecycle of the sub-project	No additional cost
Cultural Heritage Management	<ul style="list-style-type: none"> Introduction to cultural heritage Conservation/preservation techniques for tangible and intangible cultural heritage Chance Find Procedures for effective on-site implementation 	Contractor DGII	Project all personnel	Once before the commencement of construction activities and quarterly throughout the lifecycle of the sub-project	No additional cost
Labor Management	<ul style="list-style-type: none"> Code of Conduct Gender-based violence (GBV), sexual exploitation and abuse/sexual harassment (SEA/SH) Worker's GM SEP requirements 	Contractor DGII	Project all personnel	Once before the commencement of construction activities and quarterly throughout the lifecycle of the sub-project	No additional cost
Community Health, Safety Management	<ul style="list-style-type: none"> Traffic and Road Safety Principles Environmental and Social Sensitivities SEP and GM Community Communication/Relations 	Contractor DGII	Project all personnel	Once before the commencement of construction activities and quarterly throughout the lifecycle of the sub-project	No additional cost

