REPUBLIC OF TURKEY
MINISTRY OF TRANSPORT
AND INFRASTRUCTURE

AYGM
Altyapı Yatırımları Genel Müdürlüğü

ÇINAR®
ENGINEERING
CONSULTANCY INC.

FİLYOS PORT AND INDUSTRIAL ZONE RAILWAY CONNECTION PROJECT

CONSTRUCTION IMPACTS MANAGEMENT PLAN

CNR-ZNG-CIMP-002

Final

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ABBREVIATIONS & DEFINITIONS

CIMP	Construction Impacts Management Plan
ÇINAR	Çınar Engineering Consultancy Inc.
DGII	Directorate General of Infrastructure Investments
E&S	Environmental and Social
EHS	Environment, Health and Safety
EHSG	Environmental Health and Safety Guidelines
ESIA	Environmental and Social Impact Assessment
ESIRT	Environment and Social Incidence Response Toolkit
ESMP	Environmental and Social Management Plans
ESMS	Environmental and Social Management System
ESSs	Environmental and Social Standards
IA	Impact Area
IPF	Investment Project Financing
KPI	Key Performance Indicators
OHS	Occupational Health and Safety
RCA	Root Cause Analysis
RCIAP	Regulation on the Control of Industrial Air Pollution
SEHS	Social and Environmental Health Safety
The Project	Filyos Port and Industrial Zone Railway Connection Project
WB	World Bank

1 INTRODUCTION

The management of impacts on environment and social components during construction will include the following two groups of mitigation measures defined in relation to the potential impacts of the project during land preparation and construction phase of the project.

The mitigation measures can be grouped in:

- Standard mitigation measures that are applicable throughout the project Impact Area (IA);
- Specific mitigation measures to be applied at specific locations or a specific component of the environment and affected community in the project IA.

1.1 Scope

The Construction Impacts Management Plan (CIMP) encompasses both categories of mitigation measures. These measures aim to either eliminate the impacts of the project where feasible or minimize them to acceptable levels if complete elimination of the impact is unattainable.

The Directorate General of Infrastructure and Investments (DGII) will designate a Contractor for the project. Both DGII and this appointed Contractor will share joint and individual responsibilities for ensuring the fulfillment of commitments outlined in the Environmental and Social Management Plan (ESMP). DGII will delineate the responsibilities for complying with the ESIA commitments within the contract with the Contractor. Furthermore, DGII will assume the duty of overseeing the Contractor's adherence to the contractual stipulations.

Regarding the formulation of management plans specific to DGII and the Contractor's project activities, this management plan provides explicit guidance. It outlines the requisites for managing environmental and social impacts.

DGII has the authority to modify the content of this management plan by following the project change management procedure in the event of:

- Changes in the regulatory requirements,
- Requirements and conditions imposed by relevant authorities during the approval on the ESIA,
- Availability of new information on the baseline conditions of the project area,
- Changes adapted to the project system as a result of detailed engineering findings.

1.2 Objectives

This CIMP aims to define mitigation measures that can be used to eliminate the residual impacts of the project, if possible, or to reduce them to acceptable levels.

1.3 Roles and Responsibilities

As stated in the ESIA Report, Contractors[1] are expected to comply with National Regulations and shall also conform to international standards including relevant Environmental and Social Standards (ESS) of the World Bank (WB). The detailed information on these requirements is covered in the ESIA report and Contractors are required to ensure that their activities comply with all relevant Turkish legislation and international requirements listed in the relevant chapter of the ESIA.

The contractor is required to act according to the social, environmental, health and safety (SEHS) policy to be established for the Project. Contractor's SEHS obligations and responsibilities will be clearly defined.

The contractor will be responsible for the implementation and compliance of all relevant mitigation measures and conditions outlined in the ESIA and ESMP. The contractor will need to demonstrate that the mitigation measures defined in the ESIA and ESMP are taken, implemented and monitored at the desired level by the DGII.

The Contractors will establish their own Environmental and Social Management System (ESMS) in compliance with the requirements of ISO 14001:2004 Environmental Management System and shall ensure that ESIA and ESMP requirements are addressed and met.

The ESMS will comprise ESMPs and Procedures which will be submitted to DGII for review and approval and will:

- Include the “Outline of the ESIA Requirements and Commitments”;
- Describe how applicable ESIA requirements, commitments and contractual requirements will be met;
- Describe the procedures according to which the project changes (e.g. design changes, additional land areas) will be managed in terms of environmental and social aspects;
- Describe how Contractor will ensure the commitments and contractual/legal requirements are complied with in line with project standards (monitoring, auditing and inspection programme);
- Describe the procedures to ensure that the project related concerns and grievances will be managed in terms of Stakeholder Engagement Plan;
- Provide a set of E&S Key Performance Indicators (KPIs) to cover at least (but not be limited to) the following areas based on the outline of the applicable commitments and contractual requirements:
    - Compliance with the ESMS
    - E&S accidents
    - Environmental emissions
    - Waste management
    - Water and Wastewater Management
    - Occupational health and safety (OHS)
    - Labor management
    - Local procurement
    - Local supply
    - Complaints about the Project
- Describe how Contractor will record and report their compliance;

[1] *Contractors awarded for performing activities during the Land Preperation and Construction Phase of the Project.*

- Describe how appropriately experienced and qualified personnel will be employed in the role of Contractor's E&S representative(s) and on-site inspectors subject to the approval of DGII;
- Describe the responsibilities of the dedicated E&S team clearly.
- Describe workforce training to ensure that all personnel are aware of their E&S responsibilities with reference to Contractor E&S Management Plan(s);
- Describe how the performance of all contractors and subcontractors with respect to the E&S requirements will be met;
- Describe E&S and OHS records including based on the outline of the applicable commitments and contractual requirements. These records include but are not limited to:
    - Record of events related to E&S issues and OHS
    - E&S and OHS non-compliance record
    - E&S and OHS activities track record
    - E&S and OHS training records
    - Air and water monitoring records
    - Waste registration
    - E&S and OHS monthly reports
    - Registration of complaints related to the project and complaint closing forms signed by the complainants
    - Project consultation / public participation meetings and records of stakeholder relations
    - Land entry and exit protocols signed by landowners / users
    - Records and documents related to compensation payments
    - Employment records (See Employment and Training Plan)

Contractor will be required to ensure that:

- Reports on E&S and OHS incidents are provided to DGII immediately;
- A programme of regular environmental and social self-inspection and audits is developed and implemented and the results are reported to DGII on a monthly basis as part of E&S monthly reports;
- An Action Tracking System is implemented to provide a mechanism to record and track E&S related actions derived from incidents, non-compliances, complaints, E&S meetings, sub-contractor activities, etc.

The following sections and the relevant Management Plans set out relevant details from the ESIA and ESMPs which the Contractor shall comply with and address through their ESMS. This Statement of E&S Requirements provides Contractor with a concise overview of requirements; however, Contractor is responsible for ensuring that all relevant principles and mitigation measures set out in ESIA are met while undertaking the project activities and the ESIA should be referred to in this regard.

1.4 Organizational and Capacity Requirements

The construction contractor and sub-contractors shall have the primary responsibility to fulfil all project requirements with adequate and qualified personnel working under an appropriate organizational structure and further to ensure that their sub-contractors also comply with the project requirements. Adequate and qualified personnel will be employed by the Contractor to allow the proper management of environmental and social issues, community relations and natural resources within the scope of its operations. Within this context, the organizational structure shall include units which manage environmental and social matters and promote the

implementation of its operations to support the project in harmony with its scope and national and international standards.

In order to provide a solid application of E&S requirements on site, Contractor will be responsible for ensuring that all of its personnel (including contractor and sub-contractor personnel) are aware of their E&S responsibilities. To this aim, the Contractor will develop and implement an E&S training programme to ensure that all site personnel fully understand all the aspects of E&S requirements of the project particularly in terms of potential impacts of activities, mitigation measures, sensitivities in study area, plans/procedures other project documents to be followed, action required in case of unforeseen incidents and roles and responsibilities of Contractor staff and DGII representatives with respect to E&S issues.

The E&S training programme should be submitted to DGII for review and approval within periods defined in related tender documents. Records of the trainings will be kept by the Contractor and will be submitted to DGII when required for auditing purposes.

The Contractor will ensure that all Contractor personnel participate in all training programme including regular site-specific training sessions on E&S issues throughout the course of their contract.

The contractors will ensure that the following competencies are included in their teams as relevant to their scope of work:

- Cultural heritage,
- Ecology,
- Geological / hydrogeological,
- Social / Public Relations,
- Environmental Experts,
- E&S Instructors,
- OHS Specialists,
- Environmental Auditors.

2 LEGAL FRAMEWORK

2.1 National Legislation

Turkish Environmental Law, No. 2872, published in the Official Gazette No. 18132, dated August 11, 1983 explains basic principles that are necessary to protect the environment in line with sustainable environment and sustainable development goals. The Environmental Law provides a legal framework for the development of environmental regulations in accordance with national and international standards. Following its first publication date of 1983, various amendments have been made.

Environmental regulations, by-laws and communiques that are valid within the aforementioned laws are listed in table below.

Table 1. Environmental Regulations, By-laws and Communiques

Regulation Name	Official Gazette Date	Issue
Environmental Permits and Licenses (General)		
Regulation on Environmental Impact Assessment	29.07.2022	31907
Regulation on Environmental Permits and Licenses	10.09.2014	29115
Regulation on Environmental Audit	12.06.2021	31509
Regulation Concerning Environmental Management Services	01.11.2022	32000
Climate Change		
Regulation on Minimization of Ozone Depleting Substances	07.04.2017	30031
Regulation on Monitoring of Green House Gas Emissions	17.05.2014	29003
Land Use and Soils		
Regulation on Control of Soil Pollution and Point Source Contaminated Sites	08.06.2010	27605
Regulation on Protection, Use and Planning of Agricultural Lands	09.12.2017	30265
Regulation on the implementation of articles 17 and 18 of the Forest Law No. 6831	30.11.2021	31675
Regulation on Land Consolidation and On-farm Development Services Implementation	07.02.2019	30679
Regulation Concerning the rehabilitation of the Lands Disturbed by Mining Activities	23.01.2010	27471
Regulation on Pastures	31.07.1998	23419
Water		
Regulation on Surface Water Quality	30.11.2012	28483
Regulation on Water Pollution Control	31.12.2004	25687
Regulation Concerned Water Intended for Human Consumption	17.02.2005	25730
Regulation on Urban Wastewater Treatment	08.01.2006	26047
Regulation Concerning Protection of Groundwater against Pollution and Deterioration	07.04.2012	28257
Monitoring of Surface and Groundwater Regulation	11.02.2014	28910
Regulation on Fishery Products	10.03.1995	22223
Regulation on Control of Pollution Caused by Hazardous Substances in and around the Water Bodies.	26.11.2005	26005
Communique on Sampling of Surface Water, Ground Water and Sediment and Biological Sampling	21.02.2015	29274
Regulation on Protection of Drinking-Potable Water Basins	28.10.2017	30224
Waste Management		

Regulation Name	Official Gazette Date	Issue
Regulation on Control of Packaging Wastes	26.06.2021	31523
Regulation on Waste Management	02.04.2015	29314
Regulation on the Control of Excavation Soil, Construction and Demolition Wastes	18.03.2004	25406
Regulation on the Control of Medical Wastes	25.01.2017	29959
Regulation on the Management of Waste Oils	21.12.2019	30985
Regulation on the Control of Vegetable Waste Oils	06.06.2015	29378
Regulation on the Control of Waste Batteries and Accumulators	31.08.2004	25569
Regulation on the Control of End-of-Life Tires	25.11.2006	26357
Regulation on Mining Wastes	15.07.2015	29417
Regulation on the Landfill of Wastes	26.03.2010	27533
Regulation on the Control of Waste Electrical and Electronic Equipment	26.12.2022	32055
Regulation on the Control of End-of-Life Vehicles	30.12.2009	27448
Regulation on Zero Waste	12.07.2019	30829
Notice on Fuel, Auxiliary Fuel and Alternative Raw Material Derived from Waste	20.06.2014	29036
Regulation on the Control of Collecting Wastes from the Vessels	26.12.2004	25682
Regulation on Recovery of Some Non-Hazardous Wastes	17.11.2011	27967
Air Quality		
Regulation on the Control of Industrial Air Pollution	03.07.2009	27277
Regulation on the Assessment and Management of Air Quality	06.06.2008	26898
Regulation on the Control of Exhaust Gas Emissions	11.03.2017	30004
Management of Chemicals		
Regulation on Classification, Labelling and Package of Materials and Mixtures	11.12.2013	28848
Regulation on Safety Information Forms on Hazardous Substances and Mixtures	13.12.2014	29204
Regulation Regarding Prevention of Major Industrial Accidents and Mitigation of Their Effects	02.03.2019	30702
Regulation Regarding Transport of Hazardous Materials on Highways	18.06.2022	31870
Community and Occupational Health and Safety and Labor and Working Conditions		
Regulation on Occupational Health and Safety Risk Assessment	29.12.2012	28512
Regulation on Occupational Health and Safety Services	29.12.2012	28512
Regulation on Duties, Authority, Responsibilities and Trainings of Occupational Health and Safety Specialists	29.12.2012	28512
Regulation on Procedures and Principles of Occupational Health and Safety Training of Employees	15.05.2013	28648
Regulation on the Occupational Health and Safety Committees	18.01.2013	28532
Regulation on the Health and Safety Measures to be taken in Workplace Buildings and Additions	17.07.2013	28710
Regulation on Protection of Buildings from Fire	19.12.2007	26735
Regulation on the Emergency Cases in Workplaces	18.06.2013	28681
First Aid Regulation	29.07.2015	29429
Regulation on Protection of Workers from Dangers of Explosive Environments	30.04.2013	28633
Communique on Hazard Classes List related to Occupational Health and Safety	26.12.2012	28509
Regulation Concerning the Protection of Workers from Risks Associated with Noise	28.07.2013	28721

Regulation Name	Official Gazette Date	Issue
Regulation Concerning the Protection of Workers from Risks Associated with Vibration	22.08.2013	28743
Regulation on Health and Safety Conditions in the Use of Work Equipment	25.04.2013	28628
Regulation on Occupational Health and Safety on Construction Works	05.10.2013	28786
Regulation on Health and Safety Regarding Temporary and Time Limited Works	23.08.2013	28744
Regulation on Health and Safety Precautions Regarding Working with Chemicals	12.08.2013	28733
Regulation on Health and Safety Signs	11.09.2013	28762
Regulation on Dust Management	05.11.2013	28812
Regulation on Safety Information Forms Regarding Hazardous Materials and Mixtures	13.12.2014	29204
Regulation on Personal Protection Equipment	01.05.2019	30761
Regulation on Usage of Personal Protective Equipment in Workplaces	02.07.2013	28695
Regulation on Vocational Training of the Employees Working in Dangerous and Highly Dangerous Workplaces	13.07.2013	28706
Regulation on the Provisions of Occupational Health and Safety Training of Employees	29.12.2012	28512
Regulation on the Control of Polychlorinated Biphenyl and Polychlorinated Terphenyls	27.12.2007	26739
Regulation on Transportation of Explosives via Highways	24.04.2019	30754
Act on the Procedures and Principles on Manufacture, Import, Transportation, Storing, Sales, Usage, Disposal and Control of Explosive Materials, Hunting Equipment and Similar Exempted from Monopoly	29.09.1987	19589
Regulation on the Implementation of Law Concerning Private Security Services	07.10.2004	25606
Noise		
Regulation on Environmental Noise Control	30.11.2022	32029
Regulation on Environmental Noise Emission Caused by Equipment Used Outdoors	30.12.2006	26392
Social		
Regulation on Implementation of Resettlement Law	02.12.2007	26718
Regulation on the Implementation of Law Concerning Private Security Services	07.10.2004	25606
Others		
Regulation on Traffic in Highway	18.07.1997	23053 (Duplicate)
Regulation on Railway Security	19.11.2015	29537
Regulation on Critical Duties Concerning Railway Security	31.12.2016	29935
Regulation on Earthquake Technique in Construction of Coastal and Harbor Structures, Railway and Airport	18.08.2007	26617

2.2 International Standards

World Bank Environmental and Social Standards

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 threaten 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

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 standards 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 the 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.

ESS9: Financial Intermediaries (FIs)

This standard is not relevant for the 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.

3 CONDITIONS

3.1 Pre-Construction Surveys and Detailed Studies

A complete list of the works to be carried out in order to ensure the effective implementation of the mitigation measures specified in this management plan and other management plans developed for the project and to be developed by the consultant/contractor and as a complement to the ESIA are given in Table 2 and detailed explanations are given below.

Table 2. Activities to be carried out before the Land Preparation and Construction Phase

No	Surveys / studies committed under the ESIA	Responsiblity	Period	Deliverable
1	Site-specific management plans and procedures will be developed to be implemented throughout the land preparation and construction phase of the Project.	DGII / Contractor Company	Pre-Construction	Management plans and procedures on E&S issues prepared by the Contractor and approved by DGII
2	Surveys will be undertaken to determine exact locations for the camp site, waste storage areas, borrow pits and quarries.	DGII / Contractor Company	Pre-Construction	Survey reports and outcome on identified locations for Project facilities
3	The Logistics Studies to be prepared by the Contractor will be used to estimate the extent of the increase in railway and road traffic and thus will provide the opportunity to expand the mitigation measures defined for the management of the traffic increase related to the transport of excess excavation soil and other construction material.	DGII / Contractor Company	Pre-Construction	Traffic Management Plan including mitigation measures to prevent traffic impact
4	All intersections between the Project Route and existing roads and other infrastructure elements will be determined and the infrastructure will be kept in continuous operation, and the most appropriate construction techniques will be used to reduce the impact in this process as much as possible.	DGII / Contractor Company	Pre-Construction	Road Crossing and Infrastructure Construction Methods with mitigation measures to reduce disturbances
5	An investigation will be carried out to evaluate the current status of the roads to be used during construction, and additional examinations will be carried out to determine whether the transport roads used require improvement work and to ensure that they are restored or improved after construction.	DGII / Contractor Company	Pre-Construction / Access Road Usage	Transportation Routes Evaluation Reports Access Road Records Traffic Management Plan with mitigation measures and requirements to improve existing roads and restore temporary roads Community Health and Safety Management Plan
6	During the pre-construction period, the Contractor will conduct ***site-specific studies*** for residential areas to identify distant settlements, settlements with poor road conditions and settlements with limited access to basic services (street markets, health centers, schools, etc.). According to the results of these studies, in order to minimize the effects on transportation, the contractor will contact the local authorities and special solutions will be agreed on in terms of design and logistics.	DGII / Contractor Company	Pre-Construction	Site-specific Social Status Report
7	The contractor will prepare the **Professional Code of Conduct**, which defines the rules to be followed during the working hours and on the camp sites, and the behavior on leisure time, and will convey these rules to the employees together with the employment contract and then explain them to the employees during the training.	DGII / Contractor Company	Pre-Construction	Professional Code of Conduct for Employees

No	Surveys / studies committed under the ESIA	Responsiblity	Period	Deliverable
8	During the construction phase, Project components and existing superstructure / infrastructure will be identified in order to provide appropriate technical solutions to reduce interruptions in infrastructure and transportation systems. Additional mitigation measures will be developed.	DGII / Contractor Company	Pre-Construction	Infrastructure Transition Construction Methods, including reduction of disturbances as much as possible
9	DGII will undertake land acquisitions in accordance with the Expropriation Law and will bring solutions to the issues (such as development activities that may affect the transportation of trees or other productions) to reduce impacts.	DGII	Pre-Construction	Expropriation Management
10	Special studies on waste management facilities will be carried out during construction activities to provide the capacity to reduce the additional burden from the project on existing waste storage and disposal facilities.	DGII / Contractor Company	Before camp sites and other construction infrastructure are put into operation	Waste Management Assessment and Inspection Reports Contractor Waste Management Plan including site-specific waste management measures and requirements
11	A Water Supply Plan will be prepared to identify possible resources for the supply of water required for the project. The plan will identify resources for water supply, taking into account the permits required for use and discharge and the minimum impact on communities using the same water resource.	DGII / Contractor Company	Pre-Construction	Water supply, water sustainability Assessment Reports Water Supply Plan with specific environmental and social requirements and mitigation measures

4 MITIGATION MEASURES AND MANAGEMENT CONTROLS

Mitigation measures are determined by considering both standard engineering practices and specific measures derived from the ESIA study and described below. The mitigation measures, monitoring requirements and responsibilities are outlined in detail in the ESMP.

4.1 Management of Impacts on Soil

The findings of the assessment of impacts on soil for the construction phase can be summarized as follow:

During the construction period of the Filyos Project landscape and environmental protection studies will be implemented as well as the site arrangements for the purpose of conforming the alterations (occurrence of new areas, patches and corridors etc.) which may occur during construction period and afterwards in the function and structure of natural landscape to the existing structure and minimizing the impacts. During these studies priority will be given to minimizing the disturbance of the existing structure and then the necessary measures will be taken to rehabilitate. Potential impacts of Project activities on soils, which might arise from use of fuel, oil, hazardous substance storage, and maintenance and transport sites will be managed through implementation of the Pollution Prevention Plan presented in Appendix-8 of the ESMP.

Definition of Work Area Boundaries

First step is to provide environmental training to all employees, to put up the visual communication aids such as posters, bills at various points of site, and to prevent the activities of the employees outside the work area in bothconstructional (building roads without permission, extra use of area etc.) and social (all types of hunting, setting fire etc.) aspects by defining boundaries of the work site and construction site in order to prevent the further disturbance of natural structure.

Stripping the Topsoil and Storage

In the project area, topsoil will be stripped down up to a depth of 15 cm minimum and 30 cm maximum.

In the regions where the character of topsoil is rocky and stony, first of all the rock and stone blocks among the topsoil layers will be removed and stored in a separate place, then the topsoil stripping works will be performed.

Topsoil will be stored in places where it is not compacted by vehicles and construction equipment or not exposed to contamination, in conditions that its loss and/or degradation is minimized.

Topsoil will not be mixed with subsoil, they will be stored in separate areas and potential mixing will be prevented by some physical means such as stone supports, geotextile sheeting, silt fences etc.

Additionally, topsoil piles will be identified with warning and caution signs/ plates to protect them against potential damage.

Topsoil will be stored in a manner that it is drained freely and the drainage of the run-off water channels/ditches around the piles will be provided. Drainage channels will be connected to the natural drainages and to the surface water flow points. Possible scours/erosions will be prevented through building wasteway structures, outlet points in these junction points.

In order to permit reasonable accesses (animal passages, vehicle passages etc.) and in the low areas where the surface water may be collected beside the stockpiles gaps will be left between topsoil stacks.

In storage areas, topsoil will be stored in stockpiles of not more than 2 m high with side slopes less than 45 degree.

Under no circumstances will topsoil be used as padding and filling material. Thus, for the revegetation process after completion of construction, soil (fertile/topsoil layer) which is the most important factor for plant growth will be protected, its loss will be prevented and the suitable medium will be provided for replanting.

Subsoil Transport and Storage

Subsoil extracted from excavation works will be transported as excavation material to the excavated material storage area designated by district municipalities.

Taking Temporary Measures against Erosion

During construction works after stripping the topsoil, primarily, subsoil will be removed in a manner that it is not affected by or is the cause of erosion. The following temporary measures for erosion control will be performed within the scope of activities during the land preparation, construction and installation stages:

- Material deposits will be left to retard the surface flow and prevent the ground scour.
- When it is required to break the slopes, mini weirs will be built, so these provide the flow discharge down along the slope.
- Continuous monitoring will be provided to prevent cases such as slumping, loss of soil.

These measures to be taken are the essential applications to prevent both confrontations with the dangerous situations (wreckage, landslide, demolition etc.) and occurrence of further damages in land topography.

Soil Pollution

Discharge of materials that will cause contamination to the soil will be prohibited.

Accidental spills and leaks will be managed by implementing the Emergency Preparedness and Response Plan.

Solid waste, hazardous waste and wastewater that will be generated as a result of land preparation and construction activities along the project route will also be managed through the implementation of the relevant management plans (Waste Management Plan, Pollution Prevention Plan etc.).

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.

4.2 Management of Impacts on Air Quality

Filling and emptying in emission source without watering or spinning, improvement of the roads, covering the vehicles with canvas during transportation of the materials and keeping top of the material in 10% moisture shall be taken in order to minimize the dusting which could occur in the land.

Furthermore, in order to minimize the dusting which could occur in the land, the provisions meeting the air quality standards relating to the dusty accumulation materials stored in the open yard stated in Appendix-1 of the RCIAP “Emission Limits for the Permit-Required Facilities” shall be complied with. At the land preparation and construction stage of the planned project fuel shall not be used in any process except for fuel usage of the different heavy construction machinery such as graders, excavators, dozers, trucks, compressors and mobile cranes. Diesel fuel shall be generally used in heavy construction machinery and vehicles and since gasoline-powered vehicles shall be rarely used, it is anticipated that gasoline consumption shall be much less than diesel consumption. The fuels to be used shall be supplied from the stations which have a permit to operate or from tanks of which the bottom is leak-proof and where measures have been taken against fire and spillage.

In order to minimize the emissions arising from the vehicles which will work within this scope; pursuant to the Regulation on the Control of Exhaust Gas Emission which came into force after being published in Official Gazette dated March 11, 2017 and numbered 30004, routine controls of all the vehicles and equipment to be used shall be carried out and the vehicles which need maintenance shall be taken to service and other vehicles shall be used in the works until the maintenance is over. Furthermore, they shall be warned to work pursuant to the Traffic Act and it is crucial to load pursuant to the loading standards. Implementation of the Pollution Prevention Plan and Traffic Management Plan will also be effective in terms of management of potential impacts on air quality.

4.3 Management of Noise Impacts

Necessary measures will be taken during the works within the scope of the project in order to minimize noise generation. In addition, regarding the noise that will occur in the project site during the construction phase, the issues specified in the Annex-2 of Regulation on Environmental Noise Control will be followed and the vehicles whose inspections, exhaust gas measurements and maintenance have been performed will be used. Potential noise impacts will be managed through implementing control measures within the scope of the Pollution Prevention Plan and Traffic Management Plan. Besides, noise monitoring will be conducted 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.

4.4 Wastewater Management

Since there is no wastewater (sewerage) system in the field, preparation and construction of the project, domestic wastewater to be produced will be deposited in the septic tank pit that will be leak-proof at the construction site in accordance with the "Regulation on Pits to be Built in Slopes where the Construction of Sewers is Not Possible", which was published in the Official Gazette dated 19.03.1971 and numbered 13783. 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 wastewater infrastructure system. Impacts to incur from wastewater generation due to Project construction activities will be managed within the scope of the Pollution Prevention Plan.

4.5 Traffic and Transportation Impacts Management

See the Traffic (Transportation) Management Plan (CNR-ZNG-TTMP-002).

4.6 Management of Impacts Related to Construction Wastes

See Pollution Prevention and Waste Management Plan (CNR-ZNG-PPP-002, CNR-ZNG-WMP-002).

4.7 Management of Impacts on Biodiversity

Impacts of the Project on biodiversity values will be managed through implementation of the Biodiversity Management Plan, which will be updated based on additional data to be acquired during construction surveys.

Habitat loss / fragmentation

Table 3. Measures to be taken for Habitat Loss

Receptor	Mitigation Measure
Critical habitat: B1.2 Sand beaches above the driftline	Monitoring of habitat and bird populations at the critical habitat. Habitat status check.
Natural habitats: C2.5: Temporary running waters, C1.2: Permanent mesotrophic lakes, ponds and pools, C2.2: Permanent non-tidal, fast, turbulent watercourses, D5.1: Reedbeds normally without free-standing water	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 riparian habitats will be minimized. There will be no tree cutting/vegetation clearance other than in areas required for the Project. Project-related impacts on water quality and water flow will be avoided. Mitigation measures related to land use and soil quality will be taken in line with the related management plans ensuring conservation of natural habitats. 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. The Project personnel will be informed on the sensitivity of natural habitats and species. Any direct impact on plant and animal species will be prevented.
Natural habitats:	
Fauna species of high conservation concern	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. 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 grazelands will be identified through consultations within the scope of the Stakeholder Engagement Plan (SEP).

Receptor	Mitigation Measure
	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.

Use of machinery and equipment

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.

Indirect impacts (dust, air emissions, noise, waste, and impacts on water and soil quality)

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.

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.

Invasive alien species

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.

4.8 Management of Impacts Related to Cultural Heritage

See the Cultural Heritage Management Plan (CNR-ZNG-CHMP-002).

4.9 Management of Impacts Related to Community Health and Safety

See the Community Health and Safety Management Plan (CNR-ZNG-CHSMP-002).

5 TRAINING, REPORTING AND MONITORING

5.1 Training

All employees of the contractor will be provided with basic training on social, environmental, occupational health and safety, labor and security issues. In addition, specialist training will be provided for key personnel involved in different activities such as the separation, storage, transportation and treatment of waste.

5.2 Reporting

Daily inspections will be carried out under the coordination of the environmental and social team formed by the Contractor.

Any incident detected during these inspections will be recorded and reported monthly. The World Bank and DGII will be promptly notified 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.

Sufficient detail will be provided 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. It will be ensured that the incident report is in line with the World Bank's Environment and Social Incidence Response Toolkit (ESIRT). Subsequently, as per the Bank's request, a report on the incident or accident and propose any measures to prevent its recurrence will be prepared.

All events and nonconformities will be reported according to the project standards as described in the ESMP.

5.3 Monitoring

The primary monitoring activities outlined in the ESMP will focus on ensuring compliance with the mitigation measures and management controls specified in this Construction Impacts Management Plan.

Monitoring activities for each E&S issue will be detailed in management/implementation plans and procedures to be prepared by the Contractor prior to the onset of the land preparation and construction phase of the Project. Monitoring activities will be designed to target specific topics to meet site-specific requirements in line with the Monitoring Plan framework provided in the ESMP.

6 REFERENCES

- ESIA Report (CNR-ZNG-ESIA-002)
- Resettlement Plan (CNR-ZNG-RP-002)
- Waste Management Plan (CNR-ZNG-WMP-002)
- Community Health and Safety Management Plan (CNR-ZNG-CHSMP-002)
- Traffic (Transportation) Management Plan (CNR-ZNG-TTMP-002)
- Pollution Prevention Plan (CNR-ZNG-PPP-002)
- Cultural Heritage Management Plan (CNR-ZNG-CHMP-002)
- Critical Habitat Assessment and Biodiversity Management Plan (CNR-ZNG-CHA-BMP-002)
- Stakeholder Engagement Plan (CNR-ZNG-SEP-002)