



**BLUEING THE BLACK SEA  
GEF REGIONAL PROJECT  
(P173890)**

**ENVIRONMENT AND SOCIAL  
MANAGEMENT FRAMEWORK  
(ESMF)**

**FINAL DRAFT**

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## LIST OF ABBREVIATIONS

AZE	Alliance for Zero Extinction
BBSEA	Blueing the Black Sea
BSC	Black Sea Commission
BSEC	Organization of the Black Sea Economic Cooperation
BSEC PERMIS	Permanent International Secretariat of the Organization of the Black Sea Economic Cooperation
BSTDB	Black Sea Trade and Development Bank
CMA	Common Maritime Agenda
CMU	Cabinet of Ministers of Ukraine
CSO	Civil Society Organization
CZ	Coastal Zone
EA	Environmental Assessment
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EEZ	Exclusive Economic Zones
EHS	Environmental Health and Safety
EHSG	WB Group EHS Guidelines
EIA	Environmental Impact Assessment
EIB	European Investment Bank
ESCP	Environmental and Social Commitment Plan
ESDD	Environmental and Social Due Diligence
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GBV	Gender based Violence
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GFCM	General Fisheries Commission for Mediterranean
GHG	Green House Gas
GIIP	Good International Industry Practice
GIS	Geographic Information Systems
GM	Grievance Mechanism
GN	IFC Guidance Notes
GNI	Gross National Income
GVA	Gross Value Added
IBA	Important Bird Areas
IFC	International Finance Corporation
IPM	Integrated Pest Management
IUCN	International Union for the Conservation of Nature
IVM	Integrated Vector Management
KBA	Key Biodiversity Areas

KPI	Key Performance Indicators
LC	Labor/Working Conditions
LMP	Labor Management Plan/Procedures
MEA	Maritime Economic Activities
M&E	Monitoring and Evaluation
MENR	Ministry of Ecology and Natural Resources of Ukraine
MEPA	Ministry of Environment Protection and Agriculture of Georgia
MTR	Mid-term Review
NBS	Nature-based Solutions
NGO	Non-Governmental Organization
OHS	Occupational Health and Safety
OIPs	Other Interested Parties
OP	World Bank Operational Policy
PAD	Project Appraisal Document
PAP	Project Affected Population/Person
PDF	Project Description File
PDO	Project Development Objective
PIU	Project Implementation Unit
PPE	Personal Protective Equipment
PS	IFC Performance Standards
RAP	Resettlement Action Plan
RCA	Root Cause Analysis
RPF	Resettlement Policy Framework
SEA	Strategic Environmental Assessment
SEE	State Ecological Expert
SEF	Stakeholder Engagement Framework
SEP	Stakeholder Engagement Plan
SESA	Strategic Environmental and Social Assessment
SMEs	Small and Medium Enterprises
SRIA	Strategic Research and Innovation Agenda for the Black Sea
ToR	Terms of Reference
ToT	Trainings of Trainers
UNDP	United Nations Development Program
USD	US Dollars
WB	The World Bank
WBG	World Bank Group
WTTO	World Travel & Tourism Council
WWTP	Wastewater Treatment Plants

## **EXECUTIVE SUMMARY**

The Black Sea is connected to the oceans via the Mediterranean Sea through Istanbul, Canakkale, and Gibraltar straits and with the Sea of Azov in the northeast through the Kerch Strait, and it is vulnerable to pressure from land based anthropogenic activities of coastal and non-coastal states in its basin.

The biological economic resources, the diversity of species and landscapes and of the aesthetic and recreational values of the Black Sea are in overall decline due the eutrophication, pollution and irresponsible fishing. In addition, climate change is likely to exacerbate erosion, flooding, and water and environmental quality. The most significant process causing degradation of the Black Sea has been the massive eutrophication by nitrogen and phosphorous compounds, coming largely from agricultural, domestic and industrial sources. Sewage discharge and oil pollution also poses threat to human health and in some cases hamper the development of sustainable tourism and aquaculture throughout entire Black Sea and its coastal zones.

In post-COVID era, determination of current and future environmental state of the Black Sea will be a major challenge for sustainable development of both the blue economy and the region. In this context, World Bank and its partners have engaged into planning a regional approach to respond this challenge and formulated the Blueing the Black Sea (BBSEA) Regional Project (the Project) through Global Environment Facility (GEF) funding.

The Project is one of the initiatives supporting the Common Maritime Agenda (CMA) and its seven signatory countries; Bulgaria, Georgia, Republic of Moldova, Romania, Russian Federation, Turkey, and Ukraine. The Project included pilot national level activities in Georgia, Republic of Moldova, Ukraine, and Turkey. The Project is coordinated by the Permanent International Secretariat of the Organization of the Black Sea Economic Cooperation (BSEC PERMIS).

The Project aims to result in positive environmental and social impacts through strengthened governance for improvement of the environmental status of the Black Sea by providing assessment of national policies and legal frameworks, development of national investment recommendations for pollution reduction and management, strengthened framework for blue economy and enhancing regional dialogue.

### **Project Development Objective(s)**

The Project Development Objective (PDO) is to strengthen economic, technical, and communication tools to promote regional collaboration and private sector engagement for pollution prevention in the Black Sea.



## **Project Components**

The Project includes three components:

### **(i) Component 1: Economic Case to Invest in Pollution Prevention and Reduction**

This component will address the economic knowledge gap in pollution prevention and reduction through an economic analysis. Then, building on the analytical work prepared under Turning the Tide of Pollution, investment recommendations will be developed for the governments of the BBSEA GEF Project Focus Countries. In this context, this component would provide an assessment of the current national policy and legal framework, examining compliance with regional regulations/conventions on pollution related to water management, agriculture, aquaculture, tourism and shipping. It would provide recommendations for legislative and administrative reforms at national and municipal levels, aligning with regional engagements for improved coordination between sectoral agencies and for pollution control.

The regional harmonization efforts in pollution policy framework will take place through preparation of draft national pollution reduction and management plans that are cohesive with the regional pollution policy framework. Through a series of consultation meetings with regional dialogues, the understanding of a common agenda on pollution and initiatives of each member country will be exchanged and discussed. In addition, this component will also support the adoption of internationally and regionally recognized sustainable standards for investment across sectors and provide capacity building opportunities for business operators and government officials in the Black Sea countries through workshops and webinars to attain knowledge in boosting the readiness on investment project preparation.

There are three sub-components proposed under Component 1:

- Subcomponent 1.1: National Policy and Institutional Framework
- Subcomponent 1.2: National Investment Recommendations, Knowledge Exchange and Regional Dialogue
- Subcomponent 1.3: Sustainable Business and Investment Standards and Guidelines

### **(ii) Component 2: Green & Innovative Financing**

This component will increase the readiness of both the public and private sectors in the four BBSEA GEF Project Focus Countries and provide them an access to financial investment, innovation and technologies for pollution reduction and management.

This component will finance and promote innovation to address the eutrophication issue of the Black Sea that will allow public sector institutions, development partners and potential investors to identify, verify and invest in innovative solutions. The Eco-Innovation challenge will be organized as 2 different challenges including 1 regional-wide challenge targeting early concept and ideas and 1 consolidated national challenges stage in GEF Black Sea countries to support the pilot implementation of proven concepts and piloted ideas through provision of grants. The overall theme of the challenges will be to unlock the potential of eco-innovation to mitigate the impact of eutrophication in the Black Sea.

At the national eco-innovation challenge, the type of Eco-Innovation could vary per country according to the local context. To make direct impact in reduction and removal of water pollution, the project will match the host of innovation and innovators through this challenge. Prior to the call for application, BBSEA focal points in GEF countries will nominate a potential Host of innovation, which is facing the eutrophication issue. The host of innovation can be municipalities, industrial entities, community/cooperative (i.e. agriculture/farmer cooperatives, etc.) that are willing to test the eco-innovation. BSEC will provide capacity building training to the potential host of innovation to understand the process and to prepare their own problem statement. The challenges will select the innovators who will focus their efforts in promoting healthy and sustainable innovations in Blue Economy especially targeting to solve water pollution issues. Selected eco-businesses could receive awards or grants, depending on the nature of the type of Eco-Innovation Challenge.

Moreover, one potential investment project with most pressing urgency for the purpose of bluing the Black Sea will be selected in one of the four GEF Black Sea countries to support preparing a more concrete project proposal. The preparation envisages including development of various project preparation steps such as pre-feasibility studies, economic and financial analysis, and environmental and social impact assessment.

There are two sub-components proposed under Component 2:

- Subcomponent 2.1: Eco-Innovation Challenge
- Subcomponent 2.2: Investments Preparation

### **(iii) Component 3: Project Management**

This component would aim to ensure the project efficiency and efficacy through the establishment of a satisfactory monitoring and evaluation (M&E) management system as well as the maintenance of the project's participation and consultation mechanisms. Thus, it will support BSEC in the implementation and overall management of the Project, regarding the aspects related to social and environmental safeguards, monitoring, reporting and evaluation, complaints handling mechanisms, financial audits and procurement, to ensure successful implementation of the activities under the Project.

### **Implementing Agency**

BSEC, as the implementing agency, is responsible for the overall coordination of the Project through the BBSEA Project Implementation Unit (BBSEA PIU / PIU). BBSEA PIU will be managed by BSEC PERMIS, and will be comprised by BBSEA Project Manager, Project Coordinator, Fiduciary Specialist, Procurement Specialist, Environmental specialist (including OHS) and Social specialist, Monitoring and Evaluation Officer and support staff from BSEC PERMIS.

## **Purpose and Scope of Environmental and Social Management Framework**

The framework approach is chosen as the Project will include a broad range of activities, most of which will not be identified until implementation begins. The aim of this Environmental and Social Management Framework (ESMF) is to ensure that identified grants/sub-projects are correctly assessed from environmental and social point of view to meet the World Bank's Environmental and Social Framework (ESF) and its applicable Standards, as well as national legislation of all participant countries for adequate mitigation of any residual and/or unavoidable impacts that may arise by implementation of the activities under Component 2. The ESMF provides a general description of the Project Components and Subcomponents, national and World Bank standards, a brief overview of the environmental and social baseline/state of the Black Sea, approach for screening, assessment and management of risks and impacts, implementation arrangements, public consultation and disclosure, and needs for technical assistance regarding capacity building.

## **The Legal, Regulatory and Policy Framework of the Countries with National Level Activities**

This Project is one of the initiatives supporting the CMA and its seven signatory countries. Although the Project would benefit all Black Sea countries through knowledge exchange and standards building, national level activity would take place only in Georgia, Republic of Moldova, Turkey and Ukraine, in accordance with GEF decision in the current context.

### ***Legal and Regulatory Framework of Georgia***

Environmental protection legislation in Georgia has been developed in line with the Constitution, which guarantees a legal framework for protection of environment and public access to relevant environmental information. Over the past decades, Georgia has created a firm legal and political framework for environmental protection, which attempts to follow international best practices and provides for the application of widespread legal mechanisms and standards, including environmental impact assessment (EIA), economic instruments, inspection/monitoring, and permitting.

### ***Legal and Regulatory Framework of Republic of Moldova***

The Association Agreement between the European Union and the European Atomic Energy Community and their Member States and the Republic of Moldova was signed on June 27, 2014. Following the signature of the Agreement, the country committed to implementing the relevant environmental legislation of the European Union into its national legal system by adopting or changing national legislation, regulations and procedures aiming at political association and economic integration with the EU. The legislation of Republic of Moldova has been in the harmonization phase with EU *acquis* and most of the relevant legislation has been adopted.

### ***Legal and Regulatory Framework of Turkey***

Environmental Law, which is ratified in August 1983, is one of the principal legislation on environment and environmental protection. Several by-laws and decrees are enforced under

the Environmental Law. Turkey has been in the EU accession process and in this context environment related legislation of Turkey mostly adopted the EU *Acquis*.

The Environmental Impact Assessment Regulation defines the administrative and technical procedures and principles to be followed throughout the EIA process. When an activity (a Project) is planned, the Project developer is responsible for preparing an Environmental Impact Assessment (EIA) Report along with many other permits required to realize the Project. However, facilities are subject to preparation of an EIA Report depending on the type of the facility, its capacity, or the location of the activity. The activities that are subject to the provisions of the Environmental Impact Assessment Regulation are listed in Annex I and Annex II of the Regulation. For Annex I activities a full EIA report is required and those Projects go through the full EIA process. For Annex II activities, a Project Description File (PDF) is prepared in accordance with the outline given in the Regulation and the relevant process has to be conducted.

### ***Legal and Regulatory Framework of Ukraine***

The Ukrainian legislative and regulatory framework on environmental, social, labor occupational health and safety (OHS) issues includes international conventions, Laws of Ukraine, Decrees and Orders of the Cabinet of Ministers of Ukraine (CMU), orders of ministries, various norms, procedures, standards and guidelines. There are numerous by-laws of government bodies (Ministries, state agencies, state inspections, public services and other central government bodies), which determine the powers of the relevant state body and procedures for environmental protection, social protection, access to information, etc.

The Law on Environmental Impact Assessment (EIA) came into force in December 2017. In addition, secondary legislation required for implementation of the EIA law was also enacted in December 2017 including; Regulation on Criteria for Determining Planned Activity, its Expansion and Change which are not Subject to the EIA, Regulation on Procedure for Conducting Public Discussion while Preparing the EIA, Regulation on Procedure for the Transfer of Documentation to Provide the EIA Conclusion and the EIA Funding and on Procedure for Maintaining the Unified Register on the EIA.

### ***World Bank Environmental and Social Framework***

In addition to national legislations, this ESMF has been prepared in accordance with the World Bank's ESF requirements. The Bank classifies all projects into one of four categories as *High Risk*, *Substantial Risk*, *Moderate Risk* or *Low Risk*. The risk classification of a Project is determined by taking into account of relevant issues such as type, location, sensitivity, and scale of the project; the nature and magnitude of the potential environmental and social risks and impacts; the sensitivity of the receiving environment; contextual risks and the capacity and commitment of the Borrower to manage the environmental and social risks and impacts in a manner consistent with 10 (ten) Environmental and Social Standards (ESSs) as described by the ESF. Six out of the ten ESSs are found to be relevant with respect to the Project scope, which are as follows:

- ESS1 Assessment and Management of Environmental and Social Risks and Impacts;
- ESS2 Labor and Working Conditions;

- ESS3 Resource Efficiency and Pollution Prevention and Management;
- ESS4 Community Health and Safety;
- ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- ESS10 Stakeholder Engagement and Information Disclosure.

ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement is not relevant to the project. Since, project will not finance activities that will require land acquisition, restriction to land use and involuntary resettlement.

ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities is not relevant to the project as it is anticipated that there are no indigenous groups in the foreseen Project areas that meet the definition provided in ESS7.

ESS8 Cultural Heritage is not relevant to the project. None of the activities within the scope of the project are anticipated to have impacts on cultural heritage and such activities in the scope of investments will not be eligible for financing. The projects with adverse impacts on the cultural heritage will be screened out through the ESMF. Nevertheless, the sub-project specific environmental and social assessment documents will include chance find procedures at a minimum considering the risk of chance finds during excavation works.

ESS9 Financial Intermediaries is not relevant to this project since it does not involve a Financial Intermediary.

In addition to the WB ESSs, applicable Operational Policies (OPs) of the World Bank such as OP 7.50 (Projects on International Waterways) and OP 7.60 (Projects in Disputed Areas) have also been considered with regard to their applicability with respect to the project scope. It should be noted that the Project will not have any activity triggering OP 7.50 and no activity will take place in a disputed area triggering OP 7.60.

Furthermore, in accordance with the ESSs, the WB Group's Environmental, Health and Safety (EHS) Guidelines would be applied to the project. These EHS Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). The General EHS Guidelines contain information on cross-cutting environmental, health and safety (occupational and community) issues potentially applicable to all industry sectors. These General EHS Guidelines are designed to be used together with the relevant Industry Sector EHS Guidelines which provide guidance to users on EHS issues in specific industry sectors. The applicable Industry Sector Guidelines for this project would depend on the specific type of grants/sub-projects, however, might be including the followings:

- EHS Guidelines for Water and Sanitation,
- EHS Guidelines for Tourism and Hospitality Development
- EHS Guidelines for Waste Management Facilities
- EHS Guidelines for Shipping
- EHS Guidelines for Forest Harvesting Operations

- EHS Guidelines for Annual Crop Production
- EHS Guidelines for Aquaculture
- EHS Guidelines for Perennial Crop Production
- EHS Guidelines for Fish Processing

## **Baseline Conditions**

The Black Sea is lying between Europe and Asia and its basin is asymmetric and the rivers that flow into it shape the different natural conditions of two continents. The sea itself covers a total area of 423,000 km<sup>2</sup>, while the basin it represents draws on an area covering 2.5 million km<sup>2</sup>. Black Sea coastal area of surrounding countries basically is a combination of seaside valleys and mountain ranges.

### ***Water Quality and Wastewaters***

The Black Sea is characterized by sulfidic deep waters. This anoxic zone is separated from the oxic upper waters by a suboxic zone, where the concentrations of both oxygen and free sulfide are below reliable method detection limits. In spite of this natural deficiency, the Black Sea has served mankind well through its provision of food resources, as a natural setting for recreation and transportation and even as a disposal site for waste. The large natural river supply of phosphorus and nitrogen, essential nutrients for marine plants and algae, has always made the Black Sea very fertile. Among the most serious problems is the high level of eutrophication by nutrients from land-based sources. Pollution represented by heavy metals, oil and other harmful substances are causing toxic effect on biota directly. Suspended solid particles decrease sun rays penetration through water layer and thus depress development of benthic biocenoses and pelagic algae and other organisms. Mineral and organic fertilizers originated from agricultural fields stimulate microflora bloom (eutrophication).

Rivers run-offs, oil and gas extraction activities, atmospheric deposition, intentional and accidental discharged from vessels are the main sources of water pollution. River flows are polluted by agriculture, industries, communal wastewaters, transport and others sectors located in the basin. Over 300 rivers running into the Black Sea drain almost half of Europe and significant parts of Eurasia. The main rivers are the Danube, Dnieper and Don, which are the second, the third and the fourth major European rivers.

### ***Solid Wastes***

Solid wastes management is a major environmental concern in the states surrounding the Black Sea. These countries are mainly developing countries that are trying to grow their economy and, at the same time, managing the environmental issues. The main means and infrastructure for solid waste management is landfilling (to sanitary landfills and wild dumps).

In this context, coastal Georgia has a severe lack of solid waste management infrastructure. Currently no standard sanitary landfills exist in Georgia's coastal zone. The landfill site located to the South of Batumi (near the Choroki river mouth) is most detrimental for coastal ecology and the economy. This landfill has been operating under sub-standard conditions for decades and set to close when the new site currently under construction is completed. In

Republic of Moldova, considerable share of environmental pollution is due to waste disposal sites. Less than 2% of solid waste is recycled and the remaining 98% of all solid waste produced ends in disposal sites, where 1,500 authorized landfills (30% of which could not fulfill environmental standards) and about 3,000 illegal dumpsites exist.

In Turkey majority of domestic solid wastes are going to wild dumps in rural areas. Establishment and operation of sanitary landfills have increased in last decades and strict legislation and initiative such as zero waste policy was put into force. However, open dumping to over 2000 sites and discharges into surface water in various places including the Black Sea region is still ongoing. In Ukraine, waste management is an extreme problem where wastes end up in 6,700 dumps and landfills. Ukrainian municipal solid waste landfills are mainly near rural areas causing deterioration in eco toxicological state of natural waters, agricultural products and soil.

### ***Ecology and Biodiversity Hot Spots***

The Black Sea is a nearly enclosed and zonally elongated basin with the zonal dimension of about 1,200 km. It is approximately one-fifth of the surface area of the Mediterranean and has a limited interaction with the Aegean Sea through the Turkish Straits System. Its main bathymetric feature is the presence of a narrow shelf (generally less than 20 km) and steep topographic slope (generally less than 30 km) around deep interior basin having maximum depths of 2,200 m.

The Black Sea receives fresh water inflows all around the basin, and Danube, Dniepr and Dniestr, discharge into the north-western coastal waters. The River Danube being one of the largest rivers in Europe introduced significant effects on the Black Sea ecosystem. There are many internationally recognized areas of high biodiversity value (hot spots) in the Black Sea Basin. These hot-spots include; Key Biodiversity Areas (KBAs), Important Bird Areas (IBAs) and Alliance for Zero Extinction (AZE) sites. The number of KBAs and IBAs that are directly in relation with the Black Sea are; 6 in Georgia, 15 in Turkey and 22 in Ukraine. All of these sites are both KBA and IBA sites except for 1 site in Ukraine, 4 sites in Georgia and 1 site in Turkey. There are no AZE sites directly in relation with Black Sea.

There are 12 threatened fish species in the Black Sea according to IUCN. In addition, Annex 2 (Provisional List of Species of Importance for the Black Sea) of Black Sea Biodiversity and Landscape Conservation Protocol (BSBLC) to the Convention on the Protection of the Black Sea Against Pollution lists 127 species.

### **Potential Environmental and Social Impacts and Mitigation Measures**

The ESMF identifies the environmental risks and impacts associated with the activities of the sub-project/grants to be financed. Main environmental and social risks and impacts are related to the activities to be financed under Subcomponent 2.1 (Eco-Innovation Challenge) of the Project. This subcomponent will include innovation grants in combating marine pollution through reduction and/or operation Including nutrient pollution treatment, urban wastewater treatment, water depollution, water recycling and reuse. The adverse environmental and social risks and impacts would be mainly of concern regarding and during the physical activities to be conducted in the scope of the sub-projects. These activities can

be classified as small scale civil (construction/installation type) works and small scale improvements in agricultural practices (irrigation systems, fertilizer and pest use, etc.), with low risks/impacts.

### ***Environmental Risks Impacts and Mitigation Measures***

During construction activities (including agricultural improvement activities) that would be performed for a subproject, there would be movement of machinery/equipment at the subproject sites. The involvement of heavy machinery, excavation and leveling works would cause dust, exhaust gases, and noise emissions. Considering that the works will be localized and temporary for the construction stage, the impacts associated with such activities would be considered as low in significance. To mitigate the impacts; dust suppression methods (e.g. water spraying) will be applied on site, vehicles to be used during hauling of materials will be covered, vehicles and equipment will be regularly maintained, exhaust gas controls will be done, construction activities in or close to residential areas would be conducted only during day time.

In case the subproject site is close to a surface water and groundwater resource, activities could create risk of contaminating the water resources due to surface run-off (sediments reaching the water resource, and chemicals -fertilizer, pesticide- contamination from agricultural fields) and wastewater to be generated at the site. The impacts would be low in significance in terms of magnitude and spatial extent. To mitigate impacts of subproject activities on water resources, appropriate erosion and sediment control measures would be established. Any domestic wastewater to be generated would be discharged to an existing sewer system or would be either collected in impermeable septic tanks or treated on site.

In case of any excavation or due to physical characteristics of a subproject site, excavated soil and the site may be exposed to water and wind erosion. This impact is going to be low in significance in terms of magnitude and took place for a limited time. Appropriate erosion control measures would be established on subproject sites.

Depending on the characteristics of a subproject site, there might be tree and other vegetation loss for each sub-project, either to pave way for access roads or for the actual project area. These activities might also cause loss of habitats for the wildlife. Any recognized natural habitats, wetlands and protected areas in the immediate vicinity of the activity will not be damaged or exploited. A survey and an inventory would be made for the trees to be cut down and trees would be planted elsewhere for compensation.

Solid waste would be a potential environmental risk that arises as a result of abandonment of litter/waste materials (domestic, construction, agricultural, and hazardous wastes) on subproject site. Wastes to be generated will be managed in accordance with the waste management hierarchy (prevent, reduce, reuse, recycle, energy recovery, disposal). Waste collection and disposal pathways and sites will be identified for all major waste types expected from all activities.



## ***Working Conditions and Occupational Health and Safety***

As the grants will cover small scale civil/installation works, the required labor force will be as well small and more likely to be met at local level. The Project will encourage local employment and procurement with regards to grant project activities. Therefore, labor influx is not expected. Considering the size of project workers and that there will be no labor influx, gender-based violence and sexual exploitation and abuse risks are anticipated to be low. In any type of subproject to be funded within the scope of this Project; awareness raising session on gender based violence will be held; grievance mechanisms for both communities and subproject workers will be established.

For the management of OHS risks associated with the subproject activities material and waste storage areas will be designated; person(s) with relevant certification and experience will be assigned in charge of OHS on-site; appropriate personal protective equipment and related general and job-specific OHS trainings will be provided to workers; incidents will be recorded, investigated and corrective/preventive measures will be identified after root cause analysis of the incident; COVID-19 measures will be implemented on the subproject sites by following the stipulations of national health authorities and WHO, a risk assessment study covering COVID-19 will be implemented for all works to be carried out, and site-specific Emergency Response Plans/Procedures will be prepared and implemented.

## ***Social Risks and Impacts and Mitigation Measures***

The Project will result in positive social impacts through strengthened governance for improvement of the environmental status of the Black Sea. For the successful implementation of the Project, intervention of communities and stakeholders will be ensured in a structured manner. Country specific stakeholder engagement plans (SEPs) as well as subproject-specific SEPs for grant projects that describe local and national stakeholders and engagement methods and cadence will be developed and implemented.

Two potential social risks are identified regarding the grant project:

- Perception of communities that grants/sub-projects may have adverse impact on their livelihoods.
- Resistance from communities to participate in grant projects, which requires application of new/innovative techniques in agriculture, fishery, tourism, etc.

These risks will be mitigated by development and implementation of simplified SEPs for grant projects; maintaining early, timely and active engagement of local stakeholders, particularly potential affected communities to hear and address their concerns; introducing grievance mechanism, and engaging communities and local stakeholders in monitoring activities.

The subprojects that will be financed may create community health, safety and security impacts such as traffic induced accidents and injuries; risk of spreading of communicable diseases such as COVID-19; potential damage to existing infrastructure and disruption of services; threat to community culture, safety and security associated with presence of workers and business opportunists, and disruption of daily living patterns. In order to mitigate such community health, safety and security impacts, subproject sites will be properly fenced;

subproject-related traffic will be regulated; all protective measures will be taken regarding COVID-19 and such communicable disease, and all activities will be commenced after getting relevant permits/licenses/consents.

### **ESMF Implementation Process**

Implementation process of this ESMF will include the following steps to be undertaken by BSEC PIU:

- **Screening:** ESMF process starts with the environmental and social screening of grant applications (i.e. sub-projects). Screening process will determine whether grant application (proposed sub-project) is eligible for financing based on the Exclusion List (WBG Exclusion List is provided in Annex 1), and if eligible, whether a project specific Environmental and Social Management Plan (ESMP) is required. PIU will screen the grant applications/proposed sub-projects, in consultation with the World Bank, using the screening checklist provided in Annex 2, to determine any potential adverse impacts and environmental and social risk level of the sub-projects. The World Bank will review at least first three sub-projects screening and ESMPs and provide no objection. The following screening processes and ESMP reviews will be done by the PIU. The outcome of the screening process is to categorize the sub-project in terms of its environmental and social risks in accordance with the WB environmental and social risks classification (project categorization of the World Bank is given in Annex 3). Moderate risk and low risk activities would be eligible for evaluation and financing in the Eco-Innovation Challenge.
- **Assessment of Environmental and Social Impacts:** For Moderate Risk Category sub-projects, a site specific ESMP would be developed in line with the World Bank ESSs and the indicative structure provided in Annex 4. For Low Risk Category sub-projects further environmental and social assessment (following the screening) will not be required and the ESMP Checklist provided in Annex 5 of the ESMF will be used for those sub-projects. The sub-projects that have to go through the national EIA process will not be eligible for financing before the national EIA process is completed.
- **Public Consultation and Disclosure:** SEP documents and sub-project specific ESMPs will be disclosed to the public. Public consultation and information disclosure activities will also be described in country specific SEPs, and will be conducted accordingly. The disclosure and consultation processes will be conducted in a timely and transparent manner acceptable to the WB and in line with SEP, considering any governmental restriction on COVID19 pandemic. The draft ESMP documents will be disclosed prior to consultations and after receiving the feedback of the stakeholders, these will be finalized and disclosed in the country. Prior to sub-project approval (by the World Bank), PIU will submit English versions of the final ESMP documents to the World Bank. The timing and methods of engagement with stakeholders throughout the life cycle of the Project are described in the SEP and country specific public consultation activities will be carried out as per country specific SEPs to be prepared. Records of meetings and consultations with stakeholders will be kept.
- **Monitoring and Supervision:** The contractors on site will be continuously monitored by the grant beneficiary, as the owner of the sub-project being financed by the Project (Subcomponent 2.1 Eco-Innovation Challenge). In this respect, the grant beneficiary

will make sure that the ESMP or ESMP checklist is implemented on site. PIU will carry out regular supervision of grants/sub-projects to ensure that the ESMPs, SEPs and LMP are being implemented, and grievance mechanisms (GM) are accessible and functional.

- **Labor Management Procedures (LMP):** Labor Management Procedure has been prepared and will be applied for all project workers including grant beneficiaries/grantees. The LMP covers workers' rights and describes (i) terms and conditions of employment; (ii) overview of key potential labor risks (if any); (iii) overview of labor legislation of Georgia, Republic of Moldova, Turkey and Ukraine; and iv) grievance mechanism available to all workers.

### **Institutional Arrangements for Implementation of Environmental and Social Management Measures**

The BSEC PERMIS/BBSEA PIU will be responsible for the overall coordination and will inter alia oversee the preparation of annual operating plans and prepare supervisory and other reports, as required by the GEF and the World Bank. The PIU will be in coordination with each national GEF Focal Point for the execution of national level activities in Georgia, Republic of Moldova, Turkey, and Ukraine. The national agencies include the following:

- Ministry of Environmental Protection and Agriculture of Georgia
- Ministry of Agriculture, Regional Development and Environment of Republic of Moldova
- Ministry of Environment and Urbanization and Ministry of Agriculture and Forestry of Turkey
- Ministry of Ecology and Natural Resources of Ukraine

The national agencies will provide technical guidance for the overall implementation of the project in consideration in support of the PIU.

#### ***BBSEA PIU***

BBSEA PIU will include at least one environmental (and OHS) and one social specialist with relevant qualification and skills within the scope of the Project to coordinate the implementation of the ESMF.

#### ***National GEF Focal Points***

The BBSEA PIU will enter implementation arrangements with each national GEF Focal Point for the execution of national level activities in Georgia, Republic of Moldova, Turkey, and Ukraine. The national agencies include the Ministry of Environmental Protection and Agriculture of Georgia, Ministry of Agriculture, Regional Development and Environment in Republic of Moldova, the Ministry of Environment and Urbanization and the Ministry of Agriculture and Forestry in Turkey and the Ministry of Energy and Environment Protection in Ukraine. These national agencies will provide technical guidance for the overall implementation of the project in support of the PIU. In addition, they will nominate a potential Host of Innovation, which is facing the eutrophication issue. The host of innovation can be

municipalities, industrial entities, community/cooperative (i.e. agriculture/farmer cooperatives, etc.) that are willing to test the eco-innovation. The host of innovation and awardees of the grants (grant beneficiaries) will receive capacity building training including mentoring from business experts to solidify the ideas, scale their growth and enable the success of a sustainable business ecosystem, WB ESSs and the ESMF, and good international practices with respect to WBG EHS Guidelines including in pest management (provided in Annex 6 of the ESMF).

### ***Grant Beneficiaries***

The awardees of the grants (grant beneficiaries) will be responsible to obtain any national approvals and permits for the implementation of their sub-projects. Beneficiaries will prepare and implement the ESMP (for moderate risk category sub-projects), and country specific or simplified SEP or use the ESMP Checklist presented in the ESMF in-hand to prepare and apply relevant ESSs and national regulatory requirement. The ESMP or the ESMP Checklist defined mitigation measures and monitoring activities will be commitments and need to be successfully implemented on-site by the grant beneficiaries, who are also directly responsible for the fulfillment of these commitments by contractors and other third parties engaged with the sub-project.

### ***Monitoring and Reporting***

Environmental and social monitoring starts from the construction phase of the sub-projects and continue through the operation phase, verifying the implementation of the relevant mitigation measures and assessing their effectiveness, thus enabling the BBSEA PIU and WB to take action when needed.

In this context the grant beneficiary, as the owner of the sub-project that is financed through Eco-Innovation Challenge, is the first responsible party for monitoring of any mitigation/management activities (and their effectiveness) on site during construction and operation phases. Grant beneficiaries will monitor the environmental and social impacts and associated mitigation/management measures of the sub-project activities on site continuously through assigned environmental and social experts/consultants, and report on the implementation of environmental and social management measures to PIU on a monthly basis.

Environmental and social specialists of the PIU will also be monitoring and supervising the sub-projects related to implementation of the environmental and social management measures. PIU will report the progress to the World Bank bi-annually in terms of environmental and social compliance and semiannually for overall sub-project progress

### **Stakeholder Engagement, Public Consultation and Disclosure, and Grievance Mechanism**

The direct stakeholders include the Ministry of Environmental Protection and Agriculture of Georgia, Ministry of Agriculture, Regional Development and Environment in Republic of Moldova, the Ministry of Environment and Urbanization and the Ministry of Agriculture and Forestry in Turkey and the Ministry of Energy and Environment Protection in Ukraine, local municipalities in the Black Sea basin in beneficiary countries, local business associations in

agriculture, aquaculture, tourism and shipping, local NGOs and SMEs to be involved in the grant financed activities and local communities. Regional organizations working on fisheries, academic and research institutions on marine pollution, financial/investment organizations would be among project stakeholders. SEP has been prepared outlining an approach for stakeholder analysis and mapping at national and local level and for disclosure and consultation strategy for country specific stakeholder engagement plans.

The concept for the proposed project has been presented at national consultation meetings, which were held virtually. Between February and May 2021, national consultations have been held in Georgia, Republic of Moldova, Turkey, Ukraine, Romania, and Bulgaria. The meetings have been announced on the events page of World Bank country websites and organized via Facebook and Zoom where translation was provided in countries’ official languages. More than 130 stakeholders from ministries, local authorities, academics, private sector, NGOs and international organizations have participated in the meetings.

The grievance mechanism will be introduced to all stakeholders including grantees/grant beneficiaries, contractors and other stakeholders of the grant sub-projects, which aims to identify issues and concerns as early as possible to address them timely and proactively, to continuously improve Project performance and to demonstrate Project’s commitment to meaningful stakeholder engagement, and respect for stakeholders’ opinions and concerns.

**ESMF Budget**

PIU is the main responsible body to implement the ESMF and the budget for execution of the ESMF would consider the environmental and social specialists/consultants to be employed by the PIU, site visits to be conducted by these specialists and indicative costs for preparation of ESMPs for sub-projects of moderate risk category. The estimated budget breakdown and overall budget for the execution of the ESMF activities are provided below.

Estimated Budget for ESMF Implementation

Cost Item	Unit	Number of Units	Unit Cost (USD)	Total Cost (USD)
<b>For PIU<sup>1</sup></b>				
Environmental (and OHS Expert)	per month	36 <sup>2</sup>	2,000	72,000
Social Expert	per month	36 <sup>2</sup>	2,000	72,000
Monitoring visits to grant/sub-projects	per visit	16 <sup>3</sup>	3,000	48,000
Miscellaneous (trainings, production of materials such as leaflets, visuals, etc.)	lump sum	1	8,000	8,000
<b>Total</b>				<b>200,000</b>
<b>For Grant Beneficiaries<sup>4</sup></b>				
Preparation of ESMP	per report	4 <sup>5</sup>	20,000	80,000

1. The cost items to be covered under PIU budget
2. Considering that Project components will be implemented over a period of three years
3. Assuming that either 4 sites will be visited for 4 times or 8 sites will be visited for 2 times
4. The cost items to be covered under the grants budget, where implementation of the ESMP measures are excluded assuming that they would be included in the construction budget of the sub-projects.
5. Assuming that among the grants to be financed 4 grants would be of moderate risk category requiring preparation of a site specific ESMP.

# 1. INTRODUCTION

## 1.1. Background and Context

The Black Sea is a nearly enclosed and zonally elongated basin that has a limited interaction with the Aegean Sea through Turkish Straits System. The Black Sea is bordered by Bulgaria, Georgia, Romania, Russia, Turkey and Ukraine. A number of major rivers flow into Black Sea; such as Danube, Dnieper, Don, Rioni, Kodori and Inguri Chorokhi, Kizilirmak, Yesilirmak, Sakarya, Southern Bug and Dnister draining the watersheds of some non-border countries into the Black Sea

The environmental quality of the Black Sea has been declining significantly. The climate change is likely to exacerbate erosion, flooding and environmental quality of the Black Sea. The most significant process causing degradation of the Black Sea has been the massive eutrophication by nitrogen and phosphorus compounds, coming largely from agricultural, domestic and industrial sources. Sewage discharge and oil pollution pose a threat to human health and in some cases hamper the development of sustainable tourism and aquaculture.

Addressing pollution issues will continue to be a major challenge for the sustainable development of the Black Sea in post-COVID era. Prevention and reduction of water pollution is important for human health and for healthier natural habitats. In this context, the World Bank and its partners have engaged into planning a regional approach to respond to the pollution challenge and formulated the Blueing the Black Sea (BBSEA) Regional Project (from now on BBSEA Project or the Project) through GEF (Global Environment Facility) funding.

The BBSEA Project is one of the initiatives supporting the Common Maritime Agenda (CMA) and its seven signatory countries: Bulgaria, Georgia, Republic of Moldova, Romania, Russian Federation, Turkey and Ukraine. The map of the Black Sea and the CMA countries can be seen in Figure 1 below. The BBSEA Project has also included pilot national level activities in Georgia, Republic of Moldova, Ukraine and Turkey. The Project (becoming a coherent regional program aiming both at regional and country-level activities) is coordinated by the Permanent International Secretariat of the Organization of the Black Sea Economic Cooperation (BSEC PERMIS).

Almost all the activities within the scope of the Project will result in positive environmental and social impacts through strengthened governance for improvement of the environmental status of the Black Sea by providing assessment of national policies and legal frameworks, development of national investment recommendations for pollution reduction and management, strengthened framework for blue economy and enhancing regional dialogue. The policy and capacity development activities will result in indirect positive impacts, such as conservation of aquatic species, improved water use and treated wastewater quality, reduced soil pollution.



Figure 1. Map of the Black Sea and the CMA Countries

The investment component of the project will include eco-business innovation grants in combating marine pollution through reduction and/or prevention and investment preparation through pre-feasibility studies. This component of the project might cause potential impacts such as waste generation and potential management risks, energy use, noise, dust emissions and potential occupational health and safety (OHS) risks, which would be temporary and reversible, low in magnitude and site specific which can be easily mitigated through good management practices.

- The Project will comply with the World Bank Environmental and Social Framework (ESF) and GEF requirements. In this context, for the national investment plans to be developed in the scope of the Project (Component 1) strategic environmental and social assessment (SESA) studies would be conducted in line with the SESA terms of reference (ToR) prepared as a separate document. The eco-innovation grants under the investment component are covered under this Environmental and Social Management Framework (ESMF) for management of associated, potentially well-known and readily manageable, risks and impacts. Environmental and Social Standards of the World Bank will be complied with in assessment and management of risks and impacts and World Bank Group (WBG) General Environmental Health and Safety (EHS) Guidelines as well as industry specific WBG EHS Guidelines would be taken into account, where necessary.

## 1.2. Purpose and Scope of the ESMF

The overall goal of the ESMF is to avoid, minimize or mitigate, potential negative environmental and related social impacts caused by implementation of the BBSEA Project. The Framework approach is chosen as the Project will include a broad range of activities, most of which will not be identified until implementation begins. The Framework ensures that the identified grants/sub-projects are correctly assessed from environmental and social point of view to meet the World Bank's Environmental and Social Framework (ESF) and its applicable Standards, as well as national legislation of all participant countries for adequate mitigation of any residual and/or unavoidable impacts.

The ESMF serves as a tool for; screening the sub-projects/activities regarding environmental and social risks and impacts and choosing relevant assessment tools; identifying and assessing the potential environmental and social risks and impacts of sub-projects; development of site-specific environmental and social management plans (ESMPs) that will summarize necessary mitigation measures to minimize or prevent identified risks and to provide guidance on environmental and social monitoring and reporting.

The ESMF forms the scope of the comprehensive environmental and social management approach that will be adopted for identifying and addressing the potential environmental and social impacts of the Project. The ESMF mainly covers the following:

- Measures and plans to reduce, mitigate and/or manage adverse risks and impacts as well as screening Project activities in terms of potential environmental and social risks and ensure that they are systematically addressed at the sub-project stage.
- Procedures for the screening, review, approval, and implementation of activities.
- Institutional arrangements, responsibilities and capacity building needed to successfully implement the provisions of the ESMF.
- Mechanisms for public consultation and disclosure of project documents, as well as summarizing stakeholder engagement and grievance mechanism, which are detailed in standalone Stakeholder Engagement Plan (SEP) and standalone Labor Management Procedures (LMP) for labor risks, associated with the Project activities.

The ESMF will serve as a tool for Black Sea Economic Cooperation (BSEC) to identify, mitigate and manage potential environmental and social risks and impacts that may arise by implementation of the activities under Component 2 "Green and Innovative Financing" of the BBSEA Project. The ESMF instrument aligns with the requirements of the World Bank (WB) Environmental and Social Framework (ESF), which includes the Environmental and Social Standards (ESSs); as well as WB Group Environmental, Health and Safety (EHS) Guidelines and other related standards.

This ESMF includes a general description of the BBSEA Project Components, Project Standards (including a general overview of the relevant legislation of Georgia, Republic of Moldova, Turkey and Ukraine as partner countries and World Bank standards), a brief overview of the environmental and social baseline/state of the Black Sea, approach for screening, assessment and management of risks and impacts, implementation arrangements, public consultation and disclosure and needs for technical assistance regarding capacity building.



## **2. PROJECT DESCRIPTION**

The Black Sea region may be described as an expression of multifaceted networks. The wider Black Sea area includes a population of 332 million people. The region's littoral states are; Bulgaria, Georgia, Romania, Russia, Turkey, and Ukraine and adjacent states are; Armenia, Azerbaijan, Greece, Republic of Moldova. The Black Sea is connected to the Aegean and the Mediterranean seas. The Danube River, Europe's biggest and most important river, the Dnieper and Don, continent's third and fourth biggest rivers are flowing into the Black Sea.

Countries have joined forces to make progress towards the Black Sea sustainability. On 21 May 2019, Ministers and Vice-Ministers from Bulgaria, Georgia, Republic of Moldova, Romania, Russian Federation, Turkey, and Ukraine met in Bucharest to endorse the Common Maritime Agenda (CMA) for the Black Sea. In support of the CMA, the World Bank is launching the Blueing the Black Sea Program to catalyze blue economy investments for the Black Sea. The BBSEA Program has an investment component and an analytical component, and its initial step is focused on reducing pollution in the Black Sea. Two instruments are considered for realization of the first steps toward developing the Program: (i) Turning the Tide of Pollution is a regional analytical work financed by the PROBLUE multi-donor trust fund and it is executed by the World Bank, and (ii) BBSEA Project is financed by a grant of the Global Environment Facility (GEF) under the International Water window. Although the proposed Project would benefit all Black Sea countries through knowledge exchange and standards building, national level activity would take place only in 4 countries: Georgia, Republic of Moldova, Turkey and Ukraine, in accordance with GEF decision.

Addressing pollution issues is a major challenge for sustainable development of the Black Sea in a post-COVID era. Prevention and reduction of water pollution is important for public health and for healthier natural habitats. The Project would identify innovative finance and business models and practices that reduce the degradation of coastal and marine resources, providing strong evidence for effective blue economy approaches to maritime management sustaining an economy in support of marine ecosystem restoration and protection.

### **2.1. Project Development Objective**

The Project Development Objective (PDO) is to strengthen the capacity and preparedness of governments and the private sector in participating countries to take actions to reduce pollution in the Black Sea. In this context the PDO Indicators are as follows:

- Agencies taking action to reduce or prevent pollution in the Black Sea as a result of the project (the agencies can be at regional or national level)
- Sustainable business standards and guidelines for pollution control and prevention adopted (in key sectors by regional or national agency/institutions)
- Innovations promoted through the Eco-Innovation Challenge at regional and national level

In this context, the expected outcomes are as follows:

- Level 1
  - Increased awareness of relevant institutions of costs and consequences of inaction and opportunities for action
  - Enabling legal and institutional environment for harmonized action to reduce nutrient pollution in the Black Sea
  - Increased preparedness of participating countries to undertake high impact investments to reduce nutrient pollution
  - Improved and strengthened capacity of private sector to adjust/change their operations to reduce pollution
  - Innovations developed and momentum built for taking action on pollution reduction
- Level 2
  - Policies adopted and implemented
  - Investment recommendations endorsed and budgeted
  - Farmers, industries, municipalities and SMEs change operations and practices to reduce pollution
  - Additional investments made to reduce pollution
  - Demonstration effect of actions that private citizens can take to reduce pollution

The overall long term outcomes are improved environmental health of the Black Sea and increased social and economic benefits for the population living in the region.

## **2.2. Project Component 1 – Economic Case to Invest in Pollution Prevention and Reduction**

Good policy and institutional frameworks at the national and regional levels are an indispensable basis for further developing the blue economy in the region. Despite the policies and governance in place, increasing economic activities and energy demand in the Black Sea region will further lead to a deterioration of water quality in the Black Sea. This component will address the economic knowledge gap in pollution prevention and reduction through an economic analysis. Then, building on the analytical work prepared under Turning the Tide of Pollution this component will develop investment recommendations to the governments of the BBSEA GEF Project Focus Countries. In this context, the regional harmonization efforts in pollution policy framework will take place through the preparation of draft national pollution reduction and management plans that are cohesive with the regional pollution policy framework.

### **2.2.1. Subcomponent 1.1 National Policy and Institutional Framework**

The project would build on the on-going and planned national investments for rural development, wastewater treatment and rivers basin and coastal zone management as well as current institutional reforms that may present further opportunities for improved coordination. This subcomponent would provide an assessment of the current national policy and legal framework, examining the compliance with regional regulations / conventions on

pollution related to water management, agriculture, aquaculture, tourism and shipping. It would provide recommendations for legislative and administrative reforms at national and municipal levels, aligning with regional engagements for improved coordination between sectoral agencies and for pollution control. National level analysis will take place in the BBSEA GEF Project Focus Countries and a regional synthesis will be shared with all seven CMA countries.

### **2.2.2. Subcomponent 1.2 National Investment Recommendations, Knowledge Exchange and Regional Dialogue**

The component would include development of national investment recommendations for pollution reduction and management in the four BBSEA GEF Project Focus Countries through an established dialogue with the countries and key regional stakeholders, in compliance with relevant regional frameworks and international instruments. The plan will support identifying the potential infrastructure investment plans at the pollution hot spots with investment concept and investment roadmap with baseline data, targets and monitoring mechanism. This component would also facilitate the regional dialogue with strengthened regional cooperation between the Black Sea Commission (BSC), BSEC, GFCM and enhance BSEC performance (financing of activities and participation). National Investment recommendations will be carried out in the four BBSEA GEF Project Focus Countries while knowledge exchange and regional dialogue will benefit all seven CMA countries.

### **2.2.3. Subcomponent 1.3 Sustainable Business and Investment Standards and Guidelines**

The sustainable business and investment standards in key sectors such as agriculture, aquaculture, tourism, shipping and water management will be referenced and adopted based on international and regional best practices. For sustainable investment, EU sustainable finance taxonomy regulation has come into effect in 2020. The taxonomy provides criteria of sustainable finance for environmental objectives including preservation of water and marine resources and pollution reduction. The taxonomy will be an effective benchmark for the investment finance for water pollution in the Black Sea.

Blue Flag Beach Criteria, is a potential candidate standard, which is already adopted and certified for some beaches in Turkey to promote beach maintenance to maintain clean tourism attraction sites. On the water treatment, in an effort to harmonize the water pollution control in the region, wastewater treatment performance standards from region and countries such as EU, Australia, US, Japan can be introduced and customized to the pollution characteristics and available technologies in the Black Sea region. Models from investments into nature-based solutions (NBS) will be also used. The Black Sea Trade and Development Bank (BSTDB) / and the BSEC Business Council are affiliated institutions of the BSEC and key instruments for investments development in the Black Sea Region and will be used as a vehicle for this activity (i.e. training of trainers).

To disseminate the standards, awareness raising campaigns to the stakeholders will be crucial as well as the capacity building training. Series of training mechanism consisting of trainings of trainers (ToT) and set-of workshops targeting Small and Medium Enterprises (SMEs) in the region will be provided. The adaptation and implementation of the sustainable

business standards and trainings will be conducted to build the capacity and understanding of both potential investment proponents such as municipalities and the bank officers to make prepare bankable project proposals for pollution reduction and prevention related investment. This training will develop capacity of potential proponents and bank officers regarding how to ensure suitability, feasibility, bankability and impact assessment of pollution reduction and prevention investment projects as well as the knowledge on the international practices of water pollution related projects and their critical success factors.

### **2.3. Project Component 2 - Green and Innovative Financing**

This component would increase the readiness of both the public and private sectors in the four pilot countries and provide them an access to financial investment, innovation and technologies for pollution reduction and management. The project would support the adoption of internationally and regionally recognized sustainable standards for investment in key sectors (such as agriculture, aquaculture, tourism, shipping and water management) and provide capacity building opportunities for business operators and government officials in the Black Sea countries through workshops and webinars to attain knowledge in boosting the readiness on investment project preparation.

#### **2.3.1. Subcomponent 2.1 Eco-Innovation Challenge**

This subcomponent will finance and promote innovation to address the eutrophication issue of the Black Sea that will allow public sector institutions, development partners and potential investors to identify, verify and invest in innovative solutions. The Eco-Innovation challenge will be organized as 2 different challenges including 1 regional-wide challenge targeting early concept and ideas and 1 consolidated national challenge stage in GEF Black Sea countries to support the pilot implementation of proven concepts and piloted ideas through provision of grants. The overall theme of the challenges will be to unlock the potential of eco-innovation to mitigate the impact of eutrophication in the Black Sea.

At the national eco-innovation challenge, the type of Eco-Innovation could vary per country according to the local context. To make direct impact in reduction and removal of water pollution, the project will match the host of innovation and innovators through this challenge. Prior to the call for application, BBSEA focal points in GEF countries will nominate a potential Host of innovation, which is facing the eutrophication issue. The host of innovation can be municipalities, industrial entities, community/cooperative (i.e. agriculture/farmer cooperatives, etc.) that are willing to test the eco-innovation. BSEC will provide capacity building training to the potential host of innovation to understand the process and to prepare their own problem statement. The challenges will select the innovators who will focus their efforts in promoting healthy and sustainable innovations in Blue Economy especially targeting to solve water pollution issues. Selected eco-businesses could receive awards or grants, depending on the nature of the type of Eco-Innovation Challenge.

At the regional challenge, ex-post monetary awards and capacity building opportunity will be provided to the finalists. At the national challenge, grants will be provided to support further adaptations and/or testing of the innovative technologies and business models in order to prove feasibility, applicability and effectiveness. Through strategic partnerships at the international, regional and/or national business levels, the challenge will also promote

technical collaboration, and investment matching to build capacity among entrepreneurs, eco-business and the host of innovation.

This subcomponent will finance at least one to three selected eco-businesses from each of the four GEF Black Sea countries. The core requirements and structure of all Eco-Innovation Challenges include:

- Eco-Innovation eligibility for regional challenge: Eco-innovations could be any idea, early-stage concepts and technologies developed by entrepreneurs, academics, non-governmental organizations, youth group, women's group and/or individuals from the Black Sea countries targeting incubation of new and innovative ideas to solve eutrophication.
- Eco-Innovation eligibility for national challenge: Eco-innovations could be scalable prototype, proven solutions including technology and business models targeting acceleration of proven solutions elsewhere to test the adaptability in Black Sea GEF countries. The innovators could apply for this challenge from other parts of the world, but they need to identify local partners in respective Black Sea GEF countries to work with. The innovators should be registered businesses, academic, non-governmental organizations that are interested in scaling the eco-innovation in the Black Sea region.
- Selection process: Selection of Eco-Innovations will be done by a selection committee consisting of multiple experts to be selected and will assess the innovation based on a set of pre-established criteria. The selection process will be coordinated with key experts, development partners, investors, and business incubators / accelerators. The regional challenge will select awardees based on concept note and final pitch. The national challenge will select grantees based on initial screening of concept note and final screening by full proposal, cost estimate, ES assessment and final pitch. Grants and awards may be financed by this subcomponent and will be provided to the Eco-Innovations whose proposals selected based on criteria pre-established by the BSEC organization. For the regional eco-innovation challenge, the selected Eco-businesses could receive awards in the form of monetary award, winner's trip and capacity building including mentoring from innovation business experts. For the national eco-innovation challenge, the grantees can develop and implement pilot scale of their innovation in the selected Host of innovation in the Black Sea GEF countries. The maximum award for regional challenge will be US\$10,000 per awardee. The maximum grant for national challenge will be US\$500,000 per Black Sea GEF countries and allocated by number of grantees in each country. Special prizes can be awarded upon interest of potential sponsors to these challenges. The acceleration program will equip both regional and national challenge winners to gain more knowledge in business development and leadership, as well as gaining opportunity to access to the potential investors including development partners, venture capitals and regional/local banks.
- To assure the replicability and sustainability of this eco-innovation challenge mechanism, involvement of multiple stakeholders and partners from the world and region is important and would be achieved by inviting potential partners as co-organizers of this challenge and updating and reinforcing the Project Operational

Manual (POM). Further details on selection and eligibility criteria for both Host of innovation and innovators, eligibility criteria for innovations, procurement, financial management and institutional arrangement of the eco-innovation challenge will be detailed in the POM.

- This sub-component includes consulting services, non-consulting services, goods, limited work and consultations and will focus on the four BBSEA GEF Project Focus Countries.

### **2.3.2. Subcomponent 2.2 Investments Preparation**

The project would support the preparation of investments through identification and selection of viable solutions and locations in at least one of the BBSEA GEF Project Focus Countries (beneficiary countries). Nutrient pollution from agricultural sector is the most pressing issue at stake in many of the beneficiary countries and financing gaps in green-gray infrastructures to treat the pollution was also confirmed and recognized as investments urgently needed. The support would target investments for treatment of nutrient pollution and urban wastewater, water depollution, water recycling and reuse. The project will select one potential investment project with the most pressing urgency for the purpose of bluing the Black Sea in one of the four BBSEA GEF Project Focus Countries to support preparing a more concrete project proposal. The selection criteria of the project proposal should be based on; regional and national impact of investment on pollution reduction, readiness of the government on infrastructure investment, effectiveness in reducing water pollution in the Black Sea, sustainability of operation and maintenance of the investment, replicability and scalability of the investment, and social impact on community enhancement, job creation and gender equality. The decision making on investment project selection should be done through national and regional consultations with key stakeholders. The preparation envisages including development of various project preparation steps such as pre-feasibility studies, economic and financial analysis.

### **2.4. Component 3 - Project Management**

This component would aim to ensure the project efficiency and efficacy through the establishment of a satisfactory monitoring and evaluation (M&E) management system as well as the maintenance of the project's participation and consultation mechanisms. This component would support the project executing entity in charge of the technical implementation of the project activities, financial management and procurement, overall monitoring of project results, production of progress reports, and ESF compliance, including the establishment of a culturally appropriate grievance redress mechanism.

This component will support BSEC in the implementation and overall management of the Project, regarding the aspects related to social and environmental safeguards, monitoring, reporting and evaluation, complaints handling mechanisms, as well as financial audits and procurement, to ensure successful implementation of the activities carried out under the Project. The project will finance establishing and operating the Project Implementation Unit (PIU) at the BSEC to oversee and implement the project activities. The PIU would be led by a highly competent executive project manager of the BSEC. In addition, the component will also finance consultancies required for the preparation and supervision of specific activities,

boosting capacity for all fiduciary aspects of the project (financial management, procurement as per World Bank requirements), environmental and social safeguards, monitoring and evaluation, trainings, disbursement for eco-grant project implementation, exposure visits, studies for knowledge generation, and incremental operating costs. In this context, PIU will include a project manager who will work full-time for overseeing and supervising all the project activities and day-to-day project management. In addition, specialists/Experts on fiduciary management, procurement, environmental and social safeguards, eco-grant competition secretariat, and communication will be hired to conduct the overall project management at the regional level.

## **2.5. Project Beneficiaries**

All Black Sea coastal and adjacent countries will benefit from the Project. Under GEF support, Georgia, Ukraine, Turkey and Republic of Moldova will be directly supported to implement the project activities under both Component 1 and 2. Every Black Sea coastal and adjacent country will benefit from the regional dialogues and capacity building under Component 1. In addition, relevant Ministries identified as key stakeholders in each country will benefit from improved dialogue platforms (both at regional and national levels) established under this Project.

Multiple organizations (social entrepreneurs, NGOs/CSOs, MSMEs, youth groups, business incubators and accelerators, banks, industrial associations, universities etc.) across the Black Sea region will benefit from the Project. For component 1, the Project will invite all the key-stakeholders in its consultation meetings, dialogues and capacity building trainings. Under Component 2, Eco-Innovation Challenge targets the social entrepreneurs, academia, NGOs/CSOs, SMEs, youth groups for awarding competitive awards/grants. Through the series of consultations, the Project has already reached out to more than 600 individuals from academia, private sector, civil society and public agencies.

### **3. THE LEGAL, REGULATORY AND POLICY FRAMEWORK FOR ENVIRONMENTAL AND SOCIAL ASSESSMENT AND MANAGEMENT**

#### **3.1. The Legal, Regulatory and Policy Framework of the Countries with National Level Activities**

The Blueing Black Sea Project is one of the initiatives supporting the Common Maritime Agenda (CMA) and its seven signatory countries: Bulgaria, Georgia, Republic of Moldova, Romania, Russian Federation, Ukraine and Turkey. Although the proposed Project would benefit all Black Sea countries through knowledge exchange and standards building, national level activity would take place only in Georgia, Republic of Moldova, Turkey and Ukraine, in accordance with GEF decision in the current context. In this context, relevant (environmental, health and safety, social -labor and working conditions and stakeholder engagement-) legislation of these four countries are summarized in the following sections.

##### **3.1.1. The Legal and Regulatory Framework of Georgia**

Environmental protection legislation in Georgia has been developed in line with the Constitution, which guarantees a legal framework for protection of environment and public access to relevant environmental information. Over the past decades, Georgia has created a firm legal and political framework for environmental protection, which attempts to follow international best practices and provides for the application of widespread legal mechanisms and standards, including environmental impact assessment (EIA), economic instruments, inspection/monitoring, and permitting.

Georgia's Environmental Assessment (EA) Code (No: N890-IIs, Dated: June 1<sup>st</sup>, 2017), in effect since January 2018, represented a significant step forward in terms of advancing the country's legislation and aligning it more closely with international good practice on environmental assessment. The code sets out the three stages for obtaining an environmental permit; screening, scoping, and environmental assessment. An entire section of the code is dedicated to strategic environmental assessment (SEA). Ministry of Environment Protection and Agriculture (MEPA) is the primary policy maker in the field of environmental assessment and enforces the EA Code through its EA and Environmental Supervision Departments. Within MEPA, there is also the National Environmental Agency, which is mainly responsible from establishing systems for monitoring and management of meteorological, hydrological, geological processes and environmental/ambient (air, surface and groundwater, sea, soil) quality on the territory of Georgia. The agency provides services under four main issues; hydrometeorology, geology, pollution and fisheries.

Georgian legislation comprises of the Constitution, environmental laws, international agreements, subordinate legislation, normative acts, presidential orders and governmental decrees, ministerial orders, instructions and regulations. Along with the national regulations, Georgia is signatory to a number of international conventions, including those related to environmental protection. In this context, relevant key environmental and social laws and regulations are provided in Table 1 below.



Table 1. Key Environmental and Social Legislation of Georgia

Legislation	Description	Relevance to the Project
Environmental Assessment Code (No: N890-IIs, Dated: June 1 <sup>st</sup> , 2017)	The Code establishes legal basis for regulating issues and impact assessment related to projects and strategic plans/documents, which may have significant impacts on the environment and human health.	This code concerns assessment of potential impacts of the sub-projects that might be included in the scope of the code.
Law on Licenses and Permits (No: N1775, Dated: June 24 <sup>th</sup> , 2005)	It regulates legally organized activities posing certain threats to human life/health, and addresses specific state/public interests, including usage of resources, regulates activities requiring licenses/permits, determines types of licenses/permits required, and defines the procedures for issuing, revising and cancelling of licenses and permits.	This law covers required permits and licenses to be obtained for the sub-projects.
Law on Environmental Protection (No: N519, Dated: December 10 <sup>th</sup> , 1996)	It regulates the legal relationship between the bodies of the state authority and the physical persons or legal entities in the field of environmental protection and in the use of nature on all Georgia's territory including its territorial waters, airspace, continental shelf and special economic zone.	This law concerns the potential environmental impacts of the sub-projects.
Law of Georgia on Subsoil (No: N242, Dated: May 17 <sup>th</sup> , 1996)	It regulates the status of natural resources, study and usage of mineral resources.	This law concerns potential subsoil related impacts of the sub-projects.
Waste Management Code (No: N2994-rs, Dated: December 26 <sup>th</sup> , 2014)	It provides the legal conditions for implementation of measures aiming at prevention of generation of waste and increased reuse, environmentally - sound treatment of waste.	This code concerns the management of wastes (hazardous and non-hazardous) that might be generated at all stages of the sub-projects.
Law on Protection of Atmospheric Air (No: N2116, Dated: December 22 <sup>nd</sup> , 1999)	The law regulates protection of atmospheric air from man-induced impacts.	This law concerns emission generating activities and emissions of the sub-projects.
Law on Water (No: N936, Dated: October 16 <sup>th</sup> , 1997)	It regulates water use, defines rights and obligations of water users, sets out the types of licenses for the use of water, the rules and conditions of their issuance, considers conditions of suspension, withdrawal and deprivation of license, and regulates water flows.	This law concerns all activities of the sub-projects that might impact surface waters and groundwater.
Law on Wildlife (No: N540-RS, Dated: December 25 <sup>th</sup> , 1996)	The law regulates wildlife protection and use including hunting and fishing.	This law concerns potential wildlife related impacts of the sub-projects.
Law on Red List and Red Book (No: N2356-IIs, Dated: June 6 <sup>th</sup> , 2003)	This Law provides the legal definitions and classifications, including relevant methodological issues and recommendations for identifying and categorizing the Red List species and establishment of the Red Book of Georgia.	This law concerns potential impacts of the sub-projects that are related to endangered species and their habitats.
Forestry Code (No: N5949-ss, Dated: May 22 <sup>nd</sup> , 2020)	It regulates relations and state policy in the area of forestry management, use and protection.	This code concerns potential impacts of the sub-projects related to forest areas.
Law on Soil Protection (No: N490-IIs, Dated: December 5 <sup>th</sup> , 1994)	The law provides requirements and principles of protection and preservation of soil resources against negative impacts.	This law concerns potential soil related impacts of the sub-projects

Legislation	Description	Relevance to the Project
Law of on Conservation of Soil and Restoration-Amelioration of Soil Fertility (No: N2260-IIs, Dated: May 8 <sup>th</sup> , 2003)	It ensures conservation and improvement of soil in the territory of Georgia, defines the legal principles, measures, limitations and prohibitions to that end; soil conservation and fertility restoration improvement measures.	This law concerns potential impacts of the sub-projects that directly affect the fertility of soil.
Law on System of Protected Areas (No: N136, Dated: March 7 <sup>th</sup> , 1996)	It forms a legal basis for planning, establishment and maintenance and assignment of categories for protected areas, and describing funding issues for each category.	This law concerns potential impacts of the sub-projects on protected areas.
Law on Regulation and Engineering Protection of Seacoasts and Riverbanks of Georgia (No: N4131, Dated: December 27 <sup>th</sup> , 2006)	It provides general principles and requirements for protection of coastal areas and riverbanks from negative environmental impacts.	This law concerns potential impacts the sub-projects on water bodies including seacoasts and riverbanks.
Law on Compensation for Damage Caused by Hazardous Substances (No: N2350-Rs, Dated: July 23 <sup>rd</sup> , 1999)	It includes principles and procedures for compensating the negative impacts caused by discharge of hazardous substances into environment.	This law concerns the usage of hazardous substances and their impacts.
Labor Code (No: N4113-Rs, Dated: December 27 <sup>th</sup> , 2010)	It regulates employment relations, unless such relations are otherwise regulated by international treaties that have been implemented in Georgia.	This code concerns all labor related issues of the sub-projects.
Law on Public Health (No: N5069, Dated: June 27 <sup>th</sup> , 2007)	It regulates the activities for ensuring a safe environment for human health.	This law concerns potential health related impacts of the sub-projects.
Law of Georgia on Compensating for Substitute Land Development Value and Sustained Damage when Allocating Agricultural Land for Non-agricultural Purposes (No: N900, Dated: October 30 <sup>th</sup> , 1997)	It defines compensation amounts required at the time of allocation, use or conversion of agricultural lands for non-agricultural purposes.	This law is not relevant to the sub-projects since sub-projects that might require land acquisition and conversion will not be eligible for financing.
Law on Cultural Heritage (No: N4708-Is, Dated: May 8 <sup>th</sup> , 2007)	It sets out procedures for protection of cultural heritage and permitting arrangements for archaeological investigations.	This law is not relevant to the sub-projects since sub-projects that might have adverse impacts on cultural heritage will not be eligible for financing.

### 3.1.2. The Legal and Regulatory Framework of Republic of Moldova

The Association Agreement between the European Union and the European Atomic Energy Community and their Member States and the Republic of Moldova was signed on June 27, 2014. Following the signature of the Agreement, the country committed to implementing the relevant environmental legislation of the European Union into its national legal system by adopting or changing national legislation, regulations and procedures aiming at political association and economic integration with the EU.

In Republic of Moldova the procedures for issuing an Environmental permit and the Environmental Impact Assessment (EIA), Ecological appraisal and the Ecological Expertise procedure are stipulated by the Ministry of Environment (MoE) through following acts:

- Law on Environmental Impact Assessment (No: 86, Dated: May 29<sup>th</sup>, 2014) (specifies the necessary Environmental Assessment procedures and it is harmonized with the EU EIA Directive)
- Law on Ecological Expertise
- Other relevant implementation bylaws

According to the law, all projects fall under three main categories:

- First category – projects that require full EIA, and can only be developed (detailed design) only after a positive approval of EIA findings by the State Ecological Expert (SEE);
- Second category – projects require ecological substantiation of project activities and a special environmental chapter to be included in the project design documentation and respectively positive approval from SEE before commencement of construction;
- Third category – all other projects which do not need to be passed through the formal procedures of EIA and SEE.

The legislation of Republic of Moldova has been in the harmonization phase with EU *acquis* and most of the relevant legislation has been adopted. In this context, key environmental and social laws and regulations are listed in Table 2 below.

Table 2. Key Environmental and Social Legislation of Republic of Moldova

Legislations	Description	Relevance to the Project
Law on Environmental Protection (No: 1515-XII, Dated: June 16 <sup>th</sup> , 1993)	This Law enforces environmental protection as a national priority for the welfare of citizens, realization of economic and public interests, and also for sustainable development.	This law concerns potential environmental impacts of the sub-projects.
Law on Strategic Ecological Assessment (No: 11, Dated: March 2 <sup>nd</sup> , 2017)	Purpose of this law is establishment of the legal basis of carrying out strategic ecological assessment for ensuring environmental protection, prevention or minimization of potential adverse impacts of some plans and programs.	This law concerns potential ecological impacts of plans and program and not relevant to the sub-project covered in this ESMF.

<b>Legislations</b>	<b>Description</b>	<b>Relevance to the Project</b>
Law on Environmental Impact Assessment (No: 86, Dated: May 29 <sup>th</sup> , 2014)	Purpose of this law is providing the legal basis for environmental impact assessment process to be implemented for the type of projects specified in the law.	This law concerns potential impacts of the sub-projects and related national requirements for approval.
Water Law (No: 272, Dated: December 23 <sup>rd</sup> , 2011)	This law establishes the regulatory base for; monitoring, assessment, management, protection and effective use of surface and groundwater, establishment of rights to use water and supporting investments on water resources, and mechanisms of protection of waters.	This law concerns all activities of the sub-projects that might impact surface and groundwater.
Law on the Quality of Drinking Water (No: 182, Dated: December 19 <sup>th</sup> , 2019)	This law establishes the legal basis for protection and management of quality of drinking water resources.	This law establishes standards related to drinking water to be used in the scope of sub-projects.
Law on Supervision of Public Health (No: 10-XVI, Dated: December 3 <sup>rd</sup> , 2009)	This law regulates supervision of public health, establishing general requirements for public health, the rights and obligations of persons and legal entities, and procedure for the organization of system of the state supervision of public health.	This law concerns potential health related impacts of the sub-projects.
Law on the Fund of Natural Areas Territories by the State (No: 1538-XIII, Dated: February 25 <sup>th</sup> , 1998)	This law establishes the legal basis for; implementation of funds for the natural territories protected by the state, the principles, mechanisms and procedures for preservation, and defines responsibilities of the central and local authorities, non-governmental organizations and citizens.	This law concerns potential impacts of the sub-projects related to natural areas.
Law on Quality in Construction (No: 721-XIII, Dated: February 2 <sup>nd</sup> , 1996)	This law determines legal, technical, and economic requirements for quality assurance in construction activities.	This law establishes standards related to construction activities.
Law on the Protection of Archaeological Heritage (No: 218, Dated: September 17 <sup>th</sup> , 2010)	This law regulates archeological research, and protection of archaeological heritage.	This law is not relevant to the sub-projects since sub-projects that might have adverse impacts on cultural heritage will not be eligible for financing.
Law on Red List (No: 325-XVI, Dated: December 15 <sup>th</sup> , 2005)	This Law provides the legal definitions and classifications, including relevant methodological issues and recommendations for identifying and categorizing the Red List species of Republic of Moldova as well as preservation requirements for those species and responsibilities of relevant agencies.	This law concerns any potential impact of the sub-projects on Red List species and their habitats.
Law on Means of Phytosanitary Appointment and Means Increasing Fertility of the Soil (No: 119-XV, Dated: April 22 <sup>nd</sup> , 2004)	This law is harmonized with Articles 1 and 3 of the Directive 2009/128/EC about establishment of the legal basis for use of pesticides.	This law establishes standards related to usage of pesticides.
Law on Waste (No: 209, Dated: July 29 <sup>th</sup> , 2016)	This law establishes the basis for management of solid wastes and impacts of wastes on natural resources.	This law concerns waste management associated with the sub-projects.
Law on Protection of Atmospheric Air (No: 1422-XIII, Dated: December 17 <sup>th</sup> , 1997)	This law covers management of air quality and prevention of the major impacts of emissions on atmospheric air quality.	This law concerns emission to air during the implementation of sub-projects.

Legislations	Description	Relevance to the Project
Law on Health Protection and Labor Safety (No: 186-XVI, Dated: July 10 <sup>th</sup> , 2008)	This law governs the legal relations concerning introduction of measures for safety and health of workers on workplace.	This law concerns labor health and safety related activities during the implementation of sub-projects.
Labor Code (No: 154-XV, Dated: March 28 <sup>th</sup> , 2003)	This code regulates individual and collective employment relationships, labor jurisdiction, and also other relations which are directly connected with labor force.	This code concerns labor related activities during the implementation of sub-projects.
Law on ensuring Equal Opportunities between Women and Men (No: 5-XVI, Dated: February 9 <sup>th</sup> , 2006)	The purpose of this law is ensuring equal rights for women and men in political, economic, social, cultural and working environments and for prevention and elimination of all forms of discrimination.	This law regulates gender related issues in the scope of sub-projects.
Subsoil Code (No: 3-XVI, Dated: February 2 <sup>nd</sup> , 2009)	This code considers importance of rational use and protection of subsoil, for the purpose of protection of interests of the state and citizens.	This code concerns subsoil related impacts of the sub-projects
Forest Code (No: 887-XIII, Dated: June 21 <sup>st</sup> , 1996)	Forest legislation is intended for establishing sustainable forest management principles, recovery and protection of the forests, maintenance, preserving and improvement of biodiversity.	This code concerns potential impacts of the sub-projects on forest areas.
Law on Public Service of Water Supply and the Sewerage (No: 303, Dated: December 13 <sup>rd</sup> , 2013)	The purpose of this law is establishing the standards for public water supply and sewerage services. The law covers management and monitoring measures/requirements, as well as quality standards and roles and responsibilities of both the public and private institutions.	This law concerns potential sub-projects related to water supply and sewerage, and their associated impacts.

### 3.1.3. The Legal and Regulatory Framework of Turkey

Environmental Law, which is ratified in August 1983, is one the principal legislation on environment and environmental protection. Several by-laws and decrees are enforced under the Environmental Law.

The Environmental Impact Assessment Regulation defines the administrative and technical procedures and principles to be followed throughout the EIA process. When an activity (a Project) is planned, the Project developer is responsible for preparing an Environmental Impact Assessment (EIA) Report along with many other permits required to realize the Project. However, facilities are subject to preparation of an EIA Report depending on the type of the facility, its capacity, or the location of the activity. The activities that are subject to the provisions of the Environmental Impact Assessment Regulation are listed in Annex I and Annex II of the Regulation. For Annex I activities a full EIA report is required and those Projects go through the full EIA process. For Annex II activities, a Project Description File (PDF) is prepared in accordance with the outline given in the Regulation and the relevant process has to be conducted. The Ministry of Environment and Urbanization (MoEU) has the authority to make "EIA Positive", "EIA Negative", "EIA Required" or "EIA Not Required" decisions about the projects subject to this Regulation. Within the MoEU, General Directorate of EIA, Permits and Inspection is the main entity which is responsible from the environmental

impact assessment and strategic environmental assessment processes and taking relevant decisions, issuing approvals and permits and carrying out monitoring and auditing functions.

Turkey has been in the EU accession process and in this context environment related legislation of Turkey mostly adopted the EU *Acquis*. In this context, key environmental and social legislation are listed in Table 3 below.

Table.3. Key Environmental and Social Legislation of Turkey

Legislation	Description	Relevance to the Project
Environment Law (No: 2872, Dated: August 11 <sup>th</sup> , 1983)	The purpose of this law is to protect the environment, which is the common asset of all living things, in line with the principles of sustainable environment and sustainable development.	This law concerns any permitting requirements for the sub-projects.
Forestry Law (No: 6831, Dated: September 8 <sup>th</sup> , 1956)	The purpose of this law is to determine the procedures and principles regarding the protection of forests and woodlands.	This law concerns potential impacts of the sub-projects related to forest areas.
Groundwater Law (No: 167, Dated: December 23 <sup>rd</sup> , 1960)	Groundwater is among the public water resources regulated by State. All kinds of research, use, protection and registration of these waters are subject to the provisions of this law.	This law concerns activities that might impact groundwater.
Labor Law (No: 6831, Dated: September 8 <sup>th</sup> , 1956)	The purpose of this Law is to regulate the rights and responsibilities of workers employed on the basis of an employment contract with the employers regarding the working conditions and working environment.	This law concerns all labor related activities of the sub-projects.
National Parks Law (No: 2873, Dated: August 11 <sup>th</sup> , 1983)	The purpose of this Law is to regulate the principles regarding the selection and determination of national parks, nature parks, natural monuments and nature conservation areas in the country, which have national and international values, and their protection, development and management without deteriorating their characteristics and characters.	This law concerns potential impacts of the sub-projects on national park areas.
Occupational Health and Safety Law (No: 6331, Dated: June 30 <sup>th</sup> , 2012)	The purpose of this Law is to regulate the duties, powers, responsibilities, rights and obligations of employers and employees in order to ensure occupational health and safety at workplaces and to improve existing health and safety conditions.	This law concerns all activities of the sub-projects.
Public Health Law (No: 1593, Dated: May 6 <sup>th</sup> , 1930)	The purposes of this law are improving the sanitary conditions of the country and fighting with all diseases or other agents that harm the health of citizens; ensuring healthy living conditions for future generations; and providing available medical and social assistance for the citizens.	This law concerns potential health related impacts of the sub-projects.
Soil Protection and Land Use Law (No: 5403, Dated: July 19 <sup>th</sup> , 2005)	The purpose of this law is to determine the procedures and principles that will ensure conservation and development of soil, classification of agricultural lands, the planned use of agricultural land and sufficient income agricultural lands in accordance with the environmental priority sustainable development principles.	This law concerns potential soil related impacts of the sub-projects.

Legislation	Description	Relevance to the Project
Coast Law (No: 3621, Dated: April 17 <sup>th</sup> , 1990)	The purpose of this law is to set out the principles for protection of the sea, natural and artificial lakes and river banks and shore buffer zones by paying attention to their natural and cultural characteristics and for their utilization towards public interest and access for the benefit of society.	This law concerns all impacts on coasts.
Water Products Law (No: 1380, Dated: April 4 <sup>th</sup> , 1971)	This Law includes the issues regarding the protection, production and control of fishery products.	This law concerns all impacts on fisheries.
Waste Management Regulation (No: 20644, Dated: April 2 <sup>nd</sup> , 2015)	The purposes of this regulation are; management of wastes from generation to disposal without harming the environment and human health, reduction of waste formation, reuse of waste, recycling, recovery of waste, Determination of the general principles and procedures regarding production and market surveillance and inspection of the products covered by this Regulation, which have certain criteria, basic conditions and features in terms of environment and human health.	This regulation concerns the management of hazardous and non-hazardous solid wastes.
Regulation on Landfill of Wastes (No: 13887, Dated: March 26 <sup>th</sup> , 2010)	The regulation puts down the principles for landfilling of wastes including requirements regarding planning and design, construction and operation of landfills and minimizing potential impacts of landfilling of wastes.	This regulation concerns the disposal of wastes on landfills.
Water Pollution Control Regulation (No: 7221, Dated: December 31 <sup>st</sup> , 2004)	The purpose of this regulation is to determine the legal and technical principles to prevent water pollution in line with sustainable development goals in order to protect and ensure the best use the Turkey's groundwater and surface water resources.	This regulation concerns all activities that impact surface waters and groundwater.
Regulation on the Water Intended for Human Consumption (No: 7510, Dated: February 17 <sup>th</sup> , 2005)	The purpose of this regulation is to regulate the procedures and principles regarding compliance of the water intended for human consumption with the technical and hygienic conditions and the provision of the quality standards of the water, the production, packaging, labeling, sale and inspection of the spring and drinking water.	This regulation establishes standards related to drinking water supplied for the sub-projects.
Regulation on the Control of Pollution Caused by Hazardous Substances in and around Water Environment (No: 9638, Dated: November 26 <sup>th</sup> , 2005)	The purpose of this regulation is to detect, prevent and gradually reduce the pollution caused by hazardous substances in and around the water.	This regulation concerns the usage of hazardous substances and their impacts on water bodies, at all stages of the sub-projects
Regulation on the Protection of Ground Waters against Pollution and Deterioration (No: 16038, Dated: April 7 <sup>th</sup> , 2012)	The purpose of this regulation is determination of the necessary principles for preserving the current state of well-maintained groundwater, preventing pollution and degradation of groundwater.	This regulation concerns all activities that might impact groundwater.

Legislation	Description	Relevance to the Project
Surface Water Quality Regulation (No: 16806, Dated: November 30 <sup>th</sup> , 2012)	The purpose of this regulation include; determination and classification of the biological, physico-chemical and hydro-morphological qualities of surface waters and coastal and transitional waters, monitoring water quality and quantity, determination of the procedures and principles for the measures to be taken in order to preserve, protect and achieve good water status, taking into account the balance of protection and use.	This regulation concerns all activities that might impact surface waters.
Regulation on the Monitoring of Surface Waters and Groundwaters (No: 19392, Dated: November 2 <sup>nd</sup> , 2014)	The purpose of this regulation is; to determine the current status of all surface waters and groundwater in terms of quantity, quality and hydro-morphological elements, to monitor the waters with an approach based on ecosystem integrity, to determine the procedures and principles for standardization in monitoring and to ensure coordination between monitoring institutions and organizations.	This regulation concerns all activities that impact surface waters and groundwater.
Urban Wastewater Treatment Regulation (No: 9844, Dated: January 8 <sup>th</sup> , 2006)	The purpose of this regulation is to protect the environment against the negative effects of the collection, treatment and discharge of urban wastewater including also certain industrial sectors.	This regulation concerns all sub-projects related to wastewater treatment, and their potential impacts.
Regulation on the Assessment and Management of Air Quality (No: 12188, Dated: June 6 <sup>th</sup> , 2008)	The purpose of this Regulation is to define and establish air quality targets in order to prevent or reduce the harmful effects of air pollution on the environment and human health, to evaluate air quality based on defined methods and criteria, to protect the current situation in places where air quality is good and to improve it in other cases, to collect sufficient information and to inform the public through warning thresholds.	This regulation concerns all emission generating activities.
Regulation on the Control of Odor Causing Emissions (No: 18607, Dated: July 19 <sup>th</sup> , 2013)	The purpose of this Regulation is to regulate the administrative and technical procedures and principles for the control and reduction of emissions that cause odor.	This regulation concerns all emission causing activities that generate odor.
Regulation on the Monitoring of Greenhouse Gas Emissions (No: 19678, Dated: May 17 <sup>th</sup> , 2014)	The purpose of this Regulation is to regulate the procedures and principles regarding the monitoring, reporting and verification of greenhouse gas emissions arising from the activities listed in the annex of the regulation.	This regulation concerns all greenhouse gas emission activities.
Regulation on the Assessment and Management of Environmental Noise (No: 14012, Dated: June 4 <sup>th</sup> , 2010)	The purpose of this Regulation is to ensure that necessary measures are taken to ensure that the peace and tranquility of people as a result of exposure to environmental noise and their physical and mental health are not impaired; determination of environmental noise exposure levels by using assessment methods with noise maps to be prepared, acoustic report and environmental noise level assessment report, informing the public about environmental noise and its effects, especially where environmental noise exposure levels may cause harmful effects on human health, preparation of action plans for preventing and reducing noise and determining the principles and procedures for the implementation of these plans	This regulation concerns all noise causing activities.



<b>Legislation</b>	<b>Description</b>	<b>Relevance to the Project</b>
Regulation on the Control of Soil Pollution and Lands Contaminated by Point Sources (No: 14026, Dated: June 8 <sup>th</sup> , 2010)	The purpose of this regulation is; prevention of soil pollution as a receiving environment, to identify areas and sectors where pollution is present or likely to be, to determine the principles of cleaning and monitoring contaminated soils and fields in line with sustainable development goals.	This regulation concerns all soil related impacts of the sub-projects.
Environmental Impact Assessment Regulation (No: 20235, Dated: November 11 <sup>th</sup> , 2014)	The purpose of this Regulation is to regulate the administrative and technical procedures and principles to be followed in the Environmental Impact Assessment (EIA) process.	This regulation concerns potential impacts of the sub-projects that need to go through the national EIA process.
Strategic Environmental Assessment Regulation (No: 23492, Dated: April 8 <sup>th</sup> , 2017)	The purpose of this Regulation is to regulate the administrative and technical procedures and principles to be followed in the Strategic Environmental Assessment process, which is applied to integrate environmental elements into the process of preparing and approval of plans / programs that are expected to have significant impacts on the environment, in line with the principle of sustainable development in order to protect the environment.	This regulation concerns the national plans and programs to be developed and not relevant for the sub-projects covered by this ESMF.
Environmental Auditing Regulation (No: 38696, Dated: June 12 <sup>nd</sup> , 2021)	The purpose of this Regulation is to determine the principles and procedures of environmental auditing in the process from the start of operation of the facility or activity to the termination; to regulate the qualifications and obligations of the personnel who will conduct the audit.	This regulation concerns the potential sub-projects that might need to get an environmental permit.
Environmental Permits and Licensing Regulation (No: 20033, Dated: September 10 <sup>th</sup> , 2014)	The purpose of this Regulation is to regulate the procedures and principles to be followed in the environmental permit and license process.	This regulation covers required permits and licenses and permitting process for potential sub-projects that might need to obtain such permits.
Regulation on Wastewater Collection and Disposal Systems (No: 23214, Dated: January 6 <sup>th</sup> , 2017)	The purpose of this regulation is to regulate the procedures and principles related to planning, design, construction and operation of wastewater collection and removal systems.	This regulation concerns potential sub-projects related to wastewater treatment.
Regulation on the Protection, Usage and Planning of Agricultural Lands (No: 24153, Dated: December 9 <sup>th</sup> , 2017)	The purpose of this Regulation is to make classification and development of agricultural lands, allowing for unintended use in case of necessity, determining and protecting soil and large plains with high agricultural production capability, preparing and implementing soil conservation plans and projects, and determining areas susceptible to erosion,.	This regulation concerns potential soil related impacts of the sub-projects.
Conservation of Cultural and Natural Assets Law (No: 2863, Dated: July 21 <sup>st</sup> , 1983)	The purpose of this Law is to determine the definitions of movable and immovable cultural and natural properties that need to be protected, to regulate the operations and activities to be carried out, to determine the establishment and duties of the organization that will take the necessary principles and implementation decisions in this regard.	This law is not relevant to any of the sub-projects since sub-projects that have adverse impacts on cultural heritage will not be eligible for financing. However, it will be applicable for any chance finds if sub-projects involve any construction works

Legislation	Description	Relevance to the Project
Expropriation Law (No: 2942, Dated: July 8 <sup>th</sup> , 1983)	This Law regulates the obligations and procedures and methods to be carried out in the expropriation of immovable properties owned by the real and private entities by the State and public legal entities, calculation of the expropriation value, registration of the immovable property and the right of easement in the name of the administration, taking back of the unused immovable property, and transfer of immovable properties between the administrations.	This law is not relevant to any of the sub-projects since sub-projects that require land acquisition will not be eligible for financing.
Settlement Law (No: 5543, Dated: September 26 <sup>th</sup> , 2006)	The purpose of this Law is to regulate the resettlement activities of immigrants, nomads, those whose places are expropriated, the conditions and measures to be taken regarding the arrangement of physical settlement in villages, the rights and obligations of the settled people.	This law is not relevant to any of the sub-projects since sub-projects that require land acquisition will not be eligible for financing.

### 3.1.4. The Legal and Regulatory Framework of Ukraine

The Ukrainian legislative and regulatory framework on environmental, social, labor occupational health and safety (OHS) issues includes international conventions, Laws of Ukraine, Decrees and Orders of the Cabinet of Ministers of Ukraine (CMU), orders of ministries, various norms, procedures, standards and guidelines. There are numerous by-laws of government bodies (Ministries, state agencies, state inspections, public services and other central government bodies), which determine the powers of the relevant state body and procedures for environmental protection, social protection, access to information, etc.

The Law on Environmental Impact Assessment (EIA) (No: 2059-VIII, Dated: May 23<sup>rd</sup>, 2017) came into force in December 2017. In addition, secondary legislation required for implementation of the EIA law was also enacted in December 2017; Regulation on Criteria for Determining Planned Activity, its Expansion and Change which are not Subject to the EIA, Regulation on Procedure for Conducting Public Discussion while Preparing the EIA, Regulation on Procedure for the Transfer of Documentation to Provide the EIA Conclusion and the EIA Funding and on Procedure for Maintaining the Unified Register on the EIA.

The EIA Law sets legal and organizational policies for an EIA with a view to avoid and prevent environmental damage, ensure environmental safety, environmental protection, rational use and restoration of natural resources, in the process of decision-making on economic activities likely to cause a significant impact on the environment, taking into account state, public and private interests. As part of the EIA process, the environmental authorities (The Ministry of Ecology and Natural Resources (MENR) or MENR's regional offices) need to be provided with an assessment of the environmental effect and the report will be subject to public discussion. Based on this, environmental authorities provide their opinion on the assessment and accordingly a permit is issued for the planned activity.

Key environmental and social laws and regulations are listed in Table 4 below.

Table 4. Key Environmental and Social Legislation of Ukraine

Legislation	Description	Relevance to the Project
Law on Labor Protection (No: 2694-XII, Dated: October 14 <sup>th</sup> , 1992)	This Law determines basic provisions by realization of constitutional right of workers on protection of their life and health in the course of labor activity, on proper, safe and healthy working conditions, governs the relations between the employer and the worker on occupational health and safety issues, and the production circle.	This law concerns all labor related activities under sub-projects.
Law on Ensuring Sanitary and Epidemiological Well-being of the Population (No: 4004-XII, Dated: February 24 <sup>th</sup> , 1994)	This Law governs the public health issues and, determines the rights and obligations of state bodies, companies, organizations, and citizens, establishes procedures for the organization of the public sanitary and epidemiologic service and implementation of the state sanitary and epidemiological surveillance.	This law concerns potential health related impacts of the sub-projects.
Law on Waste (No: 187/98-BP, Dated: March 5 <sup>th</sup> , 1998)	This Law determines legal, organizational and economic basis of the activities connected with the preventing or reducing waste formation, their collection, transportation, storage, sorting, processing, utilization and removal, and also with prevention of negative impacts of wastes on the surrounding environment and human health.	This regulation concerns management wastes.
Law on Environmental Impact Assessment (No: 2059-VIII, Dated: May 23 <sup>rd</sup> , 2017)	This Law establishes legal and organizational basis of the environmental impact assessment directed to prevent any harm to the environment, providing ecological safety, environmental protection, rational use and reproduction of natural resources.	This law concerns the potential impacts of the sub-projects that are covered by this national regulation.
Law on Protection of Environment (No: 1264-XII, Dated: June 25 <sup>th</sup> , 1991)	This Law determines legal, economic and social basis for protection of the environment for the benefit of present and future generations.	This law concerns the potential environmental impacts of the sub-projects.
Law on Red List (No: 3055-III, Dated: February 7 <sup>th</sup> , 2002)	This Law provides the legal definitions and classifications, including relevant methodological issues and recommendations for identifying and categorizing the Red List species of Ukraine as well as preservation requirements for those species and responsibilities of relevant agencies.	This law concerns any potential impact of the sub-projects on Red List species and their habitats.
Law on Fauna (No: 2894-III, Dated: December 13 <sup>rd</sup> , 2001)	It regulates of the relations in the field of protection, use and reproduction of objects of fauna, preserves and improves the habitat of wild animals, and provides conditions of preserving all specific and population variety of animals.	This law concerns any potential impact of the sub-projects on fauna species and their habitats.
Law on Flora (No: 594-XIV, Dated: April 9 <sup>th</sup> , 1999)	It regulates the public relations in the field of protection, use and reproduction wild-growing and others nonagricultural purpose of vascular plants, Bryophyta, seaweed, lichens, and also mushrooms, their groups and the place of growths.	This law concerns any potential impact of the sub-projects on flora.
Law on Strategic Ecological Assessment (No: 2354-VIII, Dated: March 20 <sup>th</sup> , 2018)	Purpose of this law is establishment of the legal basis of carrying out strategic ecological assessment for ensuring environmental protection, prevention or minimization of potential adverse impacts of some plans and programs.	This law concerns potential ecological impacts of plans and program and not relevant to the sub-project covered in this ESMF.

Legislation	Description	Relevance to the Project
Law on Air Quality Protection (No: 2707-XII, Dated: October 16 <sup>th</sup> , 1992)	This law covers management of air quality and prevention of the major impacts of emissions on atmospheric air quality.	This law concerns emission to air during the implementation of sub-projects.
Law on Seaports (No: 2709-VI, Dated: May 17 <sup>th</sup> , 2012)	This Law determines legal, economic and organizational basis of activities in seaports.	This law concerns potential impacts of seaports.
Law on Approval of the Nation-Wide Target Development Program of Water Economy and Ecological Improvement of River Basin Dnieper for the Period Till 2021 (No: 4836-VI, Dated: May 24 <sup>th</sup> , 2012)	The purpose of the Program is determination of the main directions of state policy in water economy for human needs and industries, preserving and reconstruction of water resources, implementation of integrated water resources management, renewal of role of the reclaimed lands in food and resource supply, water consumption optimization, prevention and mitigation of impacts on waters.	This law concerns activities related to drinking water and wastewater.
Water Code (No: 213/95-BP, Dated: June 6 <sup>th</sup> , 1995)	The water code promotes forming of water and ecological law and order and providing ecological safety of the population, and also more effective, evidence-based use of waters and their protection from pollution, contamination and exhaustion.	This code concerns activities related to drinking water and wastewater.
Land Code (No: 2768-III, Dated: October 25 <sup>th</sup> , 2001)	The land related results arising from using subsoil, the forests, waters, and also plant and animal life, are regulated by this Code.	This code concerns potential land related impacts of the sub-projects.
Forest Code (No: 3852-XII, Dated: January 21 <sup>st</sup> , 1994)	This code aims to provide protection, reproduction and steady use of forest resources taking into account ecological, economic, social and other interests of society.	This code concerns potential impacts of the sub-projects on forest areas.
Labor Code (No: 322-VIII, Dated: December 12 <sup>th</sup> , 1971)	This code regulates individual and collective employment relationships, labor jurisdiction, and also other relations which are directly connected with labor force.	This code concerns labor related activities during the implementation of sub-projects.
Subsoil Code (No: 132/94-BP, Dated: July 27 <sup>th</sup> , 1994)	This code considers importance of rational use and protection of subsoil, for the purpose of protection of interests of the state and citizens.	This code concerns subsoil related impacts of the sub-projects
Law on Cultural Heritage (No: 1805-III, Dated: June 8 <sup>th</sup> , 2000)	This Law regulates the legal, organizational, social and economic relations in the field of protection of cultural heritage.	This law is not relevant to any of the sub-projects since sub-projects that have adverse impacts on cultural heritage will not be eligible for financing.

### 3.2. World Bank Environmental and Social Framework

WB's Environmental and Social Framework became effective in October 2018. The Framework sets out the Bank's commitment to sustainable development, through a Bank Policy and a set of Environmental and Social Standards (ESS) that are designed to support Borrowers' projects, with the aim of ending extreme poverty and promoting shared prosperity.

The WB ESSs set the requirements to be met by Borrowers with respect to the identification, evaluation and mitigation of social and environmental risks and impacts associated with sub-projects supported by the Bank through Investment Project Financing. Six out of the ten ESSs are found to be relevant with respect to the project scope, which are as follows:

- ESS1: Assessment and Management of Environmental and Social Risks and Impacts;
- ESS2: Labor and Working Conditions;
- ESS3: Resource Efficiency and Pollution Prevention and Management;
- ESS4: Community Health and Safety;
- ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; and
- ESS10: Stakeholder Engagement and Information Disclosure.

ESS5 “Land Acquisition, Restrictions on Land Use and Involuntary Resettlement” is not relevant to the project. Since, project will not finance activities that will require land acquisition, restriction to land use and involuntary resettlement.

ESS7 “Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities” is not relevant to the project as it is anticipated that there are no indigenous groups in the foreseen Project Area that meet the definition provided in ESS7.

ESS8 “Cultural Heritage” is not relevant to the project. None of the activities within the scope of the project are anticipated to have impacts on cultural heritage and such activities in the scope of investments will not be eligible for financing. The projects with adverse impacts on the cultural heritage will be screened out through the ESMF. Nevertheless, the sub-project specific environmental and social assessment documents will include chance find procedures at a minimum considering the risk of chance finds during excavation works.

ESS9 “Financial Intermediaries” is not relevant to this project since it does not involve a Financial Intermediary.

In addition to the WB ESSs, applicable operational policies (OPs) of the World Bank such as OP 7.50 (Projects on International Waterways) and OP 7.60 (Projects in Disputed Areas) have also been considered with regard to their applicability with respect to the project scope. It should be noted that the Project will not have any activity triggering OP 7.50 and no activity will take place in a disputed area triggering OP 7.60.

Furthermore, in accordance with the ESSs, the WB Group’s Environmental, Health and Safety (EHS) Guidelines would be applied to the project. These EHS Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). The General EHS Guidelines contain information on cross-cutting environmental, health, and safety issues potentially applicable to all industry sectors including the following sections:

- Environmental
- Occupational Health and Safety

- Community Health and Safety
- Construction and Decommissioning

These General EHS Guidelines are designed to be used together with the relevant Industry Sector EHS Guidelines which provide guidance to users on EHS issues in specific industry sectors. The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs. In cases where the national requirements of the countries differ from the levels and measures presented in the EHS Guidelines, the more stringent measures will be applied in the project specifications.

In addition to the General EHS Guidelines, the applicable Industry Sector Guidelines for this project would depend on the specific type of grants/sub-projects, however, might be including the followings:

- EHS Guidelines for Water and Sanitation,
- EHS Guidelines for Tourism and Hospitality Development
- EHS Guidelines for Waste Management Facilities
- EHS Guidelines for Shipping
- EHS Guidelines for Forest Harvesting Operations
- EHS Guidelines for Annual Crop Production
- EHS Guidelines for Aquaculture
- EHS Guidelines for Perennial Crop Production
- EHS Guidelines for Fish Processing

### **3.2.1. ESS1 - Assessment and Management of Environmental and Social Risks and Impacts**

The World Bank requires assessment, management and monitoring of environmental and social risks and impacts of projects supported by the WB to ensure that projects are environmentally and socially sound and sustainable. The objectives of ESS1 are;

- to identify, evaluate and manage the environmental and social risks and impacts of the project in a manner consistent with ESSs
- to adopt mitigation hierarchy approach to anticipate and avoid risks and impacts, where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels, once risks and impacts have been minimized or reduced, mitigate, and where significant residual impacts remain, compensate for or offset them, where technically and financially feasible
- to adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project
- to utilize national environmental and social institutions, systems, laws, regulations and procedures in the assessment, development and implementation of projects when they are materially consistent with the requirements of the ESS
- to promote improved environmental and social performance in ways which recognize and enhance Borrower capacity.

ESS1 sets out the Implementing Entities' responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the WB, in order to achieve environmental and social outcomes consistent with the ESSs.

As per requirements of ESS1, the Borrower will: (i) conduct an environmental and social assessment to assess risks and impacts of the proposed sub-projects; (ii) prepare sub-project specific ESIA or ESMP; (iii) undertake stakeholder engagement and disclose appropriate information in accordance with ESS10; (iv) develop an Environmental and Social Commitment Plan (ESCP), and implement all measures and actions set out in the legal arrangement including the ESCP; and (v) conduct monitoring and reporting on the environmental and social performance of the project against the ESSs.

Almost all the activities within the scope of the project will result in positive environmental and social impacts through strengthened governance for improvement of the environmental status of the Black Sea. The policy and capacity development activities will result in indirect positive impacts, such as conservation of aquatic species, improved water use and treated wastewater quality, reduced soil pollution, while the investment component of the project might cause adverse impacts such as waste generation and management, energy use, noise, dust emissions and occupational health and safety (OHS) which could be temporary and reversible, low in magnitude and site specific which can be easily mitigated through good management practices.

### **3.2.2. ESS2 - Labor and Working Conditions**

The objectives of ESS2 is to: (i) promote safety and health at work; (ii) promote the fair treatment, nondiscrimination and equal opportunity of project workers; (iii) protect workers including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with ESS2) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate; (iv) prevent the use of all forms of forced labor and child labor (v) support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law; and (vi) provide project workers with accessible means to raise workplace concerns. The applicability and scope of application of ESS2 depends on the environmental and social assessment described in ESS1.

The ESS2 requires that all works should be carried out with observation of construction safety measures: mandatory wearing personal protective equipment and safe use, handling, storage and transportation of hazardous substances (e.g., paints, solvents, glues, petroleum products, disinfectants, lead containing materials, etc.). Same applies for operational period for all new equipment installed. While reflecting the requirements for occupational safety and health, the Standard also provides a grievance mechanism for employees working on the project.

The project will not finance any large civil works; therefore, impacts will be temporary, reversible, and easily managed with mitigation measures included in ESMF and sub-projects E&S documents. Labor influx is not expected to be associated with grant funded activities,

and SEA/SH risks are anticipated to be low. It is anticipated that the project will involve direct and contracted workers. It is not expected that project would engage community workers. Direct workers will include: a) BSEC staff assigned to work on the project, and b) technical consultants engaged by BSEC. BSEC is a multilateral agency and terms and conditions of their staff are regulated by the Regulations for the Staff of the Permanent International Secretariat of the Organization of the Black Sea Economic Cooperation, which is disclosed on BSEC website. These regulations, which are aligned with the requirements of ESS2, will continue to apply to BSEC staff. Technical consultants funded under the project will be hired following World Bank procurement procedures.

Contracted workers may include employees of firms hired to carry out technical and policy studies, training and capacity building activities, and workers of firms and organizations engaged to carry out grant – funded activities. Labor management procedures will be prepared to assess, and guide overall labor risks in the project, including country specific labor risks and procedures to manage sub-projects. Depending on the nature of activities in each country, Labor Management Procedures (LMP) will be prepared as a part of ESMP.

It is anticipated that labor risks will be mainly associated with OHS issues associated with small grants. These risks and impacts are addressed in the ESMF and in site specific ESMP as relevant. WB EHS Guidelines are included in the ESMF and will be followed during project implementation.

Child and forced labor risks are not anticipated and these activities will be included in the project Exclusion List. LMP will include proposed Code of Conduct to address SH/SEA risks. Business standards and guidelines, which will be developed under Component 1 of the Project, will include principles of ESS2.

### **3.2.3. ESS3 - Resource Efficiency and Pollution Prevention and Management**

The objectives of ESS3 is to: (i) promote the sustainable use of resources, including energy, water and raw materials; (ii) avoid or minimize adverse impacts on human health and the environment by avoiding minimizing pollution from project activities; (iii) avoid or minimize project related emissions of short and long-lived climate pollutants; (iv) avoid or minimize generation of hazardous and non-hazardous waste; and (v) minimize and manage the risks and impacts associated with pesticide use. The applicability of ESS3 depends on the environmental and social assessment described in ESS1.

ESS3 sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life cycle consistent with Good International Industry Practice (GIIP). The applicability of this ESS is established during the environmental and social assessment described in ESS1.

The grants for innovations for pollution reduction will be integrated with the requirements of the ESS3. For the grants with moderate risk activities site-specific ESMPs will be prepared for assessing the risks and impacts and relevant mitigation measures, which will also address efficient use of resources such as energy and water as appropriate.



The potential environmental and social impacts associated with the project funded activities will be generally positive since the project preparation will consider wastewater treatment, water depollution or water recycling facilities. Subcomponent 2.2 might include development of various project preparation steps such as pre-feasibility studies, economic and financial analysis, and environmental and social impact assessment. If environmental and social impact assessment studies will be financed under this component, potential environmental risks such as noise, dust and waste generation with respect to construction and operation phases of the potential investment will be assessed and ToR for conducting ESIA and standalone ESMP will be prepared integrating the ESF requirements. The assessments will consider WBG General and industry-specific EHS Guidelines, where necessary in accordance with the project design.

#### **3.2.4. ESS4 - Community Health and Safety**

ESS4 focuses on the risks and impacts of projects on communities' health and safety. ESS4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts and addresses corresponding responsibility of Borrowers to avoid or minimize these, with particular attention to vulnerable people. The objectives of ESS4 is to: (i) anticipate and avoid adverse impacts on health and safety of project-affected communities during the project life cycle from both routine and non-routine circumstances; (ii) promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, (iii) avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials; (iv) have in place effective measures to address emergency events; and (v) ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project.

The implementation of the activities funded under small grants component, may cause temporary disturbance to local communities. The requirements of the standards are addressed under this ESMF, while site-specific risk and impacts such as temporary traffic disruptions will be elaborated with appropriate mitigation measures to prevent or minimize the risks and impacts through site specific ESMPs, which shall be in line with the WB Group EHS Guidelines.

Small civil works or installation activities will carry out community health and safety sessions during installation works, if relevant, will adhere to the requirements of case-specific ESMPs. Labor influx is not anticipated. Code of Conduct will be implemented for grants' activities.

#### **3.2.5. ESS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources**

ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems. Biodiversity often underpins ecosystem services valued by humans. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services.

ESS6 requirements cover: (i) general requirements including assessment of risks and impacts, conservation of biodiversity and habitats (modified, natural, and critical habitats), legally protected and internationally recognized areas of high biodiversity value, invasive alien species, and sustainable management of living natural resources, and (ii) primary suppliers.

ESS6 recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. Habitat is defined as a terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the nonliving environment. All habitats support complexities of living organisms and vary in terms of species diversity, abundance and importance.

The project will have important environmental benefits due to the nature of the activities proposed. Black Sea Region is rich in biodiversity and includes many important protected areas in all riparian countries. The ESMF provides an assessment of the current biodiversity status in the Black Sea Basin area and identifies generally sensitive/protected areas and habitats, which would fall under the region of project implementation.

ESMF includes provisions on ESS6 and activities which are likely to adversely impact critical habitats will be screened out. The site-specific ESMPs to be prepared for grants will also address potential impacts and relevant measures to avoid/mitigate those, on biodiversity. ToRs that will be prepared for capacity building activities for establishment of sustainable business standards and pre-feasibility study for potential investment will integrate aspects of conservation of protected areas as well as the sustainable management of natural resources.

### **3.2.6. ESS10 - Stakeholder Engagement and Information Disclosure**

Through the ESS10, the WB recognizes the importance of open and transparent engagement between the implementing entity and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation.

The objectives of ESS10 is to: (i) establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties; (ii) assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance; (iii) promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them; (iv) ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format; and (v) provide project-affected parties with accessible and inclusive means to raise issues and grievances, and allow Borrowers to respond to and manage such grievances.

Project activities will take place in Turkey, Georgia, Ukraine and Republic of Moldova. BSEC will have overall responsibility for project implementation, including implementation activities

in each country in coordination with national agencies. This may lead to the risk of complex stakeholder coordination, which will be addressed in project design and in regional level Stakeholder Engagement Plan (SEP) and country level SEPs. The exact locations of innovation grants, which will be implemented by each beneficiary country, are not known at this stage. Regional level SEP outlines the engagement approach for both project affected population (PAPs) and other interested parties (OIPs). It will outline general principles and a collaborative strategy to identify stakeholders and plan for an engagement process in accordance with ESS10.

BSEC and country agencies will agree on the implementation arrangements for stakeholder engagement at the country level, including preparation of country specific SEPs for the set of sub-projects (grant supported activities). Country-specific SEPs will be prepared, disclosed and consulted upon before the start of any activities in each country.

The initial assessment indicated that the direct stakeholders include the Ministry of Environmental Protection and Agriculture of Georgia, Ministry of Agriculture, Regional Development and Environment in Republic of Moldova, the Ministry of Environment and Urbanization and the Ministry of Agriculture and Forestry in Turkey and the Ministry of Energy and Environment Protection in Ukraine, local municipalities in the Black Sea basin in beneficiary countries, local business associations in agriculture and aquaculture, tourism and shipping, local NGOs to be involved in the grant financed activities. Additional stakeholder groups will be identified during project preparation, and special attention will be dedicated to the identification of vulnerable groups among stakeholders. The SEPs preparation process will identify additional direct and indirect stakeholders, particularly at the local level.

The SEP will present modalities of engagement that are tailored to the needs and characteristics of each stakeholder group. The implementing agencies will ensure that all consultations are inclusive and accessible (both in format and location) and carried out through channels that are suitable in the local context. The regional level SEP and country level SEPs will be disclosed to the public, but continue to be updated throughout the implementation phase.

The regional level SEP will include the principles and guiding procedures for Grievance Mechanism (GM) to address all types of grievances, both environmental and social, that relate to the project, while country specific SEPs will propose detailed country and culturally sensitive GMs.

### **3.2.7. OP 7.50 - Projects on International Waterways**

This policy applies to the following types of international waterways:

- Any river, canal, lake, or similar body of water that forms a boundary between, or any river or body of surface water that flows through, two or more states, whether Bank members or not.
- Any tributary or other body of surface water that is a component of any waterway described in above.

- Any bay, gulf, strait, or channel bounded by two or more states or, if within one state, recognized as a necessary channel of communication between the open sea and other states and any river flowing into such waters.

This policy also applies to the following types of projects:

- Hydroelectric, irrigation, flood control, navigation, drainage, water and sewerage, industrial, and similar projects that involve the use or potential pollution of international waterways as described in above.
- Detailed design and engineering studies of projects under above statements, including those to be carried out by the Bank as executing agency or in any other capacity.

In case the proposed project triggers this OP (based on the assessment of WB), WB requires the beneficiary state, if it has not already done so, formally to notify the other riparian countries of the proposed project and its details. If the prospective borrower indicates to the WB that it does not wish to give notification, normally the WB itself does so. There might be some exceptions with regard to notification requirement, but still the potential impacts on the riparian states are expected to be assessed.

The grants/sub-projects to be financed under the Project will not have any activity triggering OP 7.50.

### **3.2.8. OP 7.60 - Projects in Disputed Areas**

Projects in disputed areas may raise a number of delicate problems affecting relations not only between the WB and its member countries, but also between the country in which the project is carried out and one or more neighboring countries. The WB may support a project in a disputed area if the governments concerned agree that, pending the settlement of the dispute, the project proposed for country A should go forward without prejudice to the claims of country B.

For every project in a disputed area, WB considers the nature of the dispute and might support such a project in the following cases:

- Other claimants to the disputed area have no objection to the project
- The project is not harmful to the interest of other claimants
- Conflicting claim has not won international recognition or been actively pursued.

The grants/sub-projects to be financed would not trigger this OP since the four countries where the grants would be financed are not in disputed areas acknowledged by the WB (based on the publicly available WB Data Catalog World Disputed Areas data - <https://datacatalog.worldbank.org/dataset/world-bank-official-boundaries>).

### 3.3. Gap Analysis between Regulatory Frameworks of the Countries and World Bank ESSs

A gap analysis was conducted in order to identify the major differences between the national legislation and the World Bank ESSs requirements related to the Project and implementation of grants/sub-projects for each country covered in this ESMF. This gap analysis is mainly based on the publicly available previous studies and does not necessarily reflect a thorough evaluation of national legislation. In this context gaps identified between the national legislation and WB ESSs are provided in the following tables including suggested means to fulfill those gaps.

The major gaps between the WB ESSs and relevant legislation of Georgia are provided in Table 5 below.

Table 5. Major Gaps between WB ESSs and Legislation of Georgia

WB Environmental and Social Standards (ESS)	Gaps	Means to Fulfill Gaps
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	<p>The major gaps between national EIA legislation and ESS1 are as follows:</p> <p>Unlike the WB ESF, the national EA code does not require any form of environmental and social assessment and management of activities not requiring a full EIA.</p> <p>There is a lack of proper mechanism for public consultation on environmental and social aspects of activities that are not subject to full-scale EIA.</p> <p>Social impact assessment is not completely integrated to the national legislation and this results in the lack of proper social baseline, and assessment of the project induced social impacts including impacts on disadvantaged or vulnerable and gender related issues in the EIAs.</p> <p>Cumulative impacts are considered in the full scale EIAs, but otherwise disregarded.</p> <p>How the monitoring results are to be used for the adaptive management of ongoing projects is unclear.</p>	ESMPs should be prepared in line with ESS1 and this ESMF for the sub-projects with potential moderate risks and impacts.
ESS2: Labor and Working Conditions	Georgia's Labor Code provides to great extent coverage of the main areas under ESS2. Although the Labor Code provides for a dispute resolution mechanism, there is no specific requirement for employers to establish a workers' grievance mechanism.	Labor Management Procedures provide guidance on the relevant management measures (such as workers grievance mechanism, code of conduct, etc.) stipulated by ESS2 and should be used for sub-projects.
ESS3: Resource Efficiency and Pollution Prevention and Management	Most of the relevant laws and regulations are in line with EU directives. There is no major gap between ESS3 and national legislative requirements.	

WB Environmental and Social Standards (ESS)	Gaps	Means to Fulfill Gaps
ESS4: Community Health and Safety	The Law on Environmental Protection establishes the general principles of community health and safety. A number of technical regulations address other aspects of ESS4. Still, some gaps exist, such as the safe distance between residential areas and certain types of linear infrastructure. The impacts from labor influx and gender based violence related risks are also not explicitly covered in national law.	ESMPs should be prepared addressing ESS4 and in line with ESS1 and this ESMF for the sub-projects with potential moderate risks and impacts.
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Georgia has a strong regulatory framework for protecting, conserving, and restoring biodiversity. There is no major gap in terms of policy. However, less attention is given to preserving habitats. There is no differentiated approach for transformed, natural, and critical habitats.  Managing biodiversity outside of formal protected areas is challenging due to legal gaps as well as a lack of technical and methodological guidance. Ecosystem services and biodiversity offsets are not part of the national legislation.	ESMPs should be prepared addressing ESS6, as necessary based on the location of sub-projects, for the sub-projects with potential moderate risks and impacts.
ESS10: Stakeholder Engagement and Information Disclosure	The General Administrative Code and the EA Code set key principles for stakeholder engagement and information disclosure with regard to development projects. The gaps with ESS10 exist in practice regarding; informing stakeholders on the details of projects to get their feedback, ensuring participation of vulnerable groups and having functional grievance redress systems.	Stakeholder engagement Plan (SE) provides relevant means regarding this issue and should be adopted/used in implementation of the sub-projects.

The major gaps between the WB ESSs and relevant legislation of Republic of Moldova are provided in Table 6 below.

Table 6. Major Gaps between WB ESSs and Legislation of Republic of Moldova

WB Environmental and Social Standards (ESS)	Gaps	Means to Fulfill Gaps
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	<p>The major gaps between national EIA legislation and ESS1 are as follows:</p> <p>There is a lack of proper mechanism for public consultation on environmental and social aspects of activities that are not subject to full-scale EIA.</p> <p>Social impact assessment is not completely integrated to the national legislation and this results in the lack of proper social baseline, and assessment of the project induced social impacts including impacts on disadvantaged or vulnerable and gender related issues in the EIAs.</p> <p>Cumulative impacts are considered in the full scale EIAs, but otherwise disregarded.</p> <p>Projects with potential impacts are required to have relevant mitigation measures in place, but there is no requirement for ESMP.</p> <p>Monitoring is not required.</p>	ESMPs should be prepared in line with ESS1 and this ESMF for the sub-projects with potential moderate risks and impacts.
ESS2: Labor and Working Conditions	National legislation covers the main areas under ESS2, but does not have provisions to establish a grievance mechanism.	Labor Management Procedures provide guidance on the relevant management measures (such as workers grievance mechanism, code of conduct, etc.) stipulated by ESS2 and should be used for sub-projects.
ESS3: Resource Efficiency and Pollution Prevention and Management	The relevant laws and regulations are generally in line with EU directives and adoption of the relevant legislation is ongoing. There is no major gap between ESS3 and national legislative requirements.	
ESS4: Community Health and Safety	General principles of community health and safety are addressed under different pieces of legislation. In general, there is no gap in terms of policy. However, impacts from labor influx and gender based violence related risks are not explicitly covered in national law.	ESMPs should be prepared addressing ESS4 and in line with ESS1 and this ESMF for the sub-projects with potential moderate risks and impacts.
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	There is no major gap in terms of policy. Managing biodiversity outside of formal protected areas is challenging due to legal gaps as well as a lack of technical and methodological guidance. Ecosystem services and biodiversity offsets are not part of the national legislation.	ESMPs should be prepared addressing ESS6, as necessary based on the location of sub-projects, for the sub-projects with potential moderate risks and impacts.

WB Environmental and Social Standards (ESS)	Gaps	Means to Fulfill Gaps
ESS10: Stakeholder Engagement and Information Disclosure	<p>The gaps with ESS10 exist in practice regarding; informing stakeholders on the details of projects to get their feedback,</p> <p>The national legislation has no provision for the development of a project specific stakeholder engagement plan for public consultations.</p> <p>The national legislation has provisions that allow citizens to make complaints and grievances, but these provisions do not allow anonymity. The anonymous or submitted petitions without indicating the petitioner's postal or email address are not examined.</p> <p>The national legislation does not have special provisions to address the concerns of the vulnerable groups during the consultation process.</p>	Stakeholder engagement Plan (SEP) provides relevant means regarding this issue and should be adopted/used in implementation of the sub-projects.

The major gaps between the WB ESSs and relevant legislation of Turkey are provided in Table 7 below.

Table 7. Major Gaps between WB ESSs and Legislation of Turkey

WB Environmental and Social Standards (ESS)	Gaps	Means to Fulfill Gaps
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	<p>The major gaps between national EIA regulation and ESS1 are as follows:</p> <p>Social impact assessment is not completely integrated to the national legislation and this results in the lack of proper social baseline, and assessment of the project induced social impacts including impacts on disadvantaged or vulnerable and gender related issues in the EIAs.</p> <p>The absence of an executive summary and information on the legal and institutional framework in the Turkish EIA (Technical level of information in the non-technical summary required in the EIA Reports may not meet WB requirements);</p> <p>Limited requirement to cover cumulative impacts with other projects</p> <p>Limited emphasis on the associated facilities</p> <p>Although mitigation and monitoring measures are required for adverse impacts, no specific requirement for an ESMP.</p>	ESMPs should be prepared in line with ESS1 and this ESMF for the sub-projects with potential moderate risks and impacts.



WB Environmental and Social Standards (ESS)	Gaps	Means to Fulfill Gaps
ESS2: Labor and Working Conditions	In general, national laws and regulations regarding labor and working conditions satisfy ESS2 requirements. Worker grievance mechanism is the main gap between national legislative requirement and ESS2. In national legislation on labor and working conditions, there is no specific requirement related to grievance mechanism that allows workers to communicate their complaints to the employer.	Labor Management Procedures provide guidance on the relevant management measures (such as workers grievance mechanism, code of conduct, etc.) stipulated by ESS2 and should be used for sub-projects.
ESS3: Resource Efficiency and Pollution Prevention and Management	Most of the relevant national legislation is in line with EU directives. There is no major gap between ESS3 and legislative requirements. Additionally, specific studies regarding resource use and pollution prevention such as Greenhouse Gas (GHG) estimations are not specifically included in local EIA Process.	ESMPs should be prepared in line with ESS1 and this ESMF for the sub-projects with potential moderate risks and impacts.
ESS4: Community Health and Safety	General principles of community health and safety are addressed under different pieces of legislation. In general, there is no gap in terms of policy. However, impacts from labor influx and gender based violence related risks are not explicitly covered in national law.	ESMPs should be prepared addressing ESS4 and in line with ESS1 and this ESMF for the sub-projects with potential moderate risks and impacts.
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	There is no gap in terms of policy. In some cases, level of the considerations of not legally protected sensitive ecological areas such as Key Biodiversity Areas in local EIA Process do not meet the requirements stipulated by ESS6. Furthermore, management and monitoring of potential impacts, mitigation measures and residual impacts are not detailed in general.	ESMPs should be prepared addressing ESS6, as necessary based on the location of sub-projects, for the sub-projects with potential moderate risks and impacts.
ESS10: Stakeholder Engagement and Information Disclosure	<p>Effective and transparent stakeholder engagement is the main gap in terms of ESS10.</p> <p>The national legislation has no provision for the development of a project specific stakeholder engagement plan for public consultations. Stakeholder engagement is only a requirement during the EIA process and there is no further requirement for construction or operation phases of the projects.</p> <p>The national legislation does not have special provisions to address the concerns of the vulnerable groups during the consultation process.</p> <p>The national legislation has provisions that allow citizens to make complaints and grievances, but there is no requirement for a project specific grievance mechanism.</p>	Stakeholder engagement Plan (SEP) provides relevant means regarding this issue and should be adopted/used in implementation of the sub-projects.

The major gaps between the WB ESSs and relevant legislation of Ukraine are provided in Table 8 below.

Table 8. Major Gaps between WB ESSs and Legislation of Ukraine

WB Environmental and Social Standards (ESS)	Gaps	Means to Fulfill Gaps
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	<p>The major gaps between national EIA legislation and ESS1 are as follows:</p> <p>There is a lack of proper mechanism for public consultation on environmental and social aspects of activities that are not subject to full-scale EIA.</p> <p>Social impact assessment is not completely integrated to the national legislation and this results in the lack of proper social baseline, and assessment of the project induced social impacts including impacts on disadvantaged or vulnerable and gender related issues in the EIAs.</p> <p>Cumulative impacts are considered in a very limited scope.</p> <p>Projects with potential impacts are required to have relevant mitigation measures in place, but there is no requirement for ESMP.</p>	ESMPs should be prepared in line with ESS1 and this ESMF for the sub-projects with potential moderate risks and impacts.
ESS2: Labor and Working Conditions	The Ukrainian labor protection and OHS legislation is advanced and reflects all the key requirements of the ESS2. However, enforcement of the labor protection and OHS provisions at enterprise level requires improvement. In addition, employees' awareness on their labor and OHS rights remains low.	Labor Management Procedures provide guidance on the relevant management measures (such as workers grievance mechanism, code of conduct, etc.) stipulated by ESS2 and should be used for sub-projects.
ESS3: Resource Efficiency and Pollution Prevention and Management	The relevant legislation basically puts standards based mainly on the use of maximum allowable concentrations and studies have been started for adoption of EU legislation. For project specific assessments there are various gaps regarding resource use and pollution prevention.	ESMPs should be prepared in line with ESS1 and this ESMF for the sub-projects with potential moderate risks and impacts.
ESS4: Community Health and Safety	General principles of community health and safety are addressed under different pieces of legislation. However, impacts from labor influx and gender based violence related risks are not explicitly covered in national law.	ESMPs should be prepared addressing ESS4 and in line with ESS1 and this ESMF for the sub-projects with potential moderate risks and impacts.

WB Environmental and Social Standards (ESS)	Gaps	Means to Fulfill Gaps
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Managing biodiversity outside of formal protected areas is challenging due to legal gaps as well as a lack of technical and methodological guidance. Ecosystem services and biodiversity offsets are not part of the national legislation.	ESMPs should be prepared addressing ESS6, as necessary based on the location of sub-projects, for the sub-projects with potential moderate risks and impacts.
ESS10: Stakeholder Engagement and Information Disclosure	<p>The gaps with ESS10 exist in practice regarding; informing stakeholders on the details of projects to get their feedback.</p> <p>The national legislation has no provision for the development of a project specific stakeholder engagement plan for public consultations. Stakeholder engagement is only a requirement during the EIA process and there is no further requirement for construction or operation phases of the projects.</p> <p>The national legislation does not have special provisions to address the concerns of the vulnerable groups during the consultation process.</p> <p>The national legislation has provisions that allow citizens to make complaints and grievances, but there is no requirement for a project specific grievance mechanism.</p>	Stakeholder Engagement Plan (SEP) provides relevant means regarding this issue and should be adopted/used in implementation of the sub-projects.

## 4. OVERVIEW OF BASELINE CONDITIONS

### 4.1. Physical Environment

#### 4.1.1. State of the Black Sea Coast

The Black Sea is lying between Europe and Asia and its basin is asymmetric and the rivers that flow into it shape the different natural conditions of two continents. The sea itself covers a total area of 423,000 km<sup>2</sup>, while the basin it represents draws on an area covering 2.5 million km<sup>2</sup>. Black Sea coastal area of surrounding countries basically is a combination of seaside valleys and mountain ranges. Mountain relief is typical for Georgia, Turkey and Russia and partially for Bulgaria, Romania, and Ukraine. A general map showing the Black Sea in the larger region and countries of the Black Sea Region/Basin is provided in Figure 2.



Figure 2. Black Sea and Surrounding Countries

The approaches to determine the area of the coastal zone (CZ) vary from country to country and generally there are no regulations used for specifying the CZ boundaries. Thus, countries have defined the area and boundaries of their coastal zones for mainly reporting purposes. There are three approaches in identification of CZ used by the Black Sea countries. The approaches are based on the following principles:

- Administrative division (Turkey).
- Specified areas on the either sides of the seashore, including specified areas of rivers flowing into the sea (Georgia).
- Combination of traditions, specific economic regime, and requirements (Ukraine).

## **Georgia**

The Georgian coastal zone is identified according to the Guidelines for the Integrated Coastal Zone Management in Georgia, a non-binding document, issued by the Ministry of Environment and Natural Resources Protection in 2006. The coastal zone extends to the outer limit of the territorial sea and comprises the coastal administrative units to a maximum distance of 3 km from the coastline and 5 km along the rivers flowing into the sea.

Protected areas nearby the coast are also considered as the part of the coastal zone. The estimated total area of the coastal zone is 7,100 km<sup>2</sup> and the length of the coastline is 310 km.

## **Republic of Moldova**

Although Republic of Moldova has no coastal zone to the Black Sea, rivers of Moldova flowing into Black Sea creates serious impacts. The country can be divided into three main river basins that are part of the Black Sea basin.

The Nistru basin in the east covers about 57% of the country. The Nistru River rises in the Carpathian Mountains in Ukraine and forms the border between Ukraine and the Republic of Moldova in parts of the north, northeast and southeast before flowing back into Ukraine, where it continues for some 20 km before reaching the Black Sea. The Nistru River has a total length of 1,362 km of which 660 km are on the territory of Republic of Moldova.

The Danube basin in the west covers about 35% of the country. The Prut River, a tributary of the Danube, rises in the Carpathian Mountains in Ukraine and forms the border between Republic of Moldova and Romania before flowing into the Danube just after crossing the border into Ukraine. The Danube River then continues for about 125 km before flowing into the Black Sea. The Prut River has a total length of 967 km of which 695 km are on the territory of Republic of Moldova.

Several rivers exist in the south part of the Country, between Nistru and Danube basins, and they reach the Black Sea flowing through Ukraine. The basins of these rivers cover about 8% of Republic of Moldova.

## **Turkey**

The Black Sea coast of Turkey is 1748 km long extending from the Bulgarian border in the west to the Georgia border in the east. The area of the region is about 141,000 km<sup>2</sup> or about 18% of the total surface area of Turkey. The total population of the region is about 8,000,000. The coastal zone of Turkey includes 14 provinces, namely: Artvin, Bartin, Duzce, Giresun, Kastamonu, Kirklareli, Kocaeli, Ordu, Rize, Sakarya, Samsun, Sinop, Trabzon and Zonguldak.

The topography of the region has a profound effect on the distribution of the population and thus pollution sources along the coast. Mountain ranges run parallel to the coast along the Turkey's Black Sea coast so inhabitants in the Black Sea region are highly concentrated in a rather narrow coastal strip. Mountains are also an obstacle for transportation and the population in the mountainous areas lives in small settlements rather than large cities.

The longest rivers flowing into Black Sea are Kizilirmak (1335 km), Sakarya (824 km), Yesilirmak (519 km), Filyos (228 km) and Melet (165 km). Among these rivers, Kizilirmak, Yesilirmak and Sakarya drain areas of 78, 65 and 58 thousand km<sup>2</sup>, respectively. Turkey's Black Sea coast contains three important deltas (Kizilirmak, Yesilirmak, and Sakarya) and lagoons of Kizilirmak Delta.

## **Ukraine**

The Ukrainian Black Sea coastal zone is limited by borders of coastal regions (oblasts) and borders of the territorial sea waters. It includes territories of Autonomous Republic of Crimea, Mykolaiv, Kherson, Odesa regions and Sevastopol city. The total estimated area of the coastal zone is 113,400 km<sup>2</sup>. It corresponds to 19% of the territory of the country. The length of the coastal line from Danube Delta to the Cape Takil is of 1,628 km.

The coastal zone includes 14 marine estuaries of large rivers (Danube, Dnipro, Dnister, and Southern Bug) that flow into the Black Sea and eight gulfs. The total estimated area of estuaries is 1,952 km<sup>2</sup> and total of gulfs is 1,770 km<sup>2</sup>.

### **4.1.2. Water Quality and Wastewaters**

The Black Sea is characterized by sulfidic deep waters. This anoxic zone is separated from the oxic upper waters by a suboxic zone, where the concentrations of both oxygen and free sulfide are below reliable method detection limits. Oxygen and sulfide are the dominant redox species above and below the suboxic layer. However, the downward flux of oxygen is not sufficient to oxidize the upward flux of sulfide. The existence of the suboxic zone requires that alternative redox processes control this system, particularly the upward flux of highly toxic sulfide.

The suboxic zone has been delimited by oxygen concentration limits ranging from 3 µM to 20 µM. This zone occurs at different depths in the Black Sea, but everywhere occurs in a narrow density interval, approximately between the isopycnals of  $\sigma_\theta$  15.20 and 16.40<sup>1</sup>.

In spite of this natural deficiency, the Black Sea has served mankind well in the past through its provision of food resources, as a natural setting for recreation and transportation and even as a disposal site for waste, including perhaps nuclear wastes. The large natural river supply of phosphorus and nitrogen, essential nutrients for marine plants and algae, has always made the Black Sea very fertile. Among the most serious problems is the high level of

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<sup>1</sup> Emil Stanev, Pierre-marie Poulain, Sebastian Grayek, Kenneth Johnson, Hervé Clautre, et al.. Understanding the Dynamics of the Oxic-Anoxic Interface in the Black Sea. *Geophysical Research Letters*, American Geophysical Union, 2018, 45 (2), pp.864-871. 10.1002/2017gl076206. hal-03138096

eutrophication by nutrients from land-based sources. Pollution represented by heavy metals, oil and other harmful substances are causing toxic effect on biota directly. Suspended solid particles decrease sun rays penetration through water layer and thus depress development of benthic biocenoses and pelagic algae and other organisms. Mineral and organic fertilizers originated from agricultural fields stimulate microflora bloom (eutrophication).

Rivers run-offs, oil and gas extraction activities, atmospheric deposition, intentional and accidental discharged from vessels are the main sources of water pollution. River flows are polluted by agriculture, industries, communal wastewaters, transport and others sectors located in the basin. Over 300 rivers running into the Black Sea drain almost half of Europe and significant parts of Eurasia. The main rivers are the Danube, Dnieper and Don, which are the second, the third and the fourth major European rivers.

The Black Sea basin and the sea itself form a single unified natural system. The rivers form a link between the land mass and the sea, supplying the marine reservoir with water discharge and output from erosion and denudation. The breakdown of discharge by state and region is as follows; the volume of water entering the sea each year, from Georgia 46.0 km<sup>3</sup> (13.2%) and from Turkey 38.0 km<sup>3</sup> (10.9%). The Danube supplies the sea with 200 km<sup>3</sup> water (57.5%). The major rivers of the Ukraine contribute 55.5 km<sup>3</sup> (15.9%) of water to the sea and the rivers of the Crimea 0.3 km<sup>3</sup> (0.08%).

In this context, country based water and wastewater management approaches for Georgia, Republic of Moldova, Turkey and Ukraine are summarized below.

## **Georgia**

Water supply, wastewater/storm water and solid waste management infrastructures play a critical role, since their failure can result in extensive impacts to communities, property values and businesses, including damage to people's health and wellbeing, as well as damage to tourism, agriculture, and forestry.

Water supply and wastewater/storm water collection systems were malfunctioning in Georgia's coastal zone for a long time due to problems in design and operation as well as a lack of maintenance. Wastewater treatment was confined to a primary stage for some settlements and was non-existent in many others. A large-scale investment into the rehabilitation of water supply and sewage/drainage utilities started in 2005 in Batumi with a KfW-support Municipal Infrastructure Rehabilitation Program. Later, in 2015, integrated improvement of water supply and sanitation systems started in the semi-urban and rural areas of Kobuleti, Khelvachauri, Keda, Shuakhevi and Khulo municipalities, an area that covers 330 villages and is home to 235,000 residents.

The risks related to water availability are low or even negligible. The present abundance of water resources in Adjara, as well as in the future (as forecasted with RCM tools), means that water availability should not be a problem. However, the likelihood of more severe and more frequent flooding, and a higher occurrence of water erosion and landslides carries the risk of physical damage to water intakes, piping and other elements of infrastructure that may interrupt their smooth operation. As for the storm water collection infrastructure, its exposure and vulnerability to the forecasted impacts of climate change are considerably more

problematic. Seaside towns are already prone to flooding as the storm water drainage systems are unable to cope with intense rainfalls.

The functionality of these storm water drainage schemes will depend not just on the duration and intensity of rainfall, but the fluctuation of sea levels. The latter depends on seasonality, the strength of sea storms, and is also influenced by long-term tectonic activity and global warming. A conceptual approach to the design of a storm water management system would include having a single, central pumping station that would receive the entire volume of collected rainwater from a given settlement and pump it into the sea. The same facility would be used to receive intruding sea water and pump it back to the sea during storm surges. If the most severe climate change scenarios materialize, very large and costly pumping systems may be required<sup>2</sup>.

### **Republic of Moldova**

Although the water quality of the rivers in Republic of Moldova has improved since the collapse of the Soviet Union, Moldova is still facing serious quality issues in terms of underground and surface waters. The water pollution is caused primarily by insufficiently treated wastewater, discharges of untreated water from the municipal sewage system, inadequate management of solid household waste from the communal-housing sector as well as from accumulated animal manure, pesticide deposits from the agro-sector and oil deposits, gas stations, other sources of continuous pollution in the energy sector.

Although water quality in Republic of Moldova is relatively stable, insufficient wastewater management measures, such as lack of tertiary and secondary treatment in most areas, are aggravating the situation. In fact, the country's water management system is often unable to fully address the challenges posed by the discharges from industries and households. This turns most of Moldova's internal rivers into highly-polluted water bodies, the water from which appears to pose threats to public health, if not properly treated. In addition, surface water sources, such as artificial and natural lakes and ponds, have a tendency to high salinity and mineralization.

Due to the country's specific climatic conditions, floods and droughts pose major risks for water and sanitation services that are affected by the fact that the equipment is either old or does not exist. This is further deteriorated by such weather-related hazards as landslides, storms, and extreme winter temperatures. As droughts result in lower dilution of pollution loads, the water quality especially in the Prut and Dniester Rivers is being highly affected<sup>3</sup>.

### **Turkey**

One of the most obvious sign of pollution in Black Sea from Turkish coastline is untreated wastewater. Wastewater discharges into the sea, which become particularly heavy during the tourist season, are suspected to be the cause of the pollution. However, input of rich organic

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<sup>2</sup> World Bank Group, 2020. *Impacts of Climate Change on Georgia's Coastal Zone*. Washington.

<sup>3</sup> Alieva, T., Ayvazi, N., & Patonia, A. (2021). *Waste and Water Management in the Time of COVID-19: A Tale of Six Countries*.



matter in wastewater can rise up the turbidity of the water and decrease the maximal depth at which seaweeds can grow. It also increases the biochemical oxygen demand (BOD) of the water, as bacteria require oxygen to destroy the organic substances in the sewage. In some habitats, notably muddy shores and estuaries, it widely increases the possibility that the mud will become totally devoid of oxygen.

In Turkish Black Sea Coast, geographical formations make the installation of wastewater infrastructure difficult. Also, both municipal and industrial wastewaters are mixed and dumped into the Black Sea. Moreover, existing treatment practices in heavy industries are generally insufficient. Although, currently there are 115 WWTP in which 15 of them includes deep sea discharge line, in the coastal provinces of Turkey, amount of wastewater treated is very low except for the Istanbul Province<sup>45</sup>.

## Ukraine

Ukrainian rivers relate to seven major river basins, all of them discharging into the Black Sea except the Western Bug flowing to the Baltic Sea. Therefore, proper water management has a great impact on the environment in Ukraine as well as in Black Sea.

Water management of Ukraine needs improvement. Due to the large territory and varying geographic conditions, not all Ukrainian households have direct access to stable and safe water supplies.

Similarly, wastewater system needs to be further improved. After the collapse of the Soviet Union, many facilities that were supposed to perform primary and secondary wastewater treatment were not maintained well.

Additionally, rural areas of Ukraine do not fully cover all the households with centralized sewage network leading to proper wastewater treatment facilities. This results in a significant share of undertreated wastewater being discharged into the surface waters, such as rivers and lakes, which makes such water bodies contaminated with various substances posing significant threats to both public health and the environment.

Within this context, the Dniester Basin extends into territories of Ukraine's seven regions (Lviv, Ivano-Frankivsk, Chernivtsi, Ternopil, Khmelnytskyi, Vinnytsia, and Odessa), covering 13% to 80% of their areas. Unfortunately, while covering 12% of the total territory of Ukraine and flowing into the Republic of Moldova, it becomes very polluted and presents a danger to human health. In fact, the recent research identified traces of medicines, pesticides, pharmaceuticals, and chemicals in the water<sup>6</sup>.

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<sup>4</sup> Bat, L., Oztekin, A., Sahin, F., Arici, E. and Ozsandikci, U., 2018. An Overview of the Black Sea Pollution in Turkey. *Mediterranean Fisheries and Aquaculture Research*.

<sup>5</sup> Akkoyunlu, A. (2018). Land-Based Pollution on the Black Sea along the Turkish Shoreline. *Journal Of Marine Science: Research & Development*, 08(02). doi: 10.4172/2155-9910.1000248

<sup>6</sup> Alieva, T., Ayvazi, N., & Patonia, A. (2021). Waste and Water Management in the Time of COVID-19: A Tale of Six Countries.

### **4.1.3. Solid Waste Management**

Estimating the amount of total solid waste processed in the region is challenging since the Black Sea countries have various approaches for estimation and reporting. In this context, country based solid waste management approaches for Georgia, Republic of Moldova, Turkey and Ukraine are summarized below.

#### **Georgia**

Coastal Georgia has a severe lack of solid waste management infrastructure. Standard solid waste landfills are very few in number and several large official waste disposal facilities have been upgraded as a temporary measure. There are many small wild dump sites in the rural areas. Significant improvements were initiated with the adoption of the Waste Management Code in 2014 and creation of Georgia Solid Waste Management Company under the Ministry of Regional Development and Infrastructure in 2015. The new national waste management system consists of a network of regional landfills and waste transferring stations, designed to serve about 65% of the population of Georgia. Tbilisi municipality and the Autonomous Republic of Adjara are not part of this system and they operate their own waste management schemes.

Currently no standard sanitary landfills exist in Georgia's coastal zone, but, two sanitary landfills are being designed; one in Zugdidi, in the Samegrelo-Zemo Svaneti region, and another in Tsetskhlauri, in the Adjara region. These facilities will enable authorities to close-down and seal the existing sub-standard disposal sites to some extent.

The site located to the South of Batumi is most detrimental for coastal ecology and the economy. It is located right on the seaside, near the Choroki river mouth, and in a high-water table area. This landfill, which has been operating under sub-standard conditions for decades, is set to close in 2021, when the new site currently under construction is expected to be completed. The same also applies for the Kobuleti landfill, located about 20 km north of Batumi.

Once the new site in Tsetskhlauri becomes operational, the use of the two old sites in Batumi and Kobuleti will be discontinued. However, without proper disestablishment phase, which the government is planning to tender in 2022, environmental damage and leaching issues are likely to remain. The new landfill in Adjara and the one planned for Zugdidi are likely to face the challenge of evacuating storm water and maintaining leachate treatment ponds since more frequent, longer and more intense rainfalls and subsequent flooding events are predicted in these areas.<sup>7</sup>

#### **Republic of Moldova**

In Republic of Moldova, considerable share of environmental pollution is due to waste disposal sites, especially in rural area. Annually, approximately 3.98 million tons of waste is generated and subsequently disposed in about 1,500 authorized landfills and about 3,000

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<sup>7</sup> World Bank Group, 2020. *Impacts of Climate Change on Georgia's Coastal Zone*. Washington.

illegal dumpsites all around the country from which 473 landfills could not fulfill the environmental standards. In addition, many of the authorized landfills face substantial problems such as overloading and sanitation.

Nearly less than 2% of solid waste is recycled and the remaining 98% of all solid waste produced in the country ends in disposal sites even though it contains valuable components such as plastics, glass, paper, or metal.

There are considerable differences between rural and urban areas regarding the access to waste collection system. While 60 to 90% of the urban population has access to waste collection system, this percentage is very low for rural population and most people from rural areas are personally responsible for their waste disposal.<sup>8</sup>

## Turkey

Solid waste is an important environmental issue in Turkey. Current disposal and recycle facilities are inadequate in terms of quantity and capacity. Majority of domestic solid wastes are stored uncontrollably, especially in rural areas. Establishment and operation of sanitary landfills have increased in number with the EU accession period and new ones are still being developed. There are various initiatives for managing wastes including the zero waste policy of the government. However, construction of solid waste disposal facilities is still seen to be the main element to protect the environment.

Many municipalities are rather unsuccessful in management of solid wastes due to financial difficulties. The lack of financial support, the reluctance of users to pay for service, huge expenditures required to provide the service and failure of proper use of economic instruments prevented the presentation of appropriate waste management services. Over the last years, projects of local governments related to solid waste management have been funded and implemented through credits provided from abroad and reciprocal agreements.<sup>9</sup>

More effective collection, transport and environmentally acceptable solutions are being worked at supported by strict regulations on management of solid waste. However, open dumping to over 2000 sites and discharges into surface water in various places including the Black Sea region is still ongoing. In general, residential areas in the Black Sea coast of Turkey have major issues of handling solid wastes, especially Zonguldak, Samsun and Trabzon provinces. Generated solid wastes are commonly dumped into the Black Sea. In the Black Sea coasts, marine litter problem is originated almost completely from the problem of solid waste pollution.<sup>10</sup>

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<sup>8</sup> Procházková, K., Ivanova, T. and Muntean, A., 2018. An Analysis of Waste Management in the Republic of Moldova: A Comparison of Rural and Urban Areas. *Polish Journal of Environmental Studies*, 28(3), pp.1869-1875.

<sup>9</sup> Bat, L., Oztekin, A., Sahin, F., Arici, E. and Ozsandikci, U., 2018. An Overview of the Black Sea Pollution in Turkey. *Mediterranean Fisheries and Aquaculture Research*.

<sup>10</sup> Bayram, T., Argun, Y. and Tirink, S., 2019. An Evaluation of Solid Waste Management in Turkey. *Black Sea Journal of Engineering and Science*, pp.7-8.

## Ukraine

In Ukraine, waste management is an extremely problematic environmental problem. Ukraine produces about 45 million m<sup>3</sup> of waste annually, which is buried in 6,700 dumps and landfills with a total area of more than 10 ha. Footprint of municipal solid waste landfills is up to over 1000 ha in some regions of Ukraine.

Ukrainian municipal solid waste landfills are mainly bordering with rural areas and it can be the cause of the deterioration eco toxicological state of natural waters, agricultural products and soil. Since landfills are objects of high environmental hazards, monitoring is a mandatory requirement. In fact, one of the solutions to the problems of safe waste management in Ukraine is seen as improvement of system of monitoring of municipal solid waste landfills with subsequent adjustment of the protective sanitary zone.<sup>11</sup>

### 4.1.4. Protected Areas

Coastal and marine protected areas are generally recognized as a primary tool for conservation of the marine environment and biodiversity. At present, protected areas and sites are established along the coastline of the Black Sea by the riparian states, and additional areas were suggested for further development.

The protected areas of the countries are given below as terrestrial and marine areas, while the protected areas in the Black Sea are given in Figure 3<sup>12</sup>.

- Romania has a total of 1574 protected areas. 24.52% (58,225 km<sup>2</sup>) of the total terrestrial area and 23.1% (6,866 km<sup>2</sup>) of the total marine area are protected.
- Georgia has a total of 89 protected areas. 9.29% of the total terrestrial area (6,501 km<sup>2</sup>) and 0.67% of the total marine area (153 km<sup>2</sup>) are protected.
- Bulgaria has a total of 1427 protected areas. 41.04% (45,503 km<sup>2</sup>) of the total terrestrial area and 8.11% (2,852 km<sup>2</sup>) of the total marine area are protected.
- Russia has a total of 8987 protected areas. 11.45% of the total terrestrial area (1,932,707 km<sup>2</sup>) and 2.24% of the total marine area (172,139 km<sup>2</sup>) are protected.
- Republic of Moldova has a total of 127 protected areas. 11.43% (3,882 km<sup>2</sup>) of the total terrestrial area is protected. Moldova does not have any protected marine area.
- Turkey has a total of 18 protected areas. 0.22% of the total terrestrial area (1,709 km<sup>2</sup>) and 0.11% of the total marine area (270 km<sup>2</sup>) are protected.

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<sup>11</sup> Makarenko, N. and Budak, O., 2017. Waste Management in Ukraine: Municipal Solid Waste Landfills and Their Impact on Rural Areas. *Annals of Agrarian Science*, 15(1), pp.80-87.

<sup>12</sup> UNEP-WCMC, I. U. C. N. "NGS. Protected Planet Live Report 2020." UNEP-WCMC, IUCN & NGS (2020). (<https://www.protectedplanet.net/>)

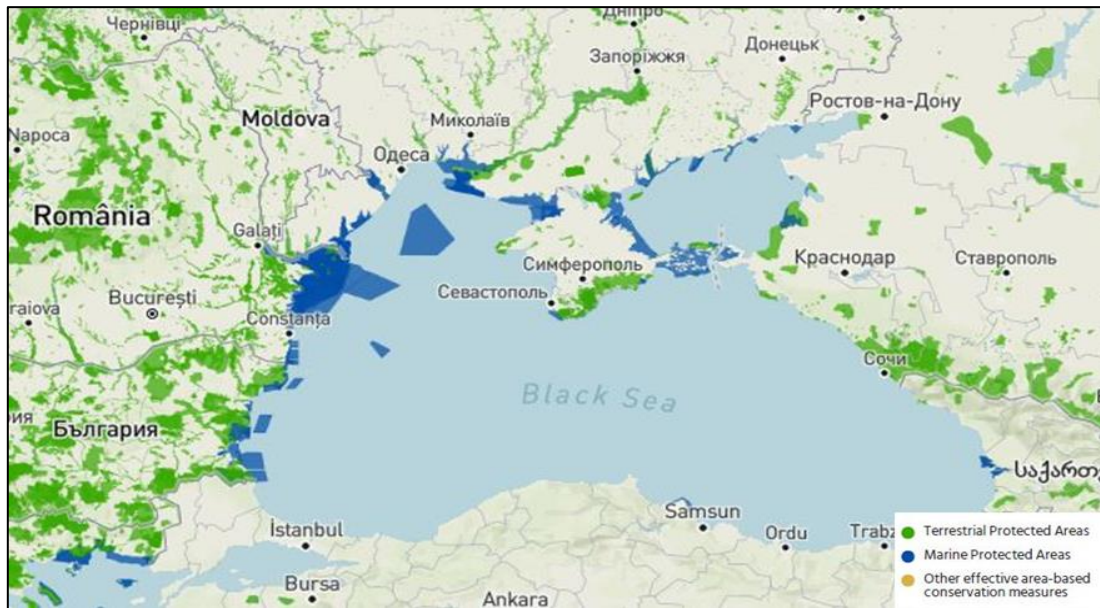


Figure 3. Protected Areas in the Black Sea Region

#### 4.1.5. Coastal Erosion

The climate of the landlocked Black Sea can be characterized generally as continental, although climatic conditions in some parts of the basin are controlled to a great extent by the shoreline relief. A steppe climate, with cold winters and hot, dry summers, is found in the northwestern part of the basin exposed to the influence of air masses from the north. The southeastern portion of the sea, sheltered by high mountains, experiences a humid subtropical climate, with abundant precipitation, warm winters, and humid summers. In winter, spurs of the Siberian anticyclone (a clear, dry, high-pressure air mass) create a strong current of cold air, and the northwestern Black Sea cools down considerably, with regular ice formation. The winter invasion of polar continental air (which prevails for an average of 185 days annually) is accompanied by strong northeasterly winds, a rapid temperature drop, and frequent precipitation, with the air becoming warm and moist after passing over the milder eastern portions of the sea. Tropical air from the Mediterranean regions (87 days affected on average) is always warm and moist. Occasionally, winds from the Atlantic via eastern Europe bring rain and sharp squalls.

The average January air temperature over the central portion of the sea is about 8°C and decreases to 2-3°C to the west. Spring air temperature everywhere approaches 16°C, rising to about 24°C in the summer. Minimum temperatures occur in the northwest, approaching -30°C during winter cold spells, while maximum temperatures occur in Crimea, sometimes reaching 37°C in summer. Winds are strongest everywhere in the winter, with the bitter northeastern ones reaching hurricane force in the Russian coastal region of Novorossiysk (Novorossiyskaya), just to the east of the Kerch Strait, and gale force on the sea itself.<sup>13</sup>

<sup>13</sup> Black Sea - Climate. (2021). Retrieved 26 June 2021, from <https://www.britannica.com/place/Black-Sea/Climate>

Coastal erosion is the common problem for all the Black Sea countries. Main impacts of coastal erosion are given below:

- Deeper penetration of the tide into rivers and estuaries and increased saline intrusion, especially during the dry season; this may cause troubles for water intakes and for irrigation and cause changes to the estuarine habitats.
- Lowering of the beds of the rivers also cause lowering of the water level in the rivers, affecting the ground water table in the flood plains. This may have impact on agriculture especially during the dry period. It also causes problems for intakes to older irrigation schemes as they are now above the water level in the river.

Beach erosion/abrasion surveys were carried out in Bulgaria from 1983 to 2003. According to the reports of the surveys, the landslides and erosion terraces cover about 13% of the coastal line of the country. The average rate of annual beach surface eroded along the Bulgarian Black Sea coast is 17,527 m<sup>2</sup>/year. The average estimated rate of coastal erosion is 0.08 m/year. The average rate of retreat of cliffs is 0.36 m/year.

About 50 ha with accumulation and about 80 ha with erosion process were identified in the northern sector of Romania's coast. The shoreline advanced by more than 10 m on 10% of the total length of the coastline and recession by more than 10 m on 53% of the coastline. It is about 38% of the coastline is stable (retreated or advanced by less than 10 m).

The average annual variation along the coast of Russia does not exceed 1 m. The average coastal recession is 0.7 m/year in the northern part of the coastline because it is formed with erodible rocks. In the south, there is a 50 km sand bay-bar system with dunes and beaches, then a flysch zone with abrasion cliffs and a mountainous coastline with gravel/pebble beaches. A long shore transport stream interrupted with a system of groins and breakwaters which intercept pebble and gravel material migration along the coast. Therefore, beaches are not restored naturally. Average rate of beach surface erosion is 0.5 m/year.

Storms, in particular of the south, southwest and southeast directions have negative impact on the coastline in Ukraine. It is due to the dynamic impact of waves which could have 4 to 7 m heights. The estimated coastline retreat due to this impact is from 0.2 to 0.3 m per 1 cm of waves heights.

Turkey's Black Sea coast contains three important deltas (Kizilirmak, Yesilirmak, and Sakarya) and lagoons of Kizilirmak Delta. These deltas provide highly productive agricultural lands. However, at present coastal erosion is a major challenge for these alluvial areas. Coastal retreat along the eastern side of the Kizilirmak Delta was reported as 2.5–5.0 m/year. Furthermore, the movement of saline water into fresh water sources in these areas threatens the activities such as agriculture and fishing. Permanent submersion of lagoons and low-lying coastal areas, and gradual transformation of the lagoons into bays is other likely impacts in the Kizilirmak Delta<sup>14</sup>.

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<sup>14</sup> Avsar, N., Kutoglu, S., Erol, B., & Jin, S. (2021). Coastal Risk Analysis of the Black Sea under the Sea Level Rise.

## 4.2. Ecology and Biodiversity Hot Spots

The Black Sea is a nearly enclosed and zonally elongated basin with the zonal dimension of about 1,200 km. With a surface area of 423,000 km<sup>2</sup>, it is approximately one-fifth of the surface area of the Mediterranean. It has a limited interaction with the Aegean Sea through the Turkish Straits System.

Its main bathymetric feature is the presence of a narrow shelf (generally less than 20 km) and steep topographic slope (generally less than 30 km) around deep interior basin having maximum depths of 2,200 m. The north-western part of the sea, occupying ~20% of the total area, is characterized by a fairly wide shelf and its connection to the deep western basin through a wider topographic slope zone.

The Black Sea receives fresh water inflows all around the basin, and the important ones Danube, Dniepr and Dniestr, discharge into the north-western coastal waters. The River Danube being one of the largest rivers in Europe introduced significant effects on the Black Sea ecosystem.

Table 9 below presents the list of threatened species in the Black Sea according to IUCN together with their IUCN status. Table 10 includes the species listed in The Black Sea Biodiversity and Landscape Conservation Protocol (BSBLC) to the Convention on the Protection of the Black Sea Against Pollution, Annex-2 Provisional List of Species of the Black Sea Importance. The Black Sea Biodiversity and Landscape Conservation Protocol to the Convention on the Protection of the Black Sea Against Pollution was signed in Sofia, Bulgaria 2002 (as per 26 February 2007 ratified by Turkey and Ukraine).

Table 9. List of Threatened Species in the Black Sea According to IUCN

FAMILY	SPECIES	IUCN Status
<b>PISCES</b>		
<b>ANGUILLIDAE</b>	<i>Anguilla anguilla</i>	CR
<b>SPARIDAE</b>	<i>Dentex dentex</i>	VU
<b>GYMNURIDAE</b>	<i>Gymnura altavela</i>	EN
<b>ANATIDAE</b>	<i>Melanitta fusca</i>	VU
<b>BALISTIDAE</b>	<i>Balistes caprisus</i>	VU
<b>SCOMBRIDAE</b>	<i>Thunnus thynnus</i>	EN
<b>SCIAENIDAE</b>	<i>Umbrina cirrosa</i>	VU
<b>ACIPENSERIDAE</b>	<i>Acipenser gueldenstaedtii</i>	CR
	<i>Acipenser nudiiventris</i>	CR
	<i>Acipenser stellatus</i>	CR
<b>LABRIDAE</b>	<i>Labrus viridis</i>	VU
<b>POMATOMIDAE</b>	<i>Pomatomus saltatrix</i>	VU

*IUCN Status/Categories: LC - Least Concern; NT - Near Threatened; VU - Vulnerable; EN - Endangered; CR - Critically Endangered*

Table 10. Provisional List of Species of the Black Sea Importance

CLASSIFICATION		BSBLC	IUCN Status
<b>CHROMISTA</b>			
	<i>Cystoseira barbata</i>	Endangered	
	<i>Cystoseira crinita</i>	Endangered	
	<i>Dictyota dichotoma</i>	Rare	
<b>PLANTAE</b>			
	<i>Phyllophora brodiaei</i>	Endangered	
	<i>Phyllophora nervosa</i>		
	<i>Phyllophora biocoenosis</i>		
	<i>Phyllophora pseudoceranooides</i>	Endangered	
	<i>Salvinia natans</i>	Endangered	LC
	<i>Trapa natans</i>	Endangered	LC
	<i>Zostera marina</i>	Rare	LC
	<i>Zostera noltii</i>	Rare	LC
<b>ANIMALIA</b>			
<b>PORIFERA</b>	<i>Lissodendoryx variisclera</i>	Rare	
	<i>Suberites prototipus</i>	Rare	
<b>ANNELIDA</b>	<i>Eteone siphonodonta</i>	Rare	
	<i>Hesionides arenarius</i>	Endangered	
	<i>Nainereis laevigata</i>		
	<i>Ophelia bicornis</i>	Endangered	
	<i>Phyllodoce nana</i>	Rare	
<b>ARTHROPODA</b>			
<b>CRUSTACEA</b>	<i>Anomalocera patersoni</i>	Endangered	
	<i>Apseudopsis ostroumovi</i>	Rare	
	<i>Biancolina cuniculus</i>	Endangered	
	<i>Branchinecta orientalis</i>	Rare	
	<i>Branchinectella spinosa</i>	Endangered	
	<i>Branchmectella media</i>		
	<i>Callianassa pontica</i>	Endangered	
	<i>Callianassa truncata</i>	Endangered	
	<i>Caprella acanthifera</i>		
	<i>Carcinus mediterraneus</i>	Rare	
	<i>Eriphia verrucosa</i>	Endangered	
	<i>Hemimysis anomala</i>	Endangered	
	<i>Hemimysis serrata</i>	Endangered	
	<i>Homarus vulgaris</i>	Rare	LC
	<i>Iphigenella acanthopoda</i>	Rare	
	<i>Iphigenella andrussovi</i>	Rare	
	<i>Iphigenella shablensis</i>	Rare	
	<i>Katamysis warpachowskyi</i>	Rare	
	<i>Labidocera brunescens</i>	Endangered	
	<i>Macropipus arcuatus</i>	Endangered	
	<i>Pilumnus hirtellus</i>	Endangered	
	<i>Pontella mediterranea</i>	Endangered	
	<i>Potamon tauricum</i>	Rare	
	<i>Processa pontica</i>	Rare	



CLASSIFICATION		BSBLC	IUCN Status
	<i>Smirnoviella reducta</i>	Rare	
	<i>Tanymastix stagnalis</i>	Rare	
	<i>Upogebia pusilla</i>	Endangered	
	<i>Xantho poressa</i>	Endangered	
<b>LNSECTA</b>	<i>Calopteryx splendens balcanica</i>	Endangered	LC
	<i>Calopteryx splendens taurica</i>	Endangered	
	<i>Calopteryx virgo meridionalis</i>	Endangered	LC
<b>HALACARIDAE</b>	<i>Halacarellus procerus</i>	Endangered	
<b>MOLLUSCA</b>	<i>Bela nebula</i>	Rare	
	<i>Cyclope donovani</i>	Rare	
	<i>Donacilla cornea</i>	Endangered	
	<i>Halichondria panicea</i>	Rare	
	<i>Melaraphe neritoides</i>	Endangered	
	<i>Ostrea edulis</i>	Endangered	
	<i>Pachygrapsus marmoratus</i>	Rare	
	<i>Patella tarentina</i>	Endangered	
	<i>Solen vagina</i>	Endangered	
<b>ECHINODERMATA</b>	<i>Echinocyamus pusillus</i>	Rare	
	<i>Marthasterias glacialis</i>	Rare	
<b>CHORDATA</b>			
	<i>Amphioxus lanceolatum</i>	Rare	
<b>PISCES</b>	<i>Acipenser guldenstaedti</i>	Endangered	CR
	<i>Acipenser guldenstaedti colchicus V. Marti</i>	Endangered	
	<i>Acipenser nudiiventris R</i>	Endangered	CR
	<i>Acipenser ruthenus</i>	Endangered	VU
	<i>Acipenser stellatus</i>	Endangered	CR
	<i>Acipenser sturio</i>		CR
	<i>Aidablennius sphinx</i>	Endangered	LC
	<i>Aphia minuta</i>	Endangered	LC
	<i>Balistes carolinensis</i>	Rare	VU
	<i>Belone belone euxini</i>	Endangered	LC
	<i>Callionymus belenus</i>	Endangered	LC
	<i>Dicentrarchus labrax</i>	Endangered	LC
	<i>Diplodus annularis</i>	Rare	LC
	<i>Hippocampus guttulatus microstephanus</i>	Endangered	DD
	<i>Hucho hucho hucho</i>	Rare	EN
	<i>Huso huso</i>	Endangered	CR
	<i>Knipowitschia longicaudata</i>	Endangered	
	<i>Lipophrys pavo</i>	Endangered	LC
	<i>Liza ramada</i>	Rare	LC
	<i>Lophius piscatorius</i>	Rare	LC
	<i>Mesogobius batrachocephalus</i>	Rare	LC
	<i>Mullus barbatus ponticus</i>	Rare	LC
	<i>Nerophis ophidion</i>	Rare	LC
	<i>Pomatomus saltator</i>	Endangered	VU
	<i>Pomatoschistus caucasicus</i>	Endangered	LC
	<i>Salmo trutta labrax</i>	Endangered	LC
	<i>Sarda sarda</i>	Endangered	LC

CLASSIFICATION		BSBLC	IUCN Status
	<i>Scomber scombrus</i>	Endangered	LC
	<i>Scorpaena porcus</i>		LC
	<i>Serranus cabrilla</i>	Endangered	LC
	<i>Serranus scriba</i>	Rare	LC
	<i>Sphyraena sphyraena</i>	Rare	LC
	<i>Spicara smaris</i>	Rare	LC
	<i>Syngnatus tenuirostris</i>	Rare	DD
	<i>Syngnatus typhle</i>	Rare	LC
	<i>Thunnus thynnus</i>	Endangered	EN
	<i>Trigla lucerna</i>	Rare	LC
	<i>Xiphias gladius</i>	Rare	LC
<b>AVES</b>	<i>Asio flammeus</i>	Rare	LC
	<i>Calonectris diomedea</i>	Endangered	LC
	<i>Ciconia nigra</i>	Endangered	LC
	<i>Gelochelidon nilotica</i>	Rare	LC
	<i>Haliaeetus albicilla</i>	Endangered	LC
	<i>Himantopus himantopus</i>	Rare	LC
	<i>Numenius tenuirostris</i>	Rare	CR
	<i>Pandion haliaetus</i>	Endangered	LC
	<i>Panurus biarmicus</i>	Rare	LC
	<i>Pelecanus crispus</i>	Endangered	NT
	<i>Pelecanus onocrotalus</i>	Endangered	LC
	<i>Phalacrocorax aristotelis</i>	Endangered	LC
	<i>Haliastur (Phalacrocorax) pygmeus</i>	Rare	LC
	<i>Phoenicopterus ruber</i>	Rare	LC
	<i>Platalea leucorodia</i>	Endangered	LC
	<i>Plegadis falcinellus</i>	Endangered	LC
	<i>Puffinus puffinus yelkouan</i>	Rare	LC
	<i>Recurvirostra avosetta</i>	Rare	LC
	<i>Branta ruficollis</i>	Endangered	VU
	<i>Somateria mollissima</i>	Rare	NT
	<i>Sturnus roseus</i>	Rare	LC
	<i>Tadorna ferruginea</i>	Endangered	LC
<b>MAMMALIA</b>	<i>Delphinus delphis</i>	Endangered	LC
	<i>Lutra lutra</i>	Rare	NT
	<i>Monachus monachus</i>	Endangered	EN
	<i>Phocoena phocoena</i>	Endangered	LC
	<i>Tursiops truncatus</i>	Endangered	LC

*IUCN Status/Categories:* LC - Least Concern; NT - Near Threatened; VU - Vulnerable; EN - Endangered; CR - Critically Endangered; BSBLC - The Black Sea Biodiversity and Landscape Conservation

The internationally recognized areas of high biodiversity value are evaluated within the scope of this ESMF as follows:

- Key biodiversity areas (KBAs) are globally important sites that are large enough or sufficiently interconnected to support viable populations of the species for which they

are important and are nationally identified sites that contribute significantly to the global persistence of biodiversity, in terrestrial, freshwater and marine ecosystems. The identification of KBAs is an important approach to address biodiversity conservation at the level of individual protected areas, concessions and land management units. Prior to 2016, KBAs were identified using globally standardized criteria and thresholds, developed from BirdLife International’s work on Important Bird and Biodiversity Areas, and then expanded to cover a wider range of taxa and conservation initiatives such as Alliance for Zero Extinction Sites. In 2016, the International Union for the Conservation of Nature (IUCN) published a Global Standard for the Identification of Key Biodiversity Areas, providing criteria under which an area can be quantitatively assessed for inclusion as a KBA with the thresholds being applicable and comparable across taxonomic groups.

- Important Bird Areas (IBAs) were identified by a database prepared by BirdLife International and Royal Society for the Protection of Birds.
- The Alliance for Zero Extinction (AZE), established in 2004 and comprising 88 biodiversity conservation NGOs, is dedicated to the identification and safeguarding of all KBAs holding effectively the entire global population of at least one Critically Endangered or Endangered species. AZE members work to rebuild populations of endangered and critically endangered species through efforts to eliminate human threats such as commercial exploitation, disease and introduction of invasive species.

KBAs and IBAs that are directly in relation with the Black Sea are presented in Table 11 and shown on a map given in Figure 4. In Table 11, field sizes and definitions of such areas are also presented. There are no AZE sites directly in relation with Black Sea. All of the KBAs in Table 11, except Chernomorskiy (Black Sea) Biosphere Reserve (Ukraine), Bichvinta-Miusera Nature Reserve (Georgia), Enguri River (Georgia), Kolkheti NP Aquatory (Georgia), Kolkheti (Georgia), Harsit Valley (Turkey), are classified as IBA at the same time.

Table 11. Biodiversity Hotspots in Direct Interaction with the Black Sea

SITE NAME	AREA OF KBA- IBA (ha)	SITE DESCRIPTION
<b>GEORGIA</b>		
Batumi	38,707 ha	One of the most important migration routes on this planet, connecting the enormous landmasses of Asia and Africa, runs straight through the Caucasus. However, the mountainous geography poses big challenges for the millions of birds that pass through this region twice a year. During bad weather especially, they are forced to the narrow coastal plains or into deep valleys, where they concentrate in incredible numbers. At Batumi, on the Georgian Black Sea coast, it is not unusual to see over 100,000 Honey or Steppe Buzzards on a single day. Millions of passerines pass the bottleneck of Besh Barnag on the Caspian shore in Azerbaijan. Unfortunately, these immense concentrations of birds also attract many poachers, who defy national and international laws protecting migratory birds. Our partners have been working hard to raise awareness and support law enforcement, in order to protect these magnificent birds.

SITE NAME	AREA OF KBA-IBA (ha)	SITE DESCRIPTION
Bichvinta-Miusera Nature Reserve	4,024	Bichvinta-Miuseri Strict Nature Reserve is a protected area in the Gagra District and Gudauta District of Abkhazia formerly Abkhazia region of Georgia. Reserve main goal is protecting Bichvinta's relic and colonized flora and fauna. Bichvinta-Miuseri Strict Nature Reserve is located on the Black Sea coast of Abkhazia and has three sections: Myussera (215 hectares), Lidzava (165 hectares) and Pitsunda (1296 hectares).
Enguri River	23,836	The Enguri flows on the territory of Western Georgia, taking the start in a few glaciers of the Greater Caucasus. In the upper Svaneti it flows through the basin, and then, turning into narrow gorges, extends near the town of Jvari and enters the territory of Colchis lowland, which flows into the Black Sea. The altitude gradient is about 3000 m. The Enguri River basin is a part of the 433 region "Western Transcaucasia"
Kolkheti	51,306	An eastern coastal region of the Black Sea consisting of wetlands and damp woodlands. Evergreen vegetation covers much of the coastline within the site. The IBA encompasses the Lower Rioni river and Lake Paliastomi. The water surface of the Black Sea in the west and the pattern of the Little Caucasus mountain range in the east come together to form a migration bottleneck in the southern part of the site.
Kolkheti NP Aquatory	23,871	Kolkheti National Park - the first natural site in Georgia, is nominated on the UNESCO World Heritage List, for its Colchic forests and wetland. The Kolkheti Lowlands received international attention for the first time in 1996 when Georgia joined the Ramsar Convention – an intergovernmental treaty on wetlands of international importance, especially those that serve as habitats for waterfowl. Park is in the emerald network as well, which is ecological cooperation, created in order to make up special conservation interest. You will be astonished how many birds are migrating here, especially in late spring and early autumn. Wetlands are an important resting and staging area for thousands of water birds migration between Northern Eurasia and Africa.
Supsa River	1,980	The Supsa is a river in the Black Sea basin of Georgia. It flows roughly west for 108 kilometres (67 mil) until it joins the Black Sea near the village Supsa.
<b>TURKEY</b>		
Amasra Coast	17,395	It is the coastline starting from Amasra District in the Western Black Sea Region and continuing to the point where Yenice River flows into the sea on the western border of Bartın province. The area also includes the small delta formed by the Bartın Stream on the Black Sea coast and the islets off Amasra. The area consists of deciduous forests, pseudo-maquis communities, agricultural fields and coastal dunes. The coastline has small well-preserved beaches and steep rocky slopes

SITE NAME	AREA OF KBA-IBA (ha)	SITE DESCRIPTION
Eastern Black Sea Mountains	1,406,622 ha	The mountains, which begin from the coast line, are relatively low to the west and increase in height to the east. They reach their peak at 3932 meters which is the fourth highest peak of Turkey. The northern slopes of the mountain are steep along the sea side. Many watercourses and seasonal streams flow from the deep valleys into the sea in the south-north direction, establishing waterfalls. Small glacier lakes and a series of small glaciers are found at the higher levels of the mountain. The mountains stretch steeply, meets the East Anatolian plateau and the Coruh Valley to the south. The Eastern Black Sea Mountains are the highest rainfall receiving area of Turkey with an annual rainfall as high as 2500 millimeters. As the altitude increases, temperature differences from warm to cold are experienced. The different geological structure of the region, the amount of rainfall, the temperature differences have resulted in the diversity of habitats and species. The region, which is the largest protection area in Turkey, consists of a mountain series mostly in the form of alkaline volcanic rocks, about 250 kilometers in length and includes the Eastern Black Sea coast line. The western border of the region is drawn by the Harsit Stream, the southeastern by the Coruh River, the eastern by the Karcal Mountains and the Georgian border.
Harsit Valley	190,057	Harsit Stream rises from the mountains on the eastern border of Gümüşhane province. It pours into the Black Sea 1.5 km east of Tirebolu. A small delta was formed in the east of Tirebolu, where the Harşit Stream empties into the Black Sea.
Giresun Island	630	Giresun Island is a small island that has an area of 4 hectares and lies 1.2 km from the Turkish city of Giresun on the southeastern coast of Black Sea. It is the largest island on the Turkish Black Sea coast. Like much of Giresun Province the island receives considerable precipitation and it is hot and humid in the summer. Its coast is mostly rocky and steep. There are two natural bays found to the north-east and south-east, the latter being an adequate harbour for small boats. Visitors can walk from this harbour up into the interior of the island. While the dominant plants of Giresun are laurels ( <i>Laurus nobilis</i> ) and black locusts ( <i>Robinia pseudoacacia</i> ), it has been reported that the island has 71 wild and introduced species of trees and herbs. It is also a wild habitat for cormorants ( <i>Phalacrocoracidae</i> sp.) and seagulls ( <i>Laridae</i> sp.).
Akkus Island	1,185	A small, sparsely-vegetated island located in the Black Sea west of Ordu, less than 100 m from the shore. The IBA lies adjacent to a major freshwater outflow into the sea and has therefore become popular with anglers.
Yesilirmak Delta	20,152	Part of the largest delta on the Turkish Black Sea coast, the majority of which is now under agriculture. The IBA comprises the largest remaining wetland Simenlik-Akgol lake complex 1,900-ha area in the eastern part of the delta of which 200 ha is open water (max. depth 3 m), and the remainder is reed <i>Phragmites</i> and marsh vegetation. Also included are dunes and <i>Cladium fen</i> communities.

SITE NAME	AREA OF KBA-IBA (ha)	SITE DESCRIPTION
Kızılırmak Delta	30,504	The largest area of intact wetland on the Turkish Black Sea coast, comprising open water, marsh vegetation (including vast reedbeds), sand-dunes, farmland and remnant woodland (including <i>Alnus/Fraxinus</i> seasonally-flooded forest). The lake edges support <i>Phragmites</i> and <i>Typha</i> ; the dunes support maquis-like vegetation. Outside the IBA, the delta is used for grazing and intensive arable production. Reed-cutting is an important economic activity
Sinop Peninsula	11,352	A complex of dune, lake and forest habitats located in a broad valley. Large areas of a shallow, stream-fed brackish coastal lake are vegetated with <i>Juncus</i> and <i>Phragmites</i> . South of the lake is an extensive, seasonally flooded <i>Fraxinus</i> forest. <i>Quercus</i> and <i>Carpinus</i> forests surround the lake on drier ground; areas of dune have been forested with <i>Pinus</i> . Cattle graze the wetland.
Kure Mountains	130,044	It is located in the north of Anatolia and the west part of Kure Mountains in Bartın and Kastamonu provincial borders. There are 8 districts and 123 villages around Kure Mountains. The part of %52 is in Bartın and %48 in Kastamonu. It was declared as a national park in 07.07.2000. Kure Mountains National Park is one of the areas of 9 hot spot needed to be preserved in Turkey. In addition to this, it is the first PAN (Protected Area Network) Park area. (It is declared as PAN Park in 2012).
Kozlu Coast	9,235	It is located in the province of Zonguldak in the Western Black Sea region. It has been evaluated as an IBA since 2004. IBA trigger species is European Shag ( <i>Gulosus aristotelis</i> )
Sakarya Delta	33,346	The KBA includes the delta ecosystem formed where the Sakarya River empties into the Black Sea, flooded forests and approximately 40 kilometers of coastal dunes. There are small ponds in the sand dunes and flooded forests in the area. The largest lake in the KBA is Akgöl. Forming a cape towards the sea, the delta constitutes one of the richest dune ecosystems of the Black Sea coast, which stands out in terms of biodiversity. The area is especially important for fish.
Sile Coast	4,817	A complex of four small islands at the entrance to harbor, a holiday resort on the Black Sea coast, east of Istanbul. The islands are sparsely vegetated with low grass and scrub vegetation on the higher parts.
Bosphorus	55,367	The site includes the forested areas east (Polonezkoy Nature Park) and west (Belgrade forest) of the strait, which are known to be of importance to roosting migrants.
Igneada Forests	8,238	A complex of seasonally-flooded forests, swamps, freshwater lakes and sand-dunes on the Black Sea coast near the Turkish-Bulgarian border. Surface water accumulation behind the dunes feeds the largely intact flooded forests, which are below sea-level. The 10 km long pristine dune and beach system is of high botanical importance. Human activities include cattle- and sheep-grazing, small-scale freshwater fisheries and reed-cutting

SITE NAME	AREA OF KBA-IBA (ha)	SITE DESCRIPTION
Terkos Basin	132,380	The Terkos-Kasatura Coastline comprises complex of aquatic and swamp communities, associated with Terkos Lake (one of İstanbul's most important drinking water reservoirs) and sand dune habitats, set in a hinterland of grassland, heath and coppice forest habitats. The coppice forest habitats are probably the largest surviving area of actively worked coppice (in good condition) in Turkey, and support what is believed to be one of the largest surviving traditional charcoal production enterprises in Europe. The site's flora is exceptionally rich: 575 vascular plant taxa have been recorded, and the floras of the freshwater and sand dune ecosystems are amongst the richest in Turkey. Overall, the IPA can be regarded as one of the most important areas of European dune, grassland, forest and wetland vegetation in Turkey, and is perhaps the single most important complex of habitats for nature conservation. The Basin is located to the north of Catalca Peninsula which is mostly within the boundaries of the province of İstanbul. The Basin is surrounded by the Istranca Mountains to the west and the Terkos Lake to the east. The Terkos-Kasatura Coastline comprises a substantial tract of coastline, together with its hinterland of forest, associated with the ridge of hills that runs parallel to, and between 10 and 15 km. inland of, the Black Sea. Its naturally forested catchment covers an area in the order of 600 km <sup>2</sup> and accordingly the lake in freshwater, despite its close proximity to the sea. The forested nature of its catchment also ensures a high water quality within the lake, which is of considerable economic importance since this is one of İstanbul's principal drinking water reservoirs.
<b>UKRAINE</b>		
Snake island	222	A rocky island in the Black Sea, near the Danube delta, covered with grassland. It is a military training area.
Stentsivs'ko-Zhebriyanivs'ki plavni	7,012	A part of the Danube delta, near Vilково village.
Sasyk lake	24,188	A lake near the Danube delta.
Janshejs'ke lake	900	Salt-lakes along the Black Sea coast.
Shagany-Alibej-Burnas lake-system	32,976	A system of lakes in the lower reaches of the Danube valley, by the Black Sea coast near Zheltye Vodу village.
Budats'kyj lyman	4,306	An estuary, connected with the Dnestr delta, near Sergeevka and Kurortnoe villages.
Dnister delta	35,299	A natural wetland in the lower reaches of the Dnestr valley, which includes a man-made reservoir as well as the floodplain of the Turunchuk river near Belyaevka town.
Khadzhybejs'kyj lyman	13,161	Khadzhybejs'kyj lyman, which has been evaluated as a KBA since 2000, includes Terrestrial and Marine habitats.
Kuyal'nyts'kyj lyman	8,461	An estuary on the Black Sea coast near Odessa, with sandy beaches adjoined by steppe and arable land.
Tylygul's'kyj lyman	20,160	The estuary/delta of the Tylygul river, on the Black Sea coast.

SITE NAME	AREA OF KBA-IBA (ha)	SITE DESCRIPTION
Berezans'kyj lyman and Solonets Tuzly pond	18,426	Berezans'kyj lyman and Solonets Tuzly pond, which has been evaluated as a KBA since 2000, includes Terrestrial and Marine habitats.
Kinburns'kyj peninsula	24,051	A peninsula in the Black Sea, near the Dnepr delta. There are numerous lakes and lagoons (fresh, brackish and salt water), set in a mosaic of steppe, pseudo-steppe and small forestry plantations.
Chernomorskiy (Black Sea) Biosphere Reserve	73,248	Chernomorskiy Biosphere Reserve is situated on the northern coast of the Black Sea about 45 km south-west of the city of Kherson. It represents shallow coastal, estuarine and inland wetlands as well as marshes, shallow coastal bays, dune systems, halophytic seaside steppe and forest-steppe, which was once common in this region. In territory of the Reserve a unique natural complexes are presented: azonal sandy forest-steppe on arenas of the Low Dnieper, seaside solonetzic desertificated steppe, complex of coast - and islands, nature-aqual complexes of shallow-water bays and Black Sea.
Yagorlyts'ka and Tendrivs'ka Bays	94,608	Yagorlytskiy (34,000 ha) and Tendrovskiy (38,000 ha) Bays, in the Black Sea, with sandy beaches.
Dnipro delta	33,037	The delta of the River Dnepr, with numerous small islands of flood-plain forest and large reedbeds, near the town of Golaya Pristan.
Karkinits'ka and Dzharylgats'ka bays	158,318	Large bays with sandy beaches, on the Black Sea coast near the towns of Skadovsk and Krasnoperekopsk. The site includes the Lebyazhi islands.
Tarkhankuts'kyj peninsula	4,175	Patches of natural steppe with numerous ravines, located within the Black Sea coastal zone and near the villages of Olenevka and Krasnoselskoe.
Mys Uret	0.960 km <sup>2</sup>	The cape lies on the Black Sea coast near the town of Tshernomorsk.
Crimean Nature Reserve	34,639	Mixed mountain forest with rocky areas.
Karadaz'kyj Nature Reserve	3,357	Deciduous mountain forest in the coastal zone of the Black Sea
Mys Martyan	0.024	A site on the Kerch peninsula of the Crimea, with salt-water and brackish lakes and areas of natural steppe on the hills. Uzunlarsky is the largest lake. There are rural plots of steppe and pseudo-steppe near the villages of Vulkanovka, Marievka and Marphovka. The area is a military zone.
Uzunlars'ke lake	4,418	A site on the Kerch peninsula of the Crimea, with salt-water and brackish lakes and areas of natural steppe on the hills. Uzunlarsky is the largest lake. There are rural plots of steppe and pseudo-steppe near the villages of Vulkanovka, Marievka and Marphovka. The area is a military zone.





Figure 4. Map of Biodiversity Hotspots in Georgia, Turkey and Ukraine in Direct Interaction with Black Sea

### 4.3. Socio-Economic Environment

#### 4.3.1. Social Features of Black Sea Region and Project Beneficiary Countries

The Black Sea region comprises a diversity of cultural, language, ethnic, and religious identities. The region is even heterogeneous in terms of the economic structure, size, and political orientation of Black Sea countries. The wider Black Sea area includes a population of 332 million people living in littoral and adjacent states.

This section summarizes the demographics, current economic situation and gender-based violence overview of the four beneficiary countries. Considering the project content, following information at country and, where possible, at Black Sea zone level has been provided and analyzed:

- General characteristics of countries' population (i.e. rural and urban, women and men).
- Minority presence in each country and Black Sea regions.
- Poverty, employment and unemployment data where possible at coastal level and focusing on youth and rural population.
- Overview of youth in the country and rural areas.
- Gross Domestic Product's (GDP) distribution among project-related sectors.
- Situation of entrepreneurship and small and medium enterprises.
- Participation of women to labor force and gender-based violence statistics.

Vulnerable groups have also been described following the country overviews.

#### Georgia

**Demography:** The population of Georgia is approximately 3.7 million with 52% women and 48% men and 41% of population lives in rural areas and 59% lives in urban areas. More than 46% of the population is in 30-65 age range and 15% is over 65 years old. The coastal zone of Georgia by the Black Sea consisting of eight municipalities (Khelvachauri, Batumi, Kobuleti, Ozurgeti, Lanchkhuti, Poti, Khobi, and Zugdidi) is home to 554,800 people with 43% rural and 57% urban population<sup>15</sup>.

According to the 2014 census, 86.8% of the population is ethnic Georgians, followed by 6.3% Azeris and 4.5% Armenians<sup>16</sup>. Azeris mainly are settled in south-east region of Kvemo Kartli bordering on Azerbaijan<sup>17</sup>. Armenian community is settled in southern region of Javakheti.

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<sup>15</sup> National Statistic Office of Georgia, Population by cities and boroughs, <https://www.geostat.ge/en/modules/categories/41/population>

<sup>16</sup> [https://web.archive.org/web/20170205175903/http://geostat.ge/cms/site\\_images/\\_files/english/population/Census\\_release\\_ENG\\_2016.pdf](https://web.archive.org/web/20170205175903/http://geostat.ge/cms/site_images/_files/english/population/Census_release_ENG_2016.pdf)

<sup>17</sup> <https://minorityrights.org/minorities/azeris/>

There are substantial Armenian and Azeri communities in Tbilisi<sup>18</sup>. Georgian community forms the majority of coastal zone population.

Around 18% of the population in Georgia is between the ages of 15 and 29. This age range defines the “youth” according to Georgia’s Youth Policy. About 60% of young people live in urban areas. According to the National Statistic Office of Georgia’s 2020 data, only 30% of youth population is employed. According to UN Voluntary National Review of Georgia Report, 35% of youth aged 14-29 are not in education, employment and/or training. Unemployment is among the main problems that young people face in Georgia.

**Economy and Employment:** Georgia has a rapidly growing economy and has become an upper middle-income country in 2019<sup>19</sup>. Georgia’s GDP per capita has increased by an annual average of 3.3% for the last ten years. In 2020, GDP in Georgia counted as \$15.9 billion and \$4,275 per capita<sup>20</sup>, 15% of which has been generated by the coastal zone of the country consisting of eight municipalities in three regions (the Autonomous Republic of Ajara, Guria, and Samegrelo).

Based on 2019 GDP shares, the largest sectors in economy are wholesale and retail trade (14%), real estate (12%) and manufacturing (10%)<sup>21</sup>. Agriculture, forestry and fishery account only for 8% of the GDP whereas 38% of population employed in Georgia is in agriculture sector<sup>22</sup>. As the Georgian economy transforms towards service sector, tourism has been increasing substantially with an average annual growth rate of 10% between 2015 and 2019. Tourism employed around 150,000 people in 2019<sup>23</sup>.

The total labor force in the country in 2020 was around 1.6 million according to National Statistics Office of Georgia. Labor force participation rate was 62.9 in the same year, the highest among the project beneficiary countries.

The pandemic and pandemic related lockdowns had a direct impact on the economy, which fell into recession in the second quarter of 2020, contracting by 6.2%<sup>24</sup>. This has resulted increase in unemployment and poverty rates and affecting transport, tourism and construction sectors the most. National Statistics Office of Georgia states that in the fourth quarter of 2020, the unemployment rate in Georgia increased by 3.8% compared to the corresponding period of the previous year and equaled 20.4%<sup>25</sup>. Georgia has the highest population rate living under national poverty line among the four beneficiary countries with 19.5%<sup>26</sup>.

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<sup>18</sup> <https://minorityrights.org/minorities/armenians-2/>

<sup>19</sup> “Georgia: Towards Green and Resilient Growth”, World Bank, November 2020

<sup>20</sup> <https://www.worldbank.org/en/country/georgia/overview>

<sup>21</sup> UN Voluntary National Review 2020

<sup>22</sup> “Georgia: Towards Green and Resilient Growth”, World Bank, November 2020

<sup>23</sup> UN Voluntary National Review 2020 for Georgia

<sup>24</sup> <https://www.worldbank.org/en/country/georgia/overview#3>

<sup>25</sup> <https://www.geostat.ge/media/36538/Indicators-of-the-Labour-Force---4Q2020.pdf>

<sup>26</sup> <https://data.worldbank.org/indicator/SI.POV.NAHC?locations=GE&view=chart>

Small and medium enterprises (SMEs) generated 60% of total added value<sup>27</sup> in Georgia in 2018 accounting for 63.3% of total private employment<sup>28</sup>. Georgia has prioritized SME development as the main source of private sector growth, jobs creation and innovation; and initiated programs for financial support and mentoring.

**Gender and Gender-based Violence:** Georgia made significant progress in terms of legislation to promote, enforce and monitor equality and non-discrimination on the basis of sex. According to World Economic Forum Global Gender Gap Report 2021, women's labor force participation rate is 61.5% compared to 77.8% for men<sup>29</sup> in Georgia.

Both United Nations<sup>30</sup> and World Bank<sup>31</sup> reports on gender-based violence conducted in the last 5 years state that around 26% women in Georgia aged between 15 and 64 have experienced at least one type of emotional abuse, sexual harassment, sexual abuse, or physical abuse in their lifetime. Another study in 2021 has revealed that 23% of women in Georgia have felt or heard of an increase in domestic violence, since the beginning of the Covid-19 outbreak<sup>32</sup>.

## Republic of Moldova

**Demography:** The population of Republic of Moldova is 2.6 million with 52% women and 48% men. The majority, 57% of the population, lives in rural areas<sup>33</sup>. Around 50% of the population is between the ages 30 and 64, 14% is above 65 years old. Approximately one million people live in the Danube River Basin within Republic of Moldova and settlements occupy around 8% of the territory. Around 70% of this population lives in rural areas<sup>34</sup>.

Republic of Moldova is a multi-ethnic state. According to 2014 census, the minorities represent around 25% of the total population with Romanians 7%, Ukrainians 6.6%, Gagauz 4.1%, Russians 4.1%, Bulgarians 1.9%, Roma 0.3% and other nationalities 0.5%<sup>35</sup>. Soroca, situated on the Dniester/Nistru River has a sizable Roma community.

Youth between the ages of 15 and 29 represents 18% of the total population in Republic of Moldova. Only 28% of the young people are employed and around 69% is economically

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<sup>27</sup> UN Voluntary National Review 2020 for Georgia

<sup>28</sup> <https://www.oecd-ilibrary.org/sites/1a9d4035-en/index.html?itemId=/content/component/1a9d4035-en>

<sup>29</sup> <https://www.weforum.org/reports/global-gender-gap-report-2021>

<sup>30</sup> <https://www2.unwomen.org/>

[/media/field%20office%20georgia/attachments/publications/2020/violence%20against%20women.pdf?la=en&vs=3716](https://www2.unwomen.org/-/media/field%20office%20georgia/attachments/publications/2020/violence%20against%20women.pdf?la=en&vs=3716)

<sup>31</sup> <http://documents1.worldbank.org/curated/en/558211513619282554/pdf/GBVinGeorgiaReportFinal102417-Web.pdf>

<sup>32</sup> <https://www2.unwomen.org/>

[/media/field%20office%20georgia/attachments/publications/2021/covid\\_gender\\_assessment\\_2021\\_eng.pdf?la=en&vs=4324](https://www2.unwomen.org/-/media/field%20office%20georgia/attachments/publications/2021/covid_gender_assessment_2021_eng.pdf?la=en&vs=4324)

<sup>33</sup> <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=MD> ,

<https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?locations=MD&view=chart>

<sup>34</sup> [https://www.icpdr.org/main/danube-](https://www.icpdr.org/main/danube-basin/moldova#:~:text=Approximately%20one%20million%20people%20live,and%2030%25%20in%20urban%20areas.)

[basin/moldova#:~:text=Approximately%20one%20million%20people%20live,and%2030%25%20in%20urban%20areas.](https://www.icpdr.org/main/danube-basin/moldova#:~:text=Approximately%20one%20million%20people%20live,and%2030%25%20in%20urban%20areas.)

<sup>35</sup> <https://minorityrights.org/minorities/roma-22/>

inactive. Half of this inactive youth is placed in education and professional training<sup>36</sup>. More than one third of the economically active youth works in the informal sector, being largely engaged in agriculture, wholesale and retail trade, as well as in tourism<sup>37</sup>.

**Economy and Employment:** Republic of Moldova is a small lower-middle income economy that has reached significant growth levels in GDP between 2015 and 2019 overcoming the financial crises in 2014 from the banking sector<sup>38</sup>. In 2020, country's GDP in Republic of Moldova is \$11.9 billion with \$4,512 per capita. Republic of Moldova is among one of the poorest countries in Europe<sup>39</sup> with the poverty rate of 15.8<sup>40</sup>%.

The country's economy mostly relies on agriculture representing 10% of the GDP and employing nearly 21% of the workforce<sup>41</sup>. Industry employs 17% of the active population with the share of 23% of GDP. For the last years, the GDP structure is turning towards services sector that represents nearly 54.1% of the GDP, employing half of the workforce (47.5%). It is driven by the insurance, legal consultancy and telecommunications sectors<sup>42</sup>.

The total labor force in the country in 2020 is around 885 thousand. Labor force participation rate is 42.26, the lowest among the project beneficiary countries. The unemployment rate in Republic of Moldova decreased to 4.7% in 2020 from 5.1% in 2019<sup>43</sup>.

Small and medium enterprises in Republic of Moldova are in developing trend. Their contribution to total gross value is 34% with an increase in the last years. Access to funding is one of the key barriers to the development of SMEs. Only one third of the SMEs in the country obtained loans<sup>44</sup>. Republic of Moldova has been running programs to support entrepreneurship and young entrepreneurs, however young people among entrepreneurs remains relatively small – 2.4% were aged up to 24 years and 20.3% were aged 25-34 years<sup>45</sup>.

**Gender and Gender-based Violence:** According to the World Economic Forum Global Gender Gap Report 2021, in Republic of Moldova women's labor force participation rate is 44.8% compared to 49.6% for men<sup>46</sup>.

According to the National Bureau of Statistics, about 63% of women have suffered from at least one form of violence perpetrated by their partners. Rural women, elderly women,

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<sup>36</sup> [https://moldova.unfpa.org/sites/default/files/pub-pdf/PSA\\_engleza.pdf](https://moldova.unfpa.org/sites/default/files/pub-pdf/PSA_engleza.pdf)

<sup>37</sup> <https://www.oecd.org/dev/inclusivesocietiesanddevelopment/youth-issues-in-moldova.htm>

<sup>38</sup> <https://statistica.gov.md/newsview.php?l=ro&idc=168&id=6605>

<sup>39</sup> <https://www.worldbank.org/en/country/moldova/overview>

<sup>40</sup> <https://www.macrotrends.net/countries/MDA/moldova/poverty-rate#:~:text=Moldova%20poverty%20rate%20for%202018,a%202.4%25%20decline%20from%202014.>

<sup>41</sup> World Bank Open Data, Employment in Agriculture (% of total employment)

<sup>42</sup> <https://santandertrade.com/en/portal/analyse-markets/moldova/economic-outline>

<sup>43</sup> <https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=MD&view=chart>

<sup>44</sup> UN Voluntary National Review 2020 for Moldova

<sup>45</sup> <http://ygeneration.eu/en/assets/files/Moldova.pdf>

<sup>46</sup> <https://www.weforum.org/reports/global-gender-gap-report-2021>

Romani women, women with disabilities and HIV-positive women reported having experienced the highest rate of multiple forms of violence<sup>47</sup>.

## Turkey

**Population:** Turkey has a population of 83 million (51% women and 49% men) with an average growing rate of 1.26% per annum<sup>48</sup>. Most (76%) of the population lives in urban areas. Turkey has a young population with more than 45% between ages 0-30, 30% between ages 30-64 and 10% older than 65 years. Around 30% of the country's population which corresponds to around 25 million people lives in 15 coastal cities of Black Sea<sup>49</sup>.

Turkey has rich ethnic and religious minority groups. Particularly Caucasian, Laz and Romani communities are among the residents of the Black Sea region. Turkey currently hosts around 3.6 million registered Syrian refugees and 320 thousand from other nationalities<sup>50</sup>.

Youth between ages 15-24 represents 15% of the population. Employment rate for young people was 29.1% in 2020. While young men's employment rate was 38.8%, young women's rate was 19.2%. The unemployment rate for young people was 25.3% in 2020. Young people who took part in neither education nor employment were 28.3%. More than 20% of young people are employed in agriculture sector, 28% in industry sector and 5% in service sector<sup>51</sup>.

**Economy and Employment:** Turkey is an upper middle-income economy and is ranked among the world's top 20 economies according to World Bank's World Development Indicators. Since August 2018, the economy has shown vulnerabilities and uncertainties due to structural challenges in output growth, unemployment, and rising inflation in the recent years.

GDP per capita, which reached its highest level in 2013 with \$12,480, has shown a continuous downward trend in the following years. In 2018, it decreased by 9.2% compared to the previous year and declined to \$9,632. The decline in GDP per capita was mainly due to the contraction in economic growth, population growth and the rapid increase in the dollar exchange rate<sup>52</sup>. In 2020, Turkey's GDP counted as \$720.1 billion and \$8.600 per capita<sup>53</sup>.

Service sector is one of the main sectoral drivers in Turkey with a share of 56% in country's total GDP. Other main sectoral drivers in the country are industry and agriculture. Based on 2019 GDP, industry represents 28% of the GDP where agriculture represents 6.4%<sup>54</sup>.

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<sup>47</sup> <https://www.ohchr.org/EN/HRBodies/HRC/Pages/NewsDetail.aspx?NewsID=25587&LangID=E>

<sup>48</sup> Turkish Statistical Institute

<sup>49</sup> Kırklareli, Istanbul, Kocaeli, Sakarya, Duzce, Zonguldak, Bartin, Kastamonu, Sinop, Samsun, Ordu, Giresun, Trabzon, Rize, Artvin.

<sup>50</sup> <https://www.unhcr.org/tr/en/refugees-and-asylum-seekers-in-turkey>

<sup>51</sup> <https://data.tuik.gov.tr/Bulten/Index?p=Istatistiklerle-Genclik-2020>

<sup>52</sup> TOBB Economic Report 2018 <https://www.tobb.org.tr/Documents/yayinlar/2019/75GK-EN.pdf>

<sup>53</sup> <https://www.worldbank.org/en/country/turkey/overview>

<sup>54</sup> <https://www.statista.com/statistics/255494/share-of-economic-sectors-in-the-gross-domestic-product-in-turkey/>

Total employed people in Turkey counted as 27.5 million in 2020. Labor force participation rate is 50.6%. The unemployment rate in Turkey decreased to 13.2 % in 2020 from 14% in 2019<sup>55</sup>.

Between 2004 and 2016, Turkey has made significant progress reducing poverty with growth in employment. In 2018 and 2019, however, economical instabilities in Turkey pose important risks to the welfare of Turkey's population and in particular of the poor and vulnerable. In addition, COVID-19 has deepened increased unemployment and the poverty rates. The poverty rate was calculated 12.2% in 2020. The COVID-19 crisis is expected to have severely negative consequences for Turkey. Retail, accommodation, food, transport and construction sectors, where low-income households comprise a significant share of the workforce, are expected to be hit hardest. Losses of employment and income are expected to be the main transmission mechanisms of the crisis for low-income households.

**Gender and Gender-based Violence:** According to the World Economic Forum Global Gender Gap Report 2021, labor force participation rate of women in Turkey is 33%, compared to 77% for men, and women estimated earned income is only 44% of men in the country.

The involvement of women in decision-making processes is also very limited. Women represents only 17% of the parliamentarians and women in managerial and senior roles are 16% compared to 83.8% of men<sup>56</sup>. Both increasing conservative approach within the political discourse and already existing patriarchal gender stereotypes have direct negative impact on gender equality in many spheres of life<sup>57</sup>.

Prior to the COVID-19 crisis, studies shows that 36% of ever-married women between the ages of 15 and 59 have experienced intimate partner physical and/or sexual violence at least once in their lifetime<sup>58</sup>. The COVID-19 outbreak has significantly increased the number of cases. NGOs involved in the fight against violence against women have also stated that there has been a critical increase in the percentage of cases. According to Turkish Federation of Women's Association there is an 80% increase in physical violence cases when March of 2019 and 2020 are compared.<sup>59</sup>

## Ukraine

**Demography:** The total population of Ukraine is approximately 44.3 million with %53 women and %47 men. Among these, 31% of population lives in rural areas and 69% lives in urban areas. Approximately 68% of population is 15-64 age range and 17% of population is above

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<sup>55</sup> <https://data.tuik.gov.tr/Bulten/Index?p=Isgucu-Istatistikleri-Agustos-2020-33792>

<sup>56</sup> <https://www.weforum.org/reports/global-gender-gap-report-2021>

<sup>57</sup> UNDP Turkey Gender Equality Strategy 2017-2020

<https://www.tr.undp.org/content/turkey/en/home/library/corporatereports/gender-strategy-2017-2020.html>

<sup>58</sup> Hacettepe University Institute of Population Studies, Ministry of Family and Social Policies, 2015. Research on Domestic Violence against Women in Turkey. Ankara, Turkey

<sup>59</sup> Rapid Gender Assessment of COVID-19 implications in Turkey, UN Women 2020 Report

65<sup>60</sup>. The coastal cities by the Black Sea Mykolayiv, Khersob and Odesa; Autonomous Republic of Crimea and Sevastopol by the Black Sea host more than 6 million people.

According to the last census conducted in 2001, minority groups in Ukraine include 17% Russian, 0.6% Belarusian, 0.5% Moldovan, 0.5% Crimean Tatar, 0.4% Bulgarians. Ukraine also has smaller populations of Hungarians, Poles, Armenians, Romanians, Roma and other nationalities/ethnic groups<sup>61</sup>.

According to 2019 National Statistics<sup>62</sup>, youth between ages 15-29 represents approximately 16% of population. The youth unemployment rate in 2017 was 18.9%, with women and youth experiencing lower employment rates than men, and those in the upper “youth” age groups, respectively. Youth in rural areas were more at risk of unemployment than those in urban areas. Self-employment remains low among youth, with most young workers in medium- to high-skill jobs<sup>63</sup>.

According to European Training Foundation’s report, only 5% of youth in Ukraine are entrepreneurs while only 6% intend to become one in the future. Moreover, 41% would like to be entrepreneurs, but point to obstacles such as the lack of start-up support or the difficult socio-economic situation and high tax rates<sup>64</sup>. The report also states that lack of accelerators and incubators as well as local mentors and few potential sources of investment are the main barriers in young entrepreneurship.

**Economy and Employment:** Ukraine has faced hyperinflation due to lack of access to financial markets and massive monetary expansion to finance public spending, while a sharp decrease in production following the 2 decades after its independence. Since 2015, Ukraine has annual average real GDP growth rate of 2.9% including 3.4% per capita thanks to accelerated growth of investments and of consumer demand<sup>65</sup>. In 2020, GDP in Ukraine counted as \$137.3 billion and \$3,118 per capita<sup>66</sup>. Service sector shares 58.8% of Ukraine’s GDP and the employment rate in service sector counted as 63% in total employment<sup>67</sup>. Industry shares 29% of GDP and agriculture 12.1% of GDP<sup>68</sup>.

The response to the COVID-19 pandemic triggered an unprecedented economic crisis in the country that includes the temporary closure of most businesses, particularly in the service sector. The disruption of global supply chains has led to a sharp fall in business sales, household incomes and employment<sup>69</sup>. Unemployment rate was falling until 2019, but due to sharp fall in economic activities, it has increased from 8.4 to 9.4 between 2019 and 2020<sup>70</sup>.

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<sup>60</sup> Statistical Yearbook of Ukraine for 2019, State Statistics Service

<sup>61</sup> <https://minorityrights.org/country/ukraine/>

<sup>62</sup> Statistical Yearbook of Ukraine for 2019, State Statistics Service

<sup>63</sup> The State of Youth, UN Ukraine, Kyiv, 2019

<sup>64</sup> <https://www.etf.europa.eu/sites/default/files/2019-07/Youth%20transition%20Ukraine.pdf>

<sup>65</sup> Voluntary National Review, Ukraine Report 2020 UN

<sup>66</sup> <https://www.worldbank.org/en/country/ukraine/overview#1>

<sup>67</sup> <https://w3.unece.org/CountriesInFigures/en/Home/Index?countryCode=804>

<sup>68</sup> Ukraine Country Environmental Analysis, World Bank, 2016

<sup>69</sup> Assessment of Socio-economic Impact of COVID-19 in Ukraine, UN SEIA Report 2020

<sup>70</sup> <https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=UA>



In 2018, overall poverty level in Ukraine was in 43.2%<sup>71</sup> and 51% of people in Ukraine cannot afford to make unexpected expenditures out of personal resources. In comparison, in all 28 European Union countries (EU-28), this indicator is 32.5 percent. Moreover, one in five Ukrainians (21.1%) could not pay their rent, mortgage, credits or utilities in full and on time. Compared to the EU-28, this indicator was 8.9%<sup>72</sup>.

**Gender and Gender-based Violence:** According to the World Economic Forum Global Gender Gap Report 2021, in Ukraine, labor force participation rate of women is 38.5% compared to 78% for men<sup>73</sup>.

Gender-based violence has long been a serious problem in Ukraine. About 75% of women in the country states that they had experienced some form of violence since age 15, and one in three had experienced physical or sexual violence according to a 2019 survey<sup>74</sup>. With COVID-19 lockdown, the national hotline on domestic violence saw a 23% increase in calls during the first month of quarantine. The second month saw a 72% increase over the pre-quarantine period<sup>75</sup>.

Some of the demographic and economic indicators for 4 beneficiary countries (Georgia, Republic of Moldova, Turkey and Ukraine) are presented together in Figure 5 below.

### **Vulnerable Groups**

The project will finance national-level innovation ideas from entrepreneurs, non-governmental organizations, universities, incubators and accelerators via a grant scheme under Sub-component 2.1. Awarded grant projects are expected to apply interventions to reduce and/or prevent marine pollution through innovative solutions. These grant projects aim involvement of young people living in beneficiary countries.

According to the project description document, grant projects may vary in terms of activity types and implementation methods, consisting of a variety of intervention tools such as a direct application of innovation to a system such as waste water treatment, or introduction of a new/innovative technique in community's agricultural production and/or fishery practice. In this context, vulnerable refers to community members whom the project intervention will be more likely to impact as well as whom will have limited opportunities to benefit from the project activities. Vulnerable groups also include the youth and local SMEs that project require specific measures to inform and involve them to grant projects as well as encouraging national and local SMEs to apply grant scheme.

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<sup>71</sup> <https://www.unicef.org/ukraine/media/5816/file/COVID%20impact%20on%20poverty%20Eng.pdf>

<sup>72</sup> FIGHTING COVID-19 IN UKRAINE: Initial estimates of the impact on poverty, 15 April 2020, UNICEF

<sup>73</sup> <https://www.weforum.org/reports/global-gender-gap-report-2021>

<sup>74</sup> [https://eeca.unfpa.org/en/publications/well-being-and-safety-women?\\_ga=2.267177995.42158705.1620841884-69444052.1620726054](https://eeca.unfpa.org/en/publications/well-being-and-safety-women?_ga=2.267177995.42158705.1620841884-69444052.1620726054) supported by UNFPA.

<sup>75</sup> <https://www.unfpa.org/news/ukraine-steadfast-tackling-gender-based-violence-despite-pandemic-related-increases>

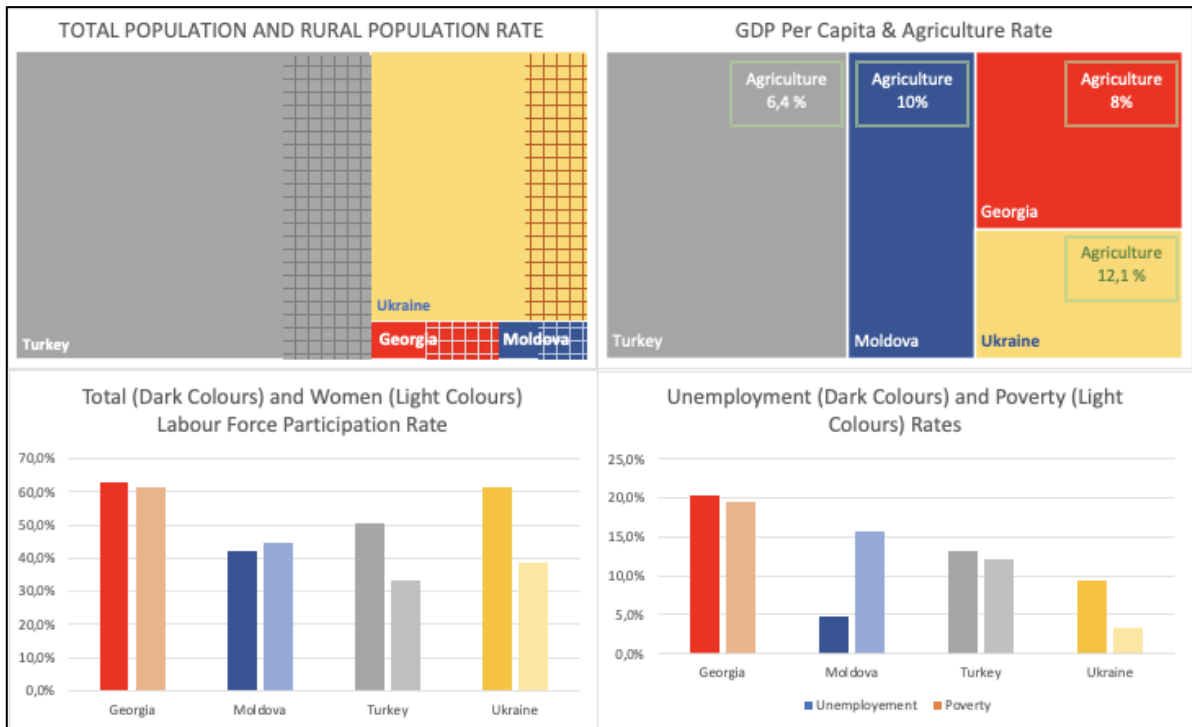


Figure 5. Some Demographic and Economic Indicators for Four Beneficiary Countries

As the grants/sub-projects are identified in the course of development of the Project other vulnerable groups can be identified. At this stage, the vulnerable groups that are valid for all beneficiary countries are;

- households economically dependent on agriculture, fishery and tourism,
- elder households in rural areas,
- women-led households,
- youth (especially youth who are not in education, employment and training),
- ethnic and language minorities living on coastal/Black Sea zone,
- local SMEs,
- young and women entrepreneurs, and
- persons with disabilities.

Depending on the social structure of the beneficiary countries, country specific vulnerable groups are summarized as follows.

**Georgia:** Households in rural areas whose primary income is from agriculture and fishing, and families doing agricultural production for their own consumption, elder households in rural areas, rural women, women-led households, rural youth (especially youth who are not in education, employment and training), local SMEs, young and women entrepreneurs.

**Republic of Moldova:** Households in rural areas dependent on agriculture, elder households in rural areas, women-led households, rural and urban youth (particularly economically inactive youth), ethnic and language minorities; particularly Romani people and Romani women, local SMEs, young and women entrepreneurs.

**Turkey:** Households in rural areas economically dependent on agriculture, small-scale fisheries, people living in remote areas, women-led households, rural and urban youth, ethnic and language minorities; particularly Laz, seasonal agricultural workers (Syrians, Kurds, people from other nationalities), local SMEs, young and women entrepreneurs.

**Ukraine:** Households in rural areas economically dependent on agriculture, small-scale fisheries, elder households in rural areas, women-led households, persons in conflict-affected areas, rural and urban youth, ethnic and language minorities, local SMEs and start-ups that have limited access to loans and financial support, young and women entrepreneurs.

#### **4.3.2. Economic Sectors and Activities in Black Sea Region and Project Beneficiary Countries**

The sea and adjusted coastal regions are the areas of various economic activities. This section focuses on the sea and pollution related economic activities that beneficiary countries and communities living in the Black Sea region rely on. The following sectors contribute to and/or are affected by pollution in the Black Sea:

- Shipping and ports
- Fisheries and aquaculture
- Tourism
- Oil and gas
- Agriculture

#### **Shipping and Ports**

The Black Sea is the cross-roads of the East-West and North-South. The sea is playing the role of geo-political, economic and trade hub and considering now as an access point to the coastal countries, as well as an entry point to the European Union, the Balkans, the Caucasus, Central Asia and other regions.

According to UNCTADSTAT country reports, the largest shipping economy between project beneficiary countries is Turkey. It is followed by Ukraine. Turkey merchandise trade volume is \$391 billion, while this figure is \$110 billion in Ukraine, \$13 billion in Georgia and only \$8 billion in Republic of Moldova. The fleet size of national flag ships are as follows; Georgia 79 ships, Republic of Moldova 138 ships, Turkey 1235 ships and Ukraine 409 ships. Ports and shipping industry is crucial for expert figures of the countries. Based on UNCTAD statistics, Turkey's international maritime exports is \$180 billion. The same figure for Ukraine is \$50 billion. Georgia and Republic of Moldova have lower maritime export figures compared to Turkey and Ukraine. It is \$3 billion in Georgia and \$26 million in Republic of Moldova.

There are several seaports along Georgia's Black Sea coast. The largest one is the Port of Batumi. Chartered passenger ferry services link Georgia and Ukraine and Turkey. Other ports in Georgia are, Poti Sea Port, Kulevi Port, Supsa Sea Terminal and Anaklia Deep Sea port. Shipping sector of Georgia plays an important role in the employment opportunities.

Giurgiulesti is the most important port of Republic of Moldova, which is the Moldova's only port accessible to seagoing vessels. Republic of Moldova has four ports other than Grurgiuilesti called Balti, Floresti, Ribnita and Tiraspol ports.

In Turkey, maritime economic activities support 280,000 jobs and reach a total Gross Value Added (GVA) of more than EUR 4.4 billion. The ship-building and ship-repair sector of Turkey contributes over 82% to GVA. Among the littoral states, Turkey has the longest shoreline in the Black Sea. This provides it with the strong strategic position at the intersection of the East-West and North-South international transport corridors and provides with the potential for the development of offshore infrastructure. Internal and international short-sea shipping is important and well developed in the country because of the unique geographic position.

Turkish merchant fleet consists of 516 ships of which 269 (5.3 million DWT) have been imported and 247 (1.4 million DWT) have been built in Turkey (Chamber of Shipping).

Turkey has 27 container ports and 18 ports on the Black Sea coast, namely; Igneada, Karasu, Karadeniz Ereğli, Bartın, Inebolu, Sinop, Samsun, Unye, Fatsa, Ordu, Giresun, Tirebolu, Trabzon, Sürmene, Rize and Hopa Ports. Filyos port that will be one of third biggest ports in Turkey is under construction and will be operational before 2023. The ports of Turkey are presented in Figure 6 below.

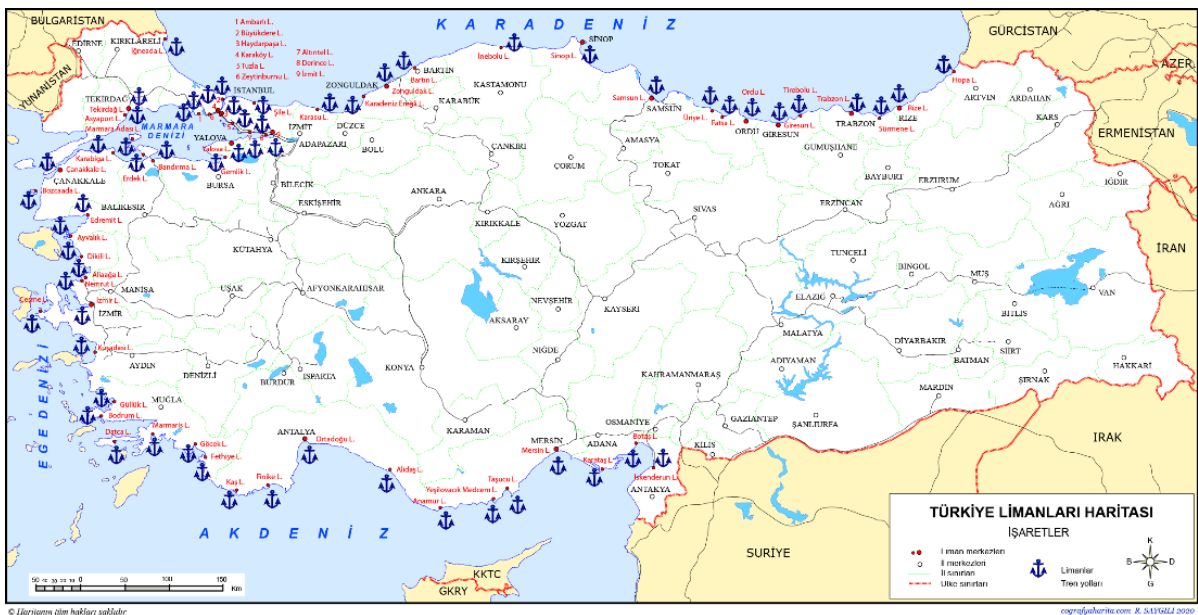


Figure 6. Sea Ports of Turkey

The shipping sector in Ukraine makes a significant contribution to the country's economy. The region has outstanding opportunities for development of river/sea shipping; river and channel systems provide opportunities to achieve Rotterdam on the North Sea (through Danube and Rhine) or the Caspian Sea ports (through Volga and Don) from Black Sea ports. The river/sea shipping capacity was not much utilized and contribution of the rivers fleet for passengers and commodities transportation was minimal in Ukraine.

Ukraine possesses the most powerful port potential among all countries of the Black Sea region. Along its Black and Azov Seas coastline there are 18 merchant seaports: Reni, Izmail, Ust-Dunaisk, Belgorod-Dnestrovskiy, Ilyichevsk, Odessa, Yuzhniy, Nikolaev, Oktyabrsk, Kherson, Skadovsk, Yevpatoria, Sevastopol, Yalta, Theodosia, Kerch, Berdyansk, Mariupol, as well as 12 port points (Ukraine Maritime Report, 2016).

The most important Ukrainian ports are those of Odessa, Ilyichevsk and Yuzhniy, all located not far from each other in the north-western part of the Black Sea. These three ports alone totally account for 56.6% of the entire cargo turnover in Ukrainian merchant seaports and 38.28% of cargo handling in all ports and terminals of the country. The major container terminals in Ukraine are also located in the ports of Odessa, Ilyichevsk and Yuzhniy. Figure 7 shows the location of ports in Ukraine<sup>76</sup>.



Figure 7. Ports of Ukraine

### Fisheries and Aquaculture

Fishing is the traditional economic activity in the Black Sea for centuries. The fishery sector plays an important role in the region by adding value to countries' GDPs as well as providing various employment opportunities for local population. Sea food processing industry in the Black Sea region comprises industrial, semi-industrial and small-scale fisheries.

According to General Fisheries Commission of Mediterranean (GFCM), total revenue (value at first sale) from marine capture fisheries is estimated at \$251 million in the Black Sea providing more than 20 thousand jobs. Small-scale fisheries contribute 22% of the total revenue in Black Sea, where they contribute more than 70% of total employment<sup>77</sup>.

<sup>76</sup> <https://www.sifservice.com/index.php/en/directory/ports-ukraine/sea-ports>

<sup>77</sup> <https://reliefweb.int/sites/reliefweb.int/files/resources/CB2429EN.pdf>

The sector supplies valuable seafood products for local consumption as well as for regional and international markets. Fishermen mainly exploit benthic and pelagic stocks of fish, as well as mollusks and crustaceans<sup>78</sup>. Dominant species are varying in landings by different countries. The main commercial species in term of value in the Black Sea are European anchovy, whiting, Mediterranean horse mackerel, Rapa whelk, Bluefish and European sprat. The Black Sea countries have different capacities regarding fishing vessels, which are summarized in Table 12.

Table 12. Fishing Vessels and Average Landings by Project Beneficiary Countries

Country	Number of vessels	Capacity (gross tonnage)	Reporting year	Average landings 2016-2018 [tons]
Georgia	49	9,184	2019	70,869
Turkey	15.352*	171,785*	2018	273,977*
Ukraine	724	24,965	2019	7,214

\*Turkey: Total data for Mediterranean and Black Sea regions

More than 87% of the vessels in 3 beneficiary countries which are riparian countries of Black Sea are used for small-scale fisheries as seen in Table 13 below.

Table 13. Fishing Vessels by Fleet Segment of Beneficiary Countries (Retrieved from The State of Mediterranean and Black Sea Fisheries 2018, GFCM, FAO)

Country	Fleet group					Total
	Small-scale vessels	Trawlers and beam trawlers	Purse seiners and pelagic trawlers	Other fleet segments	Unallocated	Total
Georgia					49	49
Turkey	8,157	792	219	158	-	9,326
Ukraine	716	4	0	4	-	724
<b>Total</b>	<b>8,873</b>	<b>796</b>	<b>219</b>	<b>162</b>	<b>49</b>	<b>10,099</b>

Between 2008 and 2014, fisheries sector faced significant challenges due to decreasing of the fish stock. The status of the Black Sea fisheries has been evaluated regularly since 1970 using various indicators such as total landings and the number of recorded stocks. Assessments confirmed that the fisheries resources of the Black Sea are at risk from overexploitation and impact of pollution from land based and offshore pollution sources<sup>79</sup>. However, first time in decades, GFCM reported in it's the Stat of Mediterranean and Black Sea Fisheries 2020 study positive trends in fish stocks for Black Sea turbot showing sign of recovery.

<sup>78</sup> The State of Mediterranean and Black Sea Fisheries 2018, GFCM, FAO

<sup>79</sup> <http://www.blacksea-commission.org/The%20Black%20Sea/Socio-Economy/>

## Coastal and Marine Tourism

Tourism plays an important role in the economies and generates significant contribution to the GDP of the Black Sea countries. Tourist arrivals in the Black Sea region grew faster than the world average over the last two decades with 143 million international tourist arrivals in 2018, and US\$75 billion of international tourism receipts in member countries of the Organization of the Black Sea Economic Cooperation<sup>80</sup>.

Recreational infrastructure and seaside resorts in Ukraine and Georgia are very active, but are less developed on Turkey's Black Sea coast where tourism is focused mainly on the Aegean and Mediterranean. Tourism potential in the Black Sea Basin area is rich and diversified, including spa and medical tourism, culture, nature, eco and agro-tourism, adventure, cave and mountain tourism, and tourism related to cuisine, rivers, hunting and diving as well as winter tourism such as skiing<sup>81</sup>.

Coastal tourism constituted a significant economic sector in terms of number of visitors and income generated. While tourism sector's contribution has growing trend in Turkey and Georgia, tourism shares in total GDPs of Ukraine and Republic of Moldova remain limited under the World's and European Union's average. The contribution of tourism sector to countries' economies is summarized in Table 14 below.

Table 14. Contribution of Travel and Tourism to GDP and Employment

Country	Contribution to GDP (% of total GDP) in 2019*	Percentage of total employment in 2019*
Georgia	26.3	27.7
Republic of Moldova	7.3	7.6
Turkey	11.3	9.4
Ukraine	5.9	6.2
Europe Average	9.5	10.1
World Average	10.3	10.0

\* Retrieved from WTTO (World Travel & Tourism Council 2019).

Pollution and tourism are very much interrelated where tourism is causing pollution and pollution being a constrained on development of tourism sector. Studies show that tourism is one of the sectors that deteriorated marine water quality and pollution impacts Black Sea ecosystem and reduce tourism opportunities. Waste, particularly plastics, and discharge of pollutants to the sea environment causes marine pollution. In addition, natural habitat loss is a phenomenon due to tourism related construction and infrastructure improvements.

Analysis of tourism in beneficiary countries has been done focusing on the economic and employability aspects, which have been dramatically affected by Covid-19 in the last two years.

<sup>80</sup> World Bank Group Georgia Towards Green and Resilient Growth November, 2020

<sup>81</sup> <http://www.blacksea-commission.org/The%20Black%20Sea/Socio-Economy/>

Tourism sector in Georgia has grown significantly with an average annual growth rate of 10% between 2015 and 2019. Tourism sector employed around 193,000 people in 2019 with 13% increase, compared to 2015<sup>82</sup>. However, tourism is the most affected sector of the economy due to COVID-19. From the first quarter of 2020, revenues for international visitors declined by 26 %<sup>83</sup>.

Most of the tourism activities locate at the coastal areas, especially in the summer in Georgia. Therefore, Georgia's coastal zone plays an important role due to its contribution to the country's economy, especially considering the significant increase in recent years. However, activities located in the coastal zone result in a devastating environmental degradation of the coast<sup>84</sup>.

Tourism has a slight increasing trend in Republic of Moldova since the beginning of 2012. Total share of tourism in total GDP increased from 3.2% in 2012 to 4.3% in 2018<sup>85</sup>. Due to COVID-19, number of tourists visiting Republic of Moldova decreased by nearly a half (-45.4%) and by almost one third decline in Moldovan tourists travelling abroad (-29.4%), while internal tourism declined by roughly 22.4% (compared to the 1st quarter of 2019)<sup>86</sup>.

Tourism is one of the most dynamic areas of Turkey's economy. International tourist arrivals counted as 45 million in 2019. A sharp decline occurred in 2020 due to COVID-19. The number of international arrivals in tourism season in Turkey decreased approximately 75% compared to 2019<sup>87</sup>. Considering accessibility to international tourism market due to its geographical and strategic location, Black Sea region in Turkey has a significant role in tourism. The region is very rich in terms of natural, historical and cultural values. It has a quite different structure compared to other regions of Turkey in terms of geographical structure, biological diversity and natural resources.

Tourism is an important factor in the development of the national economy in Ukraine<sup>88</sup>. Odessa, Sevastopol, and Yalta cities are among the most visited destinations on the Black Sea coast. Before the COVID-19, tourism in Ukraine was on the improving trend since the significant decrease related to 2014 events; Kyiv, Odessa and Lviv are the most developed tourist destinations from the point of tourism value chain, destination management and account for the major portion of international tourists<sup>89</sup>. The territories around Odesa, Sochi and Batumi are also well-established tourist destinations. However, the Black Sea tourism potential is not yet fully developed primarily due to the limited investments, insufficient

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<sup>82</sup> Geostat. 2020c

<sup>83</sup> Voluntary National Review 2020, UN Moldova

<sup>84</sup> The Cost of Coastal Zone Degradation in Georgia, A Tool for the Coastal Zone Adaptation and the Nationally Determined Contributions, February 2021 WB Report

<sup>85</sup> [https://www.theglobaleconomy.com/Moldova/international\\_tourism\\_revenue\\_to\\_GDP/](https://www.theglobaleconomy.com/Moldova/international_tourism_revenue_to_GDP/)

<sup>86</sup> Impact Assessment of the COVID-19 Pandemic on Vulnerable Groups and Economic Sectors in the Republic of Moldova, November 2020, UNDP Moldova

<sup>87</sup> <https://www.statista.com/statistics/707699/foreign-tourist-arrivals-in-turkey/>

<sup>88</sup> Formation of the National Tourism System of Ukraine, Problems, Perspectives in Management, Volume 16, Issue 1, 2018

<sup>89</sup> COVID-19 Pandemic and its Effects on Ukrainian Tourism Sector, UPDATE OF "THE ROAD MAP FOR A COMPETITIVE DEVELOPMENT OF UKRAINIAN TRAVEL & TOURISM INDUSTRY" EBRD, EU4Business



transport infrastructure, inadequate tourist facilities, and relatively poor quality of services as well as the conflict between Ukraine and the Russian Federation<sup>90</sup>.

### **Exploration and Exploitation of Oil and Gas**

Oil and gas sector includes offshore hydrocarbon industries and pipelines, located both on the adjusted terrestrial areas as well as passing through the Black Sea. The West Black Sea Basin is considered as an area with most promised gas-oil deposits. It presents shale with a depth of approximately 100 m for main part. The area covers about 50 thousand km<sup>2</sup> and comprises Odessa Bay with the adjacent province. Area comprises one exploited deposit and six deposits in the stage of preparation for the exploitation or development. The total surveyed resources of gas in this area are of 1.5 trillion m<sup>3</sup>.

The deposits of the North-Western part of the Black Sea are estimated as 495.7 billion m<sup>3</sup> of natural gas and 50.4 million tons oil. Prikerchenskay zone has 321.2 billion m<sup>3</sup> of natural gas and 126.8 million tons oil. Continental slopes have 766.6 billion m<sup>3</sup> of natural gas and 232.6 million tons oil. These indicate an important potential for energy production.

Offshore oil and mainly gas exploration and production in the Black Sea is located in production fields (Ayazli off the Turkish coast, Galata and Kaliakra near the Bulgarian coast, the Ana, Doina, Delta, Pescarus and other fields off Romania, Odesa Bay off Ukraine fields; Russian Federation is running exploration and planning exploitation of the Tuapse oil field). The recent discovery of new gas fields on the Romanian continental shelf of the Black Sea has the potential to strengthen this sector's role. Moreover, Turkey has discovered 405 billion m<sup>3</sup> natural gas in Black Sea. In the first phase of the project, Turkey estimated to process daily 10 million m<sup>3</sup> and in the second phase, it processing is forecasted to reach daily 40 million m<sup>3</sup>.

Black Sea area is becoming important for energy production, transportation and distribution. The Black Sea region is a transit route of major oil and gas exports, so the risks associated with these activities, such as oil spills, or accidental pollution might be expected to increase<sup>91</sup>.

### **Agriculture**

Agriculture is among the main sources of income for the rural population in beneficiary countries. Consisting of forestry and fishery, agriculture sector adds value between 6% and 10% range to GDPs of four countries employing a significant percentage of the total workforce. All of the countries' agriculture shares in GDP are higher than World's and European Union average. The contribution of agriculture sector to countries' economies is summarized in Table 15 below.

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<sup>90</sup> <http://www.blacksea-commission.org/The%20Black%20Sea/Socio-Economy/>

<sup>91</sup> <https://www.eea.europa.eu/soer/2015/countries/black-sea>

Table 15. Contribution of Agriculture Sector to GDP and Employment (Retrieved from World Bank National Accounts Data, and OECD National Accounts Data Files - <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS>)

Country	Agriculture, forestry, fishery (%of GDP)	Employment in agriculture (% of total employment)
Georgia	6.5	38
Republic of Moldova	10.0	21
Turkey	6.4	18
Ukraine	9.0	14
World average	3.3	27
European Union average	1.6	4

In Georgia, half of the population living in coastal zone earns some form of income from agricultural activities<sup>92</sup>. Among eight municipalities, Zugidi, Khelvachuri and Kobuleti have agriculture as the main income generating activity with 25%, 21% and 18%, respectively of their local economy. In the coastal zone, agricultural production is mostly for local consumption run by small-scale family farming which forms 90% of the total production. In addition, high value crops such as citrus, berries, kiwi, persimmon, and bay leaf are the agricultural products of the coastal zone exported to neighboring countries.

In Republic of Moldova, despite the decrease of agricultural input in GDP in the last decade, agricultural sector still employs more than 20% of the total workforce. The agricultural activities center on the Danube River Basin in the country using 80% of the basin. The average application of mineral fertilizers is 10 kg/ha for nitrogen and less than 1 kg/ha of phosphorus<sup>93</sup>. Agricultural land in Moldova is mostly planted with wheat, barley, industrial crops (sugar beet, sunflower, and oil seeds), potatoes and field vegetables, orchards and vineyards<sup>94</sup>.

In Turkey, agricultural land comprises approximately 50% of the total land area. The primary crops produced in the country are wheat, sugar beet, tomatoes, barley, and maize. In the Black Sea coastal zone, tea, hazelnut, tobacco, corn, kiwi and rice are the main agricultural products. Seasonal workers are the key workforce in Turkey's Black Sea coast during harvest season of hazelnut, tea, vegetable and fruits. The group includes workers from ethnic minorities traveling within Turkey as well as from Georgia.

In Ukraine, more than 50% of the land is arable and agriculture is the main source of export revenues. Ukraine's key agricultural products include grains, sugar beets, sunflower seeds, vegetables, beef, and milk<sup>95</sup>.

<sup>92</sup> Impacts of Climate Change on Georgia's Coastal Zone, Vulnerability Assessment and Adaptation Options, World Bank, 2020

<sup>93</sup> <https://www.icpdr.org/main/danube-basin/moldova>

<sup>94</sup> Moldova Water Security Diagnostic and Future Outlook, World Bank

<sup>95</sup> Ukraine Country Environmental Analysis, World Bank, 2016

In three of the beneficiary countries; Georgia, Republic of Moldova and Ukraine, consumption of fertilizers in agriculture is increasing according to World Bank’s data. While fertilizer consumption in Republic of Moldova, Turkey and Ukraine is below European Union average, it equals to EU’s average in Georgia. The fertilizer use in these countries in 2017 and 2018 are provided in Table 16 below.

Table 16. Fertilizer Consumption in the Four Beneficiary Countries (Retrieved from Food and Agriculture Organization, electronic files and web site - <https://data.worldbank.org/indicator/AG.CON.FERT.ZS?view=chart>)

<b>Country</b>	<b>Fertilizer consumption (kg per hectare of arable land) 2017</b>	<b>Fertilizer consumption (kg per hectare of arable land) 2018</b>
Georgia	143	154
Republic of Moldova	48	59
Turkey	132	109
Ukraine	61	65
World average	138	138
European Union average	155	154

## **5. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND GENERIC MITIGATION MEASURES**

This section identifies the potential environmental and social impacts that could arise from the activities of the sub-projects/grants to be financed. Main environmental and social risks and impacts are related to the activities to be financed under Subcomponent 2.1 (Eco-Innovation Challenge) of the Project. This subcomponent will include innovation grants in combating marine pollution through reduction and/or prevention. These grants aim to support testing the innovative project ideas, technologies and business models to prove feasibility, applicability and effectiveness supporting at least one to three selected eco-businesses from each of the four GEF Black Sea countries. These eco-businesses could be entrepreneurs, non-governmental organizations, NGOs, universities, youth groups, and women's groups. Subcomponent 2.2 (Investments Preparation) might include development of various project preparation steps such as pre-feasibility studies, economic and financial analysis, and environmental and social impact assessment. If environmental and social impact assessment studies will be financed under this component, the ESIA ToR will be prepared integrating the ESF requirements.

The overall goal of the Project is preventing and reducing the pollution in the Black Sea. In this regard, most significant process causing degradation of the Black Sea has been the massive eutrophication by nitrogen and phosphorus compounds, coming largely from agricultural, domestic, and industrial wastewater sources. Thus, the eco-innovation challenge to be implemented under Subcomponent 2.1 mainly aims healthy and sustainable innovations in the agriculture and blue economy. The grants/sub-projects would be selected based on a competitive mechanism, so their content could not be specified at the moment.

The sub-projects to be realized through the mentioned eco-innovation challenge are going to generate overall beneficial impacts both environmentally and socially. The adverse environmental and social impacts would be mainly of concern regarding and during the physical activities to be conducted in the scope of the sub-projects. These activities can be classified as small scale civil (construction/installation type) works and small-scale improvements in agricultural practices (irrigation, fertilizer and pest use, etc.), based on the budget and scope foreseen for the grants, with low (at most moderate) risks/impacts.

The potential adverse impacts presented below are the impacts that could be expected for all grants/sub-projects. These impacts would be limited (temporary and site specific), low magnitude and reversible and could be mitigated through standard management measures as provided below. More specific assessment of potential environmental and social impacts would be conducted during preparation of specific sub-project ESMPs, if necessary.

## **5.1. Environmental Risks and Impacts and Mitigation Measures**

### **Air Quality Impacts (Dust and Exhaust Gases)**

During construction activities there would be movement of machinery/equipment at the project site. Excavation, leveling, and earth moving activities would cause dust and exhaust emissions, which may cause air pollution. This impact would be considered low in magnitude, duration, and spatial extent, as it is localized and occurs only during the construction phase. During operation, there would be similar emissions based on vehicle and equipment use and if there is any sort of combustion of fuels (e.g. heating, use of diesel generators), there might be emissions of NO<sub>x</sub> and SO<sub>2</sub>. For agricultural activities, main emissions would be due to machinery/equipment exhaust and dust formation.

For mitigating impacts of dust generation appropriate dust suppression methods such as water spraying will be applied on site and vehicles to be used during hauling of materials will be covered for suppressing dust. With regard to control of exhaust gases, vehicles and equipment will be regularly maintained, exhaust gas control will be done and there will be no excessive idling of vehicles at site. In case, there are any generators or such emission sources relevant filtration systems would be used at their exhausts.

### **Noise**

Noise would be generated during both construction and operation phases of facilities and during agricultural activities due to use of machinery and vehicles including construction equipment, pumps, generators, etc.

Noise during construction will be limited to restricted times. In this context, construction activities in or close to residential areas would be conducted only during day time. The engine covers of generators, air compressors and other powered mechanical equipment will be closed, and equipment placed as far away from residential units as possible. Vehicles and equipment will be regularly maintained and in case the noise levels become disturbing more than one vehicle/equipment would not work at the same time.

### **Water Quality Impacts**

In case the project site is close to a surface water and groundwater resource, works at the project site could be a risk of contaminating the surface water due to surface run-off (sediments reaching the water resource, and chemicals –fertilizer, pesticide- contamination of both surface and groundwater from agricultural fields) and wastewater originated from the workers might affect the surface water and groundwater quality. This impact is of low in significance in terms of magnitude and spatial extent.

Any leakage from water purification systems (treatment systems), chemical and waste storage areas are potential contamination/pollutions sources for groundwater. Improper management of the sub-projects regarding these units can cause groundwater contamination and pollution of surface waters.

Appropriate erosion and sediment control measures such as hay bales and/or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby surface waters, if any, would be established. Any domestic wastewater to be generated would be discharged to an existing sewer system or would be either collected in impermeable septic tanks (and taken away by the vacuum trucks of the local authority/municipality for proper treatment and discharge), or treated on site. Vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies.

### **Soils Erosion and Contamination**

In case of any excavation or due to physical characteristics of the project site, excavated soil and the site may be exposed to water and wind erosion. This impact is going to be low in significance in terms of magnitude and took place for a limited time. The erosion will be minimal and localized in the areas where excavation will take place.

Any leakage from water purification systems (treatment systems), chemical and waste storage areas are potential contamination/pollutions sources for soil. In addition, pesticide residues used in agricultural might contaminate the soil. Improper management of the sub-projects regarding these units can cause soil contamination.

Appropriate erosion control measures such as step formations, hay bales and/or silt fences would be established. Solid grounds with containment would be provided for chemical and waste storage areas in order to prevent any leakage to soils. Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information. The containers of hazardous substances shall be placed in a leak-proof container to prevent spillage and leaching.

### **Impacts on Vegetation and Biodiversity**

Depending on the characteristics of the project site, there might be tree and other vegetation loss for each sub-project, either to pave way for access roads or for the actual project area. The vegetation might have to be cleared so that the area where the construction work is to take place is clear for work to be performed. This might involve bush clearing, removal of topsoil, excavation and haulage. These activities might also cause loss of habitats for the wildlife.

The use of pesticides serves for killing non-wanted insects and weeds, but pesticides can be toxic to other organisms including birds, fish, beneficial insects, and non-target plants causing adverse impacts on populations of non-target organisms. Direct effects of (mainly) insecticides have been linked to population reductions of terrestrial insects and aquatic arthropods. Insecticides have also been found to adversely affect pollination and natural pest control, both of which are important ecosystem services.

Any recognized natural habitats, wetlands and protected areas in the immediate vicinity of the activity will not be damaged or exploited. All staff will be strictly prohibited from hunting, foraging, logging or other damaging activities. A survey and an inventory would be made for the trees to be cut down and trees would be planted elsewhere for compensation. Mitigation

measures taken with regard to other environmental impacts would also serve for preventing and minimizing impacts on vegetation and habitats.

## **Wastes**

Solid waste is a potential environmental risk that arises as a result of abandonment of litter/waste materials on site. Solid wastes would include domestic, construction, agricultural, and hazardous wastes. Hazardous wastes are generally caused by fuels hydraulic fluids or lubricants used or stored for vehicles and machinery. In addition to these wastes, materials such as batteries and accumulators as well as chemicals used are other hazardous wastes.

Wastes to be generated will be managed in accordance with the waste management hierarchy (prevent, reduce, reuse, recycle, energy recovery, disposal). Waste collection and disposal pathways and sites will be identified for all major waste types expected from all activities.

Waste bins will be available on site for domestic waste including the means for separation recyclables (plastic, glass, paper) and they would be collected by municipalities. Whenever feasible the contractor will reuse and recycle appropriate and viable materials. Mineral wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate closed containers. A temporary waste storage area is designated for construction waste and construction waste would not be mixed with excavated soil, if any. All hazardous wastes (including waste oil, waste batteries and accumulators, waste tires) will be collected and disposed properly by licensed collectors. The records of waste disposal will be maintained as proof for proper management as designed and in line with national legislation.

## **5.2. Working Conditions and Occupational Health and Safety**

BSEC PERMIS will establish a PIU consisting of one project manager from BSEC staff and 9 staff to be hired specifically for this project. The project will employ these 9 direct workers at BSEC's office in Istanbul and contracted workers consisting of consultants, trainers and workers in grant projects. As the grants will cover small scale civil/installation works, the required labor force will be as well small and more likely to be met at local level. The Project will encourage local employment and procurement with regards to grant project activities. Therefore, labor influx is not expected. Considering the size of project workers and that there will be no labor influx, gender-based violence and sexual exploitation and abuse risks are anticipated to be low. Project will take following measure for prevention:

- Holding awareness raising session on gender based violence (GBV) to project workers
- Developing, implementing Grievance Mechanism for both communities and project workers
- Introducing Grievance Mechanism to project workers and communities that it covers complaints related to sexual harassment and sexual exploitation and abuse.

In any type of work, proper working conditions and rights have to be established for welfare of the workers and success of the works. These conditions would also involve a safe working environment. There are different risk factors in different types of work.

In the general the following working conditions have to be considered for any working environment:

- Integrity of workplace structures
- Workspace, safe access and exits
- Fire precautions
- Lavatories and showers
- Potable water supply
- Clean eating areas
- Lighting
- Air supply

In the civil works and agriculture sector potential health and safety risks can be listed as follows:

- Over-exertion
- Slips and falls
- Working at height
- Moving objects and machinery
- Exposure to dust and noise
- Materials handlings
- Unintended collapse
- Asbestos
- Electricity
- Traffic related risks due to increased traffic
- Associated risk of occupational accidents, injuries and diseases.
- Fire
- Chemicals (such as pesticides used in agriculture)

Main chemicals used in agricultural activities are pesticides and adverse effects of pesticides on human health include acute and long term impacts. Occupational or residential exposure to pesticides might cause various health impacts including acute toxicity (based on the exposure) in the short term, and cancers, neurological, immunological and reproductive effects in the long term. The high risk groups that might be exposed to pesticides include production workers, sprayers, mixers, loaders and agricultural farm workers.

In order to mitigate and manage the potential occupational health and safety risks and establish necessary working conditions the following measures can be taken:

- Providing basic facilities (such as toilets, resting, eating and changing areas, etc.) for workers on site.
- Designating material and waste storage areas.



- Assigning person(s) with relevant certification and experience in charge of OHS on site.
- Physical conditions on site and equipment will be in compliance with the requirements of national legislation.
- Works will be carried out in a safe and disciplined manner and will be designed to minimize risks on neighboring residents and environment.
- A safe working environment for the workers will be ensured.
- Appropriate personal protective equipment (PPE) will be supplied and PPE will comply with international best practice and national legislation (always hardhats, as needed masks and safety glasses, harnesses and safety boots).
- Housekeeping measures will be in place for all works on site.
- Appropriate signposting and sufficient number of OHS signs will be posted on site and then workers will be informed of key rules and regulations to follow.
- OHS trainings and toolbox talks will be provided to the workers including the code of conduct indicating the possible risks regarding the work site and works to be carried out.
- Both trainings and incidents (fatalities, lost time incidents, any significant events including spills, fire, outbreak of pandemic or communicable diseases, social unrest, etc.) will be recorded.
- OHS documentation and training materials will be available on site.
- A Risk Assessment study will be implemented for all works to be carried out.
- Site specific Emergency Response Plan/Procedures will be prepared covering emergencies such as fire, accident, natural disasters (earthquake, heavy meteorological events, etc.) and workers will be informed.
- Both the risk assessment and Emergency Response Plan/Procedures will take into consideration the COVID-19 risks and other communicable disease risks, as relevant.
- Monitoring and auditing activities will be defined and conducted regularly.

### **5.3. Social Risks and Impacts and Mitigation Measures**

The Project will result in positive social impacts through strengthened governance for improvement of the environmental status of the Black Sea. To achieve this, the Project is designed to introduce sustainable business standards in project related sectors and finance grant projects, which pilot an innovative solution to reduce and/or prevent pollution. This context drives acceptance of proposed intervention by communities and stakeholders forward for the success of the project. Country specific stakeholder engagement plans (SEPs) that describe local and national stakeholders, and engagement methods and cadence will be developed and implemented to maintain social/community acceptance.

From risk perspective, the regionality of the project as well as country level resource and capacity may cause weak participation of local actors such as local Banks, municipalities, SMEs, women entrepreneurs, and local communities to the planned activities under Component 2. The Project will ensure active engagement of national agencies in project coordination. Country specific SEPs will be developed and implemented. The disclosure and information meetings will be held in local languages in a method convenient to stakeholder group ensuring the participation of vulnerable groups.

At this stage, two potential risks are identified regarding the grant projects:

- Perception of communities that grants/sub-projects may have adverse impact on their livelihoods.
- Resistance from communities to participate in grant projects, which requires application of new/innovative techniques in agriculture, fishery, tourism, etc.

Following measures will be taken to mitigate these risks:

- Development and implementation of simplified SEPs for grant projects
- Maintaining early, timely and active engagement of local stakeholders, particularly potential affected communities to hear and address their concerns.
- Introducing grievance mechanism
- Engaging communities and local stakeholders in monitoring.

Main community health and safety issues/impacts that need to be considered for the sub-projects might include the following:

- Increased traffic and risk of road traffic accidents and injuries
- Risk of spreading of communicable diseases including COVID-19
- Potential damage to existing public utility cables and pipes and disruption of services
- Noise and vibration
- Threat to community culture, safety and security associated with presence of workers and business opportunists
- Limiting passage or access of the community to their assets or disruption of daily living patterns

In order to mitigate and manage the potential community health and safety risks following measures can be taken:

- Project site will be properly secured (fenced), as appropriate, and uncontrolled entrance will be prohibited.
- Project related traffic would be regulated through; signposting, warning signs, barriers and traffic diversions, training of staff, provision of safe passages and crossings for pedestrians, where construction traffic interferes, adjustment of working hours to local traffic patterns, (e.g. avoiding major transport activities during rush hours or times of livestock movement), active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public.
- Transportation of any special materials would be done through the routes agreed on with the authorities.
- All protective measures required by national authorities and World Health Organization regarding COVID-19 and such communicable diseases will be taken.
- All activities will be commenced after getting relevant permits and informing the local authorities.
- All relevant mitigation measures with regard to potential environmental impacts would be taken.

## 6. ESMF IMPLEMENTATION PROCESS

BSEC, as the implementing agency, is responsible for the overall implementation of the project through the BBSEA PIU/PIU. The PIU will have day-to-day responsibility for project management and support, including ensuring that project implementation is compliant with the World Bank's ESF, particularly the relevant ESSs; the World Bank Group's EHS Guidelines; WHO Covid-19 Guidelines; and this ESMF. The PIU will be adequately staffed for management of the Project and this ESMF.

Implementation process of this ESMF will include the following steps to be undertaken by the PIU.

### 6.1. Screening

ESMF process starts with environmental and social screening of grant applications (sub-projects). The main purpose of this screening is to get relevant issues addressed in the selection and then planning stage of the sub-projects. Screening process will determine whether grant application (proposed sub-project) is eligible for financing based on the Exclusion List of the World Bank Group (full list is given in Annex 1) and summarized below, and if eligible, whether a project specific ESMP is required.

The following is the exclusion list including the ineligible activities/grant applications/sub-projects for financing under the Project:

- High and substantial environmental and social risk sub-projects in accordance with the World Bank ESF risk categorization
- Sub-projects, which did not complete the necessary national EIA process
- Sub-projects that will have adverse impacts on known and protected cultural heritage
- Sub-projects that will have adverse impacts on critical and natural habitats and/or have significant impacts in terms of biodiversity
- Sub-projects that require land acquisition, restriction to land use and/or involuntary resettlement
- Sub-projects that will trigger WB's Safeguard Policy OP/BP 7.50 – Projects on International Waterways
- Sub-projects that will trigger WB's Safeguard Policy OP/BP 7.60 – Projects in Disputed Areas
- Sub-projects/activities involving child and forced labor

Screening would involve pre-evaluation of the potential environmental and social risks of the proposed sub-projects, based on the available information. PIU will screen the grant applications/proposed sub-projects (in consultation with the World Bank) using the screening checklist provided in Annex 2, to determine any potential adverse impacts and environmental and social risk level of the sub-projects. The World Bank will review at least first three sub-projects screening and ESMPs and provide no objection. The following screening processes and ESMP reviews will be done by the PIU. The Bank could conduct post review for the rest of the screenings and site-specific instruments. The information submitted to the World Bank

for this purpose will include the proposed screening category and the key environmental and social issues to be analyzed together with information substantiating the category selection.

According to the World Bank’s Environmental and Social Framework (ESF), projects are classified into one of four categories as High Risk, Substantial Risk, Moderate Risk or Low Risk taking into account relevant potential risks and impacts, such as the type, location, sensitivity and scale of the project; the nature and magnitude of the potential environmental and social risks and impacts; the capacity and commitment of the Borrower; and other areas of risks that may be relevant to the delivery of mitigation measures and outcomes. The details of WB Project Categorization are given in Annex 3.

The outcome of the screening process is to categorize the sub-project in terms of its environmental and social risks in accordance with the WB environmental and social risks classification. In this context, sub-projects can be categorized into four risk levels (high, substantial, moderate, and low). Among these four levels high and substantial risk activities will not be further evaluated since they are in the exclusion list for the Project. Moderate risk and low risk activities would be eligible for evaluation and financing in the Eco-Innovation Challenge.

**6.2. Assessment of Environmental and Social Impacts**

In accordance with the screening procedure, the sub-projects with High Risk and Substantial Risk Category will be screened out from the project scope. For Moderate Risk Category sub-projects, a site specific ESMP would be developed in line with the World Bank ESSs and the indicative structure provided in Annex 4. For Low Risk Category sub-projects further environmental and social assessment (following the screening) will not be required and the ESMP Checklist provided in Annex 5 will be used for those sub-projects. Procedures to be followed for Moderate and Low Risk Category (identified during the screening process) sub-projects are provided in Table 17 below.

Table 17. Procedures to be followed for each Risk Category

Sub-project Phase	Procedures		Responsible Party
	Moderate Risk Sub-projects	Low Risk Sub-projects	
Project Identification / Pre-feasibility	Environmental and Social Screening (per Annex 2)	Environmental and Social Screening (per Annex 2)	PIU and World Bank (provide no objection)
Feasibility/Design	Prepare ESMP (per Annex 4)	Local requirements and ESMP Checklist (per Annex 5)	Grant Beneficiary
	Public consultations (as per country specific SEP or simplified SEP for sub-project)	Local requirements and ESMP Checklist (per Annex 5)	PIU and Grant Beneficiary
Detailed Design	Ensure mitigation measures are included in the design	Local requirements and ESMP Checklist (per Annex 5)	Grant Beneficiary and PIU
	Ensure ESMP, SEP and LMP aspects are included in the Design and Bidding Documents	Local requirements and ESMP Checklist (per Annex 5)	PIU and Grant Beneficiary

Sub-project Phase	Procedures		Responsible Party
	Moderate Risk Sub-projects	Low Risk Sub-projects	
Construction	Implement and monitor ESMP, SEP and LMP	Local requirements and ESMP Checklist (per Annex 5)	Grant Beneficiary and PIU
	Update ESMP as required	Local requirements and update ESMP Checklist (per Annex 5) as required	Grant Beneficiary
Post Construction	Perform ESMP defined monitoring actions	Local requirements and ESMP Checklist (per Annex 5)	Grant Beneficiary and PIU

The sub-projects that have to go through the national EIA process will not be eligible for financing before the national EIA process is completed. Outcomes of the national EIA process will be used in ESMP (for moderate risk category) preparation to identify impact significance of the sub-project and to identify sensitivity level of the sub-project area. In such a case if national EIA document is found to meet the requirements of the World Bank, PIU and World Bank might decide not to ask for preparation of an additional ESMP.

### 6.2.1. Moderate Risk Sub-Projects

For Moderate Risk Category sub-projects, a site-specific ESMP will be required to ensure enhancements such as greening measures are implemented. The ESMP should clearly layout; the measures to be taken during construction and operation phases of a sub-project to prevent or offset adverse environmental and social impacts, or reduce them to acceptable levels, the actions needed to implement these measures and a monitoring plan to assess the effectiveness of the mitigation measures employed. The major components of an ESMP include:

- Description of the project characteristics
- Regulatory framework
- Description of the baseline conditions
- Identification and assessment of environmental and social impacts
- Mitigation and enhancement measures
- Monitoring plan
- Stakeholder consultation and information disclosure
- ESMP implementation budget

An indicative structure for the ESMP and qualifications and skills required for the consultants to prepare ESMPs are given in Annex 4.

### 6.2.2. Low Risk Sub-Projects

A project is classified as Low Risk if its potential adverse risks to and impacts on human populations and/or the environment are likely to be minimal or negligible. Therefore, Low Risk Category sub-projects, with few or no adverse risks and impacts and issues, will not require further environmental and social assessment following the initial screening. For these sub projects the ESMP Checklist provided in Annex 5 will be considered in addition to meeting the relevant national requirements.

Implementation of relevant measures is the responsibility of the grant beneficiaries where PIU (together with national focal points) will be responsible for quality assurance that the sub-projects meet the World Bank requirements.

### **6.3. Public Consultation and Disclosure**

Country specific Stakeholder Engagement Plans (SEPs), as well simplified SEPs for grant projects, where necessary, will be prepared in line with the regional level Stakeholder Engagement Plan (SEP) developed. These SEP documents and sub-project specific ESMPs will be disclosed to the public. Public consultation and information disclosure activities will also be described in country specific SEPs, and will be conducted accordingly. All E&S documents prepared under the Project and sub-projects/grants (ESMPs) will be disclosed and consulted in a timely and transparent manner acceptable to the WB and in line with regional-level SEP, considering any governmental restriction on the COVID-19 pandemic.

The draft ESMP documents will be disclosed prior to consultations and after receiving the feedback of the stakeholders, these will be finalized and disclosed in the country. Prior to sub-project approval (by the World Bank), PIU will submit English versions of the final ESMP documents to the World Bank.

The timing and methods of engagement with stakeholders throughout the life cycle of the Project are described in the SEP and country specific public consultation activities will be carried out as per country specific SEPs to be prepared. All consultation activities will consider additional measures to be taken in line with prevailing governmental restrictions under pandemic conditions.

Records of meetings and consultations with stakeholders will be kept. Preparing and implementing the country specific SEPs is the responsibility of national focal points. These would be funded from the Project budget (as indicated in the regional level SEP). When simplified SEPs are needed for grant projects, these would be the responsibility of grant beneficiaries. In reviewing a SEP, PIU will confirm that it is clear, feasible and appropriate, and will ensure that SEPs and public consultation activities meet the WB requirements.

### **6.4. World Bank Clearance**

According to the screening criteria, the grants/sub-projects that have completed national EIA procedure (if necessary), screened with respect to eligibility criteria and ESMP prepared based on the provisions set out in this ESMF will be eligible for financing. The World Bank will review at least first 3 sub-projects screening and ESMPs, and provide no objection. The following screening processes and ESMP reviews will be done by the PIU. The Bank could conduct post review for the rest of the screenings and site-specific instruments. During implementation, the WB can mutually agree with PIU that PIU conducts prior review of the E&S documents of Low and Moderate Risk sub-projects and the World Bank conducts post review.

## **6.5. Incorporation of E&S Requirements in Grants and Works Contracts**

Grant agreements must include requirements to implement the site specific ESMPs to be prepared for each moderate risk sub-project. These agreements will also include the relevant elements for complying with the ESMF and the ESCP, regional level SEP and LMP. For all sub-projects, the site specific ESMPs, LMP, and country specific SEPs, or simplified SEPs for grant projects, will also be attached to the procurement documents and be part of the contract with the contractor selected to carry out the sub-project works. These sections include potential impacts that may occur during the set of works in question and measures that the contractor needs to take to mitigate them. The contractors will be required to fully implement the site-specific mitigation measures and be responsible for monitoring of implementation. The contractors will retain sufficient capacity to ensure successful implementation of the ESMPs on site.

## **6.6. Implementation of ESMPs for Moderate Risk Category Sub-projects**

The grant beneficiary and his/her contractor will implement the site specific ESMP prepared for the sub-project, including OHS measures. The contractor will;

- have sufficient capacity for implementing the ESMP (with sufficient qualifications and skills assigned on site), as needed,
- review site specific ESMP and incorporate the requirements in his method statement,
- implement the mitigation measures set out in the ESMPs for respective works,
- control and minimize environmental and social impacts,
- ensure that all staff and workers understand the procedure and tasks in ESMP;
- ensure environmental hygiene,
- submit a monthly report on safeguard issues, mitigation, and results throughout the construction period to the grant beneficiary,
- promptly notify grant beneficiary on any accident and incidents, and keep an incident register at construction site, and
- be responsible for the training of staff and workers regarding environmental, social and OHS issues.

## **6.7. Monitoring and Supervision**

The contractors on the site will be continuously monitored by the grant beneficiary. In this respect, the grant beneficiary will make sure that the ESMP or ESMP checklist is implemented on site. In this context grant beneficiaries would:

- Hire/assign respective environmental and social experts with sufficient qualifications and skills, as needed
- Ensure that site-specific environmental and social mitigation measures are duly implemented by the contractor on site
- Monitor and supervise the activities of the contractor in line with WB ESF requirements
- Keep track of contractor's day to day activities

- Collect information on environmental and social issues for monthly progress reports submitted to PIU and eventually WB and make sure that these are all compliant with the WB requirements

PIU will carry out regular supervision of grants/sub-projects to ensure that the ESMPs, SEPs and LMP are being implemented, and grievance mechanisms (GM) are accessible and functional. When PIU notices any problems in ESMP implementation it will inform the grant beneficiary and agree with them on steps to rectify these problems. Specifically, for any significant environmental or social incidents (e.g. fatalities, lost time incidents, environmental spills etc.), the grant beneficiaries will inform PIU in 48 hours, and PIU will inform the World Bank about the incident as soon as it is informed. The incident report including root cause analysis, precautions and compensation measures taken, will be submitted to PIU in 30 business days and PIU will forward the incident report to the World Bank. PIU will also report its findings to the World Bank in its biannual project progress report, or more frequently, as needed to bring issues to the attention of the World Bank. The World Bank's Task Team for the project will, on occasion, and as required, also visit project sites as part of project supervision.

#### **6.8. Labor Management Procedures (LMP)**

The LMP has been prepared and will be applied for all project workers including grant beneficiaries/grantees. The LMP covers workers' rights and describes (i) terms and conditions of employment ; (ii) overview of key potential labor risks (if any); (iii) overview of labor legislation of Georgia, Republic of Moldova, Turkey and Ukraine; and iv) grievance mechanism available to all workers. The LMP will be updated during implementation when more details about the grant projects are known.

LMP identified below labor risks related to project:

- It is anticipated that labor risks will be mainly associated with OHS issues related to small grants such as small scale civil/installation works. Health and safety risks may include impacts such as dust, noise and temporary traffic disruptions.
- OHS risks related with the COVID-19 pandemic, may include risks associated with organization of meetings with the civil society and stakeholders.

#### **6.9. COVID-19 Pandemic Response**

The ongoing COVID-19 global pandemic would affect Project operations and activities during 2021 and likely in 2022. The pandemic might continue to have significant effects on countries' economy, including direct and indirect income from tourism as well as freedom of movement and levels and types rural service provision. It will also continue to divert capacity and other resources from government, civil society and rural communities to the prevention and effects of the pandemic.

Furthermore, the pandemic might have health, economic and social impacts on the lives of staff, communities and government partners, and is likely to change the donor landscape in the short- to medium-term. While the pandemic remains a risk, the Project must ensure preparedness, including assessing transmission risks during the course of work and potential



direct impacts from the pandemic, and include COVID-19 measures in the ESMPs and implementation following the national requirements, World Bank and WHO guidelines.

Measures may include reducing exposure and transmission by reducing travel, adhering to safety protocols, increasing remote working practices, and limiting direct Project interventions in communities while risks remain high.

Additionally, the Project should;

- Align and coordinate with government and civil society actions related to the COVID-19 pandemic where appropriate,
- Assist in communicating official information regarding the pandemic to communities and partners,
- Ensure staff are prepared and trained to carry out their work safely in the Project office(s), with partners and communities, including provision of equipment where it can reduce risks, increasing opportunities for remote work where required and ensuring national quarantine and isolation recommendations are adhered to,
- Ensure all community engagement should follow minimum protocols to curtail risk of infection within and between communities, and
- Regularly monitor the implementation and effectiveness of measures undertaken by the Project.

Due the situation around the pandemic, risks and recommendations will be assessed and detailed under the ESMP studies to be conducted, and reviewed by PIU on a monthly basis during the pandemic.

## 7. INSTUTIONAL ARRANGEMENTS AND RESPONSIBILITIES

This Project will pay attention to establishing a strong executing unit, with good institutional and convening capacities. In this context, BSEC is a renowned multilateral cooperation organization able to promote partnership and economic cooperation within its Member States in the Black Sea region. The Project Implementation Unit (PIU) will be in the Permanent International Secretariat of BSEC (BSEC PERMIS). The BSEC PERMIS is based in Istanbul, Republic of Turkey, and performs the secretarial duties of the BSEC Organization. Building on its experience in working in all countries across the Black Sea region and its ability to craft consensus, BSEC PERMIS has played an active role in the negotiation of the recent regional initiative – the 2019 Common Maritime Agenda (CMA), and its scientific pillar - SRIA. CMA highlighted the need for effective preservation of the marine environment, which coincides with the PDO of the BBSEA GEF-funded Regional project.

The Project would strengthen BSEC to administer relevant project activities via the institutional structure, which includes a Regional Steering Committee (RSC), Advisory Committee and a Project Implementation Unit. The consultative body/committee will be established within the RSC for technical guidance and projects identification. The implementation will also involve academic sector, local civil society organizations and local government authorities. The BSEC PERMIS/BBSEA PIU will be responsible for the overall coordination and will inter alia oversee the preparation of annual operating plans and prepare supervisory and other reports, as required by the GEF and the World Bank. The institutional arrangements for project implementation are provided in Figure 8 below.

### 7.1. Roles and Responsibilities of Key Bodies

**Regional Steering Committee (RSC)** will provide policy level and strategic guidance, ensuring linkages to sectoral policies and programs, assisting in the resolution of any conflicts, and debating and suggesting improvements in project strategy and operations, among other issues. The RSC will approve progress report and annual work program. The RSC will include the CMA focal points of the seven CMA countries and BBSEA focal points assigned by the governments of the four BBSEA GEF Project Focus Countries, Civil Society representative, private sector representative and academia as nominated by the BBSEA focal points and Secretary General (SG) of the BSEC PERMIS. It will meet at least once a year. For a more efficient use of resources, the RSC will meet at the margin or back-to back to the appropriate CMA meetings.

**Advisory Committee** will include the BSC, the Black Sea Commission of the Conference of Peripheral Maritime Region (CPMR), European Commission/DG MARE and other relevant regional partners/organizations (for example FAO, GFCM UNDP, CPMR, BSEC related Bodies as ICBSS and BSTDB) as well as European Bank for Reconstruction and Development (EBRD) and European Investment Bank (EIB) may be invited as consultative member for specific technical guidance. Advisory committee meetings will be held once per year to present the results. The BBSEA Special Envoy appointed by the BSEC will moderate/chair the meetings and will provide overall political guidance.

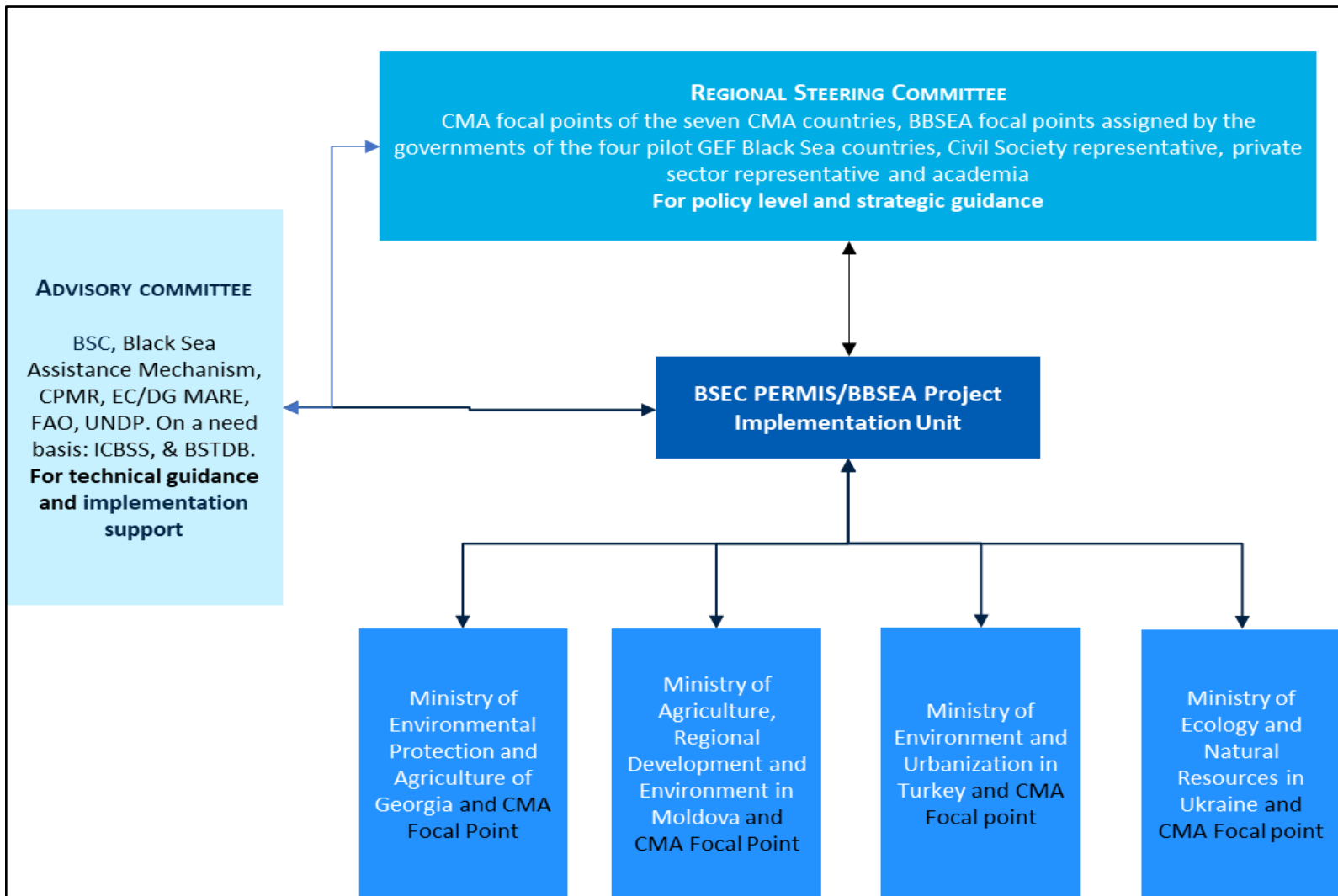


Figure 8. Institutional Arrangements for Project Implementation

**BBSEA PIU (PIU)** will be managed by the BSEC PERMIS. The PIU will be established within the BSEC Secretariat and will be comprised by professional, administrative and support staff including the following:

- BBSEA Executive/Project Manager
- Operations Specialist/Program Officer
- Innovation Officer
- Communication Expert
- Two Monitoring and Evaluation (M&E) Specialists
- IT Expert
- Procurement Officer
- Financial Officer
- Environmental (and OHS) Expert
- Social Expert
- All-round Officer

The project executing entity will be responsible for coordination, supervision and monitoring of project implementation regarding the aspects related to social and environmental safeguards, monitoring, reporting and evaluation, complaints handling mechanisms, as well as procurement and financial management and monitoring, including approving and tracking the distribution of funds.

Networks/synergies with the academic sector, local civil society organizations and local government authorities will be established. The BBSEA Project Manager will be responsible for hosting meetings with the above-mentioned partners on a regular basis. The meetings will be chaired by the BBSEA Special Envoy.

The BBSEA PIU will enter implementation arrangements with each national GEF Focal Point for the execution of national level activities in Georgia, Republic of Moldova, Turkey, and Ukraine. The national agencies include the following:

- Ministry of Environmental Protection and Agriculture of Georgia
- Ministry of Agriculture, Regional Development and Environment of Republic of Moldova
- Ministry of Environment and Urbanization and Ministry of Agriculture and Forestry of Turkey
- Ministry of Ecology and Natural Resources of Ukraine.

The national agencies will provide technical guidance for the overall implementation of the Project in consideration of the RSC observation and in support of the PIU.

## **7.2. Results Monitoring and Evaluation (M&E) Arrangements**

The Project M&E is designed for accountability, transparency, communication, learning and for project management support. M&E activities will track the progress of the project, generate information about the status of project activities, analyze and aggregate data generated at regional and national levels, and document and disseminate the key lessons-learned and good practices from the project activities to stakeholders in participating countries and outside of the region.

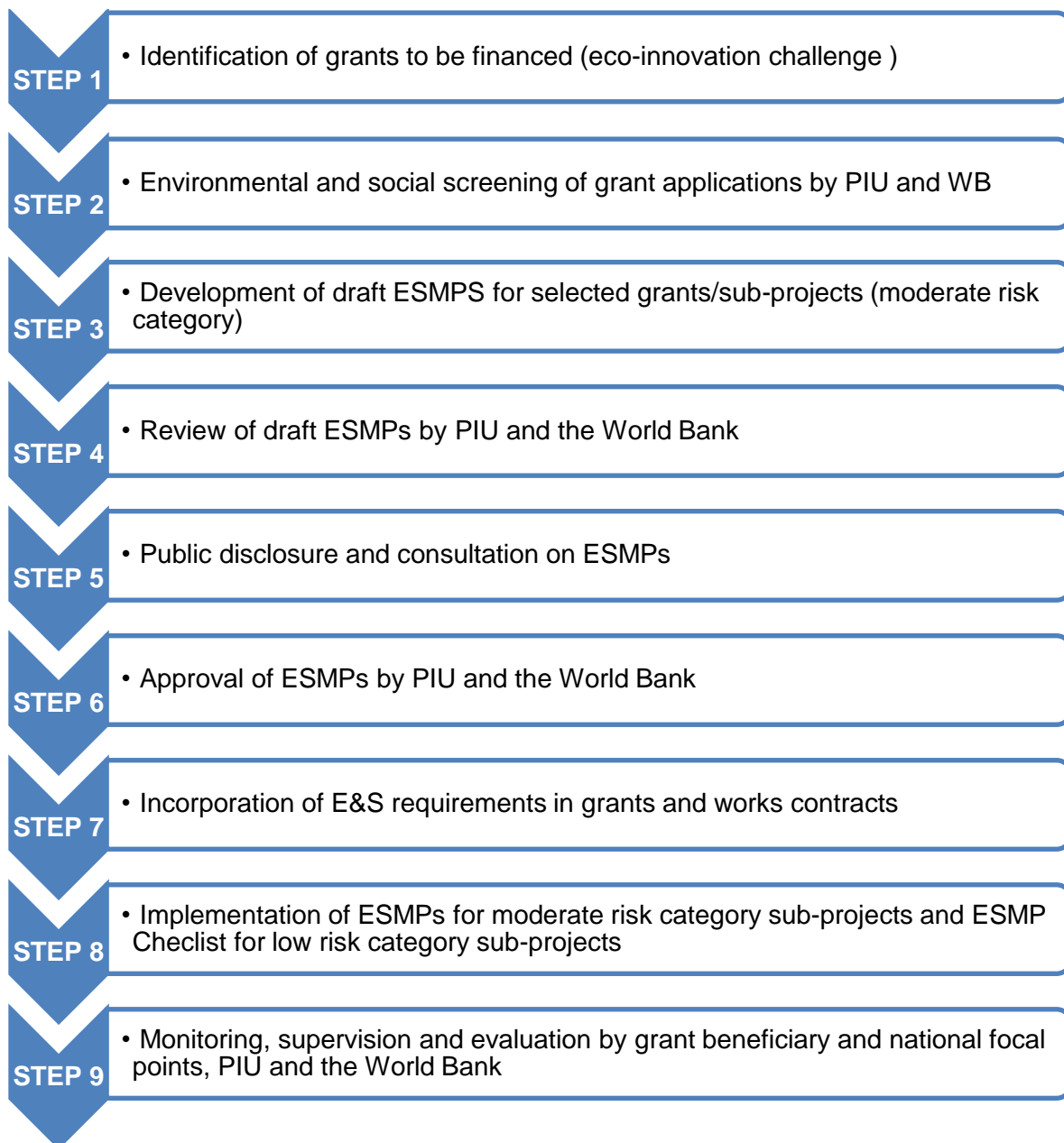
Project Monitoring will be carried out annually and is the responsibility of BSEC PERMIS/BBSEA PIU as project execution entity. Monitoring will follow the Results Framework of the project and intermediate (PDO) indicators as well as the immediate (project component) indicators. BSEC PERMIS M&E will provide for overall monitoring of information collection with regards to the project activities progress as well as compliance with the ESF standards and fiduciary regulations. BSEC PERMIS will be responsible in fulfilling the M&E objectives, preparation of M&E plan and manual, and their implementation.

At least two M&E specialists will be hired by the BSEC PERMIS/BBSEA PIU to be responsible for the overall implementation of the M&E function, implementation of M&E plan and drafting and finalizing the M&E manual. These specialists will jointly plan and implement M&E activities, dividing the countries of responsibilities to oversee the information collection. They will report directly to the project manager. Monthly, quarterly, semi-annual, and annual progress reports will be prepared. The data and information collected by the M&E specialists will be shared at the supervision mission meetings with the World Bank and also during consultation meetings with the stakeholders at regional and national level. The M&E information will also inform the policy formulation and decision-making in addition to project management purposes.

In preparation for the Mid-term Review (MTR), an assessment will be undertaken to gather the lessons learned, assessment on the progress of achievement of indicators, and potential changes in the PDO, targets, and indicators. At completion, a beneficiary assessment and final report, that is, the implementation completion and results report will be produced.

## **7.3. ESMF Process Flow at the Project Level**

The steps for implementing requirements of the ESMF could be summarized as below:



#### **7.4. Institutional Arrangements and Capacity for Implementation of Environmental and Social Management Measures**

The BSEC PERMIS/BBSEA PIU will be responsible for the overall coordination and will inter alia oversee the preparation of annual operating plans and prepare supervisory and other reports, as required by the GEF and the World Bank. The PIU will be in coordination with each national GEF Focal Point for the execution of national level activities in Georgia, Republic of Moldova, Turkey, and Ukraine. The national agencies include the following:

- Ministry of Environmental Protection and Agriculture of Georgia
- Ministry of Agriculture, Regional Development and Environment of Republic of Moldova

- Ministry of Environment and Urbanization and Ministry of Agriculture and Forestry of Turkey
- Ministry of Ecology and Natural Resources of Ukraine.

The national agencies will provide technical guidance for the overall implementation of the project in consideration in support of the PIU.

The roles and responsibilities of the institutions/agencies involved within the scope of the project are summarized in Table 18 below.

Table 18. Main Roles and Responsibilities of Project Related Institutions

<b>Institution</b>	<b>Grant Beneficiaries</b>	<b>National GEF Focal Points</b>	<b>BSEC / BSEC PERMIS/ BBSEA PIU</b>	<b>The World Bank</b>
<b>Project Roles</b>	<b>Beneficiary</b>	<b>Beneficiary Country</b>	<b>Borrower / Implementing Agency</b>	<b>Financing Institution</b>
Grant Application and Selection Process	Application to receive eco-grants	Technical guidance for overall implementation of the project and in support of the PIU	Screen the grant the applications in terms of screening criteria and E&S risks to provide information to the WB, approving and tracking the distribution of funds	Support the PIU, review the screening results, and give no objection
Sub-Project Preparation Process	Obtain any national approvals and permits for the implementation of the sub-project  Prepare the ESMP (for moderate risk category sub-projects) and simplified SEP, when necessary, or use the ESMP Checklist in the ESMF to prepare and apply the relevant environmental and social standards	Review the sub-projects in terms of compliance with relevant national legislation and permitting  Review the ESMPs for moderate risk category sub-projects  Prepare country specific SEP  Conduct public disclosure and consultation process of sub-projects at national level	Review draft ESMPs  Review and approve country specific SEPs  Disclose the ESMPs to public and conduct consultation activities  Approve ESMPs	Provide technical guidance to PIU and assist in developing performance and monitoring system  Review and approve the ESMPs and country specific SEPs

<b>Institution</b>	<b>Grant Beneficiaries</b>	<b>National GEF Focal Points</b>	<b>BSEC / BSEC PERMIS/ BBSEA PIU</b>	<b>The World Bank</b>
<b>Project Roles</b>	<b>Beneficiary</b>	<b>Beneficiary Country</b>	<b>Borrower / Implementing Agency</b>	<b>Financing Institution</b>
Sub-Project Implementation Process	<p>Implement the E&amp;S requirements (in line with the ESMPs and this ESMF, which reflects the WB ESSs) and Grievance Mechanism at sub-project level.</p> <p>Incorporate the E&amp;S requirements in works contracts</p> <p>Monitor environmental and social performance of the contractors' works on site, in line with the site-specific environmental and social requirements</p>	<p>Technical guidance for the grant beneficiary and supporting the PIU</p> <p>Monitoring and auditing of sub-projects in terms of national legislation and requirements</p>	<p>Incorporate the E&amp;S requirements in grants</p> <p>Review and approve the work contracts</p> <p>Coordinate the selected grant beneficiaries together with national focal points to ensure all the relevant rules and regulations will be adopted throughout the project</p> <p>Monitoring and supervision for ensuring the implementation of ESMF, ESCP, ESMPs, LMP, country specific SEPs and grievance process</p>	<p>Review and approve the grants and work contracts</p> <p>Review and evaluation of implementation of ESMF, ESCP, ESMPs, LMP, country specific SEPs and grievance process through implementation support missions</p>
Reporting	<p>Report on the implementation of environmental and social measures to PIU on a monthly basis</p>	-	<p>Semi-annual environmental and social compliance reports for all sub-projects under implementation will be prepared by PIU and submitted to the World Bank.</p> <p>Semi-annual project progress reports will be prepared by PIU including a section on environmental and social issues, which will summarize the status of ESCP and compliance with environmental and social framework documents and all sub-project specific ESMPs, LMP and country specific SEP implementation.</p>	<p>Review and approval of the relevant reports</p>



#### **7.4.1. BBSEA PIU**

BBSEA PIU will include at least one environmental (and OHS) and one social specialist with relevant qualification and skills within the scope of the Project to coordinate the implementation of the Environmental and Social Management Framework. The responsibilities of the E&S specialists in the PIU will be as follows:

- Carry out screening of the sub-projects regarding E&S risk categorization according to the World Bank's requirements and this ESMF.
- Provide grant beneficiaries and national focal points guidance on preparation of ESMPs for moderate risk category sub-projects and use of ESMP Checklist for low risk category sub-projects.
- Provide grant beneficiaries and national focal points guidance on the consultation and disclosure requirements for sub-projects.
- Review ESMPs, provide written comments to grant beneficiaries and national focal points, coordinate the review of ESMPs with the World Bank experts, ultimately provide formal approval E&S documentation and procedures in accordance with the World Bank's ESSs and safeguard requirements.
- Ensure that eco-innovation challenge documentation includes agreements to implement the ESMF, ESCP, site specific safeguard documents and any other ESSs and safeguard requirements.
- Perform supervision of implementation of ESMF, ESCP, ESMPs, and any other ESSs and safeguard requirements by grant beneficiaries, and document performance, recommendations and any further actions required as part of overall project supervision reporting to the World Bank.
- Coordinate and monitor public information disclosure and consultations, as appropriate, receive and address the concerns raised by affected groups and local environmental authorities regarding environmental and social aspects of sub-project implementation.
- Coordinate and liaise with the World Bank supervision missions regarding environmental and social safeguard aspects of sub-project implementation.
- Monitoring and auditing environmental and social issues at the sites (including OHS issues) through data collected from the grant beneficiaries, national focal points and from the site visits, when applicable.
- Regular reporting on the implementation of the project ESF instruments including ESCP to the Bank.

#### **7.4.2. National GEF Focal Points**

The BBSEA PIU will enter implementation arrangements with each national GEF Focal Point for the execution of national level activities in Georgia, Republic of Moldova, Turkey, and Ukraine. The national agencies include the Ministry of Environmental Protection and Agriculture of Georgia, Ministry of Agriculture, Regional Development and Environment in Republic of Moldova, the Ministry of Environment and Urbanization and the Ministry of Agriculture and Forestry in Turkey and the Ministry of Energy and Environment Protection in Ukraine. These national agencies will provide technical guidance for the overall

implementation of the project in support of the PIU. BBSEA focal points in GEF countries will nominate a potential “Host of innovation” which is facing the eutrophication issue. All these agencies are considered to have sufficient internal capacity to contribute to the Project with regard to their following responsibilities:

- Provide technical guidance and support PIU for overall implementation of the project.
- Review the sub-projects in terms of compliance with relevant national legislation and permitting requirements.
- Prepare country specific SEP documents.
- Conduct public disclosure and consultation process of sub-projects at national level in coordination with PIU.
- Provide technical guidance for the grant beneficiaries.
- Monitoring and auditing of sub-projects in terms of national legislation and requirements

### **7.4.3. Grant Beneficiaries and Host of Innovation**

The eco-innovation challenge grant mechanism of the Project aims to support testing the innovative project ideas, technologies and business models to prove feasibility, applicability and effectiveness supporting at least one to three selected eco-businesses from each of the four GEF Black Sea countries. Innovations are defined as new approaches, transfer or adaptation of existing and/or proven approaches to new contexts and/or geographies, new policies, national and regional strategies, and investments.

In this context, eco-innovation challenge targets the social entrepreneurs, NGOs/CSOs, SMEs, youth groups, women’s groups for awarding competitive grants. Grant beneficiaries will be Eco-Businesses whose proposals score highest on criteria to be pre-established by the BSEC organization. These Eco-Businesses could be entrepreneurs, legally established businesses, academics, governmental or non-governmental organizations, or cooperatives/associations.

The Eco-Innovation challenge will be organized as 2 different challenges including 1 regional-wide challenge targeting early concept and ideas and 1 consolidated national challenge stage in GEF Black Sea countries to support the pilot implementation of proven concepts and piloted ideas through provision of grants.

At the national eco-innovation challenge, the type of Eco-Innovation could vary per country according to the local context. To make direct impact in reduction and removal of water pollution, the project will match the host of innovation and innovators through this challenge. Prior to the call for application, BBSEA focal points in GEF countries will nominate a potential “Host of innovation” which is facing the eutrophication issue. The “host of innovation” can be municipalities, industrial entities, community/cooperative (i.e. agriculture/farmer cooperatives, etc.) that are willing to test the eco-innovation. For the national eco-innovation challenge, the grantees can develop and implement pilot scale of their innovation in the selected Host of innovation in the Black Sea GEF countries.

The eco-innovation challenge will address mainly prevention and control of pollution from agriculture, urban and industrial origins to mitigate the impact of eutrophication in the Black Sea and would be selected on a regional/national competitive basis. The host of innovation and awardees of the grants (grant beneficiaries) will receive capacity building training including mentoring from business experts to solidify the ideas, scale their growth and enable the success of a sustainable business ecosystem in the Black Sea region. In addition, capacity building programs will develop capacity of these beneficiaries (host of innovation and grantees) on international practices, WB ESSs and this ESMF, as well as good international practices including respective WBG EHS Guidelines including pest management. The requirements of ESS3, WBG EHS Guidelines and good practices on pest management are provided in Annex 6 of the ESMF.

Host of Innovation and Grant Beneficiaries will be responsible for the following:

- Obtain and operate in line with any national approvals and permits for the implementation of the sub-project including environmental and social permits/licenses required by respective national regulations.
- Prepare and implement the ESMP (for moderate risk category sub-projects), and country specific or simplified SEP or use the ESMP Checklist in the ESMF to prepare and apply the relevant environmental and social standards (WB ESSs) and national regulatory requirements.
- Implement the Grievance Mechanism at sub-project level.
- Incorporate the E&S requirements in works contracts for the contractors to be employed.
- Monitor environmental and social performance of the contractors' works on site, in line with the site-specific environmental and social requirements.
- Provide monthly environmental and social monitoring reports to PIU on construction and compliance activities completed during the month, and to track the resolution of any issues that may have occurred.

To carry out the above mentioned responsibilities/obligations grant beneficiaries need to have some institutional capacity (such as environmental and social experts/specialist). For this purpose, they may need to hire environmental or social specialists or work with environmental and social consultants. If the beneficiaries do not already have the capacity for implementation, it would be more efficient to employ consultants to ensure the preparation and implementation of relevant plans (such as ESMPs) in line with the level of risk identified.

## **7.5. Monitoring and Reporting**

### **7.5.1. Monitoring**

Environmental and social monitoring starts from the construction phase of the sub-projects through the operation phase, verifying the implementation of the relevant mitigation measures and assessing their effectiveness, thus enabling the WB and BSEC/BBSEA PIU to take action when needed. The monitoring system provides technical assistance and supervision, when needed, early detection of conditions related to particular measures, follow up on mitigation results and provide information of the project progress.

In this context, grant beneficiaries (as the owners of the sub-projects that are financed through Subcomponent 2.1 Eco-Innovation Challenge) will monitor the environmental and social impacts of the sub-project activities on site continuously through assigned environmental and social experts/consultants, and report on the implementation of environmental and social measures to PIU on a monthly basis. Environmental and social specialists of the PIU will also be monitoring and supervising the sub-projects related to implementation of the environmental and social measures.

Monitoring issues would include the following:

- Monitor that obligations of ESMP, SEP and LMP in line with this ESMF, ESSs and national legislation on environment, labor, and OHS are met.
- Monitor that environmental conditions are met at workplaces in line with national legislation, and WB guidelines.
- Monitor that occupational health and safety standards are met at workplaces in line with national occupational health and safety legislation, OHS requirements, ESMP, and WHO and WB guidelines on COVID-19 prevention.
- Monitor employment process of contracted workers to ensure it is carried out in accordance with the LMP and national labor law.
- Monitor the implementation of the simplified SEPs.
- Monitor the implementation of the grievance mechanism (workers and project grievance mechanism).
- Monitor implementation of the workers code of conduct.

When the PIU notices any problems in ESMP, LMP, or SEP implementation, it will inform the relevant grant beneficiary and agree with them on steps to rectify these problems. Specifically, for any incident or accident related to the sub-project, which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public and workers (e.g. OHS accidents or that result in threatening community health and safety) the grant beneficiaries will immediately (not later than 48 hours) inform PIU, and PIU will inform the World Bank. In such cases, grant beneficiaries are expected to provide sufficient details regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervising entity/consultant, as appropriate. The grant beneficiaries will submit the incident report (including root cause analysis, precautions and compensation measures taken) to PIU within 30 business days and PIU will forward the incident report to the Bank immediately upon receipt.

The environmental and OHS and social experts assigned by the grant beneficiaries would be on site at the time intervals (i.e. daily basis) defined in the ESMP for moderate risk category sub-projects in order to inspect sub-project sites and verify compliance with all applicable mitigation measures. PIU environmental/OHS and social experts will monitor the sites on quarterly/semiannual basis during construction, depending on the sub-project scope. More

frequent monitoring may be conducted if needed to ensure compliance with the mitigation measures and resolution of any issues that are noted.

### **7.5.2. Reporting**

Monthly monitoring activities carried out by the grant beneficiaries will be reported to PIU. PIU will carry out supervision monitoring activities for each sub project and report the progress to the World Bank bi-annually in terms of environmental and social compliance and semiannually for overall sub-project progress.

Grant beneficiaries are going to submit monthly environmental and social compliance reports to PIU on construction and compliance activities completed during the month, and to track the resolution of any issues that may have occurred. These reports should include information for the reporting period on completed construction activities and remaining construction schedule, list of all environmental and health and safety (EHS) incidents, follow up of any past issues that have not been resolved yet, and photographs related to implementation of ESMP mitigation measures. Due the situation around the COVID-19 pandemic, risks and recommendations will be assessed and detailed under the ESMP studies to be conducted, and covered in the monthly monitoring reports to be reviewed by PIU during the pandemic.

Bi-annual environmental and social compliance reports for all sub-projects under implementation will be prepared by PIU and submitted to the World Bank. These reports will be based on monthly compliance reports of the grant beneficiaries and results of PIU experts monitoring visits, if any. These reports should include the following:

- Summary of oversight activities, such as site visits, of PIU specialists
- Summary of key follow up issues and actions at the sub-project sites
- Completed construction activities and remaining construction schedule
- Progress of ESMP implementation including key issues; such as waste management, health and safety practices, dust management, water quality, other environmental incidents and accidents, environmental awareness and training undertaken, etc.
- Updated list of all EHS incidents, including attached notices of non-compliances that were issued
- Follow up information from any past issues that are have not been resolved yet
- Stakeholder engagement activities, if any
- Grievances received and resolved

In the semi-annual project progress reports, PIU will include a section on environmental and social issues, which will summarize the status of ESCP and compliance with environmental and social framework documents and all sub-project specific ESMPs, LMP and country specific SEP implementation. In these reports details about grievances received (if any) during the relevant reporting period (including number of grievances, dates received, and actions taken and pending/open complaints) will be included. Those reports will also highlight any issues arising from non-compliance with environmental and social requirements and how it has been/is being addressed from the environmental and social safeguards point of view.

## 7.6. ESMF Budget

PIU is the main responsible body to implement the ESMF and ensure compliance of the sub-projects/grants with the ESMF and World Bank ESSs. In this context, the budget for execution of the ESMF would consider the environmental and social specialists/consultants to be employed by the PIU, site visits to be conducted by these specialists and indicative costs for preparation of ESMPs for sub-projects of moderate risk category. The estimated budget for overall SEP activities are provided in the regional level Stakeholder Engagement Plan (SEP) document prepared for the Project.

The estimated budget breakdown and overall budget for the execution of the ESMF activities are provided in Table 19 below.

Table 19. Estimated Budget for ESMF Implementation

Cost Item	Unit	Number of Units	Unit Cost (USD)	Total Cost (USD)
<b>For PIU<sup>1</sup></b>				
Environmental (and OHS Expert)	per month	36 <sup>2</sup>	2,000	72,000
Social Expert	per month	36 <sup>2</sup>	2,000	72,000
Monitoring visits to grant/sub-projects	per visit	16 <sup>3</sup>	3,000	48,000
Miscellaneous (trainings, production of materials such as leaflets, visuals, etc.)	lump sum	1	8,000	8,000
<b>Total</b>				<b>200,000</b>
<b>For Grant Beneficiaries<sup>4</sup></b>				
Preparation of ESMP	per report	4 <sup>5</sup>	20,000	80,000

6. The cost items to be covered under PIU budget

7. Considering that Project components will be implemented over a period of three years

8. Assuming that either 4 sites will be visited for 4 times or 8 sites will be visited for 2 times

9. The cost items to be covered under the grants (budget of grant beneficiary) budget, where implementation of the ESMP measures are excluded assuming that they would be included in the construction budget of the sub-projects.

10. Assuming that among the grants to be financed 4 grants would be of moderate risk category requiring preparation of a site specific ESMP.

## **8. STAKEHOLDER ENGAGEMENT, PUBLIC CONSULTATION AND DISCLOSURE**

### **8.1. Stakeholder Engagement**

The direct stakeholders include the Ministry of Environmental Protection and Agriculture of Georgia, Ministry of Agriculture, Regional Development and Environment in Republic of Moldova, the Ministry of Environment and Urbanization and the Ministry of Agriculture and Forestry in Turkey and the Ministry of Energy and Environment Protection in Ukraine, local municipalities in the Black Sea basin in beneficiary countries, local business associations in agriculture, aquaculture, tourism and shipping, local NGOs and SMEs to be involved in the grant financed activities and local communities. Regional organizations working on fisheries, academic and research institutions on marine pollution, financial/investment organizations would be among project stakeholders. Regional-level Stakeholder Engagement Plan (SEP) has been prepared outlining an approach for stakeholder analysis and mapping at national and local level and for disclosure and consultation strategy for country specific stakeholder engagement plans.

Country specific Stakeholder Engagement Plans (SEPs) in compliance with the regional level SEP and ESS10 will be prepared as an integral part of the assessment. Each SEP will define the disclosure requirements of the particular sub-projects to be realized in the beneficiary country. In the disclosure process, governmental restrictions on COVID-19 pandemic outbreak, if still prevail during the implementation of this ESMF, will be considered. The stakeholder engagement activities and methods have been defined in the regional level SEP and would be further specified in the country specific SEP document. Findings of all consultation and engagement activities will be taken into account in the implementation of environmental and social safeguards/measures and review of defined mitigation measures and monitoring requirements.

### **8.2. Public Consultation and Disclosure**

The concept for the proposed project has been presented at national consultation meetings, which were held virtually. National consultations have been held in Georgia, Republic of Moldova, Turkey, Ukraine, Romania, and Bulgaria between February and May 2021. The meetings have been announced on the events page of World Bank country websites and organized via Facebook and Zoom where translation was provided in countries' official languages. More than 130 stakeholders from ministries, local authorities, academics, private sector, NGOs and international organizations have participated in the meetings.

The project will use different methods such as online meetings, virtual events, one-to-one interview, focus group meetings, emails, etc. according to (i) the purpose of engagement and (ii) the needs of stakeholder group for information disclosure and consultation as detailed in Stakeholder Engagement Framework. The project will ensure that depending on the stakeholder group, relevant information in relevant language will be prepared and provided. The means of consultations should be explored following the latest public health guidelines

of WHO and World Bank stakeholder's engagement guidelines in order to adjust the format of consultations taking into account the restrictions.

The draft ESMF in English and in official languages of beneficiary countries will be posted on BSEC Virtual Knowledge website: <http://www.bsec-bsvkc.org/Forms/BlueingTheBlackSeaProject>. By this way, the draft ESMF will be presented to key stakeholders, development partners, civil society organizations, the private sector and the public. National level meetings will be held for disclosure and consultation of all environmental and social documents.

The Project will adopt a pro-active approach in involving vulnerable groups to project activities, which starts with careful screening of project stakeholders from local level. PIU will ensure that local business associations and local NGOs are included in country specific stakeholder engagement plans, and additional engagement tools such as focus group meetings, face-to-face interviews are described for the individuals, such as women and youth that are not represented via these organizations.

Consultations on ESMPs will ensure stakeholder involvement in the design of sub-project activities. The sub-projects, with support from PIU, will: (i) develop simplified stakeholder engagement plan consisting of stakeholder analysis and mapping; (ii) involve the various stakeholders in highlighting environmental and social issues; (iii) explain the sub-project activities to local communities; (iv) encourage the participation of local people (opinions, concerns, suggestions and expectations); (v) collect socio-economic data and information from local communities related to sub-project activities; (vi) lay the foundations for implementation of the actions planned under the sub-project activities.

### **8.3. Grievance Mechanism**

The grievance mechanism will be introduced to all stakeholders including grantees/grant beneficiaries, contractors and other stakeholders of the grant sub-projects, which aims to identify issues and concerns as early as possible to address them timely and proactively, to continuously improve Project performance and to demonstrate Project's commitment to meaningful stakeholder engagement, and respect for stakeholders' opinions and concerns.

The grievance mechanism is developed based on following principles:

- Any person or organization can express concerns, complaints, and grievances at any time, without fear of retribution & retaliation.
- All grievances will be treated in a fair and respectful manner.
- When a grievance is received, stakeholder will be responded to confirm its receipt within five (5) business days. At this time, the stakeholder will also be provided information about response times, next steps and a contact within the team. The grievances shall be resolved within 30 calendar days.
- The grievance process (receive, investigate and resolve) will be consistent and transparent.
- Information about a grievance (and related investigations and decisions) will be documented.



- Personal information about affected stakeholders will be treated as confidential. Submission of anonymous grievances shall be allowed. The grievance mechanism will also accept complaints related to sexual harassment and sexual exploitation and abuse.
- Grievances related to project activities, project management, BSEC/PIU activities or activities of grant beneficiaries and contractors can be submitted through grievance mechanism.
- Affected stakeholders may choose to pursue World Bank's Grievance Redress Mechanism and / or external remedies at any time.

The grievance forms will be published online, and also printed and distributed to local stakeholders, where necessary. The forms will be in 6 languages: English, Georgian, Moldovan, Turkish, Ukrainian and Russian.

Grievances will be managed in five stages:

**Stage 1 - Feedback received:** Stakeholders can convey their feedbacks related to the Project in many ways; verbally during a meeting, via website, email, call or official correspondence. In either way, PIU and grant beneficiaries will ensure that it is documented, incorporated, and responded to as needed. In some cases, this process may identify a grievance. If so, Stage 2 is initiated. *PIU will respond the enquiries in five (5) business days.*

**Stage 2 - Grievance logged:** When a grievance is identified, it is officially registered and given a unique identification number. It is categorized based on the type of complaint and its severity. An initial response is sent to the person(s) who raised the grievance, acknowledging their feedback and describing the next steps in the grievance process, time estimates for these steps and a contact person.

**Stage 3 - Investigation and resolution:** PIU will investigate grievances and their surrounding circumstances. These investigations will be undertaken in a timely manner. The results of these investigations will be reviewed, and a resolution will be proposed. The development of the resolution may involve consultation with the person(s) involved and in some cases with an independent third party. The proposed resolution will then be formally communicated to all parties. *The process will be completed and responded to the complainant in 30 days.*

**Stage 4 - Resolution:** If the resolution is accepted by all parties, it is implemented, and the grievance is closed. If the resolution is not accepted, it will be reconsidered, and a revised resolution may be proposed. The affected person(s) may choose to pursue external remedies at any time, including if an agreed resolution cannot be found.

**Stage 5 - Monitoring and Evaluation:** After the resolution has been implemented, it will be monitored, and its effectiveness will be evaluated. All parties will be notified that the resolution has been implemented and will have the opportunity to provide feedback on the grievance process and its implementation.

All project staff including grant beneficiaries will have an awareness session on grievance mechanism. The Project will set specific key performance indicators (KPIs) for grievance management performance.

## **ANNEXES**

- ANNEX 1. WORLD BANK GROUP (WBG) EXCLUSION LIST**
- ANNEX 2. ENVIRONMENTAL AND SOCIAL SCREENING CHECKLIST**
- ANNEX 3. PROJECT CATEGORIZATION OF THE WORLD BANK**
- ANNEX 4. INDICATIVE STRUCTURE FOR SUB-PROJECT ESMP AND QUALIFICATION OF ESMP CONSULTANTS**
- ANNEX 5. SUB-PROJECT ESMP CHECKLIST**
- ANNEX 6. WB ESS3 AND WBG EHS GUIDELINES REQUIREMENTS OF GOOD PRACTICES FOR MANAGEMENT OF PESTICIDES**

## ANNEX 1

### WORLD BANK GROUP (WBG) EXCLUSION LIST

The WBG/IFC Exclusion List defines the types of projects that WBG **does not** finance.

WBG does not finance the following projects:

- Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements, or subject to international bans, such as pharmaceuticals, pesticides/herbicides, ozone depleting substances, PCB's, wildlife or products regulated under CITES.
- Production or trade in weapons and munitions.<sup>1</sup>
- Production or trade in alcoholic beverages (excluding beer and wine).<sup>1</sup>
- Production or trade in tobacco.<sup>1</sup>
- Gambling, casinos and equivalent enterprises.<sup>1</sup>
- Production or trade in radioactive materials. This does not apply to the purchase of medical equipment, quality control (measurement) equipment and any equipment where WBG considers the radioactive source to be trivial and/or adequately shielded.
- Production or trade in unbonded asbestos fibers. This does not apply to purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.
- Drift net fishing in the marine environment using nets in excess of 2.5 km. in length.

A reasonableness test will be applied when the activities of the project company would have a significant development impact, but circumstances of the country require adjustment to the Exclusion List.

**All financial intermediaries (FIs)**, except those engaged in activities specified below\*, must apply the following exclusions, in addition to WBG/IFC's Exclusion List:

- Production or activities involving harmful or exploitative forms of forced labor<sup>2</sup>/harmful child labor.<sup>3</sup>
- Commercial logging operations for use in primary tropical moist forest.
- Production or trade in wood or other forestry products other than from sustainably managed forests.

\* When investing in **microfinance** activities, FIs will apply the following items in addition to the WBG Exclusion List:

- Production or activities involving harmful or exploitative forms of forced labor<sup>2</sup>/harmful child labor.<sup>3</sup>

- Production, trade, storage, or transport of significant volumes of hazardous chemicals, or commercial scale usage of hazardous chemicals. Hazardous chemicals include gasoline, kerosene, and other petroleum products.
- Production or activities that impinge on the lands owned, or claimed under adjudication, by Indigenous Peoples, without full documented consent of such peoples.

\* **Trade finance projects**, given the nature of the transactions, FIs will apply the following items in addition to the WBG Exclusion List:

- Production or activities involving harmful or exploitative forms of forced labor<sup>2</sup>/harmful child labor.<sup>3</sup>

### **Footnotes**

<sup>1</sup> *This does not apply to project sponsors who are not substantially involved in these activities. "Not substantially involved" means that the activity concerned is ancillary to a project sponsor's primary operations.*

<sup>2</sup> *Forced labor means all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.*

<sup>3</sup> *Child labor means employment of children below the age of 14 years, or any other older age if a relevant national law prescribes in such manner. Harmful child labor means the employment of children that is economically exploitive, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health, or physical, mental, spiritual, moral, or social development.*

## ANNEX 2

### ENVIRONMENTAL AND SOCIAL SCREENING CHECKLIST/FORM

<b>Brief Sub-project Description:</b>
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**Exclusion List for the Project (Questions to identify ineligible activities/grant applications/sub-projects):**

Questions to be Considered	Yes / No If Yes, Sub-Project is excluded from / ineligible for financing
<i>1. Will the sub-project involve production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements, or subject to international bans, such as pharmaceuticals, pesticides/herbicides, ozone depleting substances, PCB's, wildlife or products regulated under CITES?</i>	
<i>2. Will the sub-project involve production or trade in weapons and munitions?</i>	
<i>3. Will the sub-project involve production or trade in alcoholic beverages (excluding beer and wine)?</i>	
<i>4. Will the sub-project involve production or trade in tobacco?</i>	
<i>5. Will the sub-project involve gambling, casinos and equivalent enterprises?</i>	
<i>6. Will the sub-project involve production or trade in radioactive materials? (This does not apply to the purchase of medical equipment, quality control (measurement) equipment and any equipment where WBG considers the radioactive source to be trivial and/or adequately shielded)</i>	
<i>7. Will the sub-project involve production or trade in unbonded asbestos fibers? (This does not apply to purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%)</i>	
<i>8. Will the sub-project involve drift net fishing in the marine environment using nets in excess of 2.5 km. in length?</i>	

Questions to be Considered	Yes / No If Yes, Sub-Project is excluded from / ineligible for financing
9. Will the sub-project involve production or activities involving harmful or exploitative forms of forced labor? (Forced labor means all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty)	
10. Will the sub-project involve production or activities involving harmful child labor? (Child labor means employment of children below the age of 14 years, or any other older age if a relevant national law prescribes in such manner. Harmful child labor means the employment of children that is economically exploitive, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health, or physical, mental, spiritual, moral, or social development)	
11. Will the sub-project involve commercial logging operations for use in primary tropical moist forest?	
12. Will the sub-project involve production or trade in wood or other forestry products other than from sustainably managed forests?	
13. Will the sub-project involve production, trade, storage, or transport of significant volumes of hazardous chemicals, or commercial scale usage of hazardous chemicals? (Hazardous chemicals include gasoline, kerosene, and other petroleum products)	
14. Will the sub-project involve production or activities that impinge on the lands owned, or claimed under adjudication, by Indigenous Peoples, without full documented consent of such peoples?	
15. Will the sub-project trigger WB's Safeguard Policy OP/BP 7.50 – Projects on International Waterways?	
16. Will the sub-project trigger WB's Safeguard Policy OP/BP 7.60 – Projects in Disputed Areas?	
17. Will the sub-project require land acquisition, restriction to land use and/or involuntary resettlement?	
18. Will the sub-project have adverse impacts on critical and natural habitats and/or have significant impacts in terms of biodiversity?	
19. Will the sub-project have adverse impacts on known and protected cultural heritage?	
20. Will the sub-project still need to complete the necessary national EIA process?	

**Risk Categorization/Screening for the Project (Questions to identify the risk category of activities/grant applications/sub-projects):**

Questions to be Considered	Yes / No If Yes, please briefly describe	Is this likely to result in a significant effect needing mitigation? Yes/No
1. Will construction, operation or decommissioning of the sub-project involve actions which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)?		
2. Will construction or operation of the sub-project use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or in short supply?		
3. Will the sub-project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health?		
4. Will the sub-project produce solid wastes during construction or operation or decommissioning?		
5. Will the sub-project release pollutants or any hazardous, toxic or noxious substances to air?		
6. Will the sub-project cause noise and vibration or release of light, heat energy or electromagnetic radiation?		
7. Will the sub-project lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater, coastal waters or the sea?		
8. Will there be any risk of accidents during construction or operation of the sub-project which could affect human health or the environment?		
9. Will the sub-project result in social changes, for example, in demography, traditional lifestyles, employment?		

<b>Questions to be Considered</b>	<b>Yes / No If Yes, please briefly describe</b>	<b>Is this likely to result in a significant effect needing mitigation? Yes/No</b>
<i>10. Are there any other factors which should be considered such as consequential development which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality?</i>		
<i>11. Are there any areas on or around the location which are protected under international or national or local legislation for their ecological, landscape, cultural or other value, which could be affected by the sub-project?</i>		
<i>12. Are there any other areas on or around the location which are important or sensitive for reasons of their ecology e.g. wetlands, watercourses or other water bodies, the coastal zone, mountains, forests or woodlands, which could be affected by the sub-project?</i>		
<i>13. Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected by the sub-project?</i>		
<i>14. Are there any inland, coastal, marine or underground waters on or around the location which could be affected by the sub-project?</i>		
<i>15. Are there any areas or features of high landscape or scenic value on or around the location which could be affected by the sub-project?</i>		
<i>16. Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected by the sub-project?</i>		
<i>17. Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected by the sub-project?</i>		
<i>18. Is the sub-project in a location where it is likely to be highly visible to many people?</i>		



<b>Questions to be Considered</b>	<b>Yes / No If Yes, please briefly describe</b>	<b>Is this likely to result in a significant effect needing mitigation? Yes/No</b>
<i>19. Are there any areas or features of historic or cultural importance on or around the location which could be affected by the sub-project?</i>		
<i>20. Is the sub-project located in a previously undeveloped area where there will be loss of greenfield land?</i>		
<i>21. Are there existing land uses on or around the location e.g. homes, gardens, other private property, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism, mining or quarrying which could be affected by the sub-project?</i>		
<i>22. Are there any plans for future land uses on or around the location which could be affected by the sub-project?</i>		
<i>23. Are there any areas on or around the location which are densely populated or built-up, which could be affected by the sub-project?</i>		
<i>24. Are there any areas on or around the locations which are occupied by sensitive land uses e.g. hospitals, schools, places of worship, community facilities, which could be affected by the sub-project?</i>		
<i>25. Are there any areas on or around the location which contain important, high quality or scarce resources e.g. groundwater, surface waters, forestry, agriculture, fisheries, tourism, minerals, which could be affected by the sub-project?</i>		
<i>26. Are there any areas on or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, which could be affected by the sub-project?</i>		
<i>27. Is the sub-project location susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, fogs, severe winds, which could cause the sub-project to present environmental problems?</i>		

Questions to be Considered	Yes / No If Yes, please briefly describe	Is this likely to result in a significant effect needing mitigation? Yes/No
28. Will the sub-project lead to risks associated with inter-group or intragroup conflicts/tensions?		
29. Are any disadvantaged & vulnerable groups living in proposed location(s) or affected by the sub-project?		
30. Do construction and operation activities require additional/skilled labor from outside the locality?		
31. Are any disadvantaged & vulnerable groups living in proposed locations or areas affected by the sub-project?		

**Summary of features of the sub-project and of its location indicating the need for ESMP**

<p><b>Mark the one that applies</b></p> <p><input type="checkbox"/> Risk Category "High" Significant adverse impact, excluded from financing</p> <p><input type="checkbox"/> Risk Category "Substantial" Temporary, predictable and/or reversible adverse impact, excluded from financing</p> <p><input type="checkbox"/> Risk Category "Moderate" Limited or temporary impact, ESMP needed</p> <p><input type="checkbox"/> Risk Category "Low" Minimum impact/no impact, no further E&amp;S study</p>	<b>Prepared by:</b>
	<b>Name and Signature:</b>
	<b>Title:</b>
	<b>Date:</b>
	<b>Approved by:</b>
	<b>Name and Signature:</b>
	<b>Title:</b>
<b>Date:</b>	

## ANNEX 3

### PROJECT CATEGORIZATION OF THE WORLD BANK

According to the World Bank's E&S Policy, projects (including projects involving FIs) are classified into one of four classifications as **High Risk**, **Substantial Risk**, **Moderate Risk** or **Low Risk** taking into account relevant potential risks and impacts, such as the type, location, sensitivity and scale of the project; the nature and magnitude of the potential E&S risks and impacts; the capacity and commitment of the Borrower; and other areas of risks that may be relevant to the delivery of E&S mitigation measures and outcomes.

A project is classified as **High Risk** after considering, in an integrated manner, the risks and impacts of the project, taking into account the following, as applicable:

- a. The project is likely to generate a wide range of significant adverse risks and impacts on human populations or the environment. This could be because of the complex nature of the project, the scale (large to very large) or the sensitivity of the location(s) of the project. This would take into account whether the potential risks and impacts associated with the Project have the majority or all of the following characteristics:
  - (i) long term, permanent and/or irreversible (e.g., loss of major natural habitat or conversion of wetland), and impossible to avoid entirely due to the nature of the project;
  - (ii) high in magnitude and/or in spatial extent (the geographical area or size of the population likely to be affected is large to very large);
  - (iii) significant adverse cumulative impacts;
  - (iv) significant adverse transboundary impacts; and
  - (v) a high probability of serious adverse effects to human health and/or the environment (e.g., due to accidents, toxic waste disposal, etc.).
- b. The area likely to be affected is of high value and sensitivity, for example sensitive and valuable ecosystems and habitats (legally protected and internationally recognized areas of high biodiversity value), lands or rights of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities and other vulnerable minorities, intensive or complex involuntary resettlement or land acquisition, impacts on cultural heritage or densely populated urban areas.
- c. Some of the significant adverse ES risk and impacts of the project cannot be mitigated or specific mitigation measures require complex and/or unproven mitigation, compensatory measures or technology, or sophisticated social analysis and implementation.
- d. There are significant concerns that the adverse social impacts of the project, and the associated mitigation measures, may give rise to significant social conflict or harm or significant risks to human security.
- e. There is a history of unrest in the area of the project or the sector, and there may be significant concerns regarding the activities of security forces.
- f. The project is being developed in a legal or regulatory environment where there is significant uncertainty or conflict as to jurisdiction of competing agencies, or where the legislation or regulations do not adequately address the risks and impacts of complex projects, or changes to applicable legislation are being made, or enforcement is weak.

- g. The past experience of the Borrower and the implementing agencies in developing complex projects is limited, their track record regarding ES issues would present significant challenges or concerns given the nature of the project's potential risks and impacts.
- h. There are significant concerns related to the capacity and commitment for, and track record of relevant Project parties, in relation to stakeholder engagement.
- i. There are a number of factors outside the control of the Project that could have a significant impact on the ES performance and outcomes of the project.

A project is classified as **Substantial Risk** after considering, in an integrated manner, the risks and impacts of the project, taking into account the following, as applicable:

- a. the project may not be as complex as **High Risk** projects, its ES scale and impact may be smaller (large to medium) and the location may not be in such a highly sensitive area, and some risks and impacts may be significant. This would take into account whether the potential risks and impacts have the majority or all of the following characteristics:
  - (i) they are mostly temporary, predictable and/or reversible, and the nature of the project does not preclude the possibility of avoiding or reversing them (although substantial investment and time may be required);
  - (ii) there are concerns that the adverse social impacts of the project, and the associated mitigation measures, may give rise to a limited degree of social conflict, harm or risks to human security;
  - (iii) they are medium in magnitude and/or in spatial extent (the geographical area and size of the population likely to be affected are medium to large);
  - (iv) the potential for cumulative and/or transboundary impacts may exist, but they are less severe and more readily avoided or mitigated than for **High Risk** projects; and
  - (v) there is medium to low probability of serious adverse effects to human health and/or the environment (e.g., due to accidents, toxic waste disposal, etc.), and there are known and reliable mechanisms available to prevent or minimize such incidents.
- b. The effects of the project on areas of high value or sensitivity are expected to be lower than High Risk projects.
- c. Mitigatory and/or compensatory measures may be designed more readily and be more reliable than those of High Risk projects.
- d. The project is being developed in a legal or regulatory environment where there is uncertainty or conflict as to jurisdiction of competing agencies, or where the legislation or regulations do not adequately address the risks and impacts of complex projects, or changes to applicable legislation are being made, or enforcement is weak.
- e. The past experience of the Borrower and the implementing agencies in developing complex projects is limited in some respects, and their track record regarding ES issues suggests some concerns which can be readily addressed through implementation support.
- f. There are some concerns over capacity and experience in managing stakeholder engagement, but these could be readily addressed through implementation support.

A project is classified as **Moderate Risk** after considering, in an integrated manner, the risks and impacts of the project, taking into account the following, as applicable:

- a. the potential adverse risks and impacts on human populations and/or the environment are not likely to be significant. This is because the project is not complex and/or large, does not involve activities that have a high potential for harming people or the environment, and is located away from environmentally or socially sensitive areas. As such, the potential risks and impacts and issues are likely to have the following characteristics:
  - (i) predictable and expected to be temporary and/or reversible;
  - (ii) low in magnitude;
  - (iii) site-specific, without likelihood of impacts beyond the actual footprint of the project; and
  - (iv) low probability of serious adverse effects to human health and/or the environment (e.g., do not involve use or disposal of toxic materials, routine safety precautions are expected to be sufficient to prevent accidents, etc.).
- b. The project's risks and impacts can be easily mitigated in a predictable manner.

A project is classified as **Low Risk** if its potential adverse risks to and impacts on human populations and/or the environment are likely to be minimal or negligible. These projects, with few or no adverse risks and impacts and issues, do not require further ES assessment following the initial screening.

## ANNEX 4

### INDICATIVE OUTLINE FOR SUB-PROJECT ESMP AND QUALIFICATION OF ESMP CONSULTANTS

An ESMP consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation of a project to eliminate adverse environmental and social risks and impacts, offset them, or reduce them to acceptable levels. The ESMP also includes the measures and actions needed to implement these measures. The Borrower will (a) identify the set of responses to potentially adverse impacts; (b) determine requirements for ensuring that those responses are made effectively and in a timely manner; and (c) describe the means for meeting those requirements.

ESMPs will be prepared as a stand-alone document. The content of the ESMP will include the following (please see indicative structure of the ESMP report below for details):

#### **a) Mitigation**

The ESMP identifies measures and actions in accordance with the mitigation hierarchy that reduce potentially adverse environmental and social impacts to acceptable levels. The plan will include compensatory measures, if applicable. Specifically, the ESMP:

- (i) identifies and summarizes all anticipated adverse environmental and social impacts (including those involving land acquisition, involuntary resettlement workers and community health and safety, vulnerable groups and cultural heritage or);
- (ii) describes -with technical details- each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate;
- (iii) estimates any potential environmental and social impacts of these measures; and
- (iv) takes into account, and is consistent with, other mitigation plans required for the project (e.g. for involuntary resettlement, labor, stakeholder engagement or cultural heritage).

#### **b) Monitoring**

The ESMP identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the environmental and social assessment and the mitigation measures described in the ESMP. Specifically, the monitoring section of the ESMP provides (a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and (b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

### **c) Capacity Development and Training**

- To support timely and effective implementation of environmental and social Project components and mitigation measures, the ESMP draws on the environmental and social assessment of the existence, role, and capability of responsible parties on site or at the agency and ministry level.
- Specifically, the ESMP provides a specific description of institutional arrangements, identifying which party is responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training).
- To strengthen environmental and social management capability in the agencies responsible for implementation, the ESMP recommends the establishment or expansion of the parties responsible, the training of staff and any additional measures that may be necessary to support implementation of mitigation measures and any other recommendations of the environmental and social assessment.

### **d) Implementation Schedule and Cost Estimates**

For all three aspects (mitigation, monitoring, and capacity development), the ESMP provides (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the ESMP. These figures are also integrated into the total project cost tables.

### **Indicative Structure of the ESMP Report**

The proposed structure of the ESMP report is as follows:

- **Executive Summary:**  
This should provide a general summary of the ESMP contents and key findings, in a vocabulary that is easily understood by the general public. It should be clear, concise ranging from 3 to 5 pages.
- **Introduction:**  
An introduction describing the ESMP purpose, objectives, principles and methodology. This section should introduce the project proponents, the study team, and provide other relevant information. The layout of ESMP should also be described to facilitate its use.
- **Sub-Project Description:**  
A description of the sub-project which will include background, purpose and different components. Also indicate any sub-project specific resource requirements such as material, manpower, equipment, etc.
- **Environmental Baseline of Subproject Area:**  
This section gives site specific overview of baseline covering physical and biological environment. It will include ambient air quality, noise, temperatures, rainfall, etc.

- **Socio-Economic Profile of Subproject Area:**  
 This section describes socio-economic profile of the sub-project area. It will cover community structure, planned development activities, population, occupation and livelihoods, methods of communication and transport, cultural heritage sites, etc.
- **Stakeholder consultation and Information Disclosure:**  
 This section will describe the objective, process, and outcome of the stakeholder consultations carried out during the ESMP preparation. This section should also list arrangements for disclosing subprojects information in order to comply with the Bank's Policy of Disclosure of Information.
- **Impacts and Mitigation:**  
 This section will identify all positive as well as negative environmental and social impacts with cost effective and feasible measures to reduce adverse environmental impact to acceptable level. It will describe with technical details mitigation measures including the type of impact to which it relates to. It will also describe methodology for social impacts.
- **Environmental Management and Monitoring Plan:**  
 This section will provide specific description and technical details of monitoring measures including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions. The monitoring and reporting procedures will ensure early detection of conditions that necessitate particular mitigation measures, and furnish information on the progress and results of mitigation. Mitigation Plan Table and Monitoring Plan Table templates are provided below.
- **Institutional Arrangement:**  
 Detailed description of institutional arrangements, roles and responsibilities and reporting procedures should be presented. This section should also propose capacity building and training plan for implementing agencies responsible for this project.
- **ESMP Implementation Budget:**  
 An ESMP implementation budget estimates are provided here. The budget will include funds for institutions development activities, training programs for implementation teams and local/national institutions, technical assistance to authorities, costs for preparations of EMPs and other safeguard documents.
- **Annexes:**  
 Technical annexes to support ESMP implementation.



### **Qualifications and Skills Required for ESMP Consultant**

The Consultant needs to demonstrate that the proposed ESMP preparation team has the expertise required to fully appreciate the requirements of WB ESF and ESSs to be addressed in the ESMP, and to complete all required sections of the ESMP. The team should include appropriate number of specialists from different disciplines including but not limited to environmental sciences, social sciences and GIS expert. The team should have complete understanding of the national legislative requirements as well as this ESMF, WB ESF and ESSs and experience in preparation of ESMP studies financed by international financing institutions such as WB/IFC/EBRD/EU and relevant sector experience.

**Indicative Mitigation Plan Table**

Phase	Activity	Environmental and Social Issue	Impacts	Mitigation Measure	Institutional Responsibility	Cost of / Budget for Mitigation
Preparation						
Construction						
Operation						

**Monitoring Plan Table**

Phase	What (is the parameter to be monitored?)	Where (is the parameter to be monitored?)	How (is the parameter to be monitored?)	When (is the parameter to be monitored?) (Define the frequency / or continuous?)	Why (is the parameter to be monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)	Observation and Comments
Preparation								
Construction								
Operation								

*Note: Generally any item/parameter identified in the mitigation plan (proposed as mitigation measure) has a corresponding entry in the monitoring plan.*

**ANNEX 5**  
**SUB-PROJECT ESMP CHECKLIST<sup>96</sup>**

**PART 1. PROJECT INFORMATION**

INSTUTIONAL AND ADMINISTRATIVE ASPECTS		
Country/Province District/Neighbourhood		
Project Name		
Project Scope and Activities		
SITE DESCRIPTION		
Name of site Block/Plot No		
Site Location		Attachment 1: Site Map [ ] Y [ ] N
Owner of the Site		

<sup>96</sup> The checklists contained in this annex point out main impacts and mitigation measures, but are not meant to be exhaustive in their coverage. Furthermore, not all of the issues identified in this checklist may apply to all sub-projects.

Description of geographic, physical, biological, geological, hydrological and socio-economic characteristics of the Site	
Location of the nearest sensitive receptors (such as hospitals, health care units, schools, houses) and distance to the Site	
Locations and distance for material sourcing, especially energy, water, etc.	
<b>LEGISLATION</b>	
Infrastructure services to be used during the Project activities (such as sewer system, electricity, water network etc.)	
Identify national & local legislation & required permits that apply to project activities (i.e., master plan arrangements, construction permit building permit, etc.)	
<b>PUBLIC INFORMATION DISCLOSURE/CONSULTATION</b>	
Identify when / where the public information disclosure/consultation took place (date and location of the local information meetings)	<ul style="list-style-type: none"> <li>ESMP Checklist document would be made available at the site offices and the site manager will be responsible for recording and answering any questions/comments raised by public.</li> </ul>
<b>INSTITUTIONAL CAPACITY BUILDING</b>	
Will there be any capacity building (e.g., HS training for workers, ESMP training to contractors, etc.)?	[ ] N or [ ] Y

**PART 2. ENVIRONMENTAL AND SOCIAL EVALUATION**

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ENVIRONMENTAL / SOCIAL SCREENING				
	Activity	Status		Triggered Actions*
Will the site activity include / involve any of the following?	A. Building rehabilitation/Minor new construction	<input type="checkbox"/> Yes	<input type="checkbox"/> No	See Activity A in Part 3
	B. Wastewater treatment	<input type="checkbox"/> Yes	<input type="checkbox"/> No	See Activity B in Part 3
	C. Hazardous or toxic materials <sup>97</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	See Activity C in Part 3
	D. Impacts on forests and/or biodiversity areas	<input type="checkbox"/> Yes	<input type="checkbox"/> No	See Activity D in Part 3
	E. Traffic and Pedestrian Safety	<input type="checkbox"/> Yes	<input type="checkbox"/> No	See Activity E in Part 3

\* The actions under "Preparation and Land Allocation" and "General Conditions" Activities given in Part 3 apply to all types of activities specified in Part 2.

<sup>97</sup> Toxic / hazardous material includes but is not limited to asbestos, toxic paints, noxious solvents, removal of lead paint, etc.

### PART 3. IMPACTS AND MITIGATION MEASURES

PROJECT PHASE	ACTIVITY	IMPACT PARAMETER	MITIGATION MEASURES CHECKLIST
Pre-Construction	Preparation and Land Allocation	Land Ownership	<ul style="list-style-type: none"> <li>The land plot for the grant/sub-project is allocated for the grantee/grant beneficiary.</li> </ul>
Pre-Construction	Community engagement	Community/social acceptance	<ul style="list-style-type: none"> <li>Simplified SEP has been developed identifying grant/sub-project's stakeholders.</li> <li>Project activities' positive and negative impacts have been disclosed and discussed with affected communities and key stakeholders.</li> <li>Consultation meetings have been held to receive, discuss, and address any community concern about adverse impacts on their livelihoods.</li> </ul>
Pre-Construction	Labor management	Labor management	<ul style="list-style-type: none"> <li>Labor Management Procedure has been developed.</li> <li>Recruitment process have been designed and executed based on principles of non-discrimination.</li> </ul>
Construction	0. General Conditions	Information Disclosure	<ul style="list-style-type: none"> <li>The local construction and environment inspectorates, local communities and stakeholders have been notified of upcoming activities.</li> <li>The public has been notified of the works through appropriate notification at publicly accessible sites (including the site of the works).</li> <li>The start and finish dates and working periods, and permits obtained from the municipality (provincial or district) would be posted (signpost) at the construction site at a place that could be easily seen.</li> <li>The relevant information has been disclosed on project website of BBSEA PIU.</li> </ul>
		Documentation	<ul style="list-style-type: none"> <li>All legally required permits and approvals have been acquired.</li> <li>The Contractor formally agrees that all work will be carried out in a safe and disciplined manner designed to minimize impacts on neighbouring residents and environment.</li> <li>Relevant environmental and health and safety documents are available on site.</li> <li>Monitoring and auditing results as well as grievance records have been documented.</li> </ul>
		Labor management	<ul style="list-style-type: none"> <li>No child and forced labor has been used.</li> <li>Worker's grievance mechanism has been established</li> <li>Worker's grievance mechanism has been introduced to workers.</li> </ul>

PROJECT PHASE	ACTIVITY	IMPACT PARAMETER	MITIGATION MEASURES CHECKLIST
Construction	0. General Conditions	Work Conditions Occupational Health and Safety	<ul style="list-style-type: none"> <li>• Site specific Emergency Response Plan/Procedures have been prepared covering emergencies such as fire, accident, natural disasters (earthquake, heavy meteorological events, etc.) and workers have been informed.</li> <li>• Training has been provided to workers regarding OHS rules and measures regularly.</li> <li>• Workers' personal protective equipment (PPE) complies with national legislation (always hardhats, as needed masks and safety glasses, harnesses and safety boots).</li> <li>• Physical conditions and equipment provided are in compliance with the requirements of national legislation.</li> <li>• Housekeeping measures are in place for all works on site.</li> <li>• Basic facilities (such as toilets, resting, eating and changing areas, etc.) are available for workers on site.</li> <li>• Sites/areas have been designated for material and waste storage.</li> <li>• Person(s) in charge of OHS on site have been assigned.</li> <li>• Appropriate signposting have been done and sufficient number of OHS signs has been posted on site.</li> <li>• OHS documentation and training materials are available on site.</li> <li>• Monitoring and auditing activities are being conducted regularly and any non-compliance issues are addressed and reported.</li> </ul>
Construction	0. General Conditions	Grievance Mechanism	<ul style="list-style-type: none"> <li>• Grievance Mechanism/Procedure (GM) have been established.</li> <li>• GM documentation (forms, etc.) is available on site.</li> <li>• GM records are kept on site and reported regularly.</li> </ul>
		Social Benefits	<ul style="list-style-type: none"> <li>• In recruiting of workers priority has been given to locals, based on needed and available skills.</li> <li>• The material and service supply for the project has been obtained locally (or from the same province and region) to the extent possible.</li> </ul>
		Community/Social acceptance	<ul style="list-style-type: none"> <li>• Participatory governance has been maintained with affected communities, local and national NGOs and other key stakeholders.</li> <li>• Meetings have been held in local languages.</li> <li>• Periodic and timely project updates have been shared with affected communities and stakeholders.</li> <li>• Project activities have been monitored together with affected communities and stakeholders.</li> </ul>

PROJECT PHASE	ACTIVITY	IMPACT PARAMETER	MITIGATION MEASURES CHECKLIST
Construction	A. General Rehabilitation and/or Construction Activities	Air Quality	<ul style="list-style-type: none"> <li>• Demolition debris shall be kept in controlled area and sprayed with water mist to reduce debris dust.</li> <li>• In case pneumatic drilling during excavation dust shall be suppressed by on-going water spraying and/or installing dust screen enclosures at site.</li> <li>• The surrounding environment (sidewalks, roads) shall be kept free of debris to minimize dust.</li> <li>• All vehicles and equipment are regularly maintained and necessary permits for exhaust gas emissions have been obtained.</li> <li>• In case of demolition, debris-chutes shall be used above the first floor.</li> <li>• There will be no open burning of construction / waste material at the site.</li> <li>• There will be no excessive idling of construction vehicles at sites.</li> </ul>
		Noise	<ul style="list-style-type: none"> <li>• Noise during demolishing and construction will be limited to; restricted times agreed to in the permit and the noise levels specified in national legislation.</li> <li>• The construction activities in or close to residential areas would be conducted only during day time.</li> <li>• In case construction activities have to be continued at evening and night time necessary permission would be obtained from the local authorities.</li> <li>• During operations, the engine covers of generators, air compressors and other powered mechanical equipment shall be closed, and equipment placed as far away from residential areas as possible.</li> <li>• All vehicles and equipment are regularly maintained and in case the noise levels become disturbing more than one vehicle/equipment would not work at the same time.</li> </ul>
Construction	A. General Rehabilitation and/or Construction Activities	Water Quality and Wastewaters	<ul style="list-style-type: none"> <li>• The site will establish appropriate erosion and sediment control measures such as hay bales and/or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby surface waters, if any.</li> <li>• The wastewaters to be generated during construction would be discharged to the existing sewer system.</li> <li>• Where there is no sewer line in the area of the construction site, wastewaters would be collected in septic tanks and taken away by the vacuum trucks of the local authority (municipality).</li> <li>• Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies.</li> </ul>



PROJECT PHASE	ACTIVITY	IMPACT PARAMETER	MITIGATION MEASURES CHECKLIST
Construction	A. General Rehabilitation and/or Construction Activities	Waste management	<ul style="list-style-type: none"> <li>• Waste bins will be available on site for domestic waste including the means for separation recyclables (plastic, glass, paper).</li> <li>• Domestic wastes will be collected by the municipality.</li> <li>• Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities.</li> <li>• Mineral construction wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate closed containers.</li> <li>• A temporary waste storage area is designated for construction waste and construction waste would not be mixed with excavated soil, if any.</li> <li>• All construction wastes (including waste oil, waste batteries and accumulators, waste tires) will be collected and disposed properly by licensed collectors.</li> <li>• The records of waste disposal will be maintained as proof for proper management as designed and in line with national legislation.</li> <li>• Whenever feasible the contractor will reuse and recycle appropriate and viable materials (including excavated soil, except asbestos).</li> </ul>
Construction	B. Wastewater Treatment System	Water Quality and Wastewaters	<ul style="list-style-type: none"> <li>• The approach to handling sanitary wastes and wastewater from building sites (installation or reconstruction) must be approved by the local authorities.</li> <li>• Before being discharged into receiving waters treated wastewater must meet the minimal quality criteria set out by national legislation on effluent quality and wastewater treatment.</li> <li>• Monitoring of new wastewater treatment systems will be carried out.</li> <li>• Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies.</li> </ul>
Construction	C. Hazardous or Toxic Materials	Asbestos Management	<ul style="list-style-type: none"> <li>• If asbestos is located on the project site, it shall be marked clearly as hazardous material.</li> <li>• When possible asbestos will be appropriately contained and sealed to minimize exposure.</li> <li>• The asbestos prior to removal (if removal is necessary) will be treated with a wetting agent to minimize asbestos dust.</li> <li>• Asbestos will be handled and disposed by skilled and experienced professionals.</li> <li>• If asbestos material is being stored temporarily, wastes should be securely enclosed inside closed containments and marked appropriately. Security measures will be taken against unauthorized removal from the site.</li> <li>• The removed asbestos will not be reused.</li> </ul>

PROJECT PHASE	ACTIVITY	IMPACT PARAMETER	MITIGATION MEASURES CHECKLIST
Construction	C. Hazardous or Toxic Materials	Toxic / Hazardous Waste Management	<ul style="list-style-type: none"> <li>Temporarily storage on site of all hazardous or toxic substances will be in safe containers labelled with details of composition, properties and handling information.</li> <li>The containers of hazardous substances shall be placed in a leak-proof area (solid ground that is not soil with containment) to prevent spillage and leaching.</li> <li>These wastes shall be transported by licensed carriers and disposed in a licensed facility.</li> <li>Paints with toxic ingredients or solvents or lead-based paints will not be used.</li> </ul>
Construction	D. Affected Forests, Wetlands and/or Biodiversity Areas	Protection	<ul style="list-style-type: none"> <li>All recognized natural habitats, wetlands and protected areas in the immediate vicinity of the activity will not be damaged or exploited.</li> <li>All staff will be strictly prohibited from hunting, foraging, logging or other damaging activities.</li> <li>A survey and an inventory shall be made of large trees near the construction activity, large trees shall be marked and cordoned off with fencing, their root system protected, and any damage to the trees avoided.</li> <li>Adjacent wetlands and streams shall be protected from construction site run-off with appropriate erosion and sediment control features such as hay bales and silt fences.</li> <li>There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas.</li> </ul>
Construction	E. Traffic and Pedestrian Safety	Direct or Indirect Hazards to Public Traffic and Pedestrians by Construction Activities	<ul style="list-style-type: none"> <li>In compliance with national regulations the contractor will ensure that the construction site is properly secured (fenced) and uncontrolled entrance is prohibited.</li> <li>Construction related traffic would be regulated through the following means: <ul style="list-style-type: none"> <li>Signposting, warning signs, barriers and traffic diversions; site will be clearly visible and the public warned of all potential hazards.</li> <li>Traffic management system and staff training, especially for site access and near- site heavy traffic.</li> <li>Provision of safe passages and crossings for pedestrians where construction traffic interferes.</li> <li>Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement.</li> <li>Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public.</li> </ul> </li> <li>All necessary organization related to traffic in the vicinity of the site would be planned and coordinated together with the municipality.</li> <li>Transportation of any special materials would be done through the routes agreed on with the authorities.</li> </ul>

## ANNEX 6

### WB ESS3 AND WBG EHS GUIDELINES REQUIREMENTS OF GOOD PRACTICES FOR MANAGEMENT OF PESTICIDES

The primary aim of pest management is to manage pests and diseases that may negatively affect production of crops so that they remain at a level that is under an economically damaging threshold. Pesticides should be managed to reduce human exposure and health hazards, to avoid their migration into off-site land or water environments and to avoid ecological impacts such as destruction of beneficial species and the development of pesticide resistance. One important strategy is to promote and facilitate the use of Integrated Pest Management (IPM) through preparation and implementation of an Integrated Pest Management Plan (PMP). IPM refers to a mix of farmer-driven, ecologically based pest control practices that seeks to reduce reliance on synthetic chemical pesticides. It involves: (a) managing pests (keeping them below economically damaging levels) rather than seeking to eradicate them; (b) integrating multiple methods (relying, to the extent possible, on nonchemical measures) to keep pest populations low; and (c) selecting and applying pesticides, when they have to be used, in a way that minimizes adverse effects on beneficial organisms, humans, and the environment.

**Alternatives to Pesticide Application.** Where feasible, the following alternatives to pesticides should be considered:

- Rotate crops to reduce the presence of pests and weeds in the soil ecosystem;
- Use pest-resistant crop varieties;
- Use mechanical weed control and / or thermal weeding;
- Support and use beneficial organisms, such as insects, birds, mites, and microbial agents, to perform biological control of pests;
- Protect natural enemies of pests by providing a favorable habitat, such as bushes for nesting sites and other original vegetation that can house pest predators and by avoiding the use of broad-spectrum pesticides;
- Use animals to graze areas and manage plant coverage;
- Use mechanical controls such as manual removal, traps, barriers, light, and sound to kill, relocate, or repel pests.

**Pesticide Application.** If pesticide application is warranted, users are recommended take the following actions:

- Train personnel to apply pesticides and ensure that personnel have received applicable certifications or equivalent training where such certifications are not required;
- Review and follow the manufacturer's directions on maximum recommended dosage or treatment as well as published reports on using the reduced rate of pesticide application without loss of effect, and apply the minimum effective dose;
- Avoid routine "calendar-based" application, and apply pesticides only when needed and useful based on criteria such as field observations, weather data (e.g. appropriate temperature, low wind, etc.),
- Avoid the use of highly hazardous pesticides, particularly by uncertified, untrained, or inadequately equipped users. This includes:
  - Ensuring that all pesticides used are manufactured (by an entity currently licensed by relevant regulatory agencies), formulated, packaged in safe containers, labeled (for safe and proper use), handled, stored, disposed of, and applied according to relevant international standards and codes of conduct, and in accordance with the FAO's Revised Guidelines for Good Labeling Practice for Pesticides, and Food and Agriculture Organization's (FAO's) International Code of Conduct on the Distribution and Use of Pesticides
  - Assessing the nature and degree of the risks in the procurement of any pesticide, taking into account the proposed use and the intended users. Pesticides or pesticide products or formulations will not be used unless such use is in compliance with the WBG EHS Guidelines.
  - Avoiding use of any pesticide products that contain active ingredients that are restricted under applicable international conventions or their protocols or that are listed in, or meeting, the criteria of their annexes, unless for an acceptable purpose as defined by such conventions, their protocols or annexes, or if an exemption has been obtained under such conventions, their protocol or annexes, consistent with project commitments under these and other applicable international agreements.
  - Avoiding use of any formulated pesticide products that do not meet the criteria of carcinogenicity, mutagenicity, or reproductive toxicity as set forth by relevant international agencies.
  - Avoiding use of any other pesticide products that poses other potentially serious risk to human health or the environment and that are identified in internationally recognized classification and labelling systems, pesticide formulations of products if: (a) the country lacks restrictions on their distribution, management and use; or (b) they are likely to be used by, or be accessible to, lay personnel, farmers, or others without training, equipment, and facilities to handle, store, and apply these products properly.
  - Avoiding purchase, store, use, manufacture, or trade in products that fall in WHO Recommended Classification of Pesticides by Hazard Class Ia (extremely hazardous); or Ib (highly hazardous).

- Avoiding purchase, store, use, manufacture or trade in Class II (moderately hazardous) pesticides, unless the project has appropriate controls on manufacture, procurement, or distribution and/or use of these chemicals. These chemicals should not be accessible to personnel without proper training, equipment, and facilities to handle, store, apply, and dispose of these products properly.
- Selection of application technologies and practices designed to reduce unintentional drift or runoff only as indicated in an IPM program, and under controlled conditions;
- Maintaining and calibrating pesticide application equipment in accordance with manufacturer's recommendations and using application equipment that is registered in the country of use;

**Pesticide handling and storage.** Contamination of soils, groundwater, or surface water resources, due to accidental spills during transfer, mixing, and storage of pesticides should be prevented by following the hazardous materials storage and handling recommendations. These are:

- Storing pesticides in their original packaging, in a dedicated, dry, cool, frost-free, and well aerated location that can be locked and properly identified with signs, with access limited to authorized people. The storeroom should also be designed with spill containment measures and sited in consideration of potential for contamination of soil and water resources
- Undertaking mixing and transfer of pesticides by trained personnel, using containers designed and dedicated for this purpose.
- Avoiding use of containers for any other purpose and handling contaminated containers as hazardous waste and disposing in specially designated for hazardous wastes sites. Ideally, disposal of containers contaminated with pesticides should be done in a manner consistent with FAO guidelines and with manufacturer's directions.
- Avoid purchasing and storing more pesticide than needed and rotate stock using a "first-in, first-out" principle so that pesticides do not become obsolete
- Ensuring that protective clothing worn during pesticide application is either cleaned or disposed of in an environmentally responsible manner
- Maintaining records of pesticide use and effectiveness.

In this context, pesticides will be handled, stored, applied, and disposed of in accordance with the Food and Agriculture Organization's International Code of Conduct on the Distribution and Use of Pesticides.