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Ministry of Agriculture and Forestry

General Directorate of Forestry

Turkey Resilient Landscape Integration Project(TULIP)
(P172562)



Strategic Environmental and Social Assessment Report for Bolaman Basin

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ACRONYMS and ABBREVIATIONS

AFAD	Disaster and Emergency Management Authority
CLQ	Community Level Questionnaire
CORINE	Coordination of Information on the Environment - EEA
ÇKS	Farmer Registration System
DKMP	General Directorate of Nature Conservation and National Parks
DOKAP	Eastern Black Sea Project Regional Development Administration
DSI	General Directorate of State Hydraulic Works
E&S	Environmental and Social
EBS	Eastern Black Sea
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESSs	Environmental and Social Standards
ESRS	Environmental and Social Review Summary
EU	European Union
EUNIS	European Nature Information System
FAO	Food and Agriculture Organisation of the United Nations
FMD	Forest Management Directorate
FMU	Forest Management Units
GIS	Geographic Information System
GoT	Government of Turkey
HHQ	Household Questionnaire
HPP	Hydropower Plant
HQ	Headquarters
IAIA	International Association of Impact Assessment
INC	International Nut Council
İŞKUR	Turkish Employment Agency
IUCN	International Union for Conservation of Nature
KGM	General Directorate of Highways
KOSGEB	Small and Medium Enterprises Development Organization
LPIS	Land Parcel Identification System
MDF	Medium-Density Fibreboard
MoAF	Ministry of Agriculture and Forestry
MTA	General Directorate of Mineral Research and Examination
NBM	National Basin Management
NGO	Non-Governmental Organisations
NIBIS	Nitrate Information System
OGM	General Directorate of Forestry
OHS	Occupational Health and Safety

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OMO	Chamber of Forest Engineers of Turkey
OSKİ	Ordu Water and Sewerage Administration
OTS	Ordu Chamber of Commerce and Industry
PDEU	Provincial Directorate of Environment and Urbanizations
RFD	Regional Forest Directorate
SES	Socio-Economic Status
SESA	Strategic Environmental and Social Assessment
SEA	Strategic Environmental Assessment
SSA	Strategic Social Assessment
SEF	Stakeholder Engagement Framework
SEP	Stakeholder Engagement Plan
PID	Project Information Document
RPF	Resettlement Policy Framework
LMP	Labor Management Procedure
TTLs	Task Team Leaders
AMP	Agriculture Master Plan
TOBB	Union of Chambers and Commodity Exchanges of Turkey
TRGM	General Directorate of Agricultural Reform
TULIP	Turkey Resilient Landscape Integration Project
TurkStat	Turkish Statistical Institute
UNESCO	United Nations Educational Scientific and Cultural Organization
UTF	Unilateral Trust Fund
VEC	Valued Ecosystem Component
WB	World Bank

EXECUTIVE SUMMARY

PROJECT SCOPE

Turkey Resilient Landscape Integration Project (TULIP) includes Bolaman and Çekerek Basins. This Report presents the results of strategic environmental and social assessment for only the Bolaman Basin.

TULIP is composed of three main components to be able to implement integrated green and grey infrastructure solutions to mitigate the risks of landslides, floods, and drought, and enhance the resilience of the local population and natural resources. The three components are:

Component 1: Investments in resilient landscape integration in targeted areas. This component will finance an integrated set of investments in the forestry, agriculture, water, and transport sectors under a landscape approach aimed at building the resilience of natural resources and rural livelihoods in the Bolaman and Cekerek Basins. These investments aim to address the multifaceted constraints in these basins that result in higher rural poverty and outward migration, such as resource degradation, water insecurity, and vulnerabilities to climate and disaster risks. The investments under this component will include a variety of green and gray infrastructure measures, including sustainable land management and livelihoods diversification by the General Directorate of Forestry (OGM) and the General Directorate of Agricultural Reform (TRGM); and resilient infrastructure systems for drinking water storage, irrigation water supply, flooding and sediment control, and road rehabilitation for improved local mobility and market access by the State Hydraulic Works (DSI) and the General Directorate of Highways (KGM).

Sub-Component 1.1. Green infrastructure and sustainable livelihoods. The objective of this sub-component is to restore and maintain the health, function, and productivity of critical ecosystems and promote sustainable land uses within the target basins to improve the sustainability of the natural resource base, enhance the livelihood security of local communities, and build resilience against climate-induced hazards. This sub-component will include two parts, implemented by OGM and TGRM respectively.

(a) Forest landscapes and livelihoods upstream. This sub-component will be implemented by OGM. It aims to enhance the long-term livelihood security for upland forest communities in the targeted basins through nature-based solutions (NBS) by supporting the rehabilitation, protection, and sustainable management of ecosystems upstream to optimize their capacity to provide ecosystem services in sediment retention, soil protection, and water regulation which are critical to reducing the risk, likelihood, and magnitude of downstream flooding, soil erosion, landslides, and drought, as well as for supporting the livelihoods of communities in these basins.

(b) Sustainable and climate-smart agriculture and value chains. This sub-component will be implemented by TRGM. It aims to improve livelihood opportunities for rural communities through the promotion of sustainable and climate-smart agricultural practices and enhancement of selected value chains in targeted basins.

Sub-component 1.2. Resilient gray infrastructure. The objective of this subcomponent is to help local communities in targeted basins adapt to the impacts of climate change, including floods, sedimentation, landslides, and drought, through improved access to resilient infrastructure systems for protection against climate-related disasters, water storage, irrigation water supply, and year-round mobility. This subcomponent will include two parts, implemented by DSI and KGM respectively.

(a) Resilient infrastructure for water security. This sub-component will be implemented by DSI. It aims to provide local communities with resilient infrastructure systems for supplying drinking and irrigation water sources, protecting against climate-induced flooding, and reduced sedimentation.

(b) Resilient mobility. This sub-component will be implemented by KGM. It aims at enhancing the resilience of the rural road segments in target basins against climate and disaster risks and to improve local communities' year-round mobility and access to markets for employment and commercial opportunities.

Component 2: Institutional framework, project management, and sustainability. The objective of this component is to strengthen the capacities and coordination among TULIP Implementing Agencies to ensure not only effective and efficient project implementation, but also to support the institutional structures and processes that need to be established in a sustainable way to support integrated landscape planning and management in both the Project Area and elsewhere. Implementation of this component will be under the overall responsibility of OGM and will include the following two sub-components:

Sub-component 2.1: Implementation framework for integrated landscape management. The aim of this sub-component is to support the development of a national strategy for landscape resilience and sustainable recovery for vulnerable rural areas, and the necessary institutional framework and capacity building to support the implementation of such strategy.

Sub-component 2.2: Project management and sustainability. Activities under this sub-component will include: (i) project management support, day-to-day project activities and capacity building to strengthen the technical, fiduciary, environment, and social capacities of Implementing Agencies and their respective Project Implementation Units; (ii) support for environmental and social risk management, including preparation of site-specific Environmental and Social instruments, grievance redress, citizen engagement, and communications; and (iii) monitoring and evaluation of project activities.

Component 3 Contingent emergency response. This component would support carrying out emergency response and recovery efforts under an agreed action plan of activities designed as a mechanism to implement the government's response to an emergency. This provisional component would allow rapid reallocation of the IBRD financing under streamlined procurement and disbursement procedures, to cover emergency response costs (such as contracting emergency works, procurement of goods and services) following an adverse natural event. The contingent emergency component would be triggered by an official government declaration of an emergency in accordance with the country's laws and policies.

Strategic Environmental and Social Assessment (SESA) OBJECTIVES

The SESA provides an analysis of TULIP for Bolaman Basin in relation to:

- key environmental and social (E&S) issues/sensitiveness,
- assessment of relevance of subprojects to the E&S priorities,
- E&S impacts and risks of subprojects,
- E&S challenges and opportunities for better implementation,
- mitigation measures against possible adverse impacts and risks,
- sustainable and climate-resilient alternatives,
- approaches to enhance gender awareness and prioritization of vulnerable groups, and
- institutional set-up for overall management of impacts and risks.

METHODOLOGY

The SESA methodology is comprised of a series of steps as described below:

- **Scoping of E&S Issues** that sets the overall frame for the entire SESA work; hence understanding the current state in the project area by means of desk-top reviews and field visits.
- **Identification and filling of gaps** for data requirements, which have been largely eliminated with the use of Community Level Questionnaires (CLQs) and Household Questionnaires (HHQs); in-depth interviews about gender issues; and finally data collected from government institutions and NGOs.
- **Stakeholder engagement** throughout the SESA process for ensuring a participatory assessment.
- **Prioritization of key issues** performed through a participatory approach making use of CLQs and HHQs, and establishing the project website for receiving opinions and comments from a broad range of stakeholders; mapping and Geographic Information System (GIS) applications for designating ecological hotspots and high risk zones in terms of floods and landslides, that reflect on spatial planning of subprojects.
- **Establishment of the baseline** by obtaining of information requested from government organizations and the results of desk top reviews, site observations, interviews and community surveys.
- **Strategic E&S Assessment** that made use of categorizing the subprojects under 9 rationale topics based on inter-linkages within and among them for an integrated understanding.
- **Mitigation measures** that concluded the strategic assessment with a set of recommendations to mitigate negative impacts that may arise individually or cumulatively during implementation/construction or after implementation/operation phases.
- **Cumulative Impact Assessment** that provides a complementary assessment to the strategic assessment, based on the Valued Ecosystem Components approach.

INSTITUTIONAL FRAME

The responsibility for overall project management and coordination will lie with the General Directorate of Forestry (OGM) under the Ministry of Agriculture and Forestry (MoAF). Other agencies that will be involved in project implementation include the General Directorate of Agricultural Reform (TRGM) and the State Hydraulic Works (DSI) under the MoAF, and the General Directorate of Highways (KGM) under the Ministry of Transport and Infrastructure.

A Project Steering Committee (PSC) will be established to ensure effective coordination among Implementing Agencies (OGM, TRGM, DSI, KGM). The PSC will include senior leadership from the Implementing Agencies (IAs) as well as representatives of the Strategy and Budget Office of the Presidency (SBO), the Ministry of Treasury and Finance (MoTF), and other agencies involved in natural resources management (NRM).

A Project Coordination Unit (PCU) will be established and housed within OGM at the central level, reporting directly to the Deputy General Director. The PCU will be responsible for overall project coordination and management, including coordinating the development of project-related annual work plans and budgets with the other IAs, project supervision, monitoring and evaluation, and communication with and reporting to the World Bank (WB) on fiduciary, environmental and social aspects, and overall project implementation progress.

Central-level PIUs with an assigned Project Focal Point will also be established in each of the other IAs (TRGM, DSI, KGM) which will be in charge of Ankara-based project activities, including preparation of agency-specific project annual work plans and budgets and coordination with their respective regional and/or provincial directorates. Activities at the basin level will be implemented by the Regional and/or Provincial (in the case of TRGM) Directorates (RD/PD) of each IA and their respective Field Offices (FO).

To increase the capacity for implementation in the field and ensure effective coordination among the IAs, two Regional Support Units (RSUs) will be established under two Regional Directorates of OGM at the basin level.

Regional Project Steering Committees will also be established at the basin-level to ensure coordination with local authorities, producer organizations, civil society organizations, and other stakeholders.

A number of Departments from each IA will be involved in the design and implementation of project activities.

Other agencies that will be participating in project coordination and oversight include the DG of Water Management under the MoAF, the Ministry of Environment and Urbanization (MoEU), and the Disaster and Emergency Management Presidency (AFAD) of the Ministry of Interior, and others as needed and decided by the PSC.

The budget for the implementation of SESA recommendations is estimated as 335,000 US\$.

BASELINE CONDITIONS

Bolaman River Basin (BRB) is one of the sub-basins of the Eastern Black Sea Basin. It has a catchment area of 1,339.5 km². It is at about 73 km to Samsun at the west and 55 km to Ordu at the east, and about 102 km to Reşadiye at the south. Climate characteristics of the BRB is a major factor explaining the historical and active natural disasters and on-going risks in the region, such as landslides and floods. Geomorphology of the basin explains the severe landslide incidences and erosion. The basin has a rough terrain with steep slopes, mainly influenced by surface flows. Literature cites deforestation for extending hazelnut plantations in the past, leading to increase of erosion prone areas.

Main environmental issues in Ordu province are soil pollution from uncontrolled dumping of domestic and hazardous wastes and manure deposition from livestock grazing; and surface water pollution from organic loads from grazing lands and hazelnut plantations by means of surface flow, as well as direct discharges of sewage into tributaries of Bolaman River.

The limited number of legally protected nature conservation areas and elements with high biodiversity value, within BRB include Gaga Lake Natural SITE, Ulugöl Lake Nature Park and Natural Assets of 13 monument trees found in Perşembe, Fatsa and Çatalpınar districts within the project area.

According to the Ordu Province Terrestrial and Inland Water Ecosystems Biodiversity Inventory and Monitoring Work Final Report, there are a total of 34 Special Biodiversity Areas determined for the presence of priority biodiversity features: i) three habitat areas with high target species diversity, ii) seven priority plant community areas and iii) 24 priority wildlife areas. According to the small-scale maps provided in the Appendix 5 of the report, six of the 34 Special Biodiversity Areas overlap with the BRB project area. These are namely Perşembe Plateau-1, Perşembe Plateau-2, Ulugöl Nature Park-1, Ulugöl Nature Park-2, From Fatsa to Aybastı-800m, and Black Sea Coastal areas.

The Basin has been witnessing an outgoing migration from its rural areas. Between 1990 and 2007 the rural population in Ordu shrank by losing over 33% of its population. The small and fragmented land ownership in terrains with adverse conditions reduces agricultural productivity and is insufficient to support the livelihood of the residents.

The main economic activity is hazelnut cultivation which is carried out predominantly in August. Within this scarce source of livelihood support activities, the people in the basin resort to some wider alternatives. From mid-May to September animal husbandry becomes important in the high plateaus. Beekeeping is an important economic activity and beekeepers transport their beehives to other parts of Turkey for substantial periods of the season for the flowers to enrich the flavor of honey.

The population of the BRB, based on the estimation of the community survey results is 241,680.

IDENTIFICATION OF KEY E&S ISSUES

A series of thematic studies have been performed to verify the issues raised at local level by communities and representative of provincial and district-level authorities.

Identification of key issues is based on analytical work using GIS analysis, case studies and participatory rural appraisal methods. GIS analyses are performed by mapping and overlaying different sets of data to identify critical areas of concentration of environmental and social issues. Case studies are used in order to understand inter-sectoral linkages. Results of stakeholder surveys are used as a participatory rural appraisal tool at the community level.

A participatory approach has been adopted in prioritizing the social questions identified in the region. The prioritization strategy is presented in the methodology section. Online surveys were organized on the project website to determine a priority order among the social problems identified during the SESA fieldwork. These surveys, which will allow feedback for two weeks, still open for contribution.

Field studies within the scope of SESA have shown that the most important problems of the BRB are infrastructure and livelihood problems, both of which inevitably work both as a cause and a consequence of population movements.

It has been learned that these problems are experienced especially during summer months due to weather conditions and population pressure. Especially drinking water and road problems have been attributed to seasonally increasing population.

These population movements are closely related to hazelnut production. Hazelnut production is the main economic activity of the region. Hazelnut gardens are fragmented and small. For this reason, hazelnuts alone do not allow households to earn a living. This situation causes the need for additional livelihoods. However, another important problem of the region is the low diversity of income sources. Lack of income causes local people to either work seasonally in another city or move to another city and return to their hometown for seasonal hazelnut harvest. Since hazelnut production can be carried out with one month of activity, it allows such a population movement. However, this situation causes hazelnut orchards to be neglected, further reducing productivity.

GENDER ANALYSES

The overall objective of the gender assessment study is to mainstream gender issues into the SESA process and ensure the implementation of gender-responsive scoping, identification, assessment, and evaluation stages of the TULIP.

Strategic Environmental and Social Assessment (SESA) After an in-depth analysis conducted for the subprojects proposed by the pertinent organizations for TULIP Bolaman landscape, subprojects have been categorized under certain rationales with respect to inter-linkages within and among them for an integrated understanding. This understanding also helps to analyse the relations between project groups of different rationales and how the whole approaches of different institutions operating in different service areas but in the same landscape are integrated. Rationale categorizations is also helping in assessing the subprojects' relevance as well as the area of intervention with the environmental and social prioritized issues of the Bolaman.

- **Rationale 1:** Improve resilience against landslides, floods and water erosion
- **Rationale 2:** Increasing livestock assets and related livelihood activity
- **Rationale 3:** Enhancing sustainable forests and forest-based livelihoods
- **Rationale 4:** Creating income generation by promoting tourism
- **Rationale 5:** Creating income generation by encouraging beekeeping
- **Rationale 6:** Increasing hazelnut yields in the basin
- **Rationale 7:** Promotion and expansion of non-hazelnut crop production
- **Rationale 8:** Improving drinking water supply
- **Rationale 9:** Improving roads and transportation infrastructure

The rationales set above are assessed in this chapter in terms of:

- Coordination and integration,

- Relevance to the environmental sensitivities and E&S priorities in the basin,
- Compatibility with social and environmental vulnerabilities,
- Climate resilience effect (if any), and
- Gender sensitivity context.

MITIGATION MEASURES

Mitigation measures for each rationale and corresponding subprojects are geared to more sustainable, effective, environmentally sound and socially sensitive planning and implementation of the subprojects.

Majority of the mitigations essentially depend on cooperation among the IAs and also with other government stakeholders in the project area. In this respect, the role of the Steering Committee (SC) would be very important to assure this coordination and cooperation in a timely and fluent manner.

Another significant point with the mitigation measures is the Occupational Health and Safety (OHS) context of employing forest villagers in the small construction works. Gaps in the legal frame related with this will largely be resolved with application of ESS 2 requirements, but the legal frame still needs to be considered to account for the labour conditions and OHS standards of forest villagers as the most vulnerable group in this aspect.

CUMULATIVE IMPACT ASSESSMENT

Considering the environmental and social impacts of the Project, the Valued Ecosystem Components (VECs) are listed against the Project to check whether they are prone to cumulative impacts. Impact issues evaluated with the terms “negligible” or “minor” as the outcome of environmental and social impact assessment are scoped out from the cumulative impact assessment. Priority is given to those VECs that are likely to be at the greatest risk from the Project’s contribution to cumulative impacts.

VECs scoped in to the cumulative assessment are downstream water rights, aquatic biodiversity, and community health and safety. A mitigation approach is defined for each VEC.

1 INTRODUCTION

According to Turkey's Eleventh Development Plan for the 2019-2023 period; Turkey is among the countries that will be affected adversely from the climate change and is already facing an increased incidence of sudden rains, flood and drought. Turkey is already paying a significant attention to a sustainable and inclusive growth pathway. In this context, regarding the protection and effective use of water resources, River Basin Management Plans, Sectoral Water Allocation Plans, Basin Master Plans, Drought Management Action Plans, Flood Management Action Plans and Drinking Water Basins Protection Action Plans will be completed in the 25 basins of the country. Additionally, the Plan also gives attention to the Protection of Environment; aiming to protect the environment and natural resources, improve quality, ensure effective, integrated and sustainable management, implement environment- and climate-friendly practices in all areas specifically water basins.

The General Directorate of Forestry (OGM), under the Ministry of Agriculture and Forestry (MoAF), has initiated a project preparation for the Basin titled "Turkey Resilient Landscape Integration Project (TULIP)" to address the challenges facing the Bolaman Basin and the Çekerek Basin while enhancing the livelihood security and resilience of local communities against the risks and impacts of climate-induced landslides, flooding, and drought. The Project will have an integrated landscape management approach at the sub-basin scale to achieve these objectives in line with the plans detailed above.

OGM together with the main national and local implementing institutions explored several finance options for the Turkey Resilient Landscape Integration Project. Finally, the OGM decided to work with the World Bank (WB) in cooperation with the Ministry of Treasury and Finance (MoTF). Following the initial discussions with the WB resulted in agreement for both Bolaman and Çekerek river basin areas.

Considering Food and Agriculture Organisation of the United Nations (FAO) expertise in the integrated natural resources management and capacity constraints of national institutions, OGM officially requested from FAO to support the preparation of preparatory documents (such as Feasibility Report, Strategic Environmental and Social Assessment (SESA) Report and Environmental and Social Framework (ESF) instruments) for the approval of TULIP by the national bodies and the WB as well as its implementation.

The Government of Turkey (GoT) has agreed that FAO Turkey takes the lead in preparation of documents through a Unilateral Trust Fund (UTF) Agreement and provides required technical assistance in close collaboration and coordination with the MoAF and other concerned Government agencies as well as related Non-Governmental Organizations (NGOs) at national, regional and district levels. GoT is committed to providing all necessary inputs, staff and institutional arrangements to ensure the timely and effective start-up, implementation and follow-up of the requested assistance.

Among national Government agencies, OGM is the coordinator whereas, the General Directorate of Agricultural Reform (TRGM) and the General Directorate of State Hydraulic Works (DSI) of the MoAF as well as the General Directorate of Highways (KGM) of the Ministry of Transport and Infrastructure (MoTI) are the other implementing institutions which also to be

funded from the Project. Further, the Ministry of Treasury and Finance (MoTF) and the President's Strategy and Budget Office (SBO) will act as the financial supervisors of the Project.

The Project will be composed of three main components to be able to implement integrated green and grey infrastructure solutions to mitigate the risks of landslides, floods, and drought, and enhance the resilience of the local population and natural resources. As the Project will include Bolaman and Çekerek Basins, the components and sub-components are designed accordingly. This Report covers only Bolaman Basin, and a separate SESA Report will be prepared for Çekerek Basin.

2 PROJECT DESCRIPTION

TULIP will be composed of three main components to be able to implement integrated green and grey infrastructure solutions to mitigate the risks of landslides, floods, and drought, and enhance the resilience of the local population and natural resources. As TULIP will include Bolaman and Çekerek Basins, the components and sub-components are designed accordingly.

Component 1: Investments in Resilient Landscape Integration in targeted areas. This component will finance an integrated set of investments in the forestry, agriculture, water, and transport sectors under a landscape approach aimed at building the resilience of natural resources and rural livelihoods in the Bolaman and Cekerek Basins. These investments aim to address the multifaceted constraints in these basins that result in higher rural poverty and outward migration, such as resource degradation, water insecurity, and vulnerabilities to climate and disaster risks. The investments under this component will include a variety of green and gray infrastructure measures, including sustainable land management and livelihoods diversification by the General Directorate of Forestry (OGM) and the General Directorate of Agricultural Reform (TRGM); and resilient infrastructure systems for drinking water storage, irrigation water supply, flooding and sediment control, and road rehabilitation for improved local mobility and market access by the State Hydraulic Works (DSI) and the General Directorate of Highways (KGM). The integration among the different measures will be established through the development of Integrated Landscape Management Plans (ILMP), which will be completed during the first year of project implementation, building on the Strategic Environmental and Social Assessment (SESA) developed for each basin. This component will include four parts under two sub-components, implemented by OGM, TRGM, DSI, and KGM, respectively.

Sub-Component 1.1. Green infrastructure and sustainable livelihoods. The objective of this subcomponent is to restore and maintain the health, function, and productivity of critical ecosystems and promote sustainable land uses within the target basins to improve the sustainability of the natural resource base, enhance the livelihood security of local communities, and build resilience against climate-induced hazards. This sub-component will finance a menu of investments which will be planned in a participatory manner with targeted communities through the development of priority Micro Catchment Plans (MCPs) in each respective basin. Investments will include a variety of green infrastructure (GI) measures, sustainable and climate-smart agricultural practices, and livelihood diversification activities implemented by OGM and TRGM through their Regional and Provincial offices. Forests play a key role in protecting soil cover and regulating water. GI will improve the resilience and strengthen the functions of ecosystems and their services and produce long-term climate adaptation and mitigation co-benefits such as soil, water and sediment retention, buffering extreme flood events, and carbon sequestration. GI will also protect critical habitats to enhance biodiversity and provide economic benefits through nature-based tourism and circular economy related activities such as improved manure management. Increasing forest cover and improving forest health will help prevent soil erosion and landslides and reduce the impacts of floods. Income generation and livelihood diversification for the rural poor will enhance their livelihood security and welfare while reducing the pressure on the forest ecosystems upon

which these communities traditionally depend. This will also contribute to reversing the current trend of outward migration of the local population. This subcomponent will include two parts, implemented by OGM and TGRM respectively.

(a) Forest landscapes and livelihoods upstream. This sub-component will be implemented by OGM. It aims to enhance the long-term livelihood security for upland forest communities in the targeted basins by supporting the rehabilitation, protection, and sustainable management of ecosystems upstream to optimize their capacity to provide ecosystem services in sediment retention, soil protection, and water regulation which are critical to reducing the risk, likelihood, and magnitude of downstream flooding, soil erosion, landslides, and drought, as well as for supporting the livelihoods of communities in these basins. Subproject typologies include:

- (i) *Small-scale erosion, landslide, and flood control works upstream* include technical services and green, gray and hybrid small-scale works to conserve soil, reduce erosion and sedimentation, mitigate against upstream landslides, and decrease runoff, peak flow, and magnitude of flooding downstream. The types of small-scale works will be basin-specific and include measures such as terracing and revegetation of barren lands, restoration of degraded vegetation cover, use of wire mesh fences, steel debris barriers, and check dams to stabilize slopes, limit sediment transport, and reduce the velocity and quantity of runoff downstream from streams, creeks, and gullies upstream. These small-scale measures will help reduce peak flow and flooding downstream and the amount of sediments transported to the main streams due to landslides and scouring in gullies and streams. This subproject typology also includes measures such as retaining walls and gabion retaining walls to protect vulnerable settlements and agricultural areas upstream from landslides.
- (ii) *Forest rehabilitation and sustainable management* activities aiming at restoring and maintaining the health and functionality of basin forests to deliver critical ecosystem services, including soil cover protection, erosion prevention, water retention and regulation, climate adaptation (i.e., buffering against floods and extreme events) and mitigation (i.e., carbon sequestration). Activities under consideration for this subproject typology include afforestation and reforestation, rehabilitation and sustainable management of degraded and/or secondary forests, establishment of small facilities and procurement of machineries and equipment for sapling production and trail maintenance, and adoption of alternatives to fuelwood for cooking and heating (i.e., solar energy heating systems and roofing and insulation materials) to reduce pressure on forest resources.
- (iii) *Forest pasture rehabilitation and sustainable management* activities aiming at improving the health, carrying capacity, and productivity of the pastures in and adjacent to forest areas upstream to support forest communities' livestock farming in a productive and sustainable way. Healthy pastures will also help reduce methane emissions, improve carbon pools, minimize soil erosion, improve water retention upstream, and reduce runoff downstream. These objectives will be accomplished through the restoration of degraded pasture lands, grazing management, and physical investments to support livestock welfare and productivity, including sheds and livestock drinking water systems.
- (iv) *Income generation and livelihood diversification for forest villages* aims at creating new income-generating opportunities to directly enhance the livelihood security for poor forest communities and reduce the pressure on forest ecosystems upon which these communities traditionally depend. Participating beneficiaries will be offered options from a menu of income-generating activities on a cost-sharing basis (small grants), including cultivation of alternative high value products such as truffle, high yield and low investment non-timber forest products such as mushroom and medicinal and herbal plants, as well as

fruit tree planting, beekeeping, and small scale high-yield cattle breeding and farming. This subproject typology will also finance greenhouses with small energy-efficient irrigation system and ventilation to allow for year-round climate-smart horticulture on limited land parcels, and facilities for ecotourism and recreational areas to attract more nature-based tourists to the basins. High quality saplings will be supplied by forestry nurseries. Livestock activities will be supported with increased fodder through pasture management activities and on-farm manure management.

(b) Sustainable and climate-smart agriculture and value chains. This sub-component will be implemented by TRGM. It aims to improve livelihood opportunities for rural communities through promotion of sustainable and climate-smart agricultural practices and enhancement of selected value chains in targeted basins. Diversifying livelihoods and promoting sustainable and climate-smart agricultural production will help protect the natural resources base, improve farm productivity, and strengthen these communities' adaptive capacity and socio-economic resilience. Agricultural value chain investments will help boost the marketability and value of selected local products for local Producer Organizations. This sub-component will include the following menu of investments:

- (i) *Sustainable and climate-smart agricultural practices* aim at reducing soil erosion, conserving water, and enhancing nutrient capture to improve farm productivity and minimize harmful agricultural runoff. Activities will be tailored to the specific conditions of each basin and guided by sustainability and climate-smart criteria. Planned activities will include terracing for hazelnut gardens, promotion of organic farming and Good Agricultural Practices, dissemination of high quality and climate-resilient seeds, among others. The project will not implement such measures on a massive scale; rather, it will aim to have a demonstrative effect to create the conditions for encouraging land users themselves to adopt more productive and protective land management systems across the basins.
- (ii) *Pasture rehabilitation and sustainable management outside forest lands*¹ activities aim at improving the health, carrying capacity, and productivity of pasture lands to support sustainable livestock production for rural communities. Healthy pastures will also help reduce methane emission, improve carbon pools, and minimize soil erosion. Activities under this subproject typology will include restoration of degraded pasture lands, grazing management, and physical investments to support livestock welfare and productivity, including animal sheds with feed storage, caregiver houses, and livestock drinking water systems.
- (iii) *Agricultural diversification for non-forest villages* will help poor rural communities outside forest areas to diversify and improve their livelihoods through a menu of alternative income-generation activities suitable to the natural and market conditions in each basin. These will include a variety of animal husbandry activities including high-yield cattle and poultry breeding and farming; dissemination of high quality seeds for field crop and forage crop production; alternative high-end horticultural production such as kiwi, persimmon, truffles, and drought-resistant herbal plants; and beekeeping and diversification of apicultural products, among others. Livestock productivity will be supported through pasture rehabilitation and management described above, barn improvements, and veterinarian services; and associated emissions is managed through small-scaled on-farm manure management. Female employment will be supported through female-owned micro-enterprises. Livelihood diversification will help beneficiaries adapt to the impacts of climate

¹ In accordance with the Pasture Law No. 4342, OGM carries out rehabilitation activities in the pasture lands inside and adjacent to forests, while TRGM is responsible for pasture lands outside forests.

change, which have severely impacted hazelnut cultivation² and field crops production³, the main agricultural commodities, in BRB and CRB, respectively.

- (iv) *Sustainable agricultural value chains* aim at enhancing the competitiveness and value of selected dominant agricultural products (i.e., hazelnuts and wheat flour) in the targeted basins. Investments in hazelnut drying stations, for example, will improve product quality and reduce post-harvest loss through enhanced drying processes, while other investments in small-scale facilities will aim at supporting production of high value regional specialty products. These facilities will be transferred to relevant agricultural cooperatives upon completion through transferring agreements, which will outline protocols and responsibilities for O&M. These activities will also be designed to provide employment to local women.

Sub-component 1.2. Resilient gray infrastructure. The objective of this sub-component is to help local communities in targeted basins adapt to the impacts of climate change, including floods, sedimentation, landslides, and drought, through improved access to resilient infrastructure systems for protection against climate-related disasters, water storage, irrigation water supply, and year-round mobility. The locations of these investments will be determined through hydraulic modeling, historical flood records, flood risk mapping, and other relevant analysis, including subproject-specific feasibility studies, economic analysis, and environmental assessments. Engineering designs will incorporate suitable climate and disaster resilient measures through specific resilient infrastructure guidelines developed for the planned subproject typologies based on basin-wide vulnerability assessments carried out during project preparation. GI will be designed to complement the gray infrastructure and optimize the functionality, cost-effectiveness, and resilience of the integrated natural and built system. This sub-component will include two parts, implemented by DSI and KGM respectively.

(a) Resilient infrastructure for water security. This subcomponent will be implemented by DSI. It aims to provide local communities with resilient infrastructure systems for supplying drinking and irrigation water sources, protecting against climate-induced flooding, and reducing sedimentation. The menu of investments under this sub-component includes the following subproject typologies:

- (i) *Dams and small-scale multipurpose reservoirs* will store and protect surface water sources and ensure the availability of water during low precipitation months and periods of seasonal droughts to enable the supply of drinking and irrigation water. The reservoirs will contribute to increasing groundwater reserves through increased aquifer recharge and reduced groundwater extraction. Depending on the locations, reservoir capacities, and flood peaks, some of the reservoirs will have multiple functions, such as stream flow control to prevent and minimize flooding incidents in summers and springs.
- (ii) *Irrigation schemes*, including small irrigation ponds and irrigation systems, will supply water to support agricultural activities in target basins with drought problems. The availability of irrigation water will help local communities in these basins adapt to current and future climate change impacts and improve their agricultural productivity. Irrigation technologies employed will be drip and low-pressured sprinkler systems, which will save both water and energy, and hence will be more efficient and cost-effective.

² Via changes in seasonal temperature and precipitation pattern and extreme climatic conditions such as frosts, hails, and heavy precipitation.

³ Via increased and prolonged droughts.

(iii) *Flood and sedimentation control structures* downstream will prevent and mitigate the impacts of floods, which have caused loss of lives and significant damages to local infrastructure, properties, and agricultural assets, and are even more damaging with landslides during periods of heavy precipitation. Flood and sediment control structures will include check dams, levees, retaining walls, embankments, culverts, bridges, concrete channels, grouted riprap, and stream bed rehabilitation. These structures will be built in locations determined through hydraulic modeling, historical flood records, flood risk mapping, and other relevant analysis.

(b) Resilient mobility. This sub-component will be implemented by KGM. It aims at enhancing the resilience of selected rural road segments in target basins against climate and disaster risks and to improving local communities' year-round mobility and access to markets for employment and commercial opportunities. In BRB for example, heavy precipitation, flooding, landslides, and rockslides have deteriorated the rural road network, causing traffic disruption, posing safety issues, and impeding the flow of goods and people. Improving the conditions and functionality of critical road segments in this basin will facilitate local labor mobility and transportation of agricultural goods, allowing products to reach more markets at the right times and reducing spoilage and wastage. Improved road conditions will also contribute to encouraging tourist inflows. This sub-component will include the following investment typology:

(i) *Resilient rural road rehabilitation* will include widening of the lane width to standard levels (by additional 2 meters) to meet safety requirements and resurfacing using hot mix bituminous asphaltic concrete (BSK), a water and weather resistant material, to fill in existing cracks and fix raveled surfaces in the selected road segments. BSK will protect the underlying pavement and prevent surface material from washing away from heavy rainfalls and flooding. Comparing to the current surface conditions, BSK will also increase skid resistance to improve traffic safety and can easily withstand occasional overloads without causing any serious damage. BSK will also decrease vehicle operating costs due to lower surface roughness. The rehabilitation will also incorporate other site-specific measures, such as drainage systems and protective walls to strengthen the existing road's resilience against climate and disaster risks and impacts.

Sub-component 3.1 Investments in Resilient Landscape Integration in Additional Priority Basin to be Selected During Implementation. This sub-component will finance an integrated package of investments to build landscape and socio-economic resilience for an additional basin to be selected during project implementation, following the development of the national strategy on landscape resilience and the identification of priority sites for near-future investments. However, it will be expected that the additional basin will face complex and interlinked challenges, similar to those of BRB and CRB, namely high level of poverty and low level of socio-economic resilience, degradation of natural resources, and vulnerability to climate and disaster risks. Specific investments for this additional basin will be identified based on the technical guidelines for integrated landscape planning tools combining green and gray infrastructure solutions developed under Component 2, such as SESAs, ILMPs and MCPs. Generic criteria specified in the POM for the selection of subprojects will ensure alignment with the PDO as well as technical feasibility, financial and economic suitability, and environmental and social sustainability. In the event that new subproject typologies are required to address unforeseen challenges, those typologies will be appraised for technical, financial, economic,

environmental, and social sustainability. The selection process will be conducted by the PCU under OGM, in close consultation and collaboration with other agencies and the World Bank.

Component 2: Institutional Framework, Project Management, and Sustainability. The objective of this component is to strengthen the capacity and coordination among TULIP Implementing Agencies to ensure not only effective and efficient project implementation, but also to support the institutional structures and processes that need to be established in a sustainable way to support integrated landscape planning and management in both the Project Area and elsewhere. Scaling-up of this strategy to other vulnerable rural areas in need will enable adaptation and resilience building as well as job creation and sustainable recovery from the pandemic on a large scale. Implementation of this component will be under the overall responsibility of OGM and will include the following two sub-components:

Sub-component 2.1: Implementation Framework for Integrated Landscape Management. The aim of this sub-component is to support the development of a national strategy for landscape resilience and sustainable recovery for vulnerable rural areas, and the necessary institutional framework and capacity building to support the implementation of such strategy. Activities under this component will include: (i) support for the establishment of the implementation framework for Integrated Landscape Management, including the development and adoption of a national strategy for landscape resilience and sustainable recovery in vulnerable rural areas and the associated regulatory mechanism for institutional coordination and collaboration; (ii) technical assistance for the development of guidelines to support the implementation of the national strategy for landscape resilience, including for the design of integrated planning tools at the landscape level combining green and gray infrastructure solutions (ILMPs, MCPs); (iii) assistance for the development of ILMPs and MCPs for the BRB, CRB; and (iv) capacity building and awareness raising for relevant institutions, local authorities, and rural communities for the application of sustainable landscape management practices

Sub-component 2.2: Project Management and Sustainability. Activities under this sub-component will include: (i) project management support, day-to-day project activities and capacity building to strengthen the technical, fiduciary, environment, and social capacities of Implementing Agencies and their respective Project Implementation Units (PIUs); (ii) support for environmental and social risk management, including preparation of site-specific Environmental and Social instruments, grievance redress, citizen engagement, and communications; and (iii) monitoring and evaluation of project activities, including impact assessments, beneficiary satisfaction surveys, and development of an integrated data platform for monitoring of key landscape variables.

Component 3 Contingent Emergency Response. This component would support carrying out emergency response and recovery efforts under an agreed action plan of activities designed as a mechanism to implement the government's response to an emergency. This provisional component would allow rapid reallocation of the IBRD financing under streamlined procurement and disbursement procedures, to cover emergency response costs (such as contracting emergency works, procurement of goods and services) following an adverse

natural event. The contingent emergency component would be triggered by an official government declaration of an emergency in accordance with the country's laws and policies.

Table 2-1 provides a summary of subprojects with corresponding project component and sub-component.

Table 2-1. Project Components and Subproject Typologies

Project Components	Implementing Agency	Basin
Component 1: Investments in Resilient Landscape Integration in targeted areas		
<i>Sub-Component 1.1. Green infrastructure and sustainable livelihoods</i>		
<i>1.1.a. Forest landscapes and livelihoods upstream</i>		
(i) Small-scale erosion, landslide, and flood control works upstream	OGM	Bolaman
(ii) Forest rehabilitation and sustainable management		Cekerek
(iii) Forest pasture rehabilitation and sustainable management		
(iv) Income generation and livelihood diversification for forest villages		
<i>1.1.b. Sustainable and climate-smart agriculture and value chains</i>		
(i) Sustainable and climate-smart agricultural practices	TRGM	Bolaman
(ii) Pasture rehabilitation and sustainable management outside forest lands		Cekerek
(iii) Agricultural diversification for non-forest villages		
(iv) Sustainable agricultural value chains		
<i>Sub-Component 1.2. Resilient gray infrastructure</i>		
<i>1.2.a. Resilient infrastructure for water security</i>		
(i) Dams and small-scale multipurpose reservoirs	DSI	Bolaman
(iii) Irrigation schemes		Cekerek
(iv) Flood and sedimentation control structures		
<i>1.2.b. Resilient mobility</i>		
(i) Resilient rural road rehabilitation	KGM	Bolaman
<i>Sub-component 3.1 Investments in Resilient Landscape Integration in Additional Priority Basin to be Selected During Implementation.</i>		
Component 2: Institutional Framework, Project Management, and Sustainability		
<i>Sub-Component 2.1: Implementation Framework for Integrated Landscape Management</i>		
(i) Implementation framework	OGM	
(ii) Technical Assistance		
(iii) Assistance for development of ILMPs and MCPs		
(iii) Capacity building and awareness raising		
<i>Sub-Component 2.2: Project management and sustainability</i>		
(i) Project Management	OGM	
(ii) E&S, GM, Communications		
(iii) M&E		
Component 3: Contingent Emergency Response Component		

Please see Annex-1 for brief description of Bolaman subprojects including their categorization in terms of Turkish EIA Regulation.

3 SESA OBJECTIVES and METHODOLOGY

3.1 Objectives of SESA

This SESA has been conducted for Bolaman River Basin (the Project Area) within the scope of TULIP and will help to answer the following questions:

- What are the key environmental and social issues/sensitiveness in the Project Area?
- Is TULIP relevant to the environmental and social priorities in Project Area?
- What are the environmental and social impacts/risks/trade-offs of the planned TULIP investments?
- What are the environmental and social challenges and opportunities to better the implementation of TULIP?
- Is it likely that any subproject under TULIP will adversely affect the environment or local communities? How can these impacts be mitigated and the subprojects can be monitored?
- Are there more sustainable and climate-resilient alternatives?
- How can responsible parties prioritize gender sensitivity and ensure that the activities benefit vulnerable groups in implementing TULIP?
- How will environmental and social impacts be managed? What are the responsibilities of the institutions to mitigate or manage these impacts?

3.2 Methodology

The SESA methodology is comprised of a series of steps as described below:

3.2.1 Scoping of E&S Issues

The scoping stage was used for setting the overall frame for the entire SESA work. Thereby, the initial step was to understand the current state in the project area by means of desk-top reviews and field visits.

The scoping process supported decision-making on setting the baseline parameters to be focused for impact assessment as well as setting the reference line for future monitoring of project results. Hence the scoping provided a structured method for identifying initial issues related to the Project.

The scoping process has been performed in conjunction with the planning of stakeholder engagement, thus providing concise links between key stakeholders and initial issues.

The field study comprised of on-site observations and consultations (meetings and non-structured interviews) between 13-16 July 2020 with the guidance of OMO.

3.2.2 Gap Analysis and Filling the Data Gaps

During the scoping phase of SESA, the initial data obtained through preliminary site visits, stakeholder engagement meeting and literature review were not sufficient to conduct a reliable strategic environmental and social assessment. Therefore, in the scoping phase, the following data gaps required for the assessment were determined and a gap filling strategy was designed.

Table 3-1. Gap Analysis and Data Collection Tools

Issues/Sensitivities	Data Gaps	Data Collection Tools	Geographic Coverage
ENVIRONMENTAL			
Climate	No gaps.	N/A	Ordu Province Eastern Black Sea
Land Cover	Land-use maps	Maps to be collected from OGM	Project Area
Landslides	Updated landslide risk map Topographical map Geology map Location of active quarries and stone pits Map of roads	Risk map to be obtained from OGM Base maps to be obtained from OGM, MTA Information to be obtained from PDEU or Governorate. Map to be obtained from KGM.	Project Area
Floods	Updated flood risk map Map of roads	Risk map to be obtained from OGM Map to be obtained from KGM.	Project Area
Drinking Water	Records of water quality surveys Health records Coordinates of groundwater wells for drinking water supply; water treatment plants Wastewater discharge points	Data to be obtained from PDEU and DSI Water-borne disease records from PDH Information to be obtained from OSKI and DSI Information to be obtained from OSKI and PDEU	Project Area
Erosion	Updated erosion risk map	Risk map to be obtained from OGM	Project Area
Biodiversity	GIS Layers of HABITAT Maps	Digital GIS Maps to be acquired from OGM and DKMP Focused field studies on potential critical habitats and species Community Level Questionnaire	Project Area
Insufficient Water Supply	Basin hydrology map	Hydrology map to be obtained from DSI	Project Area

Issues/Sensitivities	Data Gaps	Data Collection Tools	Geographic Coverage
	Location of groundwater wells		
Environmental Infrastructure	Coverage of sewerage system; water and wastewater treatment plants, landfill.	Maps and information to be obtained from OSKI and PDEU. Community Level Questionnaire	Project Area
SOCIAL			
Outgoing migration	Migration trends of the Basin. Causes of migration. The impact of metropolitan Municipality Law on the changes of the statuses of the village settlements.	Community Level Questionnaire	Homogeneously distributed sample representing over 95% of the settlements in the Project Area
Unbalanced population pyramid	Demographic features of the Basin.	Community Level Questionnaire	Homogeneously distributed sample of settlements in the Project Area
Source of agricultural livelihood	The characteristics of agricultural activities in the Basin. Sources of agriculture related problems of the settlements with different geographical features.	Community Level Questionnaire, Household Questionnaire, Official records of TRGM	Homogeneously distributed sample of settlements in the Project Area
Structure of employment	Employment structure specific to the Basin	Community Level Questionnaire, Household Questionnaire	Homogeneously distributed sample of settlements in the Project Area
Limited economic turnout	Distribution of income according to the settlements in the basin.	Community Level Questionnaire	Homogeneously distributed sample of settlements in the Project Area
Low Socio-Economic Status (SES)	Self-evaluation of the SES according to muhtars and households. Structural features of the houses and economic assets.	Community Level Questionnaire, Household Questionnaire	Homogeneously distributed sample of settlements in Project Area
Fragmentized land tenure	Livelihood strategies of the households. The characteristic of subsidiary livelihoods.	Community Level Questionnaire Household Questionnaire, Official records of TRGM	Homogeneously distributed sample of settlements in the Project Area
Use of common properties (forestlands and pasturelands)	Settlement based use of natural resources and relations with the forestry areas.	Community Level Questionnaire	Homogeneously distributed sample of settlements in the Project Area
Lack of infrastructure	Places where infrastructure problems persist.	Community Level Questionnaire, Official records of KGM and DSI	Homogeneously distributed sample of settlements in the Project Area

Issues/Sensitivities	Data Gaps	Data Collection Tools	Geographic Coverage
Community health and safety	Information about prevention and protection in the impacted settlements	Community Level Questionnaire, Records of AFAD	Homogeneously distributed sample of settlements in the Project Area
Lack of social facilities and services	Current situation of social services in the Basin. Socio-cultural facilities of the settlements.	Community Level Questionnaire	Homogeneously distributed sample of settlements in the Project Area
Low education level	Number of education facilities and level of education in the Basin	Community Level Questionnaire, Household Questionnaire	Homogeneously distributed sample of settlements in the Project Area
Social exclusion	The sources of tensions between different religious sects and cultures in the project area Sources of conflict in the local communities.	Community Level Questionnaire	Homogeneously distributed sample of settlements in the Project Area
Cultural heritage	Cultural artifacts that might be impacted by the Project activities (including intangibles)	Official correspondence Community Level Questionnaires	Homogeneously distributed sample of settlements in the Project Area
Vulnerable Groups			
Disadvantaged rural women (People with disabilities, Elderly, Refugee, Unemployed, Migrant Worker and Female Household Heads)	Lack of household level information	Community Level Questionnaire Household Questionnaire	Homogeneously distributed sample of settlements in the Project Area
Women's access to basic services (health and education)	Up-to-date village level information on relevant education and health facilities, conditions of health services, diseases)	Community Level Questionnaire Household Questionnaire	Homogeneously distributed sample of settlements in the Project Area
Women's skill development including technology usage	Site – specific data regarding skill level and education needs at household level	Community Level Questionnaire Household Questionnaire In-depth Interviews	Homogeneously distributed sample of settlements in the Project Area
Women labour and time poverty	Site – specific data regarding time poverty at household level	Household Questionnaire In – depth Interviews	Homogeneously distributed sample of settlements in the Project Area
Violence Against Women	Qualitative data at household and village level	Community Level Questionnaire In - depth Interviews Key Informant Meeting (Police/Gendarmerie and Ordu Bar)	Homogeneously distributed sample of settlements in the Project Area
Women's access to infrastructure (Water, Sanitation and Road)	Qualitative data at basin level.	Community Level Questionnaire Household Questionnaire	Homogeneously distributed sample of settlements in the Project Area

Issues/Sensitivities	Data Gaps	Data Collection Tools	Geographic Coverage
		In - depth Interviews Key Informant Meeting (Municipality)	
Women's Participation in Decision Making Process	Site – specific data regarding women's participation in decision making process at household level.	In – depth Interviews Key Informant Meeting (Women Civil Society Organizations)	Homogeneously distributed sample of settlements in the Project Area
Gender Division of Labour on Income Resources (Agriculture, livestock, forestry, fisheries and aquaculture)	Up-to-date site specific data regarding women's needs, problems, coping strategies in line with their income at household level.	Community Level Questionnaire Household Questionnaire In – depth interviews Key Informant Meeting (Extension Agents, Officers (MoFA)	Homogeneously distributed sample of settlements in the Project Area
Women Entrepreneurship	Village level data on women entrepreneurship.	Community Level Questionnaire Household Questionnaire In – depth interviews Key Informant Meeting (KOSGEB)	Homogeneously distributed sample of settlements in the Project Area
Access and Control Over Sources and Land Ownership	Site-specific on access to and control over the sources and land ownership	Community Level Questionnaire Household Questionnaire In – depth interviews Key Informant Meeting (Officers from GD of Land Registry and Cadastre and Ordu Bar)	Homogeneously distributed sample of settlements in the Project Area

Source: SESA Scoping Report, September 2020.

Baseline gaps have been eliminated with data from the following sources:

- Baseline characteristics of settlements were determined with Community Level Questionnaires (CLQs).
- Individuals in settlements with different characteristics (settlements with sensitivities) were consulted directly with the Household Questionnaires (HHQs).
- Information about gender issues was obtained through in-depth interviews conducted by gender expert with women, especially those with cumulative vulnerability.
- Up-to-date and detailed data, which could not be obtained from the literature, were requested from stakeholder institutions and organizations with an official letter. Data gaps and institution-based list of requested data with an official letter are presented in the Scoping Report.
- Information about the sensitivities of the region was requested from non-governmental organizations.
- Information, which could not be found in the literature reviews, statistics and is needed to reveal characteristics of agricultural activities, required from

TRGM, KGM and Provincial Directores of Agriculture and Forest with the official letter from OGM. Please see Annex-2 for the first and second round data request and respond list from government organizations.

- Critical habitat characteristics of some potential areas were verified by conducting a field study in the project area, on 27-29 November 2020 by the biodiversity expert. The field study concentrated on some of the areas with potential critical and/or rare habitats. In order to collect additional data, meetings were held with the forest chiefs of Aybastı and Grgentepe Forest Management Units (FMU).

3.2.3 Stakeholder Engagement

A series of stakeholder engagement techniques have been used throughout the SESA process, from scoping phase and data collection for establishing the baseline to setting of key priorities. Participatory actions are described in respective sub-sections.

The first introductory meetings were held in Ordu on July 13-14, 2020 with wide stakeholder participation. The Minister of Agriculture and Forestry Dr. Bekir Pakdemirli addressed the participants and the participating institutions made informative presentations about the project at the meeting. See Annex 3 for agenda and participation lists of meetings held during the field study. The scoping process was mainly based on the results of this meeting. Authorized institutions have created informative content on their websites after the meeting. It was observed that the project was well accepted in the region.

A WhatsApp group was established with muhtars of the project settlements on September 05, 2020 before the fieldwork carried out within the scope of Bolaman SESA, and rapid communication was ensured in case of need. Within the scope of SESA, the main problems of the region were identified with a participatory understanding through interviews with 76 muhtars. Alevi villages, Georgian villages, disaster-damaged areas, villages whose livelihood is largely dependent on beekeeping were evaluated not only through muhtar interviews, but also with household surveys. Therefore, a survey of 132 households was conducted in the villages with different characteristics. Last but not least, consultations were held with women, especially those members of the disadvantaged groups, women farmers, and non-governmental organizations representing vulnerable groups through telephone interviews.

During the SESA preparation phase, a website (<https://bolaman.ogm.gov.tr>) dedicated to the Bolaman Basin Rehabilitation Project was prepared with the contribution of OGM and OMO officials, and contents regarding the project information, stakeholder engagement and contact information were provided. Population, livelihood, living conditions, social life, vulnerable groups, cultural heritage, environmental features and priority issues determined by experts were published on the website and presented for the opinions and suggestions of the stakeholders. In order for the stakeholders to actively use the site and participate in stakeholder engagement methods, the project website was introduced with official letters, telephone messages, and e-mails. These announcements were accompanied by a poster prepared to be displayed in public spaces (See Annex 6).

The SESA working group, established within the scope of SESA process, composed of representatives of different groups (vulnerable groups, farmer leaders, women farmers, etc.), who played a role in ensuring local participation in the environmental and social assessment

of the project. The participatory assessment process was designed to receive feedbacks from the group, whose information about the project was provided via remote communication channels.

On 2-6 November 2020; OGM, DSI, KGM and TRGM officials and staff held online meetings to determine their technical capacities and needs. FAO and WB officials participated as observers in these meetings organized by OMO, and FAO SESA team presented the WB ESS requirements, Environmental and Social Management Framework (ESMF), SEF, Resettlement Framework (RF), Labor Management Procedure (LMP) and purchasing procedures.

3.2.4 Prioritization of Key Issues

The main approach to determine the project priorities has been stemmed from the priorities among the existing problems. For this, the environmental and social problems of the basin were listed and then a participatory approach was adopted to determine their priority order. The following actions have been performed in participatory prioritization of the crucial problems and therefore the areas awaiting investment:

- Priority problems of the settlements were identified through Community Level Surveys (CLQs).
- Individuals in settlements with different characteristics (sensitive settlements) were directly consulted through Household Surveys (HHQs).
- Opinions and suggestions were received from non-governmental organizations on issues that need attention.
- Problems identified in these resources have been reported and summarized for publication on the project website. The website includes the following issues:
 - Demographic characteristics and related problems of the Project Area.
 - Livelihood characteristics and related problems of the Project Area.
 - Quality of life in the Project Area.
 - Social life and vulnerable groups/communities in the Project Area.
 - Environmental characteristics and related problems of the Project Area.
 - Dissemination of information about the project.
 - Nine topic-based small questionnaires - for those who want to provide additional opinions and highlight problems. ;
 - Structure of population
 - Changes of population in the last 10 years
 - Reasons for outgoing migration
 - Structure of livelihood sources
 - Problems of livelihood
 - Most important five problems of the settlements

- Vulnerable groups
- Environmental polluters
- Biodiversity
- Active NGOs operating in the Bolaman River Basin were sent a project information letter (by WhatsApp and e-mail), and they were asked to contribute to the identification of the sensitivities in their field of activity.

As a result of the layered consultations, the priority environmental and social problems of the region were identified. Both environmental and social problems mentioned throughout the consultations have been cross checked through desktop review with the information collected from the implementing authorities and other government organizations.

Regarding environmental issues, mapping and GIS applications have been used with a view to designating ecological hotspots and high risk zones in terms of floods and landslides, that reflect on spatial planning of subprojects.

3.2.5 Establishment of the Baseline

The E&S baseline has been established obtaining of information requested from government organizations and the results of community level and household level surveys. The baseline refers to E&S parameters that are relevant to the issues scoped in.

The baseline assessment as retrieved from desktop reviews, site observations, interviews and community surveys provide an understanding of the environmental and social context in which the TULIP will achieve restoration, rehabilitation and improvement of Project Area as necessary.

In this respect, a series of SESA objectives as put forth by TULIP and various regional plans covering the basin are used by the SESA Team in order to prioritize concerns and reach a consensus view among stakeholders.

3.2.6 Preliminary Identificaiton of Key E&S Issues

The SESA process identifies and assesses key environmental and social challenges and opportunities of better implementation associated with integrated management of the subprojects developed by different government institutions aiming to address issues of a specific landscape.

The preliminary key environmental and social issues/sensitivities in the Project Area identified during the scoping stage are listed below.

Table 3-2. Key E&S Issues and Sensitivities

Environmental Issues/Sensitivities	Social Issues/Sensitivities
Air pollution	Outgoing migration
Climate	Unbalanced population pyramid
Land cover	Source of agricultural livelihood
Water resources	Structure of employment

Landslide risks	Limited economic turnout
Flood risks	Low SES
Drinking water	Fragmentized land tenure
Soil Contamination	Common properties (Forestlands and Pasturelands) use issues
Erosion	Lack of infrastructure
Biodiversity	Community Health and Safety
Insufficient water supply	Low education level
Solid Wastes	Social exclusion
	Cultural heritage
	Vulnerable groups
	Disadvantaged groups (rural women, people with disabilities, elderly, refugee, unemployed, migrant worker and female household heads)
	Women's access to basic services (health and education)
	Women's skill development including technology usage
	Women labor and time poverty
	Violence against women
	Women's access to infrastructure (water, sanitation and transportation)
	Women's participation in decision making process
	Gender division of labour on income resources
	Women entrepreneurship
	Access and control over sources and land ownership

The key environmental and social issues resulting from the mapping and analytical work are reviewed and prioritized by a representative sample of communities in the critical areas identified from the mapping exercise.

3.2.7 Strategic E&S Assessment (SESA)

As discussed in Chapter 9, subprojects have been assessed under 9 rationale topics based on categorization of their inter-linkages within and among them for an integrated understanding.

The categories are assessed with respect to:

- Coordination and integration,
- Relevance to the environmental sensitivities and E&S priorities in the basin,
- Compatibility with social and environmental vulnerabilities,
- Climate resilience effect (if any), and
- Gender sensitivity context.

3.2.8 Mitigation Measures

The SESA Report is concluded with a set of recommendations to mitigate negative impacts that may arise individually or cumulatively during implementation/construction or after implementation/operation phases. Mitigation measures are presented in Section 9.2.

Cumulative Impact Assessment that provides a complementary assessment to the strategic assessment, based on the Valued Ecosystem Components approach, has also been conducted and management approaches for cumulative impacts are presented in Chapter 10.

4 LEGAL and POLICY FRAME

4.1 National Legislation

The key national laws and By-laws presented in this section include the legal context with a broader perspective to basin-wide issues that call for integrated management, sustainability, climate resilience and socio-economic development. The legal frame will be expanded at the stage of impact assessment and development of the management framework in terms of requirements to reduce the potential environmental and social impacts that may arise from the construction and operational activities of subprojects under TULIP.

One of the key By-laws is the By-law on Strategic Environmental Assessment (SEA By-law hereinafter). It aims at integrating the environmental considerations into preparation and approval of plans and programs, which are likely to have significant effects on the environment, with a view to promote sustainable development. The SEA By-law relates to plans and programs on agriculture, forestry, fishery, energy, industry, transport, waste management, water management, telecommunications, tourism, urban and rural planning or land use and the plans and programs.

The “SEA process” is comprised of a series of stages: screening with respect to Appendix I and II of the By-law; scoping process encompassing a scoping meeting; a public participation meeting (as proportional to the scale of the plan being assessed and as relevant); and assessment process that is based on a review of baseline conditions, identification of issues and possible impacts, designation of environmental protection objectives; assessment of impacts of the plan; associated mitigation measures and monitoring needs; development of alternatives.

The SESA process covers the whole SEA process and exceeds its scope by putting detailed focus on social aspects and conduct of a structured stakeholder engagement process that is beyond public participation.

Considering that a Basin Management Plan will be prepared by OGM within TULIP, the screening process should be initiated by OGM by applying to MoEU. The SESA process conducted and the SESA Report prepared within the scope of TULIP is anticipated to provide inputs to and speed up the SEA process under the national legislation.

Under its Article 10, Environmental Law sets out the general scope of the Environmental Impact Assessment (EIA) procedure in Turkey, indicating that institutions, agencies and establishments that lead to environmental problems as a result of their planned activities are obliged to prepare Environmental Impact Assessment report or Project Information File (PIF). Based on this legal framework, the Regulation on Environmental Impact Assessment (henceforth “EIA Regulation”) was put into force for the first time after being published in the Official Journal numbered 21489 and dated on February 7, 1993. Since then there had been several amendments in the first regulation and new EIA regulations were published in 2008 and 2013 repealing the former regulations in force. The latest EIA Regulation has been published in the Official Journal dated November 25, 2014 and numbered 29186, which repealed the 2013 EIA Regulation.

The EIA Regulation is largely in line with the EU Directive on EIA. The key relevant steps of the Turkish EIA procedure namely screening, public consultation, scoping, disclosure and supervision are briefly reviewed below in the order they are prescribed to occur.

The EIA Regulation classifies projects into two categories:

Annex I projects. These are projects that have significant potential impacts and require a full EIA. Annex I of the EIA Regulation lists these projects types, so project proponents are expected to start the EIA procedure without any other screening process; and

Annex II projects. Annex II of the EIA regulation covers the projects that may or may not have significant effects on the environment. Proponents of Annex II projects are required to submit a Project Information File (PIF) to the Ministry of Environment and Urbanization (MoEU). The PIF is prepared following the General Format for PIF provided in Annex IV of the EIA Regulation and contains information on: (i) project characteristics; (ii) environmental characteristics of the project site and impact area; and (iii) significant impacts of the project and measures to be taken during construction and operation phases of the project. A non-technical summary of the above items is also to be added to the PIF. The PIF is submitted to the MoEU for review and evaluation. Provincial Directorate gives its “**EIA is Necessary**” or “**EIA is not necessary**” decision regarding the project. The decision of the Provincial Directorate is communicated to public using appropriate means (i.e. announcement boards, internet).

According to the EIA regulation, it is not needed to prepare an EIA Report for technical assistance works like Component 2.

Table 4-1 provides the list of project types that will be considered for funding under the project and their category per the EIA Regulation. The consideration of social impacts within the screening are not compulsory under the national EIA regulation and generally are either very briefly mentioned or not mentioned at all.

Table 4-1. National EIA Requirement of Subprojects

Project Components	Basin	National EIA Requirement
Component 1: Investments in Resilient Landscape Integration in targeted areas		
Sub-Component 1.1. Green infrastructure and sustainable livelihoods upstream		
(i) Small-scale erosion, landslide, and flood control works 1.1.1.	1.1.a. Bolaman	Exempt from EIA

(ii) Forest rehabilitation and sustainable management		Exempt from EIA
Sub-Component 1.2: Sustainable agriculture & value chains		
(i) Climate-smart and sustainable agricultural practices	1.2.a. Bolaman	Exempt from EIA
(ii) Pasture rehabilitation and sustainable management outside forest lands		Exempt from EIA
Sub-Component 1.3. Resilient infrastructure for water security		
(i) Dams and multipurpose reservoirs	1.3.a. Bolaman	Annex 2 of EIA Regulation based on water storage capacity
(ii) Drinking water infrastructure systems		
Sub-Component 1.4. Resilient mobility		
(i) Resilient rural road rehabilitation	1.4.a. Bolaman	Exempt from EIA
Component 3 Contingent Emergency Response Component	N/A	

Laws and regulations that pertain to the E&S issues of the Project are given in Tables 4.2 through 4.4 below.

Table 4-2. Primary National Legislation

Title of Legislation and Date/Issue of Official Journal	Brief context
Environment	
Environmental Law No. 2872 (16.08.1983/18132)	The framework law for environmental legislation (and penalties). Overall environmental protection.
Forest Law No. 6831 (08.09.1956/9402)	Regulates the protection and conservation of forests, including topics such as rights of forest villagers, tourism, water management, the forests under protection, natural parks, non-wood products, public consciousness, grasslands and financial supports given to the villagers.
Law on Groundwater No:167	Regulates use of groundwater. State Hydraulic Works (DSI) is the competent authority for groundwater exploration, and construction and operation of wells to be utilized by facilities for groundwater extraction purposes.
Ecosystem Services	
Pasture Law No. 4342 (as amended with the Law No. 6552 and relevant regulations)	The purpose of this law is to ensure that pastures are used in accordance with the rules to be determined, to increase and maintain their productivity by maintaining and improving them, to constantly monitor their use, to protect and to change the purpose of use if it is necessary. Stipulates that in-forest pastures and graze lands are re-defined by a committee and cannot be used for any other purposes unless their allocation purposes are modified.
Agricultural Law No. 5488 (18.04.2066/ 26149)	The aim of this Law determining the necessary policies and making arrangements for the development and support of the agricultural sector and rural area in line with the development plans and strategies. Sets the necessary policies and regulates development and support of the agricultural sector and rural areas in line with the development plans and strategies.
Law on Planning of Hazelnut Production and Determination of Plant Areas (18.06.1983/18081)	The purpose of this Law; to regulate hazelnut production in the most appropriate areas and to direct production according to the developments in demand.
Soil Protection and Land Use Law No:5403 (19.07.2005/25880)	The purpose of this Law; protection of land, development, classification of agricultural lands, determination of minimum agricultural land and sufficient income agricultural land sizes and prevention of their fragmentation, determination of principles to ensure planned use of

Title of Legislation and Date/Issue of Official Journal	Brief context
	agricultural land and sufficient income agricultural lands in accordance with environmental priority sustainable development principle.
Expropriation	
Expropriation Law No: 2942 (08.11.1983 / 18215)	Expropriation law is defined by expropriation process which is performed legitimately under the 46. Article of constitution and provisions of the law. Government and statutory bodies are authorized to expropriate and establish an easement on personal property partially or fully, in condition of pay cash its market value, in such cases when public welfare requires and in compliance with the principles and procedures stated in laws.
Amendment on Expropriation Law (05.05.2011 / 24393)	The amendments of the Expropriation Law shortly stipulates that the party who expropriate is also entitled to apply to the court for determination of price. In this case, the party whose property is expropriated should pursue the lawsuit and claim his/her rights to determine market value of his/her property.
Stakeholder Engagement	
Constitution of Republic of Turkey	Constitution of Republic of Turkey is the fundamental document in respect to guaranteeing citizens' freedom of thought and opinion. Everyone has the right to express and disseminate his/her thoughts and opinions, individually or collectively, through speech, writing, pictures or other means.
Law on the Right to Information No.4982 (Official Journal dated 24.10.2003 and numbered 25269)	Law on the Right to Information defines the process concerning the right to information. It regulates this right in line with the principles of equality, impartiality and transparency, which are the prerequisites of democratic and transparent administration.
The Law on Use of the Right of Petition (Official Journal dated 01.11.1984 and numbered 3071)	Citizens of the Turkish Republic are entitled to apply to the Turkish Grand National Assembly and the public authorities by written petition,
Labor	
Occupational Health and Safety Law (Official Journal dated 20.06.2012 and numbered 6331)	Object of this law is to regulate duties, authority, responsibility, rights and obligations of employers and workers in order to ensure occupational health and safety at workplaces and to improve existing health and safety conditions.
Labor Law (Official Journal dated 22.05.2003 and numbered 4857)	Working conditions and work-related rights and obligations of employers and employees working under an employment contract are regulated by this law.
Labor Law (Official Journal dated 22.05.2003 and numbered 4857)- Article 71	It is prohibited to employ children who have not completed the age of 15. However, children who have completed the age of 14 and have completed compulsory primary school period can be employed in light works.
Social Insurance and General Health Insurance Law (No.5510) (16.06.2006 / 26200)	Determines the rights of beneficiaries and provides for general rules for the functioning of the insurance system and funding conditions. Also contains provisions on employers and workplaces, short-term and long-term insurances.
Primary Education and Training Law (Official Journal dated 12.01.1961 and numbered 222)-Article 59	Those who do not attend compulsory primary education institutions cannot be employed (for a fee or for free) in any official and private workplaces. Those who document that they attend primary education institutions can be employed in such places except for the lecture hours provided that the provisions of the law regulating the employment of children are applied.
Child Protection Law (Official Journal dated 15.07.2005 and numbered 5395)	The basic principles for the protection of the child rights are explained.

Title of Legislation and Date/Issue of Official Journal	Brief context
Public Health Law (Official Journal dated 06.05.1930 and numbered 1593)-Article 173	Employment of all children under the age of 12 as labor and apprentice in all kinds of businesses, such as factories, workshops, mines is prohibited.
Vocational Training Law (Official Journal dated 19.06.1986 and numbered 3308)-Article 13	Includes regulations on the development of knowledge and skills in the context of child labor starting at the age of 14
Restructuring of Some Receivables and Social Insurance and General Health Insurance Law (Official Journal dated 25.02.2011 and numbered 6111)-Article 51	Discontinuous workers in agriculture and forestry sectors will work with insurance and their insurance will be evaluated within the scope of 4(a) at the same law. Agricultural workers under this insurance have been given the opportunity to benefit from work accident, occupational disease, disability, old age, death insurance and general health insurance.
Cultural Heritage	
Law on Conservation of Cultural and Natural Assets No. 5879 (Official Journal dated 21.7.1983 and numbered 18113)	The purpose of this Law is to determine the definitions related to movable and immovable cultural and natural assets that need to be protected, to organize the transactions 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.
Gender	
Civil Law (Official Journal dated 01.01.2002 and numbered 24607)	The law upholds equality between women and men, puts an end to sexual discrimination, renders women equal to men in both family and the society; and values the women's work. With the new Civil Code, substantial changes were made considering the developments in the law of domestic relations, and the changes and needs of the day.
Penal Law no: 5237 (Official Journal dated 01.06.2005 and numbered 25611)	Include modern arrangements with respect to gender equality and violence against women.
Other	
Highways Traffic Law Official Newspaper Date : 18.10.1983 Numbered 18195	Measures to be taken to ensure traffic order regarding safety of life and goods and all issues relating to traffic safety

Table 4-3. Secondary National Legislation

Title of By-law	Date of Official Journal	Issue	Implications for the Project
ENVIRONMENT			
Air Quality and Management			
By-law Concerning Follow up of Greenhouse Gas Emissions	May 31, 2017	30082	GHG emissions mainly from transportation vehicles during construction works
By-law on the Control of Exhaust Emissions	March 11, 2017	30004	Exhaust gas emissions from transportation vehicles
Industrial Air Pollution Control By-law	December 20, 2014	29211	Management of air emission sources during construction and operation stages. Dust emission control at the construction stage and SO ₂ , NO _x and dust emission control at the operation stage Emission monitoring

By-law on Assessment and Management of Air Quality	June 6, 2008	26898	Management of ambient air quality. Ambient air quality standards Modelling Requirement
Environmental Management, Permitting and Planning			
By-law on Environmental Impact Assessment	November 25, 2014	29186	Annex II project introduction files to be prepared for the water reservoirs and road construction projects.
By-law on Strategic Environmental Assessment	April 08, 2017	30032	Preparation of a basin management plan may trigger preparation of a SEA Report in the future.
By-law on Environmental Permit and Licenses	September 10, 2014	29115	Operation of new establishments and facilities
Regulation on Amendments to the Environmental Permit and Licensing Regulations	December 12, 2020	31351	Operation of new establishments and facilities
By-law on Preparation, Implementation and Monitoring of Basin Management Plans	October 17, 2012	28444	Environmental requirements in case of preparing a basin management plan
By-law for Starting up and Operating a Work Place	August 10, 2005	25902	Operation of the facilities.
By-law on Environmental Auditing	November 21, 2008	27061	All types of polluting activities and violations are subject to auditing throughout their life time.
Nature Protection			
By-law Procedures and Principles Concerning the Determination, Registration and Approval of Protected Areas	July 19, 2012	28358	Critical habitats among protected areas
By-law on Pastures	July 31, 1998	23419	Protection and restoration of pastures
By-law on the Protection of Wetlands	April 4, 2014	28962	Protection requirements for wetlands in the basin
By-law on Activities for Supporting Improvement of Forest Villagers	June 13, 2012	28322	Income generation, health and safety, vulnerability of forest villagers
By-law on Procedures and Principles Concerning the Protection of Game and Wild Animals and their Habitats and Combat with their Pests	October 24, 2005	25976	Prevention of illegal hunting in the project area
Noise Control and Management			
By-law on the Assessment and Management of Environmental Noise	June 4, 2010	27601	Control of environmental noise from construction and operation of certain subproject activities
By-law on the Environmental Noise Generation caused by Equipment used Outdoors	June 30, 2016	29758	Control of environmental noise from construction and operation of certain subproject activities
Soil Quality Control and Management			
Implementation By-law on Soil Protection and Land Use	December 15, 2005	26024	Protection of agricultural lands.

By-law on the Control of Soil Pollution and Polluted Areas by Point Sources	June 8, 2010	27605	Risks of point sources of soil contamination from subproject activities
Waste Management			
By-law of Waste Management	April 2, 2015	29314	Management and disposal of wastes generated during the construction operation stages Management of hazardous wastes
By-law Concerning the Landfill of Wastes	March 26, 2010	27533	Final disposal of wastes in sanitary landfills
By-law on the Control of Excavation Materials, Construction and Demolition Wastes	March 18, 2004	25406	Disposal of excavation materials and construction debris at appropriate areas to be designated by the municipality
By-law on the Control of Medical Wastes	January 25, 2017	29959	Separate storage, collection and disposal of medical wastes
By-law on the Control of Packaging Wastes	December 27, 2017	30283	Separate storage, collection and disposal of packaging waste
By-law on the Control of Waste Batteries and Accumulators	August 31, 2004	25569	Separate storage, collection and disposal of waste batteries and accumulators
By-law on the Control of Waste Oils	July 30, 2008	26952	Management of waste oils generated at construction and operation stages
Zero Waste By-law	July 12, 2019	30829	Sorting and recycling of wastes
By-law on the Control of Waste Tyres	March 11, 2015	29292	Separate storage, collection and disposal of waste tyres
Waste Quality Control and Management			
Ordinance on Groundwater Resources	August 8, 1961	10875	Protection of groundwater resources
By-law Concerning Protection of Ground Waters against Pollution and Deterioration	May 22, 2015	29363	Protection of groundwater resources
By-law Concerning Quality of Surface Waters Planned or Used as Drinking Water Supply	June 29, 2012	28338	Licensing of groundwater supply by DSI
By-law Concerning Water for Human Consumption	March 7, 2013	28580	Drinking water supply
By-law on Cesspits Where Sewer System Construction is not Applicable	March 19, 1971	13783	Wastewater management in rural settlements
Surface Water Quality Management By-law	April 15, 2015	29327	Requirements to mitigate pollution of surface waters
By-Law on Determination of Sensitive Water Bodies with Areas Affecting these Water Bodies and Improvement of Water Quality	December 23, 2016	29927	Prevention of agricultural pollution in nitrate sensitive water bodies.
Urban Wastewater Treatment By-law	January 8, 2006	26047	Requirements for collection, treatment and discharge of urban wastewater.

By-law Concerning Wastewater Collection and Discharge Systems	January 6, 2017	29940	Requirements for planning, design, construction and operation of wastewater collection and discharge systems.
Water Pollution Control By-law	December 31, 2004	25687	Water quality discharge limits
HEALTH, SAFETY AND LABOR			
Health and Safety			
Communiqué on Hazard Classes List related to Occupational Health and Safety	December 26, 2012	28509	OHS risk classification in subprojects
First Aid By-law	July 29, 2015	29429	Requirements as part of OHS management
Heavy and Dangerous Works By-law	June 16, 2004	25494	Requirements as part of OHS management
Health and Safety Signs By-law (based on EU Council Directive 92/58/EEC dated June 24, 1992)	September 11, 2013	28762	Requirements as part of OHS management
By-law Concerning the Use of Personal Protection Equipment at Workplaces (based on EU Council Directive 89/656/EEC dated November 11, 1989)	July 2, 2013	28695	Requirements as part of OHS management
By-law on Health and Safety in Fixed Term and Temporary Employment	August 23, 2013	28744	Requirements as part of OHS management
By-law on Health and Safety Measures in the Use of Work Equipment	April 25, 2013	28628	Requirements as part of OHS management
By-law on Health and Safety Measures to be taken at Works Involving Chemical Substances	August 12, 2013	28733	Requirements as part of OHS management
By-law on Methods and Essentials of Occupational Health and Safety Training for Workers	May 15, 2013	28648	Requirements as part of OHS management
By-law on Occupational Health and Safety (based on EU Council Directive 89/391/EEC dated June 6, 1989)	December 9, 2003	25311	Requirements as part of OHS management
By-law on Radiation Safety	March 24, 2000	23999	Requirements as part of OHS management
Communiqué on Vocational Training Of Workers To Be Worked In Heavy And Dangerous Works	May 31, 2009	27244	Requirements as part of OHS management
By-law On Duty, Authority, Responsibility and Training of Occupational Safety Experts	December 29, 2012	28512	Requirements as part of OHS management
By-law On Duty, Authority, Responsibility and Training of Workplace Doctors	July 20, 2013	28713	Requirements as part of OHS management
By-law On Occupational Health and Safety Risk Assessment	December 29, 2012	28512	Requirements as part of OHS management
By-law on Protection of Buildings from Fire	December 19, 2007	26735	Requirements as part of OHS management
By-law on Electricity Indoor Facilities	November 4, 1984	18565	Requirements as part of OHS management

By-law on Occupational Health and Safety in Construction Works	October 5, 2013	28786	Requirements as part of OHS management
By-law on Control of Large-Scale Industrial Accidents	August 18, 2010	27676	Community risks associated with storage of hazardous chemicals
Labor			
By-law on the Procedures and Principles of Employing Child and Young Workers	April 6 2004	25425	Requirements as part of Labour Management Procedures
By-law on the Conditions of Women Employees Working In Night Shifts	July 24, 2013	28717	Requirements as part of Labour Management Procedures
By-law on the Working Conditions of Pregnant or Nursing Women and Nursing Rooms and Child Care Residences	August 16, 2013	28737	Requirements as part of Labour Management Procedures
By-law on Work Permits of Foreigners Provided With Temporary Protection (Article 5)	January 15, 2016	29594	Requirements as part of Labour Management Procedures
By-law on the Special Procedures and Principles Regarding Works in Shifts Conducted by Workers	April 7, 2004	25426	Requirements as part of Labour Management Procedures
By-law on Contractors and Sub-contractors	27 September 2008	27010	Requirements as part of Labour Management Procedures
Prime Ministry Circular (Articles 5 and 7)	2017	6	Requirements as part of Labour Management Procedures

Table 4-4. Non-Exhaustive List of Social Legal Framework Applicable

Title of By-law	Date of Official Journal	Issue
Labor Law (No. 4857)	10 June 2003	25134
Law on Occupational Health and Safety (No. 6331)	30 June 2012	28339
By-law on Contractors and Sub-contractors	27 September 2008	27010
Laws on Right to Information (No. 4982)	24 October 2003	25269
Expropriation Law	8 November 1983	18215
Amendment on Expropriation Law	5 May 2011	24393
By-law on Environmental Impact Assessment	November 25, 2014	29186

4.2 National and Regional Policy Frame

National policy documents, strategies and action plans relevant to the project are presented in Table 4-5 below.

Table 4-5. Applicable National Policies, Strategies and Action Plans

Policy Document	Period	Responsible Organization
11th National Development Plan	2019-2023	Ministry of Development

Policy Document	Period	Responsible Organization
National Climate Change Strategy (NCCS)	2010-2023	Ministry Environmental and Urbanization
National Climate Change Action Plan (NCCAP)	2011-2023	Ministry Environmental and Urbanization
National Climate Change Adaptation Strategy and Action Plan	2011-2023	Ministry Environmental and Urbanization
The Strategic Plan of the Ministry of Energy and Natural Resources (MENR)	2015-2019	Ministry of Energy and Natural Resources
Wastewater Treatment Action Plan	2015-2023	Ministry of Environment and Urbanization
Strategic Plan of Ministry of Environment and Urbanization	2015-2017	Ministry of Environment and Urbanization
Food Agriculture and Livestock Strategic Plan(s)	2018-2022	Ministry of Agriculture and Forestry
National Agricultural Drought Strategy and Action Plan (NADSAP)	2013-2017	Ministry of Agriculture and Forestry
Integrated Urban Development Strategy and Action Plan	2010-2023	Ministry of Environment and Urbanization
National Basin Management Strategy	2014-2023	Ministry of Agriculture and Forestry
National Biodiversity Strategy and Action Plan	2007	General Directorate of Nature Conservation and National Parks
Eastern Black Sea River Basin Protection Action Plan	2013	Ministry of Agriculture and Forestry
National Disaster Management Strategic Plan	2013-2017	Ministry of Interior, Disaster and Emergency Preparedness Presidency (AFAD)
National Programme on The Elimination of Child Labour	2017-2023	Ministry of Family, Labor and Social Services
The National Employment Strategy of Turkey	2014-2023	Ministry of Family, Labor and Social Services

In addition to the above-mentioned national policy documents, regional plans are also key for the assessment of E&S issues in Project Area, as listed in Table 4-6.

Table 4-6. Applicable Regional Policies and Action Plans

Policy Document	Period	Responsible Organization
Eastern Black Sea Tourism Master Plan	2008	Ministry of Culture and Tourism
50-Year Storm Water Master Plan for Ordu	2019-2023	OSKI
11th Rural Development Plan	2019-2023	The Presidency of the Republic of Turkey- Strategy and Budget Presidency
Flood Management Plan for Çoruh and the Eastern Black Sea Basin	2019	Ministry of Agriculture and Forestry
Environmental Land-use Plan for Ordu (1/100.000)	2017	Ministry of Environment and Urbanization, General Directorate of Spatial Planning
Ordu Agricultural Mater Plan	2014	Ministry of Agriculture and Forestry, Ordu Provincial Directorate of Agriculture and Forestry
Ordu Environmental Condition Report	2017	Ministry of Environment and Urbanization, Ordu Provincial Directorate of Environment and

Policy Document	Period	Responsible Organization
OSKI Strategic Plan	2015-2019	Ordu Metropolitan Municipality, OSKI Genel Directorate
Eastern Black Sea Regional Plan	2014-2023	Eastern Black Sea Development Agency
Action Plan for Combating Violence Against Women in Ordu	2018-2021	The Ministry of Family, Labor and Social Services, Ordu Provincial Directorate
Terrestrial and Aquatic Biodiversity Inventory of Ordu Province		Ministry of Agriculture and Forestry, General Directorate for Nature Protection and National
Elimination of Worst Forms of Child Labour (WFCL) in Seasonal Hazelnut	2012-2020	Ministry of Family, Labor and Social Services

4.3 International Agreements and Conventions

Turkish national policy on protection of environment, cultural heritage and conservation of biological resources has been formulated on the basis of relevant international agreements signed or ratified by Turkey. Relevant environmental, OHS and international labor agreements and conventions ratified by Turkey are listed below:

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (ratified on 22.03.1989)
- Bern Convention on Protection of Europe's Wildlife and Living Environment (ratified on 24.12.1979)
- Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) (ratified on 20.06.1996)
- Convention on Long-range Transboundary Air Pollution (ratified on 13.11.1979)
- European Convention on the Protection of the Archaeological Heritage (ratified on 29.11.1999)
- European Landscape Convention (ratified on 01.08.2018)
- International Convention for the Protection of Birds (ratified on 14.06.1967)
- Montreal Protocol on Substances that Deplete the Ozone Layer (ratified on 20.09.1991)
- Paris Convention on the Protection of the World Cultural and Natural Heritage (ratified on 16.03.1983)
- Ramsar Convention on Wetlands of International Importance Especially as Wildfowl Habitat (ratified on 13.11.1994)
- Stockholm Convention on Persistent Organic Pollutants (ratified on 30.07.2009)
- United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (ratified on 16.05.1998)
- United Nations (UN) Framework Convention on Climate Change (Kyoto Protocol) (ratified on 28 May 2009)
- UN (Rio) Convention on Biological Diversity (ratified on 11.06.1992)

- Vienna Convention on the Protection of the Ozone Layer (ratified on 20.09.1991)
- ILO Occupational Safety and Health Convention (ratified on 03.02.2004)
- Occupational Health Services Convention (ratified on 03.02.2004)
- Labour Inspection Convention (ratified in 1947)
- Promotional Framework for Occupational Safety and Health Convention (ratified on 15.06.2006)
- Worst Forms of Child Labour Convention (ratified on 25.01.2001)

4.4 World Bank Environmental and Social Standards

The World Bank is committed to supporting Borrowers in the development and implementation of projects that are environmentally and socially sustainable, and to enhancing the capacity of Borrowers' environmental and social frameworks to assess and manage the environmental and social risks and impacts of projects. To this end, the Bank has defined specific Environmental and Social Standards (ESSs), which are designed to avoid, minimize, reduce or mitigate the adverse environmental and social risks and impacts of projects. The Bank will assist Borrowers in their application of the ESSs to projects supported through Investment Project Financing in accordance with this Environmental and Social Policy for Investment Project Financing (Policy). Brief description of the WB ESSs relevant to the project are given in Table 2-6.

After enactment of the ESF, environmental and social safeguard policies of the World Bank got abolished, but some remained in force. One of them is OP 7.50 - Projects on International Waterways. It describes the types of waterways and projects that the policy applies, and the requirements and conditions of financing projects on international waterways. With regard to OP 7.50, the subprojects financed are located and dependent on national waterways only. The waterways identified as NOT being international waterway (do not trigger OP 7.50) in Turkey are the following: Susurluk, North Aegean, Gediz, Kucuk Menderes, Buyuk Menderes, Western Mediterranean, Antalya, Sakarya, Western Black Sea, Yesilirmak, Kizilirmak, Konya Kapali, Eastern Mediterranean, Seyhan, Ceyhan, Eastern Black Sea, Burdur, Afyon, Orta, Anadolu, and Van. As the Project Area is one of the sub-basins of the Eastern Black Sea Basin, the Project does not trigger OP 7.50.

The safeguard policy OP 7.60 – Projects in Disputed Areas is not triggered by the Project, as the Project area is not located in any disputed area.

Table 4-7. Brief Description of World Bank ESSs Relevant to the Project

ESS No.	Topic	Brief requirement
ESS 1	Assessment and Management of Environmental and Social Risks and Impacts	The Borrower will carry out an environmental and social assessment of the project to assess the environmental and social risks and impacts of the project throughout the project life cycle. The assessment will be proportionate to the potential risks and impacts of the project, and will assess, in an integrated way, all relevant direct, indirect and cumulative

		environmental and social risks and impacts throughout the project life cycle, including those specifically identified in ESSs 2–10.
ESS 2	Labor and Working Conditions	The Borrower will develop and implement written labor management procedures applicable to the project. These procedures will set out the way in which project workers will be managed, in accordance with the requirements of national law and this ESS.
ESS 3	Resource Efficiency and Pollution Prevention and Management	The Borrower will consider ambient conditions and apply technically and financially feasible resource efficiency and pollution prevention measures in accordance with the mitigation hierarchy. The measures will be proportionate to the risks and impacts associated with the project and consistent with Good International Industry Practice, in the first instance the WB Environmental, Health and Safety Guidelines.
ESS 4	Community Health and Safety Annex 1 – Safety of Dams	The Borrower will evaluate the risks and impacts of the project on the health and safety of the affected communities during the project life cycle, including those who, because of their particular circumstances, may be vulnerable. The Borrower will identify risks and impacts and propose mitigation measures in accordance with the mitigation hierarchy. Annex 1 to ESS4 requires that the Borrower engages experienced and competent professionals for the supervision of the design and construction of new dams and require the owner of the dam to adopt and implement dam safety measures during the design, bid tendering, construction, operation, and maintenance of the dam and associated works.
ESS 5	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	The Borrower will demonstrate that involuntary land acquisition or restrictions on land use are limited to direct project requirements for clearly specified project purposes within a clearly specified period of time. The Borrower will consider feasible alternative project designs to avoid or minimize land acquisition or restrictions on land use, especially where this would result in physical or economic displacement, while balancing environmental, social, and financial costs and benefits, and paying particular attention to gender impacts and impacts on the poor and vulnerable.
ESS 6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	The environmental and social assessment as set out in ESS1 will consider direct, indirect and cumulative project-related impacts on habitats and the biodiversity they support. This assessment will consider threats to biodiversity, for example habitat loss, degradation and fragmentation, invasive alien species, overexploitation, hydrological changes, nutrient loading, pollution and incidental take, as well as projected climate change impacts. It will determine the significance of biodiversity or habitats based on their vulnerability and irreplaceability at a global, regional or national level and will also take into account the differing values attached to biodiversity and habitats by project-affected parties and other interested parties.
ESS 8	Cultural Heritage	The Borrower will avoid impacts on cultural heritage. When avoidance of impacts is not possible, the Borrower will identify and implement measures to address impacts on cultural heritage in accordance with the mitigation hierarchy. Where appropriate, the Borrower will develop a Cultural Heritage Management Plan.
ESS 10	Stakeholder Engagement and Information Disclosure	Borrowers will engage with stakeholders throughout the project life cycle, commencing such engagement as early as possible in the project development process and in a timeframe that enables meaningful consultations with stakeholders on project design. The nature, scope and frequency of stakeholder engagement will be proportionate to the nature and scale of the project and its potential risks and impacts.

In accordance with the ESSs, the World Bank Group’s Environment, Health and Safety (EHS) Guidelines should be applied to the project. Therefore, this project will apply the relevant requirements of the EHS Guidelines. In cases where the Turkish requirements differ from the

levels and measures presented in the EHS Guidelines, the more stringent one (such as the most stringent discharge and emission standards) will be applied in the project specifications. The applicable WBG EHS Guidelines for TULIP, depending on the specific type of subprojects, include but are not limited to the following:

- World Bank Group's EHS General Guidelines (2007);
- World Bank Group's EHS Guidelines for Water and Sanitation (2007);
- World Bank Group's EHS Guidelines for Waste Management Facilities (2007);
- World Bank Group's EHS Guidelines for Forest Harvesting Facilities (2007);
- World Bank Group's EHS Guidelines for Annual Crop Production (2016);
- World Bank Group's EHS Guidelines for Perennial Crop Production (2016);
- World Bank Group's EHS Guidelines for Mammalian Livestock Production (2007).

Given the importance of the Covid-19 pandemic, World Bank Group (WBG) also provided guidance as follows;

- Technical Note: Public Consultations and Stakeholder Engagement in WB-supported operations when there are constraints on conducting public meetings, issued on March 20, 2020
- Technical Note: Use of Military Forces to Assist in Covid-19 Operations, issued on March 25, 2020
- ESF/Safeguards Interim Note: Covid-19 Considerations in Construction/Civil Works Projects, issued on April 7, 2020
- Technical Note on SEA/H for HNP Covid Response Operations, issued in March 2020
- Interim Advice for IFC Clients on Preventing and Managing Health Risks of Covid-19 in the Workplace, issued on April 6, 2020
- Interim Advice for IFC Clients on Supporting Workers in the Context of Covid-19, issued on April 6, 2020
- IFC Tip Sheet for Company Leadership on Crisis Response: Facing the Covid-19 Pandemic, issued on April 6, 2020

WHO resources also include technical guidance on: (i) laboratory biosafety, (ii) infection prevention and control, (iii) rights, roles and responsibilities of health workers, including key considerations for occupational safety and health, (iv) water, sanitation, hygiene and waste management, (v) quarantine of individuals, (vi) rational use of PPE, (vii) oxygen sources and distribution for Covid-19 treatment centers (see WHO website for Country and Technical Guidance on Covid-19; <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>).

4.5 Legislative Gap Analysis

There are a number of differences between the Turkish EIA Regulation and the WB impact assessment procedures. Major differences are related with categorization, scope of environmental and social assessment, and public consultation. Table 4-8 provides a summary of the major differences.

Table 4-8. Differences between Turkish and WB Impact Assessment Procedures

Topic	World Bank Standards	National Regulation
Project categorization	Projects 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. Projects are screened on a case by case basis.	Projects are classified into two categories as Annex I and Annex II projects, which is mainly based on magnitude of capacity of planned investment, rather than associated risks and impacts. Projects are screened with respect to Annex I and Annex II of the EIA Regulation.
Scope of Assessment	Level of assessment varies with respect to significance of potential risks and impacts. All direct, indirect and cumulative environmental and social risks and impacts are assessed.	Assessment is made based on an outline of contents provided by MoEU, which is comprised of estimation of mainly direct environmental impacts. Indirect and cumulative impacts are not taken into account in general. Level of detail on social baseline and assessment of social impacts is limited. There is usually limited focus on community health and safety and occupational health and safety and labor and working conditions. No concerns on disadvantaged or vulnerable and gender related issues.
Stakeholder engagement	An integral part of E&S assessment is conducted in accordance with ESS 10. Continuous stakeholder engagement takes place throughout the life cycle of the project (proportionate to the nature, scale and impact magnitude of the project)	The Turkish EIA Regulation requires “pre-scoping” public consultation only for projects requiring an EIA, and only requires announcement of the environmental assessment together with the justification.

Table 4-9 provides a brief summary of key gaps between WB ESSs and Turkish E&S legislation, and suggests means for filling the gaps.

Table 4-9. Key Gaps Between WB ESSs and Turkish E&S Legislation

WB ESSs	Gaps	ESF Instruments/study to fill the Gaps
<p>ESS 1: Assessment and Management of Environmental and Social Risks and Impacts</p>	<p>The major gaps between National EIA Regulation and ESS 1 are as follows:</p> <ul style="list-style-type: none"> • Social impact assessment is not completely integrated to the Turkish EIA and this results in the absence of proper social baseline, identification and assessment of the project induced social impacts including impacts on disadvantaged or vulnerable and gender related issues, • 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 Turkish EIA may not meet WB requirements); • Limited or no requirement to cover cumulative impacts with other projects in the Turkish EIA; • Limited emphasis on the associated facilities; • Limited information regarding sub-management plans such as Water Quality Management Plan, Air Quality Management Plan, Noise Management Plan, Hazardous Waste Management Plan, Community Health and Safety Management Plan etc. 	<ul style="list-style-type: none"> • Subproject specific Environmental and social assessment studies regarding ESIA or ESMP will be prepared in line with ESS1. In this respect, potential social impacts of the subprojects will be the part of the assessment. • The environmental and social assessment will include impacts of the associated facilities and potential cumulative impacts. • Depending on the level of the impacts and proposed mitigation measures together with residual impact analysis, sub-management plans will be annexed to each ESIA/ESMP.
<p>ESS 2: Labour and Working Conditions</p>	<ul style="list-style-type: none"> • In general, Turkish national laws and regulations regarding labor and working conditions satisfies ESS 2 requirements. Worker grievance mechanism is the main gap between national legislative requirement and ESS 2. Per the Turkish national legislation on labor and working conditions, there is no specific requirement related to grievance mechanism that allow workers to communicate their complaints to the employer. 	<ul style="list-style-type: none"> • Labor Management Procedure (LMP) is a component of the ESF instruments. LMP provides guidance on the required mitigations or management implementations such as workers GM, code of conduct etc. stipulated by ESS2 and relevant WB EHS guidelines. • In line with the LMP developed for the Project, subproject specific LMPs will be developed, as relevant.
<p>ESS 3: Resource Efficiency and Pollution Prevention and Management</p>	<ul style="list-style-type: none"> • Most of the relevant national legislations regarding laws and regulations are in line with EU directives. There is no major gap between ESS3 and legislative requirements. Local EIA does not provide detailed management perspective on potential impacts, mitigation measures and residual impacts and monitoring. In other words, sub-management plans are not specifically defined in local EIA process. • Additionally, the specific studies regarding resource use and pollution prevention such as Water Source Vulnerability Analysis WSVA, Green 	<ul style="list-style-type: none"> • Sub-management plans will be developed as part of ESIA/ESMP, for construction and operation phases of the projects. These management plans also provide requirement stipulated in relevant WB EHS Guidelines.

WB ESSs	Gaps	ESF Instruments/study to fill the Gaps
	House Gas (GHG) estimations etc. are not included in local EIA Process.	
ESS 4: Community Health and Safety	<ul style="list-style-type: none"> In general, there is no gap in terms of policy level. On the other hand, project level management of specific risks such as labour influx, sexual exploitation and abuse and sexual harassment are the key gaps in terms of ESS4. In relation to dam safety; despite that there is no specific legislation for dam classification and their required safety measures are available but the general requirements are identified following many laws and regulations, such as Protection against Flooding Law (1943), Civil Defence Act (1958), Measures and Assistance Regarding Natural Disasters affecting General Public Life Precautions Act (1959), DSI Regulation on Protection against Flooding (1982), The Environmental Law (1983), and Regulation on the Environmental Impact Assessment (2003). In order to eliminate the security weaknesses that may occur during the operation of water storage structures, DSI has in place guidelines "Environmental Protection, Safety and Warning Systems" for Power Generation Facilities". In line with this guide, for each storage structure, operation DSI prepares an "Environmental Protection, Safety and Warning Systems Application Project" that includes safety measures against possible risks associated with construction and operation activities in storage structures. 	<ul style="list-style-type: none"> Management plans will be prepared for the subprojects, as relevant, as a part of ESIA/ESMP, such as: <ul style="list-style-type: none"> Traffic Management Plans, Community Health and Safety Plans, Emergency Response and Preparedness Plans DSI will comply with the dam safety requirements of the WB by means of conducting risk assessment procedures and preparing and implementing Emergency Preparedness Plans; conducting monitoring and reporting procedures, ensuring reviews by an independent panel of experts throughout investigation, design, and construction of the dam and the start of operations, preparation and implementation of detailed plans for construction supervision and quality assurance, a plan for instrumentation, an operation and maintenance plan, and an emergency preparedness plan; prequalification of bidders during procurement and bid tendering; and periodic safety inspections of the storage structures and dams after completion. The ESMP/LMP will include relevant provisions for sexual exploitation and abuse and sexual harassment.
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	<ul style="list-style-type: none"> Turkish legislation on land acquisition mainly corresponds to requirements stipulated by ESS 5. However some differences include; preparation of a Resettlement Plan (RP), compensation at replacement costs, continuous consultation during RP implementation, impact assessment on informal land users, vulnerable groups and land based livelihood restoration are the major gaps in terms of ESS 5 requirement. 	<ul style="list-style-type: none"> The RF in line with this ESMF is prepared to provide a guidance to assess any risk of resettlement and to prepare subproject specific RP in case a requirement. Subproject specific RPs will be prepared in order to account for the discrepancies with the national legislation. Particular concern will be given in RPs on vulnerable groups. Livelihood impacts of subprojects on informal land users will be assessed and Livelihood Restoration Plans (LRPs) will be prepared as relevant to subprojects.
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	<ul style="list-style-type: none"> There is no gap in terms of policy level. On the other hand, in some cases, level of the considerations of not legally protected sensitive ecological areas such as Key Biodiversity Areas in local EIA Process are not sustain the requirements stipulated by ESS6. 	<ul style="list-style-type: none"> Depending on the location of the subprojects and pertinent impacts, Biodiversity Management and Action Plans can be annexed to the ESIA/ESMP.

WB ESSs	Gaps	ESF Instruments/study to fill the Gaps
	<p>Furthermore, management and monitoring of potential impacts, mitigation measures and residual impacts are not detailed in general.</p>	<ul style="list-style-type: none"> Subprojects which have significant impacts in terms of biodiversity will be considered as ineligible.
<p>ESS 8: Cultural Heritage</p>	<ul style="list-style-type: none"> Turkish national legislation on protection of cultural assets mainly satisfies the ESS 8 requirements for physical cultural heritage, but fails to cover intangible cultural heritage. 	<ul style="list-style-type: none"> Subproject specific environmental and social assessment will take into consideration the significance of intangible cultural heritage that may be materially affected or put at risk as a result of the subproject.
<p>ESS 10: Stakeholder Engagement and Information Disclosure</p>	<ul style="list-style-type: none"> Effective and transparent stakeholder engagement is the main gap in terms of ESS10 requirement. Within this scope, a Stakeholder Engagement Plan required to identify the different stakeholders (project-affected parties and other interested parties including disadvantaged or vulnerable). Stakeholder engagement should be a continuous and well-documented process throughout project duration. 	<ul style="list-style-type: none"> SEF is in place as part of ESF Instruments. Subproject level SEPs will be prepared depending on the level of social risks. TULIP SEF will be operational throughout implementation of the Project, including an overall disclosure of information on subprojects and the grievance mechanism.

5 INSTITUTIONAL FRAMEWORK

5.1 Roles and Responsibilities

Basin management policies are centrally planned in Turkey. The governmental organizations undertake the planning, development, management, maintenance, and monitoring and evaluation of programs related to river basin management. The local authorities are involved at the stage of implementation and non-governmental organizations are also indirectly involved in many activities. Direct stakeholders of basin management and their main responsibilities in relation to basin management as well as institutional responsibilities of them within the Project are indicated in Table 5-1 below.

Table 5-1. Governmental Stakeholders for Basin Management

Organization	Main tasks and responsibilities	Institutional Responsibilities within the Project
Ministry of Environment and Urbanization (MoEU)	<ul style="list-style-type: none"> • Pollution prevention in water resources • Overall coordination of environmental policies • Approve and ensure environmental plans • Ensure implementation of SEA By-law and EIA By-law • Ensure harmonization with EU acquis • Regulate classification of water resources per quality parameters • Issue permits and monitor wastewater discharges • Review and approve treatment plant projects • Ensure protection plans are in place for water resources • Coordinate and set the regulatory frame related with climate change • Coordinate and monitor climate change action plans, • Set policies for adaptation to climate change. 	<ul style="list-style-type: none"> • Review and approval of SEA for Bolaman Basin Management Plan if required, • Review and approval of EIAs and/or PIF for sub-components during implementation as per national legislation • Providing permits to the treatment plants
General Directorate of Forestry (OGM)	<ul style="list-style-type: none"> • Protection, maintenance and sustainable management of forests and forest connected pastures, afforestation and reforestation, restoration of riparian ecosystems and stream corridors, • Erosion and sedimentation control, upstream natural water retention and storage, land slide and flood control work, • Income generation and livelihood diversification activities for forest communities, such as bee-keeping, non-timber forest products, and ecotourism. services. Integration of the socio-economic dimensions and 	<ul style="list-style-type: none"> • Leading and coordinating agency for the Project • Implementation of sub-components 1.1.(a), 2.1 and 2.2. • Preparing ESIA, ESMPs, SEPs, RPs and LMPs as relevant related to its project activities, and to carry out its M&E activities. • Receiving and processing complaints in accordance with Grievance Mechanism

	provision of services to upland communities	
General Directorate of Agricultural Reform (TRGM)	<ul style="list-style-type: none"> Improving the quality of life and economic diversity in rural areas Collecting agricultural data and generating statistics Increasing productivity in agricultural irrigation Carrying services related to global climate changes, agricultural environment, drought, desertification, other agricultural disasters Working on the marketing of agricultural products Working on the support to be given to the agricultural sector and rural areas 	<ul style="list-style-type: none"> Implementation of Sub-Component 1.1.(b) including planning, procurement, contract management, supervision, and financial management, Preparing ESIA's, ESMPs, SEPs, RPs and LMPs related to its project activities, and results monitoring and evaluation Receiving and processing complaints in accordance with Grievance Mechanism.
General Directorate for State Hydraulic Works (DSİ)	<ul style="list-style-type: none"> Conduct investigations and develop water resources River basin development Overall development and management of water resources Hydropower development Sediment-cleaning works Drying and draining of waterways because of the damage caused by floods and sediments Controlling erosion, sediments and floods Data collection for mapping, hydrometric measurements, water quality, agricultural economy, land classification, drainage, and hydro-geology. 	<ul style="list-style-type: none"> Implementation of Sub-component 1.2.(a) including planning, procurement, contract management, supervision, and financial management, Preparing ESIA's, ESMPs, SEPs, RPs and LMPs related to its project activities, and to carry out its monitoring and evaluation. Receiving and processing complaints in accordance with Grievance Mechanism
General Directorate of Combating Desertification and Erosion	<ul style="list-style-type: none"> Formulating policies, strategies, plans and projects, and Building coordination and cooperation between concerned institutions and organizations regarding soil conservation, natural resources improvement, combating desertification and erosion, and avalanche, landslide and flood control activities, Finding solutions not only for Turkey's problems but also for regional and international problems. 	N/A
General Directorate of Nature Conservation and Natural Parks (DKMP)	<ul style="list-style-type: none"> Conservation of biodiversity Ensuring that ecological services from watersheds contribute to the welfare of both the local population as well as downstream users 	N/A
General Directorate of Highways (KGM)	<ul style="list-style-type: none"> Ensuring the safety of life and property on the roads Inspecting traffic on roads open to traffic in terms of compliance with traffic safety and marking rules 	<ul style="list-style-type: none"> Implementation of Sub-Component 1.2.(b) Preparing ESIA's, ESMPs, SEPs, RPs and LMPs related to its project activities, and results monitoring and evaluation activities.

	<ul style="list-style-type: none"> Collecting and disposing of all kinds of waste materials (rubble, household and similar wastes) that cause environmental pollution and endanger traffic safety Collecting data on the causes of traffic accidents and taking necessary preventive technical measures 	<ul style="list-style-type: none"> Receiving and processing complaints in accordance with Grievance Mechanism
Disaster and Emergency Management Presidency (AFAD)	<ul style="list-style-type: none"> Preventing disasters and minimize disaster-related damages, plan and coordinate post-disaster response, and promote cooperation among various government agencies. Managing disasters through Integrated Disaster Management System, a disaster management model enabling risk management Developing necessary strategies and serving people in need at home and abroad. 	N/A
Ordu Metropolitan Municipality Water and Sewerage Administrations (OSKI)	<ul style="list-style-type: none"> Implementation of pollution control policies, including water supply and construction and operation of wastewater treatment facilities. 	<ul style="list-style-type: none"> Providing permits and licences required during the construction activities by Ordu Metropolitan Municipality. A stakeholder of the SEPs, RPs and LMPs if and when required Operation of treatment plants and reservoirs

The responsibility for overall project management and coordination will lie with the General Directorate of Forestry (OGM) under the Ministry of Agriculture and Forestry (MoAF). OGM is tasked with the protection and sustainable management of the country's forest resources, including soil rehabilitation and erosion control. It is the institution assigned with the responsibility for the implementation of integrated watershed rehabilitation projects under the Forest Code (Law No6831). OGM operates through 21 Departments located in its headquarters, 28 Regional Directorates of Forestry and 12 Research Institute Directorates, with a total of approximately 40,000 staff at the national level.

Other agencies that will be involved in project implementation include the General Directorate of Agricultural Reform (TRGM) and the State Hydraulic Works (DSI) under the MoAF, and the General Directorate of Highways (KGM) under the Ministry of Transport and Infrastructure. TRGM is tasked with improving living conditions in rural areas by promoting the country's agricultural development and competitiveness and supporting agricultural infrastructure and capacities. DSI is the state agency responsible for water resources planning, operations and management. Its primary focus is to plan, design, construct and operate dams, hydroelectric power plants, water supply and wastewater treatment infrastructure, irrigation schemes, and to implement structural flood protection and control measures. It has been affiliated with the MoAF since 2018. KGM will participate in the implementation of subcomponent 1.2.(b) of the project related to strengthening the resilience of rural road infrastructure. KGM is tasked with the identification, construction and maintenance of highways, state and provincial road networks, and bridges to ensure safe transport across the country.

5.2 Institutional Arrangements for Project Implementation in Bolaman Basin

The Borrower of the IBRD Loan will be the Republic of Turkey, represented through the Ministry of Treasury and Finance.

Implementing Agencies. The project will have four Implementing Agencies (IAs), namely OGM, TRGM, DSI, and KGM, as project activities are cross-sectoral reflecting the integrated landscape management approach promoted by the project, covering a broad spectrum of interventions related to forestry, agriculture, water and transport. OGM will have overall responsibility for project management and coordination acting as the Lead IA, based on its mandate for the implementation of integrated basin projects as per the Forest Law. It will manage the Project Designated Account in the Central Bank and be responsible for overall project reporting to the World Bank. Project Components will be implemented directly by the IAs with the support of their PIUs, using the agreed implementation provisions specified in the POM.

Project Steering Committee. A Project Steering Committee (PSC) will be established to ensure effective coordination among IAs, comprised of senior leadership from the IAs. Other relevant DGs (such as DG of Water Management and DG for Combatting Desertification and Erosion), as well as representatives from the Strategic Budget Office (SBO) and the Ministry of Treasury and Finance. The PSC will be chaired by the Deputy Minister of the MOAF, with the Deputy Director of OGM acting as the Secretariat. The key functions of the PSC will be to review the annual work-plan and budget, monitor implementation progress, ensure effective institutional coordination, and provide instructions as needed for ensuring the delivery of project outputs and the achievement of project outcomes. The composition and the TORs of the PSC will be further specified in the POM.

Central-level implementation arrangements. A Project Coordination Unit (PCU) will be established and housed within OGM at the central level, reporting directly to the Deputy General Director. The PCU will be responsible for overall project coordination and management, including coordinating the development of project-related annual workplans and budgets with the other IAs, project supervision, monitoring and evaluation, and communication with and reporting to the World Bank on fiduciary, environmental and social aspects, and overall project implementation progress. The PCU will be headed by a Project Coordinator, appointed by OGM, who will be in charge of day-to-day project-related activities and coordination with other IAs for the execution of the project. The PCU will also act as the Central-level PIU for OGM, responsible for the implementation of OGM specific activities at the central level. The PCU will be composed of both OGM staff and specialized consultants on fiduciary, environmental and social, and technical aspects, among others.

Central-level PIUs with an assigned Project Focal Point will also be established in each of the other IAs (TRGM, DSI, KGM) which will be in charge of Ankara-based project activities,

including preparation of agency-specific project annual work plans and budgets and coordination with their respective regional and/or provincial directorates. Each Central PIU will be responsible for the implementation of project activities under their respective subcomponents, and for operating their respective project sub-accounts in the Central Bank. They will coordinate with their regional or provincial Directorates for the execution of project activities in the field and follow-up the procurement processes of their investments at basin level as needed and will report to the PCU periodically on the realization of relevant project targets and achievement of outputs. Central PIUs will have dedicated staff on fiduciary, E&S, and M&E issues, and technical aspects as needed, which will be assigned by the IAs

Basin level implementation arrangements. Activities at the basin level will be implemented by the Regional and/or Provincial (in the case of TRGM) Directorates (RD/PD) of each IA and their respective Field Offices (FO). The project will be implemented in two different basins, within the borders of five provinces (Ordu, Tokat, Yozgat, Sivas, and Çorum). Thus the project will be executed in three Regional Directorates of OGM (Giresun, Amasya, Kayseri), four Regional Directorates of DSI (Samsun, Kayseri, Sivas, Ankara), one Regional Directorate of KGM (Samsun), and five Provincial Directorates of TRGM (Ordu, Tokat, Yozgat, Sivas and Çorum). Each RD/PD will have dedicated staff that will be assigned by each IA to support project implementation. To increase the capacity for implementation in the field and ensure effective coordination among the IAs, two Regional Support Units (RSUs) will be established under two Regional Directorates of OGM at the basin level. The physical location of the Bolaman RSU will be in the Ordu Province and the Cekerek RSU will be located in the Yozgat Province. RSUs will be composed of both staff and specialized consultants to strengthen the technical and administrative capacity of the regional/provincial structures of the IAs at basin level. The exact required positions will be specified in the POM taking into consideration a flexible structure adaptable to the project needs during implementation.

Regional Project Steering Committees will also be established at the basin-level to ensure coordination with local authorities such as Municipal Administration and Services in the Bolaman basin, Special Provincial Administrations (SPAs) in the Cekerek basin, Producer Organizations, civil society organizations, and other stakeholders. The composition and function of the Regional PSCs will be further specified in the POM.

Relevant Departments of Implementing Agencies. A number of Departments from each IA will be involved in the design and implementation of project activities. Each IA will assign a Focal Point from the main Department that will act as the PIU responsible for overall project management and reporting and for coordinating project activities with other relevant Departments within the IA.

Other agencies involved in coordination. Other agencies that will be participating in project coordination and oversight include the DG of Water Management under the MoAF, the Ministry of Environment and Urbanization (MoEU), and the Disaster and Emergency Management Presidency (AFAD) of the Ministry of Interior, and others will be included to the PIU.

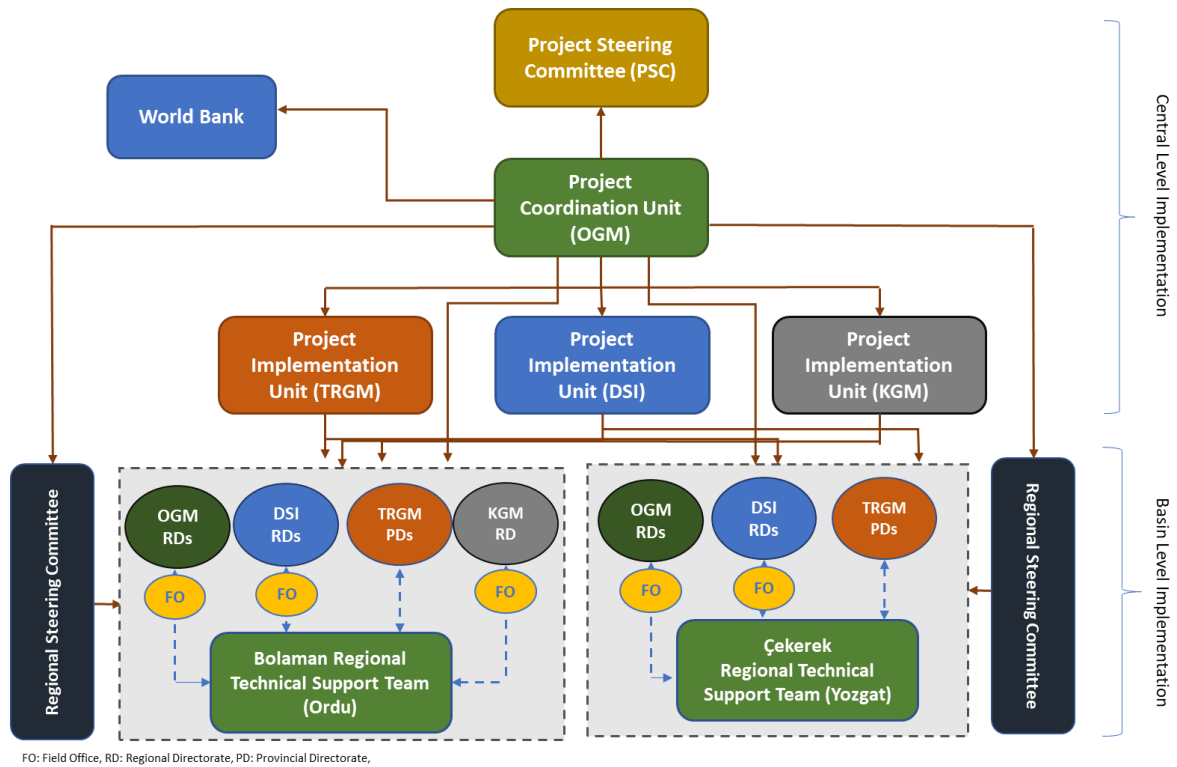


Figure 5-1 Project Implementation Structure

5.3 Institutional Arrangements for Implementing ESMF

This section describes the institutional arrangements for the ESMF aspects of the full project management and implementation. Please refer to Figure 5.1 for an overall layout of organization of project units.

The planning level of institutional arrangement of the ESMF will be through PIUs of IAs (DSI, KGM and TRGM) under the overall supervision and guidance of the PCU. PIU for OGM will be the PCU at the same time.

PCU, with its ESF Team established, will manage and coordinate the entire project and technically support and supervise PIUs, on continuous basis.

PCU will supervise PIUs in their screening process for subprojects and will finally review and compile the results of screening before submission to WB for clearance (No-Objection). Preparation of the subproject ESA documents (ESIAs, ESMPs, etc.) will be the responsibility of PIUs under supervision and technical support of PCU, whereas implementation of these documents is the responsibility of RD/PD of IAs under direct support and supervision of RSUs, as pertinent to each subproject. PCU will perform an overall quality assurance function that the documents prepared meet the World Bank requirements. The WB will provide prior review and provide No-Objections to the subproject ESA documents. For all subprojects, the site specific ESIAs, ESMPs, LMPs and RPs will also be included in bidding documents and be part of the contract with the contractor selected to carry out the subproject works.

PIUs will report to PCU periodically on the realization of relevant project targets and achievement of outputs including implementation of ESA documents, and PCU will report to the WB on project implementation progress, including technical, fiduciary, E&S, and M&E aspects.

PCU, PIUs and RSUs will include as an ESF Team at least the following qualified and experienced personnel:

PCU (OGM);

- 2 Environmental experts with knowledge on WB safeguards and associated procedures; in particular: ESS 1, ESS 3, ESS 4, ESS 6, ESS 8 and ESS 10
- 2 Social experts with knowledge on WB safeguards and associated procedures; in particular: ESS 1, ESS 2, ESS 4, ESS 5, ESS 8 and ESS 10 and gender vulnerability issues
- 1 OHS expert with knowledge on ESS 2 and ESS 4
- 1 Biodiversity expert with knowledge on ESS 6
- 1 Archaeologist (On demand basis, in case of a change find)

PIUs (TRGM, DSI and KGM each):

- 1 Environmental expert with knowledge on WB safeguards and associated procedures; in particular: ESS 1, ESS 3, ESS 4, ESS 6, ESS 8 and ESS 10
- 1 Social experts with knowledge on WB safeguards and associated procedures; in particular: ESS 1, ESS 2, ESS 4, ESS 5, ESS 8 and ESS 10 and gender vulnerability issues
- 1 OHS expert with knowledge on ESS 2 and ESS 4
- 2 dam experts in the case of DSI with knowledge on ESS 4

RSUs (Bolaman and Çekerek Basin each);

- 1 Environmental expert with knowledge on WB safeguards and associated procedures; in particular: ESS 1, ESS 3, ESS 4, ESS 6, ESS 8 and ESS 10
- 1 Social expert with knowledge on WB safeguards and associated procedures; in particular: ESS 1, ESS 2, ESS 4, ESS 5, ESS 8 and ESS 10 and gender vulnerability issues
- 1 OHS expert with knowledge on ESS 2 and ESS 4
- 1 Biodiversity expert with knowledge on ESS 6

The PCU, PIUs and RSUs will deploy additional staff as needed, for proper implementation of the environmental and social framework elements of the project.

ESF Teams other than Consultants at PCU, PIUs and RSUs will be trained through a series of sessions geared to WB ESSs, preparation of ESF instruments, gender vulnerability and the main E&S issues specific to both basins. The central level and regional level consultants will also be responsible for trainings (on regular basis) of the government personnel appointed for the project (in house personnel).

Management responsibility for the grievance mechanism in each basin will also lie with the PCU and RSUs. At the central level a grievance coordinator will be mobilized whom will coordinate with central level PIUs. At the basin level, focal point for the grievance mechanism will be the primary responsible staff for collecting and responding the complaints working together with the RD/PD of each IA.

5.3.1 Project Coordination Unit (PCU)

PCU will be the main coordinating body and will be staffed to carry the technical capacity that will technically support other management units of the project.

The ESF responsibilities of the PCU will be as follows:

- Review and present results of screening of the subprojects for the clearance of the WB.
- Coordinate acquisition of technical assistance for preparation of ESA documents in accordance with the World Bank's ESF requirements.
- Establish an ESF Team and organize training of ESF Team regarding World Bank's E&S assessment standards and procedures, consultation and disclosure requirements.
- Technically support and supervise PIUs in their ESF procedures: preparation of ESIA's, ESMPs, SEPs, etc.
- Provide final review of subproject ESA documents prepared by PIUs and submit to the WB for clearance.
- Ensure that subproject loan documents include agreements to implement project specific ESMPs in line with the ESMF and any other ESSs requirements.
- Establish and ensure efficient implementation of the grievance mechanism and coordinate with the RSUs.
- Ensure project-specific SEPs and LMPs are implemented in line with the SEF and LMP; respectively, and
- Collect and compile implementation reports from PIUs and RSUs, and report to the WB on a regular basis regarding implementation of the ESMF and associated instruments (SEF, RF, LMP, etc.).

5.3.2 Project Implementation Units (PIUs)

PIUs will be staffed by in-house technical personnel that will comprise of environmental experts, social experts and OHS experts with relevant qualification and skills within the scope of this project to coordinate the implementation of ESMF.

To help build improved capacity, PCU will organize trainings to familiarize the PIUs with the WB's ESSs and the ESMF, RF, ESCP, SEF, LMP.

Institutional capacity building will be ensured as the need arises through additional training or acquisition of equipment.

The ESMF responsibilities of each PIU will be as follows:

- Undertake the screening process of the subprojects regarding E&S risk categorization according to the World Bank's requirements,
- Prepare ESA documents with the supervision and technical support of PCU and present to PCU for final approval before it is submitted to the WB for clearance,
- Report periodically to the PCU as per implementation of ESIAs/ESMPs, SEPs, LMPs, RPs and GMs,
- Report to PCU on records of chance finds, OHS accidents, received grievance, consultations,
- Perform monthly supervision of RSUs implementation of ESMF, RF, ESCP, site specific E&S assessment documents and any other ESSs requirements, and document performance, recommendations and any further actions required as part of overall project supervision reporting to the WB, and
- Monitoring and auditing environmental and social issues at the sites (including OHS issues) through data collected from the site visits.

5.3.3 RD/PD and RSUs

The ESMF will be implemented by the RD/PD of the IAs under direct support and supervision of the RSU. The overall roles and responsibilities and capacities of key organizations are described below.

RD/PD

- Implement the ESIAs/ESMPs, SEPs, LMPs, RP, GM
- Be open and responsive to concerns raised by affected groups and local environmental authorities regarding environmental aspects of subproject implementation. Execute consultations with these groups during site visits, as necessary
- Compile and present quarterly monitoring reports to PIUs
- Inform PIUs and /or RSU promptly at times of diversions from ESIAs/ESMPs
- Carry out regular stakeholder engagement in line with the SEPs and report to PIUs regularly

RSU

- Ensure smooth and correct implementation of the ESIAs/ESMPs, SEPs, LMPs, RP, GM
- Support and ensure that the RD/PD are open and responsive to concerns raised by affected groups and local environmental authorities regarding environmental aspects of subproject implementation. Execute consultations with these with these groups during site visits, as necessary
- Assist the RD/PD of the IAs for compiling and presenting quarterly monitoring Reports to PIUs
- Inform PIUs promptly at times of diversions from ESIAs/ESMPs
- Assist and take part in regular stakeholder engagements in line with the SEPs and report to PIUs regularly

5.4 Assessment of ESMF Implementation Capacity of Implementing Agencies

Among national government agencies, the General Directorate of Forestry (OGM) is the coordinator whereas, the General Directorate of Agricultural Reform (TRGM) and the General Directorate of State Hydraulic Works (DSI) of the MoAF as well as the General Directorate of Highways (KGM) of the Ministry of Transport and Infrastructure are the other IAs which are also to be supported through the Project. Further, the Ministry of Treasury and Finance and the President's Strategy and Budget Office will act as the financial supervisors of the Project.

All IAs are subject to Turkish national laws and regulations. Therefore, they are responsible for the application of various law and regulations including Environment Law, Expropriation Law, Resettlement Law etc. for the subprojects financed through the Project.

The key procedural documents managing the project's environmental and social screening, review and monitoring procedures for subprojects will be based on ESMF, RF, SEP and LMP prepared in consideration of the national regulations and the ESF requirements.

For the World Bank-financed projects, these framework documents are integrated into the Project Appraisal Document (PAD) and Project Operational Manual (POM) of the project and also the core elements are referred in the Loan Agreements. Therefore, PCU and PIUs are fully responsible for the satisfactory implementation of the E&S documents. The ESMF additionally requires that subproject-specific ESA documents are prepared and these documents become a part of the sub-loan agreements between IAs and contractors. Through these contract agreements, IAs and the World Bank manage and oversee the subprojects in terms of the World Bank E&S requirements.

All four IAs have experienced staff in technical and procurement related procedures of Turkey with limited experience about WB's ESF requirements. An ESF training program is suggested for PIU experts. For each subproject's environmental and social risk identification and monitoring, PCU and the World Bank Environmental and Social team will conduct regular meetings, informal discussions and joint meetings with the sub-borrowers as necessary. PCU and the World Bank teams also will conduct and attend site visits during subproject risk identification and implementation.

Similar type of experts will be allocated for PIUs and RSUs, as they will be mainly responsible for the preparation and implementation of the ESA documents.

All four IAs are subject to national law on OHS of the Ministry of Family, Labor and Social Security. During the implementation of the project, PCU will ensure that PIUs have assistance from OHS experts for the supervision OHS measures implementation, which are required by Turkish OHS laws and regulations and ESS2. PCU will also guide PIUs to appoint OHS experts responsible for the supervision of the OHS measures implementation.

According to the national OHS Law, all employers must notify the Ministry of Family, Labour and Social Services in 3 workdays after OHS related incidents. Specifically, for any significant environmental or social incidents (e.g. fatalities, lost time incidents, environmental spills etc.), the RSUs will inform PCU through PIUs in 3 business days, and PCU will inform the Bank about the incident as soon as they are informed. The incident report including root cause

analysis, precautions and compensation measures taken, will be submitted to PCU in 30 business days and PCU will forward the incident report to the World Bank.

As government authorities, no one under the legal age (18 years) is permitted to work within the organization, thus no child labor related issues is expected. Cases including unregistered/uninsured employment of refugees, unequal employment opportunities for women etc. that may be relevant to civil works of contractors may encounter, will not be an issue in terms of non-compliance with ESS2 for the IAs.

IAs are committed to ensure compliance of their own operations and those of any contractors or sub-contractors working at the Project with the provision of the Turkish Labor Law and WB ESS 2 requirements in line with the LMP associated to the ESMF.

Key management measures, reporting and monitoring on unregistered/uninsured employment of refugees, unequal employment opportunities for women etc. that may be relevant to civil works that IAs' contractors will be presented in a joint Labor Management Procedure specific to the Project.

5.5 Capacity Building

ESS trainings will help to ensure that the requirements of the ESMF and subsequent ESIA's and ESMPs are clearly understood and followed by all project personnel throughout the project period.

PIUs will be continuously supported in technical terms by the ESF Team of the PCU in preparation of WB ESA documents and their implementation as well as compliance with national legislation.

RSU will ensure, in collaboration with the PCU that these trainings are provided to all project personnel. The environmental and social training program will be finalized before the commencement of the project. The training will be provided to the project staff, construction contractors, and other staff engaged in the Project. Training will cover all staff levels, ranging from the management and supervisory to the skilled and unskilled categories. The scope of the training will cover general environmental and social awareness and the requirements of the ESMF, ESIA (where relevant) and the ESMP, with special emphasis on sensitizing the project staff to the environmental, social and genders aspects of the region. Table 5.2 provides a summary of various aspects of the environmental and social safeguards training to be conducted under this project. The PIUs may revise the plan during the project implementation as required and subject to PCU approval.

Table 5-2. Capacity Building Scope

Target Audience	Contents	Responsibility	Schedule
OGM DSI KGM TRGM RD/PDs	General environmental and socioeconomic awareness Environmental and social sensitivity of the project area E&S screening Key findings of ESIA (as relevant) Mitigation measures	PCU and RSU	Prior to the start of the Project activities.

Target Audience	Contents	Responsibility	Schedule
	<p>ESMP</p> <p>Social and cultural values of subproject areas</p> <p>Grievance Mechanism</p> <p>Gender equality trainings</p> <p>Conflict management</p> <p>Research methodologies</p>		
<p>PIUs</p> <p>RD/PD</p> <p>Contractors</p>	<p>General environmental and socioeconomic awareness</p> <p>Environmental and social sensitivity of the project area</p> <p>E&S screening</p> <p>Mitigation measures</p> <p>Community issues</p> <p>Awareness of transmittable diseases, risk of Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH)</p> <p>Social and cultural values</p> <p>Grievance Mechanism</p> <p>Gender equality trainings</p> <p>Conflict management</p>	PCU and RSU	<p>Prior to the start of the field activities.</p> <p>To be repeated as needed.</p>
<p>PIUs</p> <p>RD/PD</p> <p>Contractors</p>	<p>ESMP</p> <p>Associated Management Plans (i.e. Waste Management Plan, Labor Management Plan, Traffic Management Plan, etc. as relevant).</p> <p>OHS Management Plan</p> <p>SEP</p> <p>LMP</p> <p>Grievance Mechanism</p> <p>Cultural values and social sensitivity</p> <p>Chance find procedure</p> <p>Gender equality trainings</p> <p>Conflict management</p>	PCU and RSU	<p>Prior to the start of the construction activities.</p> <p>To be repeated as needed.</p>
Drivers	<p>Road safety</p> <p>Defensive driving</p> <p>Cultural values and social sensitivity</p> <p>Chance find procedure</p> <p>Gender equality trainings</p> <p>Conflict management</p>	PCU and RSU Contractors	<p>Before and during the construction activities.</p> <p>To be repeated as needed.</p>
Forest Villagers	<p>OHS Management Plan</p> <p>Grievance Mechanism</p> <p>Chance finds procedure</p> <p>Gender equality trainings</p> <p>Conflict management</p>	PCU and RSU	<p>Before and during the construction activities.</p> <p>To be repeated as needed.</p>
RD/PD	<p>ESMP for operation stage</p> <p>OHS Management Plan</p> <p>LMP</p> <p>Gender equality trainings</p> <p>Conflict management</p>	PCU and RSU	<p>Prior to the Start of the Project Operation and when required</p>

6 ENVIRONMENTAL and SOCIAL BASELINE

6.1 Environmental Baseline

6.1.1 Geographical Location of the Basin

The Project Area is one of the sub-basins of the Eastern Black Sea Basin. It has a catchment area of 1339.5 km². It is at about 73 km to Samsun at the West and 55 km to Ordu at the East, and about 102 km to Reşadiye at the South. A large part of the Project Area is situated within the provincial borders of Ordu province while a small part is within borders of Tokat province. The geographic location of the Project Area can be seen in Figure 3-1.



Figure 6-1. Geographic Location of the Bolaman River Basin

6.1.2 Climate

Climate characteristics of the Bolaman River Basin is a major factor explaining the historical and active natural disasters and ongoing risks in the region, such as landslides and floods.

Climate characteristics of the basin is appropriated to Ordu Province in general, where the climate is mainly affected by the Black Sea: a mild climate, cold in winter. The Black Sea

precipitation regime prevails, which receives the highest rainfall in autumn, rainy throughout the year. Significant differences can be seen in inner parts and the coastal zones. It is rainy throughout the year.

The climate data is taken from the 11 meteorological stations (see Figure 6-2) within the boundaries of the basin, from which average temperature and total average precipitation values have been retrieved . Availability of climate data dates back to 2014 when meteorological stations were established. For the basin specific conditions, calculations using Thissen Polygon Method indicate at average precipitation of 81.31 mm and average temperature of 11.5°C.

The average temperature in the coastal areas of Fatsa is higher than the other meteorological stations. The lowest average temperature was recorded in Başçiftlik.

The hottest month is August and the coldest month is January. The highest temperature was recorded as 37.3°C in June 1994; the lowest temperature was -7.2°C in January 1964.

An average of 9 days of frost was detected over the long years. The average relative humidity value of Ordu Province is 74.7%. The highest humidity is in May and the lowest in December. The weather is open 58 days a year, cloudy 177 days and closed 130 days. Snowfalls are not common. The duration of stay on the ground, including high altitudes of falling snow, is 1 - 15 days. The number of snowy days is 8, and the number of days with snow cover is 9. The highest snow depth in the long years was 72 cm in January.

The average monthly wind speed is 1.9 m/sec. The fastest wind direction is the west and its speed is 35.7 m/sec. The number of strong and stormy days is 44 days on average. Dominant wind direction is South - Southeast (SSE).

The annual drought index varies between “abnormally moist” in inner parts to “exceptionally moist” in coastal areas of Ordu. However, the drought index is “moderately dry” in summer months, which explains the drought period in summer months that water scarcity is an issue for the seasonally increased population.

Rate of total average precipitation and average temperature increases from the south to the north of the Bolaman River Basin. The highest average temperature has been recorded as approximately 15 °C in the coastal regions of Fatsa. The highest total precipitation average has been recorded as high as 1600 mm on Kırılı Station.

See Figure 6-2 for the average temperature and average total precipitation distribution between 2014 and 2020 in the basin.

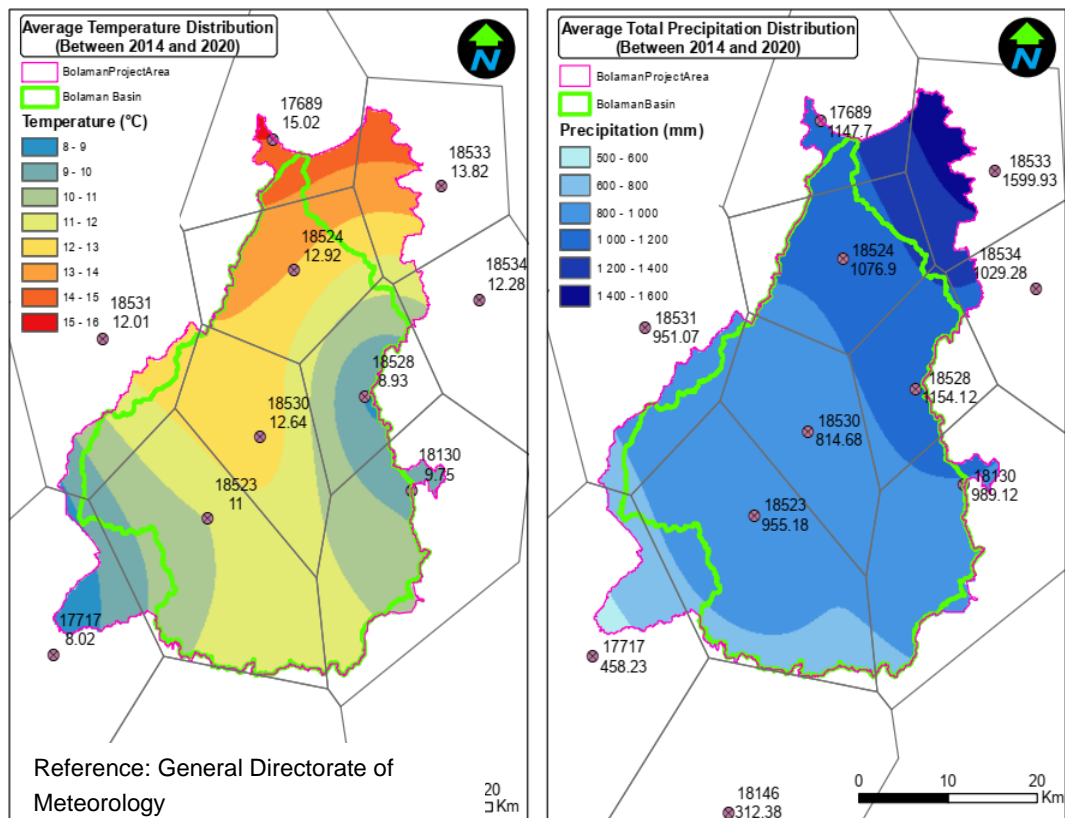


Figure 6-2. Average temperature and total precipitation (2014-2020)

- [Access Link](#)

6.1.3 Geology and Geomorphology

Limestone, sandstone and mudstone rock structures are common in the geology of the lower parts of basin with lower altitudes. Central parts of basin are comprised of andesite and basalt rock structures whereas the upper parts are comprised of basalt, agglomerate, tuff and andesite rock structures. A large part of the Bolaman River Basin was formed during the Eocene and Upper Cretaceous periods. Lithologically; pyroclastic, conglomerate, surface volcanoes, and sediments make up 98.6% of the basin. Geology map of the Bolaman River Basin can be seen in

Figure 6-3.

It is possible to divide the Bolaman River Basin into three main geomorphological units: mountainous areas, plateau areas and plains. More than 50% of the Bolaman river basin consists of plateaus; mountainous areas makes up of 28.8% and flat terrain makes up 17% of the total basin.

Geomorphology of the basin explains the severe landslide incidences and erosion. The basin has a rough terrain with steep slopes, mainly influenced by surface flows. Literature cites deforestation for extending hazelnut plantations in the past, leading to increase of erosion prone areas. As any agricultural activity, hazelnut production had started on natural areas. Those areas suitable for hazelnut are natural forest areas of the Black Sea Coast. Therefore, either directly or indirectly (i.e. first converted to some other product, then to hazelnut) natural forests were converted to hazelnut orchards. This conversion period was highest in the 1975-

1985, while it decreased after 1990s, although still exist in much smaller amounts as documented for Giresun province (Kurdođlu et al., 2017). It would not be far fetching to assume a similar process had taken place in the Project Area. Additionally, as studies using climate change projections predict and current reports from official bodies indicate, that the once most productive areas for hazelnut growth – coastal areas up to 250 m. altitude – no longer produce as much hazelnuts during the last 4-5 years. On the other hand, hazelnut varieties adapted to higher altitudes seem to take over, which may lead to expansion of hazelnut orchards towards forest areas at higher altitudes (Ustaoglu and Karaca, 2014). Natural forests comprise a variety of forest trees, shrubs and herbal vegetation with various types of root structures, which stabilize the soil and prevent erosion. When this complex natural structure is replaced with a monotypic agricultural scheme through conversion, soil stabilization decreases and erosion increases. This leads to a substantial increase in the amount of areas prone to erosion due to conversion of natural forests into hazelnut orchards, especially in areas with increasing slope.

It is possible to express the factors that cause erosion in the basin in two groups as natural factors (i.e. slope, exposure, streams and climate) and human factors (i.e. land-use, take of vegetative land for settlement, agriculture, roads, industrial facilities, etc.).

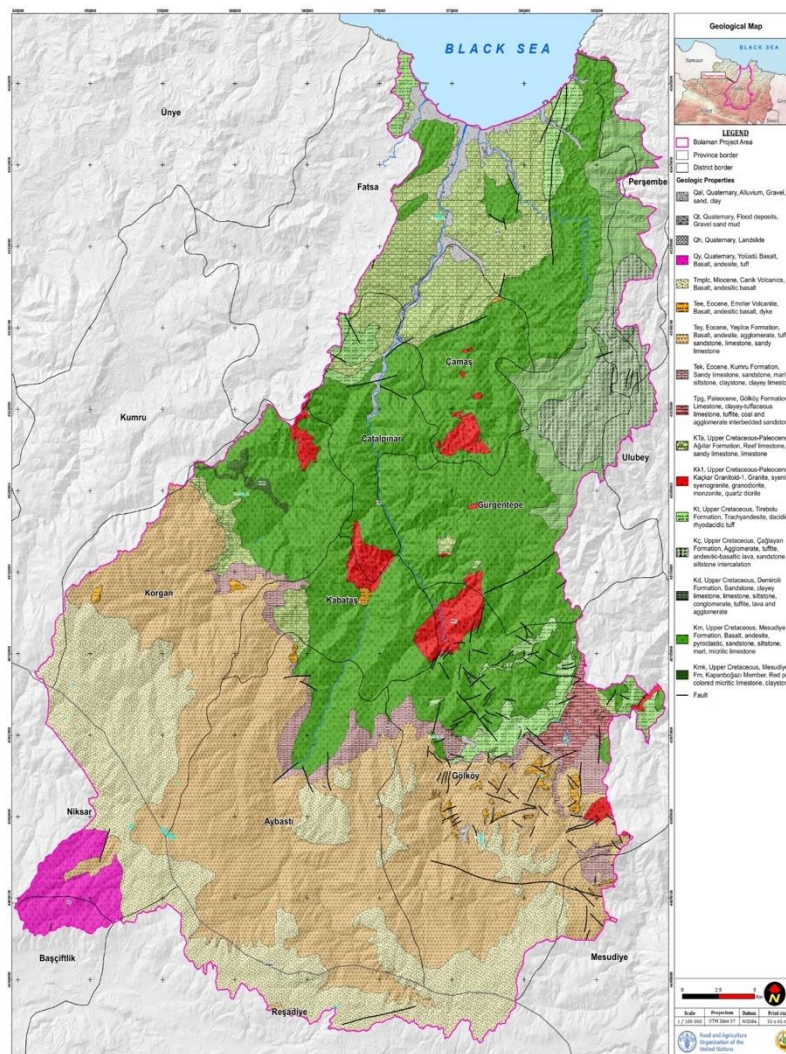


Figure 6-3. Geological Map for the Project Area - [Access Link](#)

6.1.4 Erosion

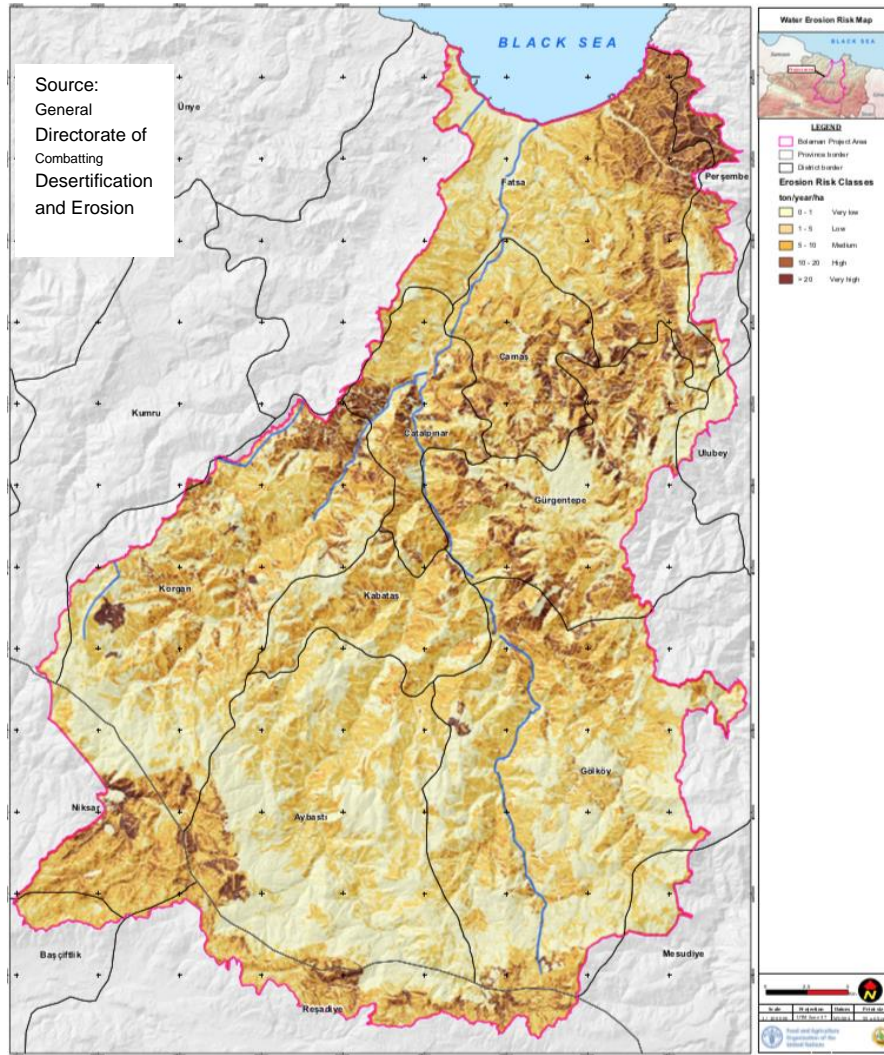


Figure 6-4. Water Erosion Map of Bolaman River Basin (ÇEM) – [Access Link](#)

The water erosion map can be seen in Figure 3-4, as retrieved from the maps developed by General Directorate of Combating Desertification and Erosion (ÇEM). The erosion map shows that there are areas exposed to moderate level of erosion and severe level erosion in Fatsa, Çatalpınar, Çamaş, Gökçöy and Gürkentepe districts.

About half of the basin has a slope of more than 20%. However, due to low socio-economic status, the forests have been destroyed and turned into hazelnut fields. Planting smaller plants instead of tall plants in the forests has facilitated the surface flow of water falling on the ground. Such misuse of land is one of the most important factors increasing the erosion in the basin.

Slopes facing the north Black Sea is dominated in a large part of the basin. The humid air masses coming from the north causes more rainfall to these slopes due to the exposure effect. The small materials formed on the slopes facing north under the influence of humidity and rainfall are transported to rivers or stream beds by rainwater or landslides. In the periods when the surface flow increases, the amount of material transported also increases. For this reason, the slopes facing north in the region are places at higher erosion risk.

The erosion risk is high on the native soils in the basin. The majority of the basin consists of native soils and there are eroded soils in the coastal part of Fatsa. Due to the fact that the native soils at higher slope values than eroded soils, the erosion rate is higher.

6.1.5 Landslides

One of the major issues triggered by geomorphological characteristics of the basin is landslides. Rapid urbanization and population growth also contribute to increased landslides. Landslides in the basin have caused significant damages on settlements and transportation routes through years.

Sağlık Neighborhood in Aybastı district was prone to the impacts of the landscape disaster in February 2015. Residents lost their homes as a result of the disaster. The landslide affected an area of 22 hectares.

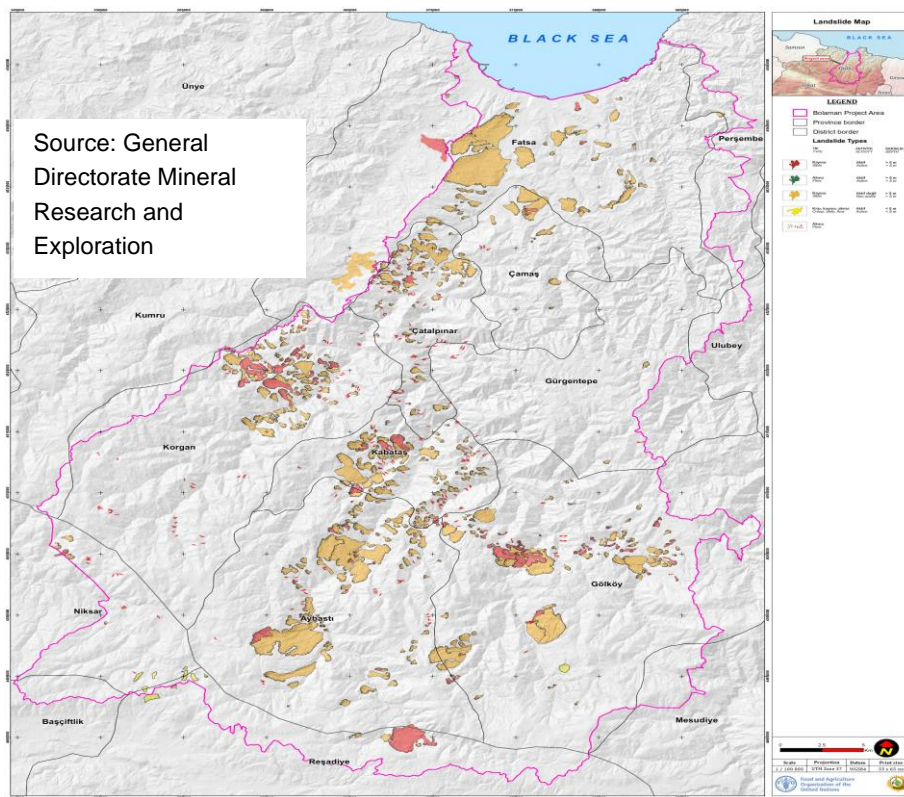


Figure 6-5. Landslide Map of Bolaman River Basin -[Access Link](#)

The regions at higher altitude are assessed to be more sensitive to landslides than regions at lower altitudes. This result may be assessed as higher parts especially in mountainous regions having more rainfall and more material transportation. The altitude increases to the south from the shore.

Although it would be expected that landslides would increase towards higher altitudes to the South, it is seen that landslides are affected by the humidity factor rather than altitude. Highest humidity is recorded in alluvial plains, mainly in the coastal section of Fatsa segments of the basin. Surface flow retains on flat alluvial lands and infiltrates into soil layers, triggering further landslides.

6.1.6 Floods

Floods in the basin mostly occur following heavy storms. Maximum rainfall occurs from June to August, making it the most critical time period for flood disasters. In this time period of heavy rainfalls, soil is highly saturated with water highly. Given the existence of impermeable and semi-permeable rock layers and steep slopes and erosion values, rainfall easily converts into surface flows. This is further sparked by land-use practices including uncontrolled collection of aggregates from riverbeds.

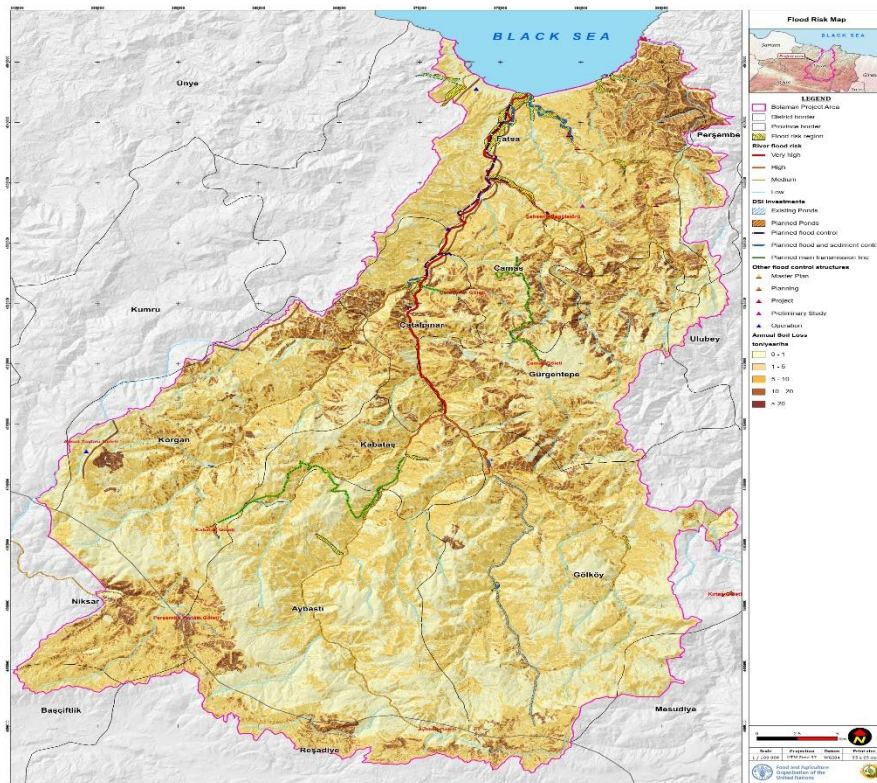


Figure 6-6. Flood Risk Map of Bolaman River Basin -[Access Link](#)

According to the flood risk map given in Figure 6-6, the fact that areas with a very high flood risk are located within the boundaries of residential areas such as Fatsa and Çatalpınar shows that these areas are likely to be damaged by a possible flood. At the same time, it is observed that flood risk is high in areas close to the sea where precipitation is high, and slopes are low.

6.1.7 Vegetation Cover

Bolaman Project Area has a rough terrain, with altitudes varying between 0 to 1983 meters. Vegetation cover changes with respect to climate features, geomorphology and soil types. The typical vegetation cover is humid forest foundation dominated by broad-leaved trees that shed their leaves in winter. The vegetated areas up to 300 - 400 meters are comprised of shrubs and herbs formations, occupied by hazelnut fields in general. Trees are dominant at higher altitudes.

As altitudes increase, soil thickness and humidity decrease due to the increasing slope where vegetation has less demand for moisture, causing shrub and weed formations. The elements of the flora formation are cranberry, shrub, broom bush, wild nut, yellow flower rhododendron. It is also possible to see tall plants and different pine species.

As literature cites, agricultural lands in the region have rapidly increased since the 1930s. Thus, land cover of the Project Area has gradually transformed into mono-cultured area dominated by hazelnut producers. Initial expansion of the hazelnut gardens was established only in coastal areas, then spread rapidly towards the inner parts of the Project Area. Consultations during the field visit indicate that changes in land-use have slowed down.

Table 6-1 provides land cover information from 2018 and suggests that 45% is agriculture area of Bolaman River Basin.

Table 6-1. Land Cover in the Project Area

Land Cover	Area (ha)	Area (%)
Inland waters	442.84	0.28
Industrial area	252.52	0.16
Urban fabric	1440.83	0.91
Permanent crops	30,798.01	19.39
Heterogeneous agricultural areas	72,321.73	45.52
Arable land	452.40	0.28
Open spaces or no vegetation	231.80	0.15
Pastures	160.83	0.10
Scrub / herbaceous vegetations	23,333.75	14.69
Forests	29,431.23	18.53
TOTAL	158,865.94	100.00%

Source: Corine, 2018

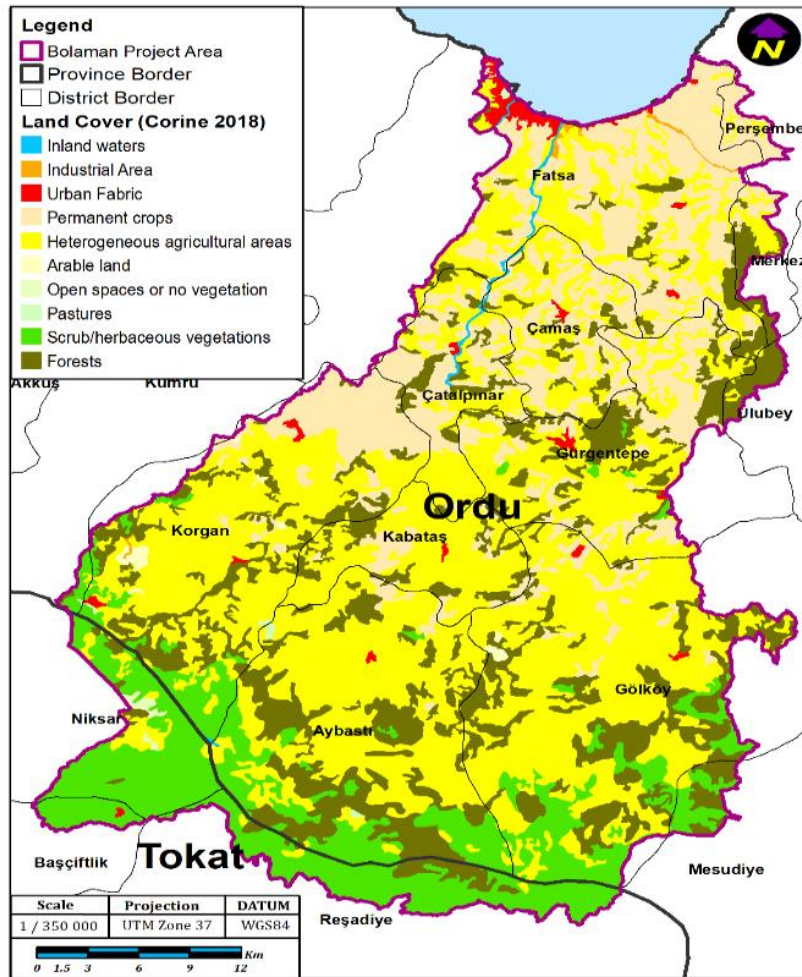


Figure 6-7. Land-use and Land Cover in the Project Area (Corine, 2018)

The land cover map of the Project Area is provided in

Figure 6-7. Additionally, CORINE maps were added in order to observe the change of land cover and usage by the years within borders of the Project Area. In order to reveal the change, the reference year was set at 1990, and change of the land cover was aimed to be easily comprehensible by digitized. Corine Land Cover Map by years can be seen in Figure 6-8.

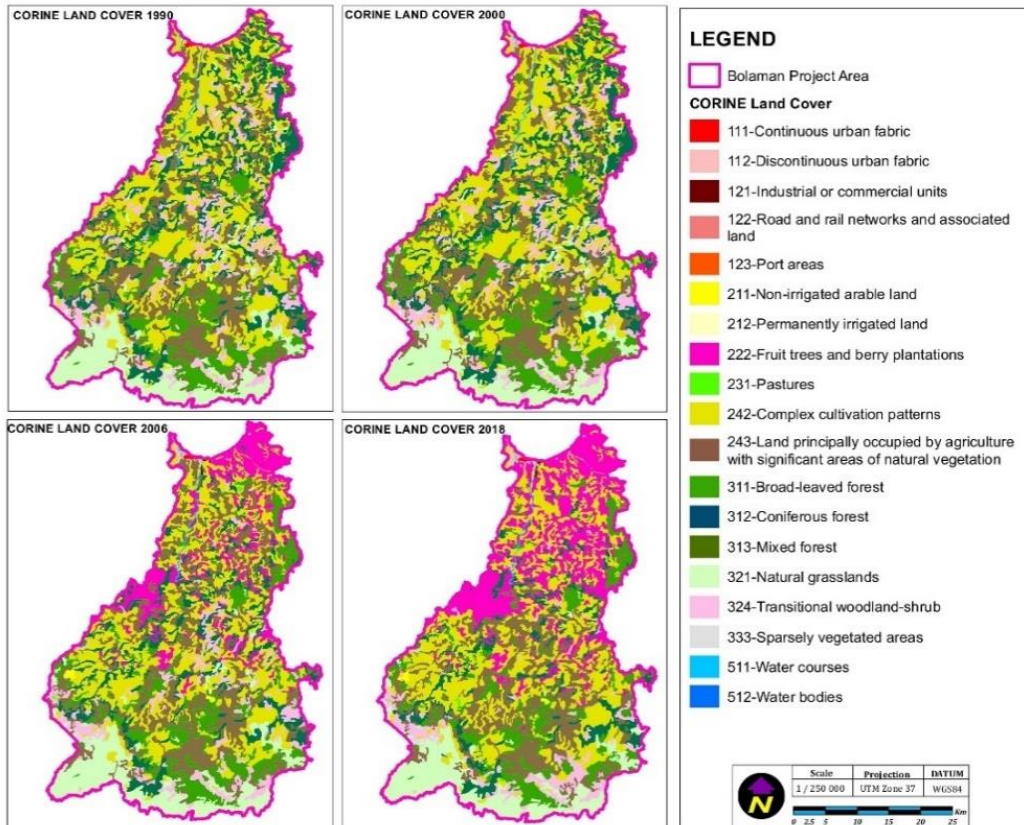


Figure 6-8. Corine Land Cover Map by years -[Access Link](#)

The state owned area with forest character in the project area is approximately 39,000 hectares (Forest Stand Data Map, 2019). Forest map of the project area in Figure 6-9 is prepared using the current Forest Stand Data Map and shows the areas having legal forest boundaries based on the information obtained from OGM.

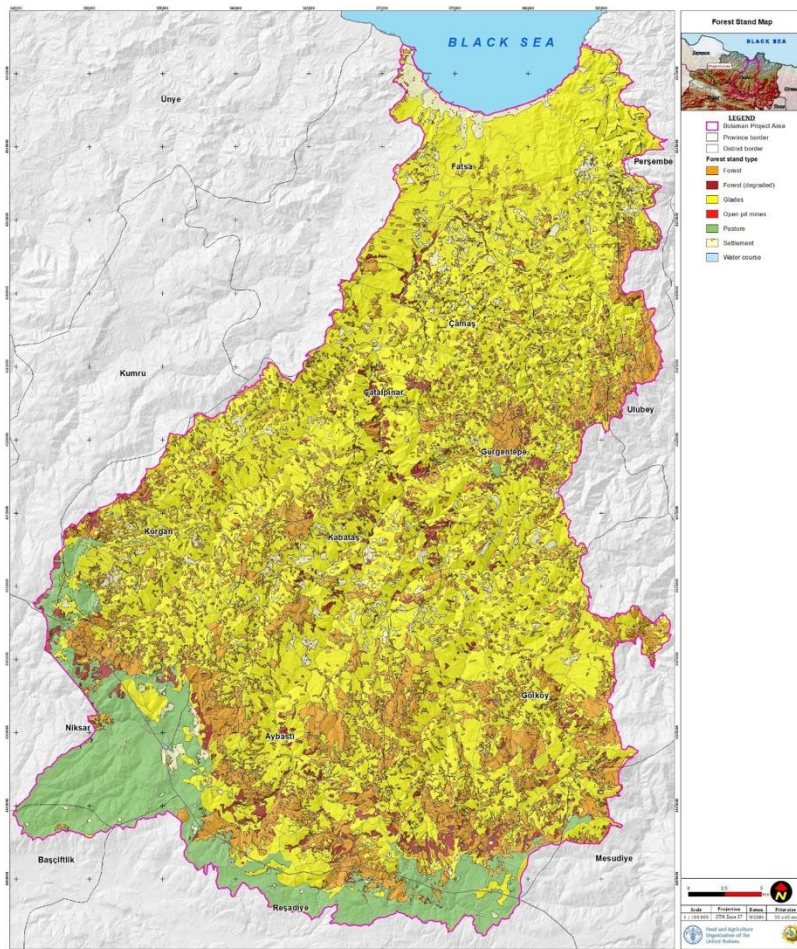


Figure 6-9. Forest Map of the Project Area (2019)

No	Land Use Classification	Area_ha
1	Forest	34675.13
2	Forest (degraded)	4629.09
3	Glades	96880.31
4	Open pit mines	26.24
5	Pasture	16165.11
6	Settlement	6435.76
7	Water course	52.72

On the other hand, in order to evaluate the land use and land cover change in Bolaman Project Area, official CORINE 2018 data has been used in order to produce the map that is based on a more general analysis of the satellite images. Therefore, Corine 2018 Map designates 29,431.23 hectares of area as 'forest' in the Bolaman Project Area, and assigns other land use and land cover classes to the rest of the official forest areas, which include some of the following classes: 333-sparsely vegetated areas, 324-Transitional woodland and scrub, 243-Land principally occupied by agriculture with significant areas of natural vegetation and 231-

Pastures. These areas are entitled officially as forest areas, which have been assigned different uses by OGM, i.e. afforestation, reforestation or non-timber forest products production.

6.1.8 Basin Hydrology

The basin is situated in the Eastern Black Sea (EBS) basin and covers an area of 1339.5 km². The NS length of the basin along Dıpköy - Cimili line is 55.7 km; and the width along Gököy - Dereköy line in EW is 37.4 km. Project Area is comprised of 7 sub-basins as shown in Table 6-2.

Table 6-2. Sub-Basins in Project Area and Percentages of Coverage

Sub-Basin Boundaries	Area (km ²)	Percentage in the basin (%)
Bolaman Tributary	178.1	13.3
Şahsene Tributary	132.6	9.9
Ilıca Tributary	99.4	7.4
Keş Tributary	202.2	15.1
Eceli Tributary	329.5	24.6
Direkli Tributary	227.4	17.0
Medrese Tributary	170.3	12.7
TOTAL	1339.5	100

Source: Özdemir, 2006

Creeks and tributaries in the basin have relatively high flow rates and are active in all seasons. Flow rates increase after heavy storms and overflow the riverbeds, which causes increased sediment loads. Natural lakes and ponds are mostly formed as a result of the blockage of drainage depression following landslides.

Bolaman River has three main branches: Karakoyun, Reşadiye and Gököy creeks, which are fed by many small and temporary creeks. Bolaman river forms a corridor between the coast and the inner parts, between Tokat and Reşadiye. Heavy rainfall, especially in the form of downpours, causes the level of the stream to rise and flooding occurs in parts of the shallow parts of valleys.

Natural lakes and ponds in the basin are mostly formed after the drainage collapse is blocked as a result of landslides. Gaga, Ulugöl and Sülük lakes are the major lakes that formed in this way.

Gaga Lake was formed as a result of a landslide between Bolaman River and Yassıtaş tributary. There is a small islet in the middle of the lake. Lake surface is around 6 hectares. The lake is legally protected as a 1st and 3rd degree natural conservation site.

Ulugöl Nature Park was established in 07/09/2009. It comprises three landslide set lakes covering a total lake surface of 8 hectares and a total Nature Park area of 26.5 hectares, which include the surrounding forests. It consists of one large and two small lakes. There is one endemic and endangered fish species *Salmo abanticus*, which was artificially introduced in the

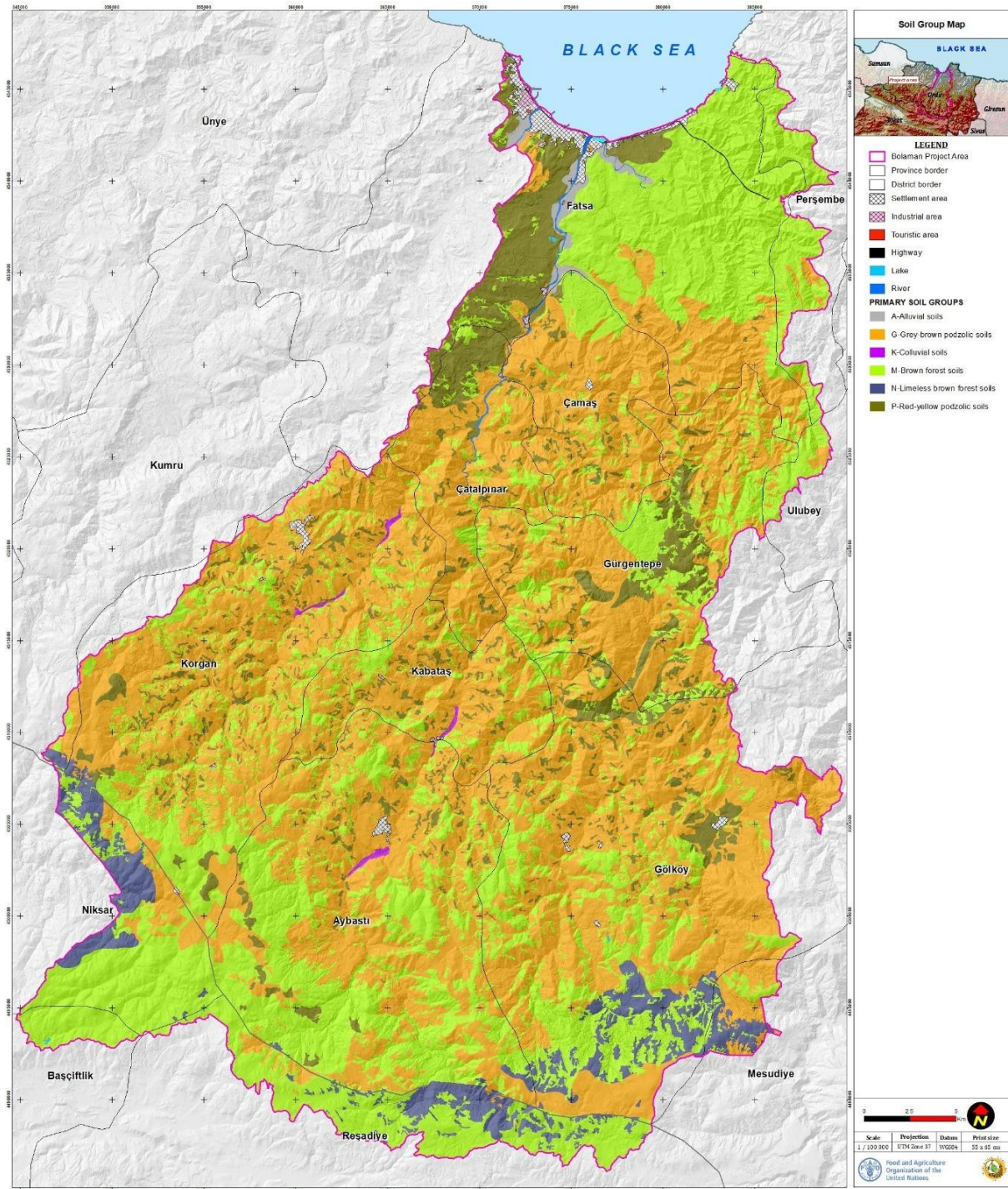


Figure 6-12. Soil Group Map of Basin – [Access Link](#)

Table 6-3. Ranking of Activities Causing Soil Contamination in Ordu

Soil pollution causes	Industrial waste discharge	Mining wastes	Uncontrolled dumping of domestic solid wastes	Uncontrolled dumping of hazardous wastes	Unplanned urbanization	Excessive use of fertilizers	Excessive use of pesticides	Animal waste
Pollution degree	3	8	1	2	4	7	6	5

Source: MoEU, 2016

From the 2016 figures of MoEU for ranking of environmental problems in provinces, the main cause of soil pollution in Ordu is uncontrolled dumping of domestic and hazardous wastes (see Table 3-3).

Before 2019, all solid wastes were disposed in wild dumps, causing serious soil contamination. As of 2019, solid wastes generated in the basin districts are disposed in the sanitary landfill facility located in Çaybaşı district outside the basin. With the start-up of operation of the Çaybaşı landfill, wild dumps in the basin have been closed.

The other soil pollution is manure deposition from livestock grazing. Livestock breeding and grazing is a common sector of economy in the Bolaman basin. Some of the manure is used directly as natural fertilizers in agriculture. The remaining part is stored outdoors under unsanitary conditions and are dumped in the nearest lands.

Chemical fertilizers used in conventional farming methods are mainly nitrogenous, phosphorus, or potassium salts. Overuse of chemical fertilizers cause accumulation in the soil, causing salinization and contamination, eventually decreasing fertility of the soils.

The pesticides used in combating harmful insects and microorganisms also have important environmental pollutants for the basin.

Mines are rated with the least impact on soil pollution.

6.1.11 Air Quality

Air quality data for the basin is retrieved from province level records of air quality measurements at Fatsa station located in Ordu. Measured parameters are PM₁₀, NO₂, SO₂, NO and NO_x. Table 6-4 gives yearly averages for the year 2017.

Table 6-4. Air quality records for 2017

Months	PM ₁₀ (ug/m ³)	SO ₂ (ug/m ³)	NO ₂ (ug/m ³)	NO _x (ug/m ³)
January	74	64	104	158
February	70	52	136	150
March	75	39	107	161
April	61	33	91	124
May	44	7	70	91
June	33	7	16	22

Months	PM ₁₀ (ug/m ³)	SO ₂ (ug/m ³)	NO ₂ (ug/m ³)	NOX (ug/m ³)
July	31	6	16	21
August	-	7	15	20
September	11	10	16	24
October	25	10	26	41
November	17	25	28	49
December	37	46	32	55
Average	45	27	55	80
Limit Values	48	20	48	30

Source: MoEU, 2019

Level of air pollution increases in winter season due to urban heating in general. SO₂, NO₂ and NO_x concentrations in the basin are above the limit values according to Regulation on Air Quality Assessment and Management (Official Journal Dated 05.05.2009; No: 2719). At the same time, it is seen that PM₁₀ values rise top level during the winter months. (MoEU,2019)

The reasons for the concentrations exceeding the air quality limit values are fossil-fuel combustion and vehicle emissions for SO₂; industry, vehicle emissions, fossil fuel combustion and agricultural activities for PM₁₀; and vehicle emissions and high temperature combustion processes for NO_x.

The community surveys indicate that air pollution is not seen as a serious problem in the basin. Muhtars have noted that dust is source of nuisance on communities, mainly caused by motor vehicles on unpaved roads.

6.1.12 Water Quality

Water quality is a problem mentioned by local stakeholders and community members. It was stated on the site that the main water for drinking and domestic use is supplied from groundwater wells. Surface water resources are stated to be polluted by organic loads from grazing lands and hazelnut plantations by means of surface flow. Specifically, Aybastı Municipality obtains water from Kızılot Reservoir which also serves OGM as a firefighting reservoir at the same time. Aybastı Mayor expressed that the quality of tap water is not in compliance with Turkish Standards and a reliable and good quality water source is highly needed. Capacity of Kızılot Reservoir remains insufficient to meet the current demands in both qualitative and quantitative terms. It was also observed during the site visit that the reservoir has no protection fence to prevent access of animals to the source, which might be interpreted as one of the possible source of pollution in Kızılot reservoir water.

Based on water quality records from the 3 water quality stations of DSI in the basin, it is seen that the surface water quality is 2nd class in the measurements made at the Bağlama-Korgan station, while the the surface water quality is 3rd and 4th class in the measurements made in Cevizdere -Kızılderesi and Bolaman-Hisarbey. (Eastern Black Sea Master Plan, 2016)

Table 6-5. Water Quality Records in the Basin

Station name	Bağlama-Korgan		Cevzidere -Kızılderesi		Bolaman -Hisarbey	
Surface water quality	Avg.		95%	90%	95%	90%
	2 nd quality		4 th quality	3 rd quality	4 th quality	3 rd quality
T (oC)	Avg.		95%	90%	95%	90%
	14.7		31,1	26,4	30,9	26
pH	Avg.		95%	90%	95%	90%
	8.1		9,1	8,9	9	8,8
EC (µS/cm)	Avg.		95%	90%	95%	90%
	90		548	435	702	537
DO (%)	95%	90%	95%	90%	Avg.	
	100	100	105,8		96,6	
DO (mg/L)	Avg.		95%	90%	95%	90%
	8.9		12,9	12,2	13,2	12,4
KOİ (mg/L)	Avg.		95%	90%	95%	90%
	7,7		18,7	13,5	27,9	18,4
BOİ5 (mg/L)	Avg.		95%	90%	95%	90%
	3		11,4	8,4	7	5,5
NH4 (mg/L)	95%	90%	95%	90%	Avg.	
	-	-	2,21	1	0,15	
NO3 (mg/L)	Avg.		95%	90%	95%	90%
	5,5		27,5	16,3	25	17
NO2 (mg/L)	Avg.		Avg.		95%	90%
	0,01		0,01		0,44	0,21
TP (mg/L)	Avg.		Avg.		Avg.	
	0,08		0,13		0,14	

Source: Eastern Black Sea Master Plan, 2016

Water quality records in the 3 stations are as follows:

Bolaman River - Hisarbey station:

The pollution is caused by the discharge of domestic wastewater and dumping of solid wastes from settlements near Bolaman River into its tributaries. At the same time, creeks are polluted due to the pesticides and fertilizers used in hazelnut orchards.

Cevzidere - Kızılderesi station:

Pollutants are mostly metallic mine-based waste, domestic and industrial wastes.

Bağlama-Korgan station:

Water quality is Cass II. Wastes originating from domestic and agricultural activities in the region are discharged to Bağlama river. Class II refers to surface waters with potential for

drinking water, recreation, fish production other than trout and irrigation. (Eastern Black Sea Master Plan, 2016).

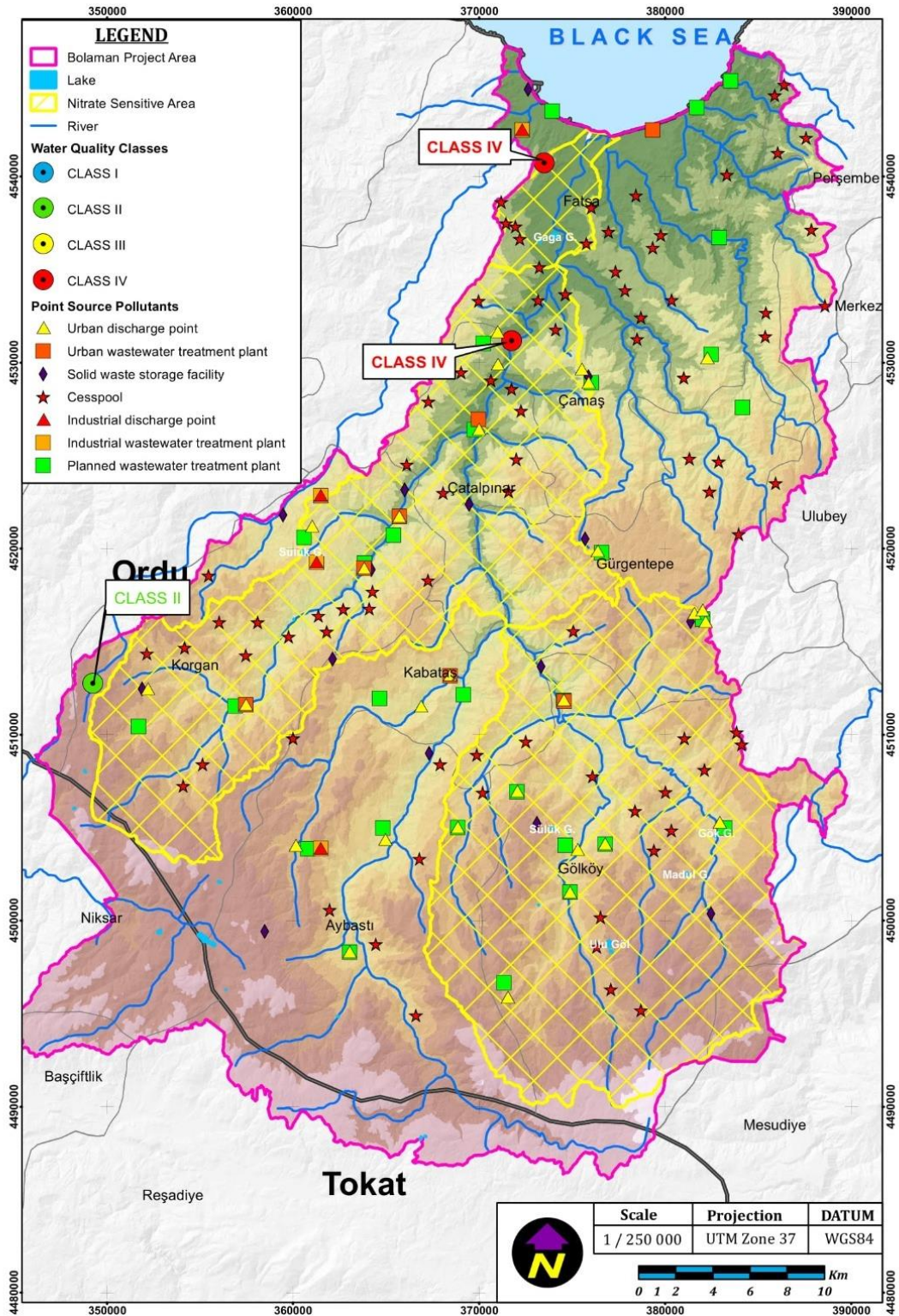


Figure 6-13. Water Quality Measurements

6.1.13 Biodiversity

There are legally protected nature conservation areas and elements with high biodiversity value, within Project Area, including Gaga Lake Natural SITE, Ulugöl Lake Nature Park and 12 Nature Monuments (monumental trees) found in Perşembe, Fatsa and Çatalpınar districts within the Bolaman River Basin Project Area (Ordu Department of Nature Protection and National Parks, 2020) (Table 6-6).

Table 6-6. Legally protected areas/assets within the project area

No	Type of Area	Name of the Area / Asset	Type / Location
1	Natural SITE	Gaga Lake	1 st and 3 rd Category Natural Site
2	Nature Park	Ulugöl Lake	Gölköy
3	Nature Monument	One monumental oak tree	Gündoğdu Village (Perşembe)
4	Nature Monument	Three monumental oak, and three monumental beech trees	Çamarası Village (Perşembe)
5	Nature Monument	Three monumental plane trees	Coastal Center (Fatsa)
6	Nature Monument	One monumental plane tree	Center (Fatsa)
7	Nature Monument	One monumental linden tree	Ortaköy Village cemetery (Çatalpınar)

The other legally protected areas outside the Bolaman River Basin Project Area are listed in Table 6-7.

Table 6-7. Other legally protected areas outside but nearby the project area

No	Type of Area	Name of the Area / Asset	Distance
1	Wildlife Development Area	Terme Gölardı Simenlik Lake	42 km.
2	Nationally Recognized Wetland	Yeşilırmak Delta	40 km
3	Nature Park	Çınarsuyu	28 km
4	Nature Park	Amazon	43 km.
5	Nature Park	Zinav Lake	12 km.
6	Nature Park	Ağaçbaşı	53 km.
7	Nature Park	Kuzalan	59 km.

The most up-to-date and complete study on the biodiversity of the majority of the Bolaman River Basin Project Area are the two official reports on Terrestrial and Inland Water Ecosystems Biodiversity Inventory and Monitoring Work by the General Directorate for Nature Protection and National Parks (GDNPNP) for Ordu and Tokat provinces. These studies have been accomplished by private companies with a definite methodology dictated by the GDNPNP and has specific outputs on biodiversity elements of Ordu and Tokat provinces at province level. The major outputs of these studies comprise, i) species diversity (plants, mammals, birds, inland fish, reptiles, amphibians, invertebrates), ii) indicator species from each species group and their monitoring plans, and iii) a synthesis of the distribution of biodiversity in the province, which defines 'Special Biodiversity Areas' of habitats with high target species diversity, priority plant community areas and priority wildlife areas. The results

of this study cover whole area of Ordu and Tokat provinces and in order to select those parts that reside within the Project Area, GIS data was officially requested. However, only the printed reports (in pdf format) was provided and relevant information could be partially extracted from them.

According to the Ordu Province Terrestrial and Inland Water Ecosystems Biodiversity Inventory and Monitoring Work Final Report, there are a total of 34 Special Biodiversity Areas determined for the presence of priority biodiversity features: i) three habitat areas with high target species diversity, ii) seven priority plant community areas and iii) 24 priority areas. According to the small-scale maps provided in the Appendix 5 of the report, six of the 34 Special Biodiversity Areas overlap with the Project Area. These are namely Perşembe Plateau-1, Perşembe Plateau-2, Ulugöl Nature Park-1, Ulugöl Nature Park-2, From Fatsa to Aybastı-800m, and Black Sea Coastal areas (Table 6-6).

Table 6-6. Special Biodiversity Areas and Designated Target Species

No	Type of Area	Name of the Area	Designated Target Species	IUCN Threat Category*	Endemicity
1	Special Plant Area	From Fatsa to Aybastı-800m	<i>Trifolium kilaeum</i>	EN	Endemic
2	Special Plant Area	Perşembe Plateau -1	<i>Alchemilla orduensis</i>	EN	Endemic
3	Special Wildlife Area	Black Sea Coast	None	-	-
4	Special Wildlife Area	Perşembe Plateau - 2	None	-	-
5	Special Wildlife Area	Ulugöl Nature Park - 1	<i>Pseudorasbora parva</i> **	LC	Not endemic
			<i>Carassius gibelio</i> **	LC	Not endemic
6	Special Wildlife Area	Ulugöl Nature Park - 2	<i>Salmo abanticus</i>	VU	Endemic

Source: Ordu Province Terrestrial and Inland Water Ecosystems Biodiversity Inventory and Monitoring Work Final Report

*IUCN threat categories EN: endangered; VU: vulnerable; LC: least concern; ** Invasive species

According to the report, two plant species with conservation priority are designated for conservation priority and monitoring are *Trifolium kilaeum* and *Alchemilla orduensis*. *Trifolium kilaeum* is a rare and endangered (EN for IUCN threat category) annual plant known from two locations, while *Alchemilla orduensis* is an endemic and endangered (EN) perennial herb which is under potential threat from overgrazing.

As for the faunal biodiversity, one freshwater fish species *Salmo abanticus* is determined as conservation priority species, while another fish, *Pseudorasbora parva* is found as an invasive species (Table 6-6). *Pseudorasbora parva* is found only in Ulu Lake Nature Park and therefore designated to be monitored in order to prevent its population increase and spread to adjacent habitats. *Salmo abanticus* on the other hand is under threat of illegal fishing and water pollution mainly due to domestic, agricultural and livestock. Its habitat is also therefore deemed as a critical habitat with conservation priority. *Salmo abanticus* was only found in Ulugöl Nature Park too. However, it is highly possible that species would potentially be present in the

connecting rivers, although it is reported that the species was deliberately released into the Ulugöl (Bostancı et al., 2015).

These Special Biodiversity Areas determined in the report also present aspects of critical habitats as briefly described in the report.

- Black Sea coast present habitats such as muddy estuaries, sandy seashores, mud flats and rocky shores for shore birds, both resident and migrant, providing feeding and breeding grounds.
- Perşembe Plateau has a mosaic of habitats including mostly subalpine grassland with many meandering rivers and high-altitude forest patches, supporting a high faunal biodiversity.
- Ulugöl Nature Park has terrestrial and freshwater habitats in combination with each other including lakes, reeds and forest.

The southern part of Project Area coincides with Tokat province, and a similar study called Tokat Province Terrestrial and Inland Water Ecosystems Biodiversity Inventory and Monitoring Work by the General Directorate for Nature Protection and National Parks (GDNPNP) was made. The report of this study presents a total of 23 Special Biodiversity Areas, where priority biodiversity features such as rare, threatened or endangered species or critical habitats are present. However, none of them are found within Project Area (Figure 6-14).

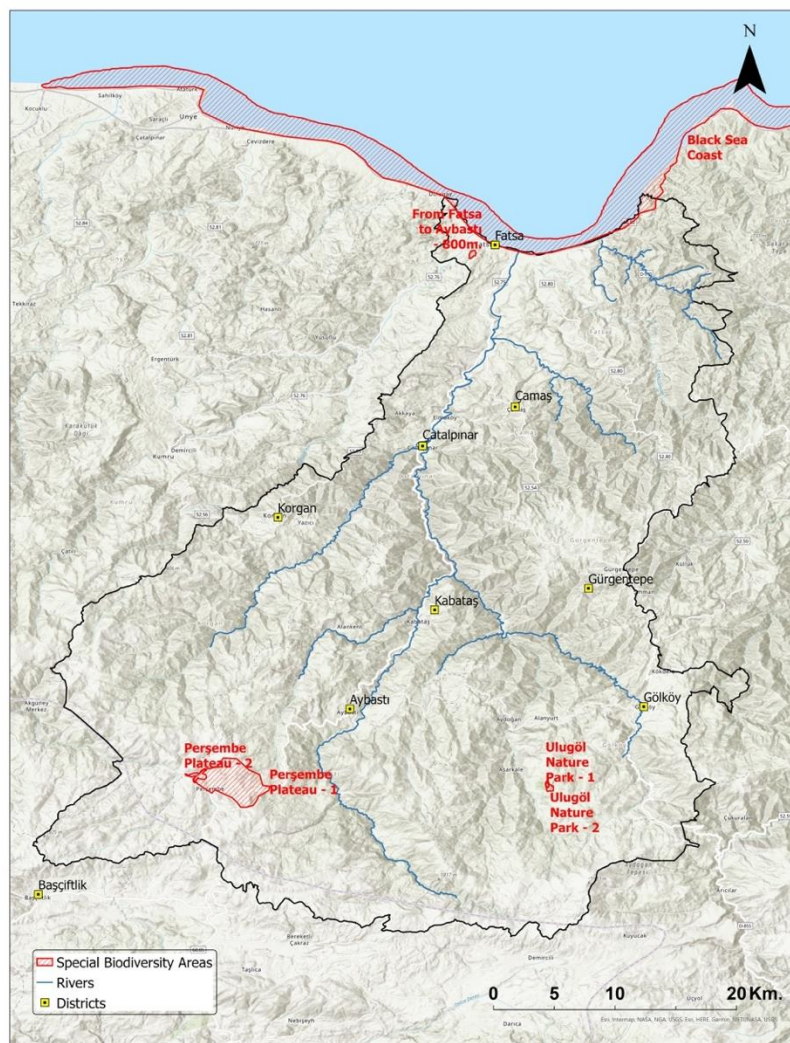


Figure 6-14. Special Biodiversity Areas designated by the GDNPNP

The rare, threatened and endangered species found in Ordu province are given in Table 6-7. They are found during the surveys within the scope of Ordu Province Terrestrial and Inland Water Ecosystems Biodiversity Inventory and Monitoring Work. Some of these species may not be found within Project Area. The exact locations of these species are present in the database of GDNPNP and therefore should be sought for each project planned to be implemented by project owners in order to evaluate the avoidance and mitigation measures, in case the Project Areas overlap with the distribution of these conservation priority species.

Table 6-7. Rare, threatened and endangered species (Ordu)

No	Group	Species	IUCN Threat Category*	Endemicity	Monitoring Proposed
1	Plants	<i>Trifolium kilaeum</i>	EN	Endemic	Yes
2		<i>Verbascum degenii</i>	EN	Not endemic	Yes
3		<i>Pancratium maritimum</i>	EN	Not endemic	Yes
4		<i>Doronicum tobeyi</i>	CR	Endemic	Yes
5		<i>Hieracium karagoellense</i>	CR	Endemic	No
6		<i>Turanecio hypochinaeus</i>	EN	Endemic	No
7		<i>Lilium akkusianum</i>	VU	Endemic	Yes
8		<i>Strenbergia vernalis</i>	VU	Not endemic	Yes
9		<i>Potentilla umbrosa ssp. Decrescens</i>	EN	Not endemic	No
10		<i>Verbascum cheiranthifolium var. asperulum</i>	EN	Endemic	No
11	Mammals	<i>Capra aegagrus</i>	VU	Not endemic	Yes
12		<i>Cervus elaphus</i>	LC	Not endemic	Yes
13		<i>Lutra lutra</i>	NT	Not endemic	Yes
14	Birds	<i>Aythya ferina</i>	VU	Not endemic	Yes
15		<i>Neophron percnopterus</i>	EN	Not endemic	Yes
16	Fish	<i>Salmo abanticus</i>	VU	Endemic	Yes
17	Reptiles	<i>Darveskia clarkorum</i>	EN	Not endemic	Yes
18		<i>Vipera barani</i>	NT	Endemic	Yes
19	Amphibians	<i>Ommatotriton ophryticus</i>	NT	Not endemic	Yes
20		<i>Triturus karelinii</i>	LC	Not endemic	Yes
21		<i>Mertensiella caucasica</i>	VU	Not endemic	Yes
22		<i>Pelodytes causicus</i>	NT	Not endemic	Yes

* IUCN Threat Categories: LC: Least concern, NT: Near threatened, VU: Vulnerable, EN: Endangered, CR: Critically endangered

Some of the species given in Table 6-8, are deemed as conservation priority species by the GDNPNP and designated for biodiversity monitoring. Other species are not designated as monitoring target but their habitats constitute critical habitat since these species are endangered or critically endangered.

The similar study for the Tokat province was also evaluated. The rare, threatened and endangered species (which are less threatened but subject to monitoring by GDNPNP) for Tokat province (except for plants) found in Tokat province are given in Table 6-8. They are found during the surveys within the scope of Tokat Province Terrestrial and Inland Water Ecosystems Biodiversity Inventory and Monitoring Work.

Table 6-8. Rare, threatened and endangered species (Tokat)

No	Group	Species	IUCN Threat Category*	Endemicity	Monitoring Proposed
1	Plants**	<i>Paracaryum calycinum</i>	CR	Endemic	Yes
2		<i>Teucrium chamaedrys</i> subsp. <i>chamaedrys</i>	CR	Endemic	Yes
3		<i>Verbascum myrianthum</i>	EN	Endemic	Yes
4		<i>Silene otitis</i>	EN	Endemic	Yes
5	Mammals	<i>Muscardinus avellanarius</i>	LC	Not endemic	Yes
6		<i>Felis silvestris</i>	LC	Not endemic	Yes
7		<i>Lutra lutra</i>	NT	Not endemic	Yes
8		<i>Capra aegagrus</i>	LC	Not endemic	Yes
9	Birds	<i>Todorna ferruginea</i>	LC	Not endemic	Yes
10		<i>Neophron percnopterus</i>	EN	Not endemic	Yes
11		<i>Coturnix coturnix</i>	LC	Not endemic	Yes
12	Fish	<i>Capoeta capoeta sieboldii</i>	LC	Not endemic	Yes
13		<i>Rhodeus amarus</i>	LC	Not endemic	Yes
14	Reptiles	<i>Emys orbicularis</i>	VU	Not endemic	Yes
15		<i>Vipera transcaucasiana</i>	NT	Not endemic	Yes
16		<i>Testudo graeca</i>	VU	Not endemic	Yes
17	Amphibians	<i>Ommatotriton ophryticus</i>	NT	Not endemic	Yes
18		<i>Triturus karelinii</i>	LC	Not endemic	Yes

* IUCN Threat Categories: LC: Least concern, NT: Near threatened, VU: Vulnerable, EN: Endangered, CR: Critically endangered

** Certain plant taxa are presented erroneously as EN, CR or endemic in the report, which were left out of this table.

As in Ordu province, some of these species may not be found within Project Area. The exact locations of these species are present in the database of GDNPNP and therefore should be sought for each project planned to be implemented by project owners in order to evaluate the avoidance and mitigation measures, in case the Project Area overlap with the distribution of these conservation priority species.

Three of the 36 biodiversity hotspots of the world have extensive regions in Turkey (World's Biodiversity Hotspots). These are Mediterranean Basin, Irano-Anatolian and Caucasus. BRB project area does not overlap with any of these global hotspot areas. Additionally, there are national assessments on the regional biodiversity hotspots of Turkey, which are Key Biodiversity Areas, Important Plant Areas, Important Bird Areas, Priority Butterfly Areas of Turkey and Systematic Conservation Planning of Black Sea Region. BRB project area do not

overlap with any of these national biodiversity hotspot areas. The nearest hotspots and protected areas to BRB are shown in Figure 6.14.

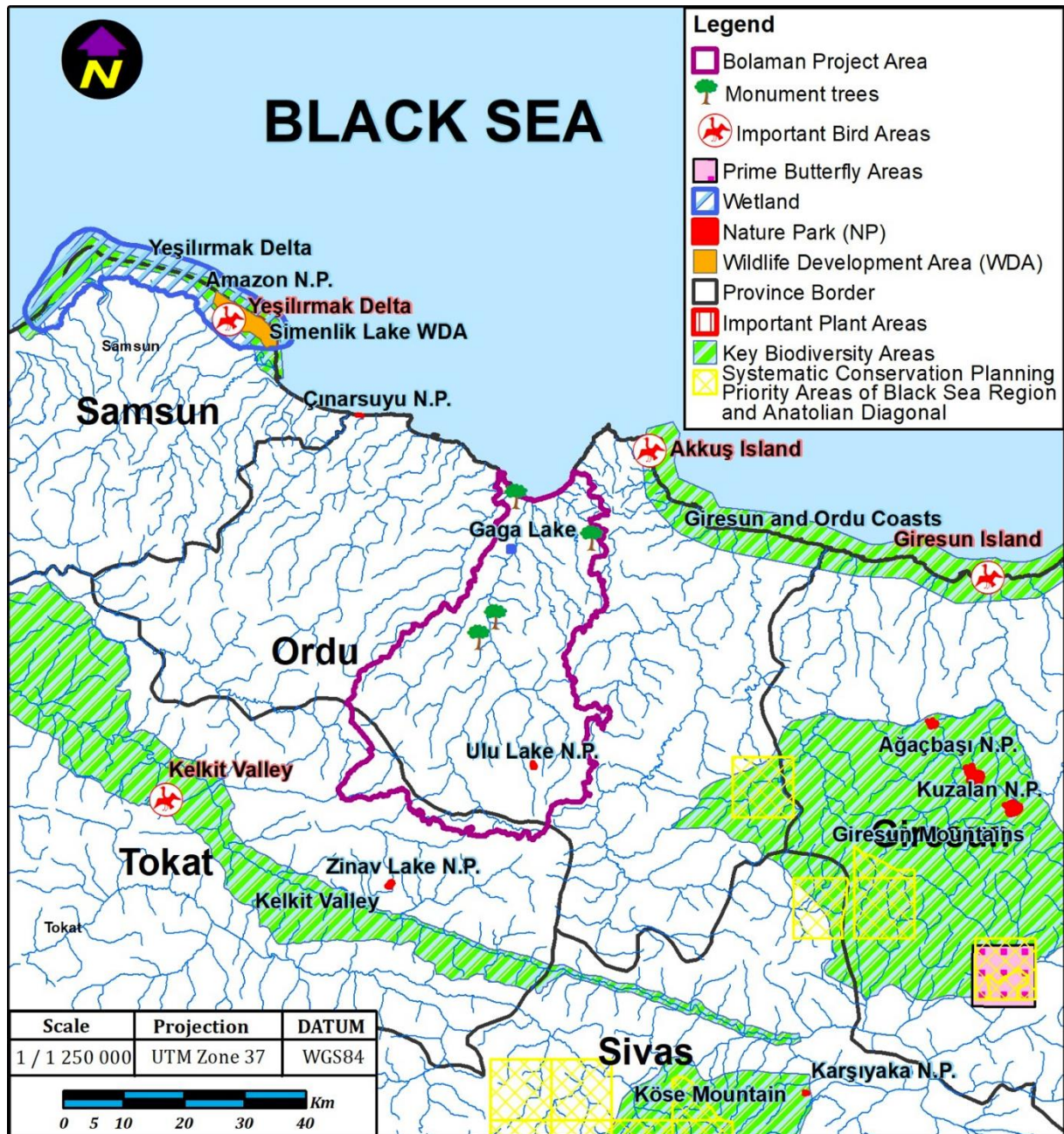


Figure 6-15. Nearest Biodiversity Hotspots and Protected Areas

A field study was conducted in the project area, during 27-29 November 2020 by the biodiversity expert. The field study concentrated on some of the areas with potential critical and/or rare habitats. These potential areas checked during the field study were old-growth forest areas, temporary or permanent forest wetlands/ponds, forest areas with high diversity of tree species and wetland areas of alpine grasslands. During the field study, meetings with the forest chiefs of Aybastı and Gürgentepe Forest Management Units (FMU) were conducted to obtain additional information. The potential areas visited and found to be as critical habitats are listed in Table 6-11 and photos provided in Figure 6-16.

Table 6-11. Critical and/or rare habitats determined by the field study in the project area

No	Type of Critical Habitat	Identifier of the Area	Habitat	Notes
1	Old-growth Forest	Forest compartments 243, 244 of Aybastı FMU	Old growth beech (<i>Fagus orientalis</i>) forest	There are regenerated forests in the neighbouring forest stands.
2	Old-growth forest, high tree species diversity and concentration of wildlife	Forest compartments 264, 266, 268, 279, 280, 281, 282 of Aybastı FMU	Old-growth beech (<i>Fagus orientalis</i>) forest with high other tree species in the composition	The area is also found to comprise high wildlife activity ¹
3	Natural freshwater pond in forest	Forest compartment 281 in Aybastı FMU	Large natural permanent freshwater pond	The pond is within the same old-growth forest area (#2).
4	Natural freshwater pond and small wetland in forest	Forest compartment 40 of Gurgentepe FMU	Natural wetland and pond inside forest	The shores of the wetland were disturbed by recent harvesting operations

Akçin, 2020⁴

⁴ Akçin, A. 2020. Investigations on Wildlife and Ecotourism Opportunities in Aybastı Perşembe Plateau and Surrounding Forest. MSc Thesis. Kahramanmaraş Sütçü İmam University, Dept. of Forest Engineering. 65 pg.

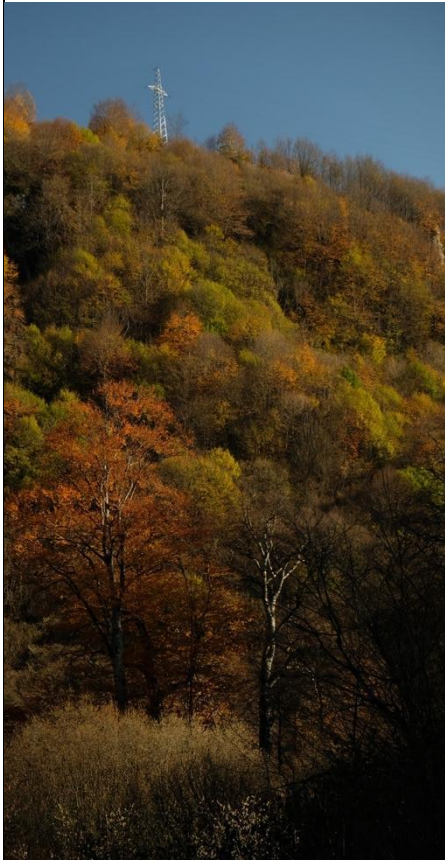




Figure 6-16. Examples of critical and rare habitats (1 – 4 according to Table 6.11)

The old-growth forest areas are rare habitats and can be considered as areas where key evolutionary and ecological processes are ongoing compared to the majority of the rest of the forest areas, which have been regenerated by forestry activities. These old-growth forests provide habitat for habitat specialist species such as saproxylic beetles or certain woodpeckers and other wildlife. Temporary and permanent freshwater ponds and small wetlands within the forest are also rare ecosystems providing habitat especially for amphibians. These areas should be conserved.

Similar habitats and ecosystems can be found in other parts of the project area through additional field studies. Potential old-growth forests can be present in forest stands classified as having 'd' and 'e' age classes in the forest management plans. Freshwater ponds and wetlands within the forest can be found by consulting foresters who are knowledgeable about

their forest areas. The subprojects should conduct additional field studies in such potential habitats to locate and conserve these habitats, if found within the subproject footprint area.

6.1.14 Environmental Infrastructure and Services

Annual Reports of the Provincial Directorate of Environment and Urbanizations (PDEU) indicate the available infrastructure for environmental services: sewerage systems, water and wastewater treatment, solid waste disposal. The infrastructure elements have been mapped in order to see geographic coverages, deficiencies, possible impacts and cumulative impacts together with the TULIP investments. OSKI is another major stakeholder in establishing the baseline on environmental infrastructure.

Drinking water in the basin is generally supplied from rivers. In periods when the amount of water is insufficient, water needs are provided from wells. According to the data obtained from DSI, 79 registered wells in total were identified in Project Area. Groundwater is widely used in the district of Camaş. In the surveys conducted in the region, the muhtars were asked whether there was a change in water resources. As a result of the survey, approximately 90 percent of the muhtars stated that the water resources of Project Area have decreased.

Wastewater treatment facilities are operational in Kabataş, Fatsa and Çatalpınar districts. Wastewater generated in settlements other than these three districts discharge their sewerage into Bolaman river and its tributaries without treatment. The community surveys indicate that discharge of wastewater directly into streams was a general problem of the Bolaman project area, rated as the third significant problem.

Table 6-9. Sewerage Infrastructure in Basin Districts

District	Sewerage system	% of the current population served	Treatment plant status	Discharge status
Aybastı	combined system	70%	X	Discharged into the stream from 2 different points, collector line required for discharge from a single point.
Kabataş	combined system	70%	The existing treatment plant has become unusable due to flood disaster.	Discharged into the stream from 4 different points, collector line required for discharge from a single point.
Gölköy	combined system	70%	X	Discharged into Gölköy Creek. Collector line is needed.
Çamaş	combined system	50%	X	Discharged into stream. Collector line is needed.
Fatsa	combined system	85%	pre-treatment and sea discharge	Discharged into sea; need for collector line.
Korgan	combined system	30%	X	Discharged into the stream; need for collector line.

Gürgentepe	combined system	50%	X	Discharged into the stream; need for collector line and sewerage network.
Çatalpınar	combined system	80%	X	Discharged into the stream. Collector line is needed.

Source: OSKI, 2020

Cesspits are widely used in villages without sewerage system in the basin. According to the data obtained from DSI, 83 cesspits were identified in all district in the basin.

Current status of environmental infrastructure in the basin can be seen in Figure 6-16.

Solid wastes in the basin are collected by the municipalities in waste bins, transported by trucks and sent to the Çaybaşı Sanitary Landfill Facility. Before 2019, all solid wastes were disposed in wild dumps, causing serious soil contamination. As of 2019, solid wastes generated in the basin districts are disposed in the sanitary landfill facility located in Çaybaşı district outside the basin. With the start-up of the Çaybaşı landfill, wild dumps in the basin have been closed.

In the basin, sewerage systems are mainly used in provincial centers. In rural areas, domestic wastewaters are collected cesspits or directly discharged to the receiving environment. According to the 2018 provincial environmental reports, the current status of the wastewater treatment plants in the districts located in basin, are provided in the below:

Table 6-10. The Current Status of the Wastewater Treatment Plants

Municipal Wastewater Treatment Plant Type	Municipal Wastewater Treatment Plant Type
Fatsa East Deap Sea Discharge System	Physical
Fatsa West Deap Sea Discharge System	Physical
Çatalpınar WWTP	Biological
Tepealan WW Package Treatment Plant	Biological

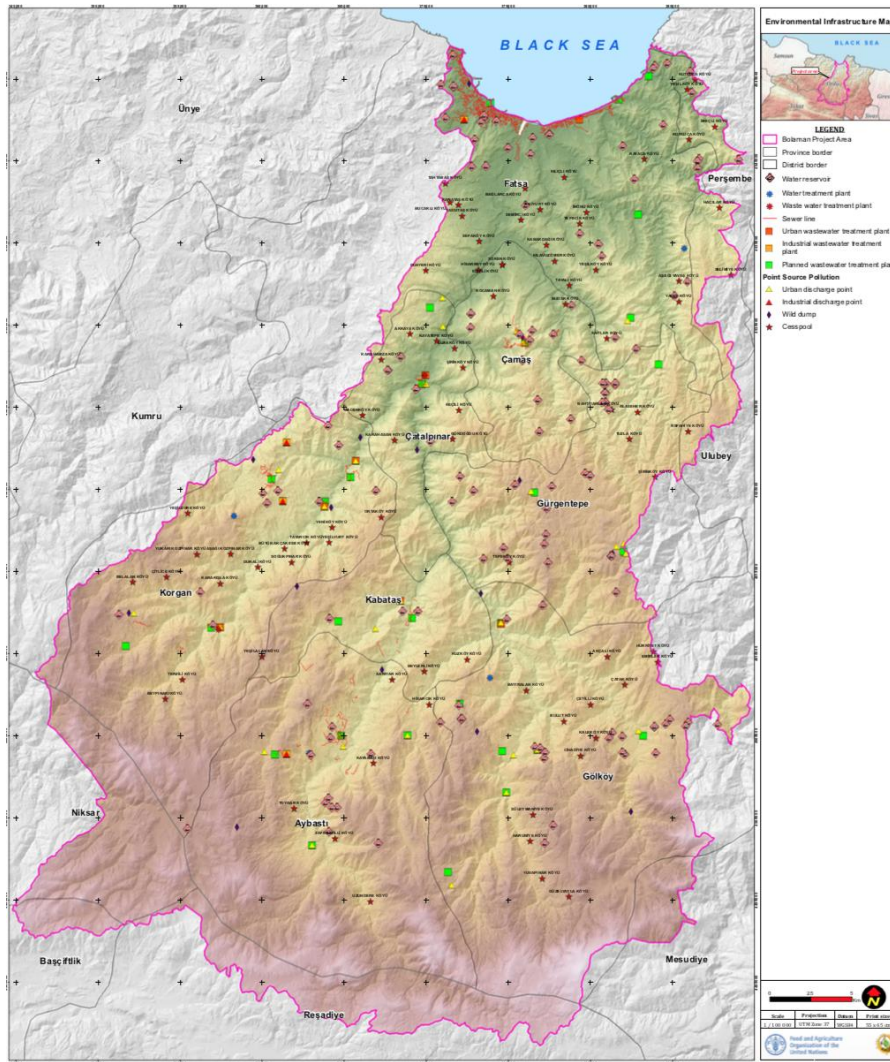


Figure 6-16. Current Status of Environmental Infrastructure - [Access Link](#)

Figure 6-16 shows the registered wells in the basin. Groundwater is used when surface waters are not sufficient. In the Bolaman basin, there is water supply from groundwater sources; drinking water, industry and agriculture etc. is used. There is no drinking water treatment facility that operates by supplying water from underground water sources.

As of May 2020, solid wastes in the basin are collected by the municipalities in waste bins, transported by trucks and sent to the Çaybaşı Sanitary Landfill Facility. The EIA Report for the landfill was approved as “positive” by MoEU on 26.04.2017. Wastes were formerly disposed in an uncontrolled manner at dump sites.

All uncontrolled waste disposal sites throughout the basin have been rehabilitated by capping with soil cover and installing gas control.

Power Plants and Mines

There are 3 hydroelectric power plants and 5 regulators in the Bolaman River basin. The purpose of the hydroelectric power plant is to generate energy, and the purpose of regulators

is to regulate the flow of water. At the same time, there are HPP and regulators under construction in Project Area.

Hydropower plants and regulators are located on Bolaman River, Reşadiye River, Keşkek Creek. Atila HPP on Bolaman River generates 10 MW power, Kuzey I and HPP on Reşadiye generate 5.55 MW energy. Irmak HPP on Reşadiye Creek produces 5.8 MW. Please see Figure 6-17 for the location of these existing power plants.

4 quarries are located in the basin. At the same time, small scale unlicensed mining is carried out in the region. As a result of the surveys conducted, the quarries are source of noise generation.

Quarries are for basalt, sand and gravel and limestone; with annual capacity range of 300-400 tons. EIA Reports are in place with approval of the MoEU. Compliance with environmental legislation is audited by the Provincial Directorate of Environment and urbanization on a regular basis.

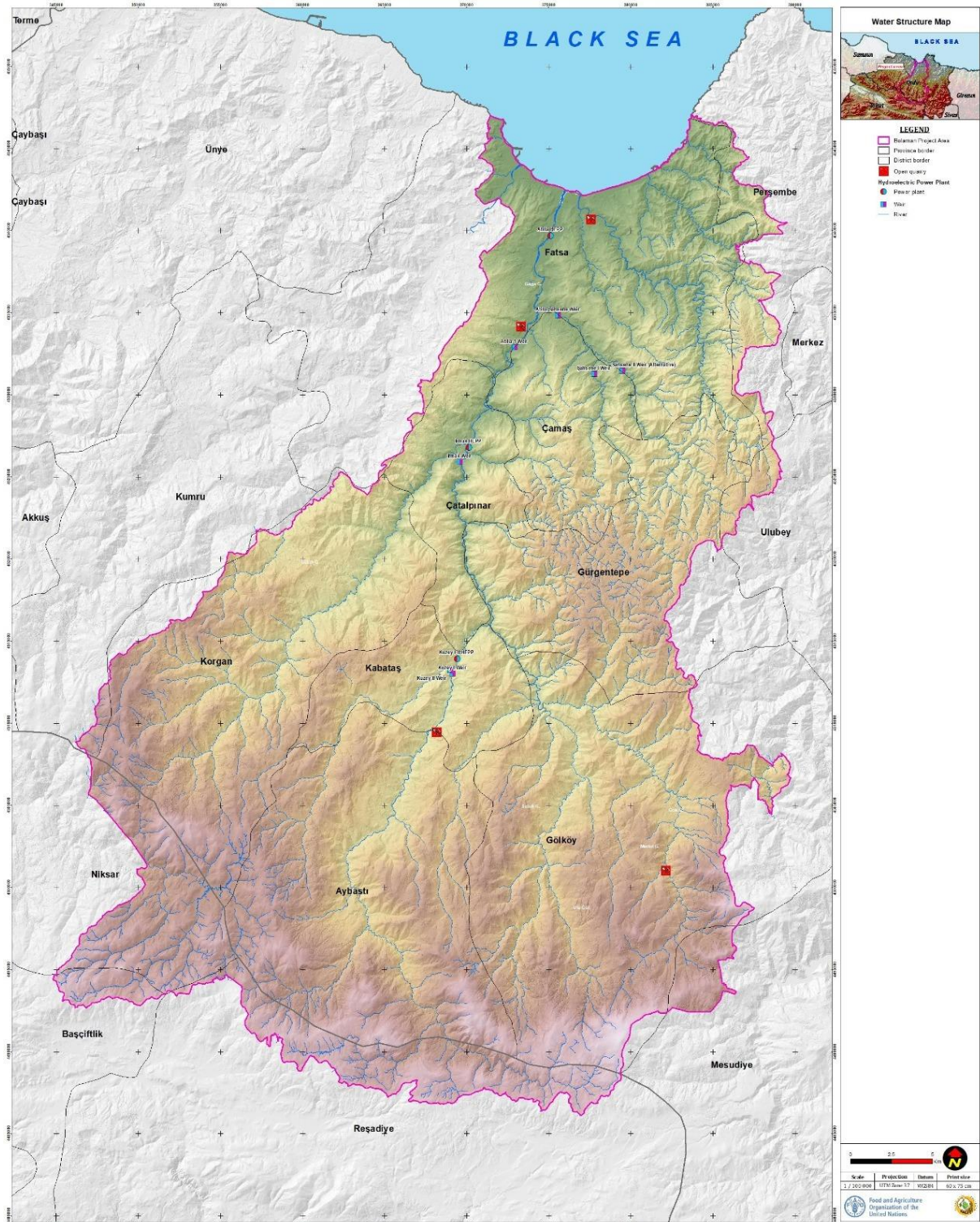


Figure 6-17. Location of Water Structures, Power Plants and Quarries

6.2 Social Baseline

The topics related to social characteristics will be examined under six headings and these include:

- Demographics and migration
- Welfare and livelihoods
- Agricultural production
- Living conditions
- Social Relations
- Cultural Heritage
- Vulnerable groups

6.2.1 Demographics and migration

The Bolaman River Basin, located within the Ordu-Giresun sub-basin of Eastern Black Sea (EBS), is an area severely affected by landslides, flooding, and degradation of natural resources affecting the wellbeing and livelihoods of the local population. The Project Area has its distinct geographical boundaries and hydrological structure and covers an area of 158,886 hectares almost entirely within Ordu Province. Most of its residents live in rural areas across villages, over half of which are forest villages. According to 2020 TurkStat estimates, the population of Ordu is 756,712. The city covers an area of 5,952 km². The population density is 127/km². Compared to its four neighboring cities in the area, apart from Samsun (135/km²), the population density of the city is quite high (Sivas 21/km²; Tokat 60/km²; and Giresun 63/km²). The population density of Ordu is also above the Turkey's average which is (108/km²). However, as can be seen from Table 6-11 the population increase of the city is in negative for most years since 2008. 2012 has witnessed a relatively high rate of population increase (3.74%). This is due to the fact that in that year net migration gain of the city was 21,645 and this could be due to the Syrian refugees coming to the city. Apart from this particular year since 2008 Ordu has been a migrant sending city rather than a receiving one.

Table 6-11. Population and rate of increase in Ordu Province

Years	Total population	Rate of increase (%)
2008	719,278	0.54
2009	723,507	0.59
2010	719,183	-0.60
2011	714,390	-0.67
2012	741,371	3.78
2013	731,452	-1.34
2014	724,268	-0.98
2015	728,949	0.65
2016	750,588	2.97
2017	742,341	-1.10
2018	771,932	3.99
2019	754,198	-2.30

Source: TurkStat, 2019

In line with the Law No 6360 of the Metropolitan Municipalities (2012), the municipalities of provinces that had a population that exceeded 750,000 were converted into metropolitan municipalities in Turkey. Again, with the same law, village municipalities and village legal entities were abolished in the provinces that had the same population size, and such areas were defined as neighborhoods; and the metropolitan municipality boundaries were overlaid with provincial borders. TurkStat considers the entire population within the metropolitan boundaries as the population of the “urban” by recognizing the above-mentioned law. As a result of this, the information about the quantity and quality of the “rural” population is shared with the public is not compatible with the geographical and sociological terminologies. In these circumstances researchers who do want to study rural settlements in metropolitan municipalities trace back the locations that had a village status prior to a city gaining a metropolitan status. Ordu Municipality became a metropolitan municipality in 2013 and today despite legally not having any village, the city is one of the most rural provinces in Turkey.

Bolaman River Basin includes villages from the districts of Ordu (Aybastı, Çamaş, Fatsa, Gölköy, Gürgentepe, Korgan, Kabataş, and Çatalpınar) and villages from the districts of Tokat (Başçiftlik, Niksar and Reşadiye). As can be seen from Table 6-12 according to 2019 data the total population of these districts corresponds to 32.7 percent of the province’s total population. In other words, the population of the Project Area is about one third of Ordu’s population (234,643 out of 754,198). However, it needs to be emphasized that all the villages in the above mentioned districts are not within the boundaries of the Project Area. According to Özdemir (2006: 166), over the years as a general inclination the rural population had increased in the Project Area although the rate of increase was lower than the Turkey’s average. The rural population in the basin has been concentrated on the northern parts of the basin and as well as along the Bolaman River. The urban population is heavily concentrated around the Fatsa district.

Table 6-12. Population of Ordu province by districts (2019)

District	Population	Men	Women	Percentage of population (%)
Altınordu	217,640	106,296	111,344	28.86
Ünye	128,101	63,734	64,367	16.99
Fatsa	119,094	59,186	59,908	15.79
Perşembe	31,542	16,380	15,162	4.18
Kumru	29,945	15,053	14,892	3.97
Korgan	28,609	14,570	14,039	3.79
Gölköy	28,332	14,363	13,969	3.76
Akkuş	22,192	11,564	10,628	2.94
Aybastı	22,027	11,003	11,024	2.92
Ulubey	19,450	9,997	9,453	2.58
Mesudiye	16,809	8,735	8,074	2.23
İkizce	14,570	7,524	7,046	1.93
Gürgentepe	14,100	7,184	6,916	1.87

District	Population	Men	Women	Percentage of population (%)
Çatalpınar	13,809	6,930	6,879	1.83
Çaybaşı	12.687	6,451	6,236	1.68
Kabataş	10.617	5,313	5,304	1.41
Çamaş	9.058	4,623	4,435	1.20
Gülyalı	8.269	4,135	4,134	1.10
Kabadüz	7.347	3,892	3,455	0.97

Source: Address Based Population Registration System (ABPRS), 2019

Ninety-three percent of the population in Ordu was born in the province itself. Four percent of the population came from three particular cities in the region, including Giresun, Samsun and Trabzon. The remaining 3% were born other cities in the region and elsewhere in Turkey. According to Özdemir (2006: 197), between 1970 and 1999 almost 40% of the outgoing migrant from the province went to İstanbul. The other popular destinations for the migrants were Samsun and Ankara. This trend has not changed over the years and according to 2019 TurkStat data there were 46,640 outgoing migrants from Ordu. Seventy percent of these went to five different cities, including: İstanbul (48,53%), Samsun (9,42%), Ankara (6,05%), Giresun (3,06%), and Kocaeli (2,90%). The main reasons for the outgoing migration was mostly due to the economics and a small and fragmented land ownership which was not big enough to support the families.

All the residential areas in the Bolaman River Basin opens out through the districts of Fatsa. As a result of the increase in the agricultural production and opening up new employment areas along this increase and developments of industry and commerce the district expanded both horizontally and vertically. These developments had an impact on the developments of new residential areas in the immediate vicinity. Including residential developments through the Project Area. Therefore, Fatsa has witnessed intensive population increase. The population of the district increased from 39,467 in 1990 to 63,721 in 2000, which corresponds to 61% increase only over a ten-year period. Apart from natural causes (such as lower death rates and higher birth rates) migration is one of the main causes of this increase (Dölek, 2008). Outside the shoreline settlements in Bolaman the landscape is very rugged, and due to a small and fragmented land ownership the residential areas are spread out and dispersed. Especially in the districts of Fatsa, Bolaman, Çamaş and Çatalpınar houses were built on hillsides with some distance between them. Thus, making the village settlements spreading over the landscape. In fact, almost half of the settlements in the Project Area are located on the hillsides. The districts of Bayıralan, Çamaş, Aydoğan, Göller and Kuzköy are located on steeply sloped hillsides. The valley areas are also placing where settlements are also located and districts like Gölköy, Kabataş, Çatalpınar, Dereköy, Dereyurt, Direkli and Aybastı.

In the basin areas from shoreline up to the altitude of 500 meters the residential areas are densely populated. The areas over the altitude of 1,200 meters are open to adverse weather conditions and the settlements above this altitude are quite scarce, making permanent population density very low. However high plateaus in this altitude are intensely occupied in summer months. In other words, geographical conditions in the basin had an impact on the

socio-economic activities, population movements and the formation and structure of the settlement’s areas. However, there is a lack of information on the outgoing migration from the settlements related to their land use and economic activities. These sorts of information seem to be important in sending and receiving migration and this data gap is filled by field study as part of SESA. The details of this study will be provided in some details in the related sections below.

As emphasized, there has been an internal migration in the basin towards shoreline settlements especially to Fatsa. However, more dramatically the Basin has been witnessing an outgoing migration from its rural areas. The small and fragmented land ownership in terrains with adverse conditions reduces the agricultural productivity and is insufficient to support the livelihoods of the residents. Within this scarce source of livelihood support activities, the people in the basin resort to some wider alternatives. From mid-May to September animal husbandry becomes important in the high plateaus. As observed in the scoping field study the beekeeping is an important economic activity and beekeepers transport their beehives to other parts of Turkey for the substantial periods of the season. However, existing data and observations do not provide enough materials to evaluate the household economic strategies in the Basin. The related data gap is filled with household surveys in the Basin and details of the surveys finds will be reported in the coming sections.

The household based and community level surveys in the Project Area were conducted during the Septembers 2020. The community level survey questionnaire (CLQ) conducted with 76 settlements. These communities were chosen by random sampling techniques (see detailed outline of the Methodology in the Gap Filling Strategy section of this report for further details). The population of the Project Area based on the estimation of the community survey results which is 241,680 corresponds with the above official statistics related to the population of the Basin for the year of 2019 which was 234,643. Table 6-13 provides information about the average permanent population size of the settlements which is 912 and there are 265 settlements in the Project Area.

Table 6-13. Average size of permanent population per settlement

	Minimum population	Maximum Population	Average population per settlement (Mean)
Population in settlements	80	7100	912

SESA Gap filling field study (CLQ), September 2020 (Number of responses: 71)

According the findings of the CLQ the average number of households per settlement is 242. The smallest settlement had 20 households and the largest 1,500 (See Table 6-14 for more details).

Table 6-14. Distribution of permanent households in settlements

Number of settlements	Settlement with a Minimum number of Households	Settlement with a Maximum number of Households	Average number of Households in settlements
73	20	1500	241.55

SESA Gap filling field study (CLQ), September 2020

Almost half of the settlements have up to 199 households living in them. When evaluated in more detail, the proportion of settlements with 99 or less households is 28.8%; the proportion of settlements with between 100 and 199 households is 19.2%; the proportion of settlements with between 200 and 299 households is 26%; the proportion of settlements with between 300 and 999 households is 24.7%, and the proportion of settlements with more than 1000 households is only 1.4% (See Table 6-15 for more details).

Table 6-15. Number of households that live permanently in the settlements

Number of Households	Number of Settlements	Percent
Under 99	21	28.8
Between 100 and 199	14	19.2
Between 200 and 299	19	26
Between 300 and 999	18	24.7
Between 1,000 and 2,000	1	1.4
Total	73	100

SESA Gap filling field study (CLQ), September 2020

As emphasized before, since the settlements in the basin are places that with experiences of sending migrants to the other cities in Turkey and abroad, especially because of the expatriate visits and people returning for hazelnut harvest during the summer months and due to some other reasons temporary returns the settlements in the Project Area the settlements experience temporary population increase for a period of about 3 months. This is a regularly recurring and substantial population movement every year. According to the survey data, the rate of settlements with periodic and temporary population increase up to 199 people is 24%. The proportion of settlements with temporary population increase between 200 and 499 people is 20.5%; the proportion of settlements with temporary population increase between 500 and 999 people is 13.7%; The rate of settlements with a temporary population increase of 1,000 to 1,499 is 12.3%; the rate of settlements with a temporary population of between 1,500 and 1,999 is 6.8%; The rate of settlements with a temporary population increase of 2,000 and above people is 21.9%. In other words, more than 40% of the settlements in the basin experience a temporary population increase of 1,000 people and above (for details see Table 6-16).

Table 6-16. Categorization of the temporary total population

Temporary population increase	Number of Settlements	Percent
Under 199	18	24.7
between 200 and 499	15	20.5
between 500 and 999	10	13.7
between 1000 and 1499	9	12.3
between 1500 and 1999	5	6.8
between 2000 and 3250	16	21.9
Total	73	100

SESA Gap filling field study (CLQ), September 2020.

Fifty-five per cent of the settlements in the basin receive temporary populations well above their permanent population. In fact more than 20% of them experience temporary population increase more than twice of their permanent population. When we evaluate in more detail, the rate of temporary population growth between 2% and 49% according to their permanent population is 29%. The proportion of settlements experiencing a population increase between 50% and 99% is 14.7%; the proportion of settlements experiencing a population increase between 100% and 149% is 22.1%; The proportion of settlements experiencing population increase between 150% and 199% is 13.2%; as emphasized above, the rate of settlements with a population increase of 200% and above is 20.6% (See Table 6-17 for details).

Table 6-17. Rate of temporary population increased (categorized)

Population	Number of Settlements	Percent
between 2% and 49%	20	29.4
between 50% and 99%	10	14.7
between 100% and 149%	15	22.1
between 150% and 199%	9	13.2
200% and over	14	20.6
Total	68	100

SESA Gap filling field study (CLQ), September 2020.

A further data analysis show that on average each settlement receive around 276 new households during the summer months. The number of temporary households in a settlement vary according to its size and a minimum number of household a settlement received was 5 and the maximum was 1,300 (See Table 6-18).

Table 6-18. Distribution of temporary households in the settlements

	Number of Settlements	Minimum number of temporary resident households	Maximum number of temporary resident households	Mean
Temporary resident households	74	5	1,300	275.68

SESA Gap filling field study (CLQ), September 2020

On average each settlement receives around 923 new temporary residents in summer months. One settlement receives as little as 15 temporary residents but another as much as 3250 (See Table 6-19).

Table 6-19. Distribution of temporary number of people in the settlements

Number of Settlements	Minimum number of temporary residents	Maximum number of temporary residents	Mean
Temporary Total Population	73	15 3250	922.58

SESA Gap filling field study (CLQ), September 2020

It can be also estimated that temporary population increase in the Project Area especially in the summer months is 236,180 people. Together with the permanent population the number of populations reaches to around half a million. This exacerbates the infrastructure related

problems in the basin, such as roads, power and water supplies, sewers and so on. As one muhtar emphasized: *“we like our returning migrant neighbors who come to visit their homes but in fact we don’t want them back, because their existence in big numbers put extra pressure on services that is already inadequate”*.

In addition to the CLQs there were 132 households’ surveys (HHQ) conducted on settlements with sensitivities (see SESA Methodology Section). In this surveys data related to 523 members of these households obtained. In the literature review the average size of the households in the basin according to different district varied between 2,75 (Gürgentepe) and 3.46 (Fatsa) (See Table 6-20 for further details). However, according to household surveys the average size of the households is 3.96.

Table 6-20. Average size of the households in the basin according to different district

District	Average household size
Gölköy	2.89
Aybastı	2.95
Korgan	3.56
Kabataş	2.89
Çatalpınar	3.46
Gürgentepe	2.75
Çamaş	2.84
Fatsa	3.1

Migration

The urban and rural population changes of Ordu since 1927 is provided in Table 6-21. One of the main observations is the increasing number of urban populations. This increase could stem from migrations towards district centers as well as increases in the number of districts and geographical developments of districts by absorbing villages in the immediate vicinity. When the rural population examined closely a steady increase in the rural population up to the year of 1985 could be seen. However, since then a major population decrease in the rural areas could be observed (See Table 6-21 for further details). In fact, between 1990 and 2007 the rural population in Ordu shrank by losing over 33% of its population. Furthermore, between 2000 and 2007 the population increase in rural Ordu was -4.25.

Table 6-21. Historical Development of Rural and Urban Population of Ordu

Year	Urban	Rural	Total
1927	16,823	207,408	224,231
1935	20,342	262,712	283,054
1940	24,334	280,683	305,017
1945	27,056	305,952	333,008
1950	32,922	340,106	373,028
1955	39,655	368,032	407,687
1960	58,134	411,245	469,379

Year	Urban	Rural	Total
1965	83,585	460,278	543,863
1970	118,041	490,680	608,721
1975	134,970	515,553	650,523
1980	169,820	543,715	713,535
1985	220,067	543,790	763,857
1990	348,028	478,858	826,886
1997	368,063	446,095	832,158
2000	416,631	471,134	887,765
2007	395,283	320,126	715,409
2012	423,295	318,076	741,371
2017	468,757	273,584	742,341

Source: TurkStat (1927-2000); TurkStat (2007-2017)

The CLQ survey provided very detailed information about the migration from the settlements of the Project Area. When the muhtars were asked about the change of population in their settlements for the last five years, 42 muhtars (55.3 %) out of 76 responded that the population had decreased. Only 25% of them reported that there had been some increase (See Table 6-22).

Table 6-22. Has there been any change in population in the last 5 years?

Change in the population	Number of settlements	Percent
Increased	19	25
Decreased	42	55.3
Remained the same	15	19.7
Total	76	100

Source: SESA Gap filling field study (CLQ), September 2020.

However, when the reasons were asked about the decrease and increase, the main reason for the population increase was the Covid-19 pandemic. Because of the extend of the pandemic in major metropolitan cities some migrants especially elderly population returned back to their villages in the Project Area. Here some examples of what muhtars said about the reasons for the increase in 19 settlements (25%) out of 76:

“Because of the pandemic many retired migrants in the cities returned back to their villages”

“Because of the Corona Virus migrants from the neighborhood returned back mainly due to the health reasons but also some were made redundant and others became unemployed due to the new conditions”

However, the majority of the muhtars reported decrease of population in their settlements for the last five years. In their opinion the main reasons for this decrease was the migration due to lack of employment opportunities and services and facilities in the Project Area and its immediate vicinity. Here some examples to illustrate these:

“There are some people coming back after retirement but outgoing migration especially for the young people is overwhelming”

“People can’t make the ends meet here. Hazelnut doesn’t bring money; animal husbandry has finished; schools are closed down. People had to migrate for a better future.”

“There is unemployment. There are only textiles and dairy industry which don’t create enough employment.”

“Our economy depends on the hazelnut production and animal husbandry. Hazelnut gardens are fragmented and small so don’t bring much money in and animal husbandry is not a profitable economic activity due to the expenses involved”

Muhtars’ statements and their first person accounts highlights the fact that outgoing migration still continues in the Project Area. As emphasized and also will be highlighted further in the following section the most important motivation behind the migration from the region is limited economic opportunities that people experience. As can be seen from Table 6-23, 89.4% of the muhtars emphasized that migrants’ incomes from the settlements are much higher or higher than the people living in the settlements.

Table 6-23. Comparison of income between migrants and people remain in the settlements

Income comparison	Number	Percent
Migrants’ income is much higher than the people living in the settlement.	46	60.5
Migrants’ income is higher than the people living in the settlement.	22	28.9
Migrants’ income is similar to people living in the settlement.	2	2.6
Migrants’ income is lower higher than the people living in the settlement.	6	7.9
Total	76	100

SESA Gap filling field study (CLQ), September 2020.

It should be emphasized that most of the income outgoing migrants receive in their host societies subsidizes the agricultural income in their villages. In addition, many of these migrants return to their home societies in the Project Area during the hazelnut harvest season.

One of the main characteristics of the outgoing rural migration in Ordu is the young age migration. This trend is also evident from the increasing elderly and decreasing young populations in rural parts of the region. The proportion of child population in rural Ordu is 14.9% and this is well below the national average which is 26.6%. The proportion of child population in urban Ordu is 19.5%. It is evident that the ratio of child population in rural Ordu is extremely low (See Table 6-24 for further details).

Table 6-24. Young, Adult and Elderly Population of Ordu (2017)

Population	Total Province		Rural	
	Population	%	Population	%
Child	144,752	19.50	40,812	14.92
Adult	498,371	67.14	174,476	64.10
Elderly	99,218	13.37	58,296	21.31
Total	742,341	100	273,584	100

Source: Adopted from TurkStat, 2017 (0-18 child, 18-65 adult, 65-x elderly).

As a result the proportion of elderly population is very high in the Bolaman River Basin exceeding the proportion in urban Ordu. In fact, 2019 TurkStat data also confirms this trend. For example, in Mesudiye district of the Bolaman River Basin, the percentage of population at the age of 65 and over is 29%. The same ratio in other parts of the Basin is also high, 25.3 % in Ulubey, 23.9% in Perşembe, 19.3% in Çamaş and 18.8 % both in Gürgentepe and Kabataş. Whereas in Fatsa which is the most urbanized part of the Basin only 11.7% of the population is aged 65 years and over.

It is also possible to evaluate the population of Ordu by looking at other variables like sex and education. We know the impact of age on migration through the analysis of demographic data however, we have no information about the sex and education level of the migrants. In fact, we do not exactly know the age patterns of outgoing migrants from Project Area either. However, we know about the general age (i.e. young and elderly) characteristics of migrant population. An over representation of elderly population especially in some districts reveal that the scarce economic resources had an impact on the migration of young people from the Basin. The potential cultural capital and human resources of the Basin is important for the strategic evaluation however, this type of information is limited in the existing literature and data sets and this limitation demonstrates an important data gap.

Some of this gap has been filled with the information gathered through the CLQ's. Considering the distribution of the population of settlements by age, the high rate of the population aged 65 and over is striking. According to data from the 2019 the average rate for this age category for Turkey was 9.51%, while for the settlements in the Project Area however, this rate is 24.5%. In other words, the rate of this age group is almost 3 times higher in the settlements compared with the general Turkish population. When we examine the distribution of the population in the basin by age in more detail, the rate of the population between 0 and 6 years old is 8.16%; the proportion of the population between the ages of 7 and 18 is 12.24%; the proportion of the population between the ages of 19 and 35 is 19.62%; the proportion of the population between the ages of 36 and 64 is 35.50%, and the proportion of the population aged 65 and over is 24.5% as emphasized above (See Table 6-25 for details). This picture is an outcome of the young people migration of both males and females. As the further data analysis show that male and female distribution of the age categories show similar patterns in all the settlements. Only exception is that female percentage in the Basin is 1% (25) higher than the male population in the age category of 65 and over.

Table 6-25. Distribution of the percentages of age categories in settlements

Age categories	Number of settlements	Minimum Observation (%)	Maximum Observation (%)	Average (%)
Between ages of 0 and 6	71	0	24.00	8.16
Between ages of 7 and 18	71	2.67	31.25	12.24
Between ages of 19 and 35	71	2.33	60.00	19.62
Between ages of 36 and 64	71	9.68	69.09	35.60
At the age of 65 and over	71	9.48	65.38	24.50

SESA Gap filling field study (CLQ), September 2020.

Seasonal migration from the Project Area

When muhtars were asked whether residents from their settlements went to other places on a temporary bases to work, it has been revealed that out of 76 settlements 58 (76.31%) of them send regular temporary laborers to other places. This corresponds to three quarters of all the settlements in the Project Area. Muhtars were also asked about the numbers of seasonal migrant laborers, their destinations, type of work they do and their gender and child labor break down. Table 6-26 below shows the number of temporary migrants. There are altogether 13,317 temporary migrants from 55 settlements. It has been estimated that there are just over 64,000 temporary migrants from the settlements in the Basin. Table 3-26 shows the number of people who went on a temporary basis to work outside the basin. It should be noted that since the question was destination and occupation based there were multiple reports from some destinations. For example a settlement might sent 30 temporary migrant to work in the construction in Istanbul and again the same settlement might send another 20 construction workers to Ankara and some other five factory workers to İzmir.

Table 6-26. How many temporary migrants a settlement sent including women and children

Number of people	How many times mentioned	Total temporary migrants
2	1	2
5	8	40
10	23	230
15	8	120
20	20	400
25	4	100
30	9	270
35	1	35
40	2	80
50	25	1250
70	3	210
75	1	75
80	1	80
100	14	1400
150	6	900
175	1	175
200	5	1000
300	7	2100
400	1	400
450	1	450
500	4	2000
1000	2	2000
Total number of settlements providing information on migrants	55	13317

SESA Gap filling field study (CLQ), September 2020.

Most popular destination for the temporary migrants was İstanbul, this was followed by Ankara, abroad (especially Georgia), İzmir, Bursa, Rize, Antalya and so on (See Table 6-27 for further details)

Table 6-27. Destination of temporary labor migrants

Destination for temporary labour migrants	Times mentioned
Ordu center	7
Ankara	22
İstanbul	44
İzmir	9
Overseas	22
Bursa	7
Rize	5
Antalya	4
Marmaris	3
Giresun	3
Erzurum	2
Trabzon	2
Çanakkale	2
Malatya	2
Erzincan	2
Gaziantep	2
Diyarbakır, Zonguldak, Konya, Elazığ, Kars, Sivas, İzmit, Kocaeli, Muş, Kütahya, Big cities (each mentioned once)	11
Eastern Anatolia Region	2

SESA Gap filling field study (CLQ), September 2020 (Note: based on responses from 58 settlements)

An overwhelming majority of the temporary workers from the Basin worked as construction workers in the destinations of their migration, this was followed by agricultural labourer, fishermen, beekeeping, factory worker, electrician, textile worker and mine worker (See Table 6-28 for further details)

Table 6-28. What type of work temporary migrants do?

Working area	Times mentioned
Textile workers	4
Construction worker	116
Beekeeping	7
Agricultural labourer	8
Electrician	5
Fisherman	8
Factory Workers	5
Mine workers	3

SESA Gap filling field study (CLQ), September 2020 (Note: based on responses from 58 settlements)

Almost 80% of the temporary migrants work up to six months in a year, just under 9% stay between seven and nine months and a further 12% between 9 and 11 months (See Table 6-29 for further details).

Table 6-29. How long temporary migrants stay away in a year?

Duration	Percent
Between 1 and 3 months	14
Between 4 and 6 months	65.0
Between 7 and 9 months	8.8
9-11 ay	12.3
Total	100

SESA Gap filling field study (CLQ), September 2020 (Note: based on responses from 57 settlements)

As emphasized above on average there were over 64,000 temporary labor migrants from the Project Area. According the accounts of the muhtars in the response group it could be estimated that about 4,300 of these migrants are woman and about 1,500 of them are young people between the ages of 14 and 16. These young people perhaps travelling with their parent particularly with their fathers and working in beekeeping and working as apprentice in electric workshops and so on.

6.2.2 Welfare and Livelihood

As far as Ordu metropolitan area is concerned it is possible to reach almost all the necessary information about welfare and livelihoods for SESA from publicly available resources. As can be seen in the titles below, detailed baseline information on the socio-economic structure of the region has been reached. There are also related studies carried out within the Bolaman River Basin. However, within the scope of SESA, it is planned to create a livelihood map of the Basin. In order to provide up-to-date data for this map, survey studies included limited number of questions about livelihoods, ; (1 the main sources of livelihood, (2) the place and types of agricultural activities, (3) activities related to utilization of natural resources.

Structure of Livelihood Sources

According to the Eastern Black Sea Project Regional Development Administration (DOKAP) 2015 report, the economy of Ordu is largely based on agriculture and 80% of the economically active population works in the agricultural sector. In Ordu province, land suitable for cultivation is limited, but hazelnut cultivation is carried out on even steeply sloped lands that is not suitable for any other type of cultivation. Therefore, Ordu is associated with hazelnut cultivation. There are around one million hazelnut trees in the city, and the annual hazelnut production is around 80,000 tons.

In the study area where forest areas are destructed and converted to hazelnut fields, hazelnuts are grown in the 98% of the cultivated areas. Transformation of forests into hazelnut fields has accelerated between 1975 and 1995 (Özdemir, 2006). Although yield and quality decrease at altitudes over 500 meters, hazelnuts are still grown even at higher altitudes. Hazelnuts are planted as monoculture up to 600 – 700 meters from the shore. Starting from Fatsa, along Bolaman Creek, hazelnut is, almost, the only means of livelihood of all villages in the Basin

from Çamaş to Çatalpınar. Grain and vegetable cultivation is carried out in very small areas and narrow areas in coastal parts. However, the commercial value of grain and vegetable farming is low.

Following hazelnut, the other agricultural products grown are corn, potatoes, beans, soya, wheat and barley. Apart from these, citrus fruits, cabbage and kidney beans are also grown.

The highlands in Ordu are suitable for animal husbandry. Animal husbandry including sheep and cattle is very developed in Aybastı, Gököy, Mesudiye and Korgan districts. Beekeeping has developed and fishing is also advanced.

Industry has developed in Ordu province in the 1970s. The number of industrial workplaces employing ten or more workers has exceeded 120, and 35 (29%) of which are the factories that separate hazelnuts from their husks. Sagra Plants are the most modern facility that processes hazelnuts and the label is quite strong in domestic and foreign markets. Other industrial establishments are rubber and shoe factories, animal feed factories, flour factories, fish oil factories, soy oil factories, cement factories, brick factories, timber factories, wire nail factories and ship repairs.

Industry, Commerce, Agriculture and Tourism Sectors

During early years of the Republican period farming and animal husbandry were dominant activities in the Bolaman River Basin. However, later on most of the available field turned into hazelnut groves. There have been some developments in other sectors as well (such as transportation, trade, industry, and forestry).

Animal husbandry is still an important activity for settlements in the inner parts of the Basin. As hazelnut production has no economic advantage in places where altitude exceeds one thousand meters, animal husbandry has become an important potential which is reinforced by the presence of important plateaus at these levels. However, in rural areas, beekeeping is the most income-generating activity after the hazelnut cultivation in the Basin. The Basin in terms of the number of beehives ranks second in Turkey, after the Muğla region (Smith, 2006: 413). A significant number of local people are mobile beekeepers. For example, according to information taken in the scoping field study a substantial number of beekeepers from the Basin spent most of the beekeeping season in the Southern and Eastern Anatolian regions. As a result Ordu in mobile beekeeping and honey production ranks first in Turkey. It should be emphasized that the existing forest areas in the Bolaman River Basin cannot be utilized economically for the benefit of the local people.

The economy in Ordu province is based on agriculture, animal husbandry and tourism sectors. In Ordu main industrial activities include; “mining and quarry”, “manufacturing of non-metallic and mineral products”, “food manufacturing”, “vegetable production”, “machinery manufacturing”, “textile ready-to-wear”, “wood processing industry” and “construction products”. Most of the existing industrial facilities have been established to utilize the natural resource richness of the region. In the food products and beverage sector; milk and dairy products, bakery products and milled grain products, hazelnut and hazelnut products and chocolate production stand out. As a result of the horizontal structuring of the economic life and industry a hazelnut and hazelnut products sector related machinery and equipment

manufacturing is also important in the region. In the textile sector, the production of ready-made garments is another manufacturing activity.

According to 2017 Ordu Chamber of Commerce and Industry (OTS) data, 21.1% of the industrial enterprises in Ordu province are micro-scale, 61.3% are small-scale, 14.3% are medium-scale and 3.2% are large-scale enterprises. The number of industrial enterprises with a reported active capacity is 279. The industrial enterprises in Ordu make up only 0.4% of the Turkish industry. Based on the active capacity reports in the Union of Chambers and Commodity Exchanges of Turkey (TOBB) Industry database, the number of personnel working in Ordu industrial enterprises is 11,738 and only 6.8% of industrial enterprises in the Black Sea Region are located in Ordu (OTS, 2017: 5).

In the province, 60-70% of the exports are made through nuts and hazelnut-based products. In addition, products such as hazelnut machines, bentonite, ceramic products, MDF, laminate flooring, cement, various mineral ores are the leading items of export. In the imports of the province, products such as coal, timber logs, MDF and wood used for making laminate parquet, decorative paper, various spraying machines used in hazelnut farming, and small hand tools come to the fore.

An important issue to be emphasized here is the seasonal employment of the majority of workers working in the hazelnut processing industry, which significantly restricts the employment opportunities of the industry and its contribution to the economy.

According to OTS (2017) Annual Report there were 13,236 firms operating in Ordu, and 10,744 of them were micro-enterprises, 2,463 were medium-scale companies and 29 were outside the scope of SMEs, and they can be described as large-scale companies. 12,755 of 13,256 enterprises operating in Ordu province were private sector organizations and 1,772 of these companies operate in the manufacturing sector. Thus a total of 11,484 enterprises operate in sub-sectors supporting the Trade and Trade sector in Ordu. Furthermore, there were 4,802 companies in Ordu with a single person employment capacity. In Ordu province, there was one company that employs more than 1,000 people. When the sectoral distributions of the companies operating in Ordu are examined, it is seen that they are primarily operating in the wholesale and retail trade sector, followed by the construction, manufacturing, transportation and storage, accommodation and food services sectors respectively.

One of the issues that should be emphasized in line with these data is that workplace inflation in Ordu. The province producing goods and services for its own market (i.e. closed economic structure) is an important source of economic problem. Because every new business established in the same sector in the city is disconnected from production and cuts from the profit of the other establishments in the market which makes the survival of these establishments in a shrinking market conditions very difficult.

Structure of Employment

According to Turkish Employment Agency (İŞKUR) data for 2018, there are 32,593 registered people who were looking for a job aged between 15 and 35. Of these, 17,640 were women and 15,953 were men. Since this data is only related to applications made to İŞKUR, it is very

limited and more importantly does not cover the agricultural sector. In addition, 55% of the women registered at İŞKUR work in part-time jobs (İŞKUR, 2019: 17).

Another striking aspect of İŞKUR data is that the rate of unemployed among the university graduates in the Ordu is 25% compared to 14.2% which is the average unemployment rate in Turkey for the same group. Such data can also be considered as one of the explanatory factors for Ordu's outward migration. As it will be evaluated below, the commercial and industrial structure of the city and its low-yielding agriculture are another important effects that explain this out going migration process.

Since employment rates are generally based on the official records (i.e. unemployed people who are registered at İŞKUR) the data excludes people who did not registered at İŞKUR.

Socio-Economic Status and Livelihood

The Socio-Economic Status (SES) index that ranks the population according to various variables including, income, leisure time activities, ownership of various assets and so on. These statuses ranked from A+ which is being the highest to D which is being the lowest status. Table 6-30 shows the SES status of the districts in the Project Area. According to the table percentage of people in the highest SES groups of A+ and A is very low across all districts in the basin. Another striking characteristic of the basin is that with the exception of Fatsa (43.74%) in all districts over half of the population's SES statuses are in Group D which is the lowest group. Furthermore, the representation of high SES groups of A+ and A in the region (5.54%) is much lower than the country average (16.31%). Again representation in Group D which corresponds to the lowest SES status is much higher in the region (between 43.79% and 56.65% among different districts) compared to an average percentage in Turkey (33.19%). In summary the majority of the people in the Basin have the lowest SES status that is also well above the country average.

Table 6-30. SES groups in the Bolaman Region by Districts (compared to Turkey)

Area	A+	A	B	C	D
Fatsa	0.91	4.77	14.74	36.02	43.74
Gölköy	0	2.76	14.11	29.08	54.05
Aybastı	0	3.10	13.91	30.24	52.75
Korgan	0	2.79	13.97	28.90	54.33
Kabataş	0	2.76	13.94	28.51	54.79
Çatalpınar	0	2.61	13.91	27.92	56.56
Gürgentepe	0	2.47	13.89	27.79	56.35
Çamaş	0	2.52	14.00	26.84	56.65
Turkey	4.63	11.68	23.23	27.26	33.19

Source: adopted from <https://www.endeksa.com/tr>

Since more than half of the settlements in the Project Area are forest villages, it is worth adding a few more words on poverty and forest villages. The evidence generated from the forest village household survey analysis as part of a study conducted by the World Bank in 2017 titled "Poverty, Forest Dependence and Migration in the Forest Communities of Turkey", strongly support some aspects of the linkages between poverty, forest dependence, income

vulnerability and migration. The findings of the study show that the poor are more forest dependent because of their lack of alternative income options, a low level of productive assets, social capital and high vulnerability. As a result, they have limited capacity to diversify income sources and move to higher-return economic activities – such as agriculture and owning livestock. To a certain extent, forest dependency represents a poverty trap – since income opportunities are low in the value chain and do not pay that well. However, specific interventions, such as strengthening the value chain through greater local level processing, can improve the situation. Currently, the most forest dependent individuals are in the bottom 20% of the income structure (World Bank, 2017: 41). A further evidence for their poverty comes from the same report as they also lack ownership of some basic household appliances (See Table 6-31).

Table 6-31. Proportion of Households Appliances Ownership

Households Appliances	% Households Ownership
Internet	0.63
Computer	1.17
Dishwasher	2.47
Fridge	2.54
TV	9.79

Source: Adopted from Appendix 4 of WB 2017: 50

The results of the above-mentioned SES study show similarities with the Socio-Economic Development Index carried out in 2017 by the Turkish Ministry of Industry and Technology (SEGE 2017). This study ranks the SES of the Turkish cities in 6 categories (1 is being the highest and 6 is being the lowest). In this categorization some various sub-categories are used including demography, quality of life, social inclusion, finances, competitive and innovative capacity, health, education and employment status. The average score of the Ordu province puts the city in the 60th place out of 81 cities. This ranking also puts Ordu in the fifth category which is near the lower end of the SES (the lowest being 6).

As suggested by the data above people in the Project Area have a very low SES. However, as the above discussions also suggest that there are differences according to different communities and we are not able to pinpoint these differences from the literature review. These data gaps have been partially filled in the SESA field study.

The average income per household differed enormously as can be seen from Table 6-32 the minimum earning of a household per year is 5,000TL whereas the maximum earning is 150,000TL. However, these earnings represent extreme cases on average household in the Basin earns 22,816 TL a year (See Table 6-32). This is much lower than the one person's annual minimum wages. Annual minimum wage for the year 2020 varies between 27,888 TL and 29,748 TL depending on the marital status and the number of children of the wage earner. However, as emphasized above all the different indicators of SES had been used so far clearly demonstrated that the population of the Basin is significantly poor compared with many other regions in Turkey.

Table 6-32. Average income of a household in the Basin

	Number	Minimum	Maximum	Mean
Average income	75	5000	150000	22816

SESA Gap filling field study (CLQ), September 2020

What is more striking that when earnings of the forest communities in the Basin taken into account the annual income per household in these communities is even lower. In the sample group 33 forest communities provided data for their annual household income. The lowest for households in these communities was 6000TL and the maximum was 40,000 TL. However, an average income was 18,480 (See Table 6-33).

Table 6-33. Annual income per household in forest communities

	Number	Minimum	Maximum	Mean
Average annual income (for forest communities)	33	6000	40000	18460.61

SESA Gap filling field study (CLQ), September 2020

When forest communities excluded an average household income in the non-forest communities is much higher. In fact these households in these communities on average earn 26238TL which is almost 50% higher than the annual average earnings of the households in forest communities (See Table 6-34).

Table 6-34. Annual income per household for non-forest communities

	Number	Minimum	Maximum	Mean
Annual average income for non-forest communities	42	5000	150000	26238,1

SESA Gap filling field study (CLQ), September 2020

As part of the HHQ Surveys households were asked whether household receive social assistance in terms of money and provisions from any institution, organization or person. Thirty per cent of the household stated that they got such help recently or were getting at the time of the survey. Again in this HHQ surveys which was mainly conducted in the communities where sensitive groups were the part of the settlements, the type of the economic activity that was the source of livelihoods were asked. 132 Households expressed 252 livelihoods sources for themselves. As can be seen from Table 6-35 households (64.39%) mentioned agriculture as a source income, this was followed by retirement pension (45.45%), waged or salaried labour (36.36%), self-employment (21.96%), animal husbandry (17.42%), government social funds (3.78%) and beekeeping (1.52%). The households were also asked to specify primary and secondary sources of livelihoods. For 40 households the retirement pension was primary and 70 households the agricultural income was secondary source of livelihoods.

Table 6-35. The type of the economic activity that was the source of livelihoods

Activity	Number	% (out of 132 households)
Gardening/Agriculture	85	64.39
Animal Husbandry	23	17.42
Beekeeping	2	1.52
Waged or salaried labour	48	36.36
Self-employment	29	21.96

Retirement pension	60	45.45
Government social funds	5	3.78
Total	252	-

SESA Gap filling field study (HHQ), September 2020

In HHQ surveys households were asked to compare their annual income with the average household income in the Ordu province. Fifty-four per cent of the households stated that their annual earnings were below the average income. Another 41,7% said their annual income was similar to average annual income of the households in Ordu and only 4,7 of the households stated their annual income being higher than the average household income in Ordu (See Table 6-36 for further details).

Table 6-36. Comparison of annual income with the average household (Ordu)

Level of annual households income	Number	%
Above the average of Ordu Province	6	4.7
Same as the average of Ordu Province	53	41.7
Below the average of Ordu Province	68	54.5
Total	127	100

SESA Gap filling field study (HHQ), September 2020

In the HHQ surveys people were also asked about percentage of their expenditure against their income. Food expenses took most of the households' income away in the Project Area. This is also one of the major indicators that households earning was to subsidise their most basic needs in order to survive. About 60% of the households in the Basin spent 50% and above proportion of their income on food. For some families their food expenses took 80% of their income away (See Table 6-37). On the contrary only two people in the survey respondents stated that they put money in savings account and none mentioned about buying foreign currency, golds or investing money in stock markets. Again only two households mentioned buying any agricultural tools from their income and only three people mentioned about buying any animals. Majority of the households (52%) spend less than 10% of their income on health and personal care. Around 70 percent of the families spent around 20% of their income for paying debts. Only three households mentioned spending between 5 and 10% of their income on holiday and leisure. All these indicates that households in selected communities don't have much money to spend outside their kitchen expenses. And the remaining money mostly spent on paying debts.

Table 6-37. Percentage of food expenditure against income

	Number	%
Between 10 and 24 percent	7	5.6
Between 25 and 49 percent	45	35.7
50 percent and over	74	58.7
Total	126	100

SESA Gap filling field study (HHQ), September 2020

In order to fill some gaps on the SES level of the people living in the Project Area some data was requested from various government agencies. The Governorship of the Ordu provided

data. Data also shows the number of people and their gender distribution according to different Project Area districts. In 2019, there were in total 68,319 beneficiaries of the Government Social Assistance and Solidarity Encouragement Fund (SYDEF) and 26,336 (38.5%) of them were male and 41,983 (61.4%) were female. Table 6-38 gives district details of these people. What is striking from this data is that as the total people of the Basin stands around 240,000 these figure of people receiving some assistance from the Social Assistance and Solidarity Fund makes about 28.4% of the population of the entire Project Area.

Table 6-38. Number of Men and Women Beneficiaries of SYDEF

District	Male	Female	Total
Aybastı	1,922	3,096	5,018
Çamaş	865	1,137	2,002
Çatalpınar	1,975	3,538	5,513
Fatsa	6,620	11,841	18,461
Gölköy	2,353	3,361	5,714
Gürgentepe	1,557	2,922	4,479
Kabataş	1,775	2,616	4,391
Korgan	4,039	5,547	9,586
Kumru	2,655	3,034	5,689
Mesudiye	781	1,050	1,831
Perşembe	1,508	2,191	3,699
Ulubey	1,573	1,649	3,222
Total	27,623	41,982	69,605

6.2.3 Agricultural Production

During the SESA study, steps mentioned below have been followed to make an accurate evaluation of agricultural activities in the Bolaman River Basin;

- Present current situation with district-based agricultural statistical data,
- Monitoring the change in agricultural production in time to understand agricultural trends/directions,
- Present current situation in the villages, to identify key issues

Statistical digitization of district-based data has been used in the Scoping Report for the study of agricultural condition in Project Area. However, distribution of districts within the basin boundaries is not equal. For instance, Aybastı and Kabataş districts are all bordered by basins, while there are only a few villages of Kumru and Ulubey districts within the basin. Therefore, at this stage village-based data collected and utilised for better assessment.

Agricultural Land Ownership

According to the Ordu Agriculture Master Plan, although having only 1.2% of the country-wide agricultural lands in Turkey, Ordu ranks first with its registered farmers. As given Table 6-39 below, approximately, 45% of these lands registered in the Farmer Register System (ÇKS). These lands are rather small, having size between 0.1-20 decares per agro-enterprise which points out clearly the fragmentation of agricultural activity.

Table 6-39. Agricultural Enterprises Registered to the ÇKS

Range	<5 decares	<5-10 decares	10-20 decares	20-50 decares	50-100 decares	100-200 decares	200-500 decares	Total
Number of Agro-Enterprises	16,702	30,288	36,036	25,404	3,063	302	17	111,812
Total Parcel Number of Agro-Enterprises	61,509	172,856	278,577	264,996	42,861	6,192	438	827,429
Total Land Assets of Agro-Enterprises (Decare)	57,686.30	224,528.63	514,009.13	748,867.41	196,046.43	37,570.85	4,368.72	1,783,077.48
Share in Ordu (%)	3.28	12.6	29	42	11	2.1	0.02	100
Share in Turkey (%)	17.67	16.23	9.67	3.28	0.57	0.10	0.01	1.20

Source: Agriculture Master Plan, 2012

The structural problem of small and fragmented agricultural lands in Turkey is well-known but the problem in the Project is even more severe.

Almost entire arable land in Başçiftlik, Niksar and Reşadiye bounding Tokat are pasturelands as shown in land cover map

Figure 6-7. Therefore, they remain as un-cultivated land and will be reviewed in following sections. It is also cross-checked by the village-based data provided by Tokat Provincial Directorate of Agriculture and Forest, to compare land-cover map, and assured that the total land assets of agro-enterprises are only 18,302 decares and average land asset is 34 decares in Tokat villages inside the Project Area.

Table 6-40. Land Assets of Agro-Enterprises by Districts (2012-2019)

Districts of the Project Area	Total Number of Agro-Enterprises		Total Land Assets of Agro-Enterprises (Decare)		Average Land Assets of Agro-Enterprises (Decare)	
	2012	2019	2012	2019	2012	2019
Aybastı	6,002	7,051	63,266.40	69,525.99	10.54	9.86
Başçiftlik (T)						
Çamaş	3,066	3,220	49,534.00	48,260.01	16.15	14.99
Çatalpınar	3,397	3,595	50,220.06	49,258.63	14.78	13.70
Fatsa	11,681	13,542	203,945.00	206,776.55	17.45	15.27
Gölköy	8,568	9,194	103,138.51	108,485.06	12.03	11.80
Gürgentepe	5,709	6,011	76,361.00	74,100.03	13.37	12.33
Kabataş	3,503	3,771	38,995.00	38,426.37	11.13	10.19
Korgan	6,836	6,937	94,949.00	78,584.74	13.88	11.33
Kumru	6,183	6,688	87,730.00	86,718.19	14.18	12.97
Mesudiye	755	829	10,491.00	9,582.79	13.89	11.56
Niksar (T)						
Perşembe	8,351	9,594	117,497.00	125,917.19	14.06	13.12
Reşadiye (T)						
Ulubey	7,462	7,908	123,261.00	118,275.67	16.51	14.96
Total	71,513	78340	1,019,387.97	1,103,911.22	14.00	12.67

Source: Agriculture Master Plan, ÇKS (Farmer Registration System) Data provided by Ordu Provincial Directorate of Agriculture and Forest

Based on the data provided in the

Table 6-40 the total number of agro-enterprises within the boundaries of Project Area was 71,513 in 2012. When compared with 2019 Farmer Registration System records (provided by Ordu Provincial Directorate of Agriculture and Forest), the recent figures has risen to 78,340 agro-enterprises. Despite the augmentation (6,827) from 2012 to 2019, average land asset of agro-enterprises has become smaller and more fragmented since 2012. In 2019, Fatsa has sustained its highest quantitative condition of agro-enterprises (13,542) and reached major total arable land assets with 206,776.55 decares. Taking into account the average land size per agro-enterprise, Fatsa is most advantageous location with 15.27 decares per agro-enterprises. Conversely, Aybastı has maintained its characteristics being smallest land size per enterprise in the Project Area with the average of 9.86 decares per agro-enterprises. Moreover, by comparison of both tables (

Table 6-40 and

Table 6-41), it is can be said that the agricultural lands within the boundaries of the Project Area have a typical characteristic regarding the application size per agro-enterprise. For a better look to thse issue, Land Parcel Identification System (LPIS) data analysed and presented in section where also hazelnut production identified.

Table 6-41. Land ownership

Do you own any land, garden or field?	Response	Cumulative Percent
YES	105	80.8
NO	23	19.2
TOTAL	100.0	100.0

Source: SESA HHQ survey – September 2020

Furthermore, frequently preferred land use methods have been examined in the basin via CLQ to identify the structure of the ownership in the Project Area. Based on the result of the CLQ, tenancy model nor the co-production models are common practices. As stipulated in above table, high number of resident farmers have their own land and there is very few people without land.

Condition of Pasture Land in the Project Area

Amount of pasture assets in Project Area by districts have been demonstrated in Table 6-42. Additionally, according to the Ordu Agriculture Master Plan, amount of the pasture areas, which is within the boundaries of nine (9) districts in Ordu in total, offer a good opportunity for grazing livestock. From the site observations, bovine and ovine concentration in visited pastures (in July) were rather limited reminding use of below capacity.

Table 6-42. Pasture Assets by Districts (2012 and 2018)

Districts of Project Area	Size of the Pasture Land (Decare)- 2012	Size of the Pasture Land (Decare) - 2018	Variation
Aybastı	45,147	44,176	-971
Başçiftlik (T)	53,403	53742	339
Çamaş	N/A	N/A	N/A
Çatalpınar	N/A	N/A	N/A
Fatsa	20	18	-2
Gölköy	36,020	39,044	3,024
Gürgentepe	N/A	N/A	N/A
Kabataş	N/A	N/A	N/A
Korgan	51,170	50,788	-382
Kumru	38,610	38,750	140
Mesudiye	147,470	143,610	-3,860
Niksar (T)	42,307	62,550	20,243
Perşembe	N/A	N/A	N/A
Reşadiye (T)	102,796	101,847	-949
Ulubey	1,300	1,942	642
TOTAL	518,243	536,467	18,224

Source: AMP, 2018 - Ordu Environment Report

On the other hand, based on what appears in satellite images, almost entire land of Tokat within the borders of Project Area have characteristics of the pastureland. Table 6-43 mentioned below has been prepared according to application norms related to pasture grazing status and classes are defined in the Pasture Regulation (Application Norms, Article 6)

prepared on the basis of Article 31 Pasture Law no. 4342. Based on legal definition and information collected from Pasture Branch Offices in Ordu and Tokat Provincial Directorate of Agriculture and Forest, 57% of total pasture area of Project Area has average status consisting of 26-51% of the vegetation by weight of high-quality plants. 21% of total pasture area has weak vegetation cover and 22% of total pasture area has good status than others. It is also seen that Reşadiye district stands out in terms of both the quality of vegetation and its spatial size.

Table 6-43. Pasturelands characteristics

Name of the Districts	Name of the Villages	Location-based Status and Classes of Pasture Lands (decare)			
		Weak (% 0-25)	Average (% 26-50)	Good (% 51-75)	Very Good (% 76-100)
Başçiftlik	Hatıpli		4,693.00		
Başçiftlik	Karacaoren		36,618.00		
Resadiye	Merkez			3,265.00	
Resadiye	Bozcalı, Isıklar			13,204.00	
Resadiye	Bereketli		14,872.00		
Resadiye	Hasanşeyh			3,714.00	
Resadiye	Baydarlı			8,727.00	
Resadiye	Cimitekke			8,870.00	
Resadiye	Demircili Köyü	4,906.00			
Resadiye	Kuyucak	4,496.00			
Resadiye	İbrahimşeyh			969.00	
Resadiye	Nebiseyh		2,260.00		
Resadiye	Guvendik		939.00		
Resadiye	Taslica	2,271.00			
Resadiye	Guzeldere		856.00		
Resadiye	Elmacık		3,570.00		
Resadiye	Konak	1,713.00			
Niksar	Ozalan		11,927.00		
Niksar	Bilgili		5,373.00		
Niksar	Bozcaarmut		2,665.00		
Aybasti	Uzundere	5,339.90	13491.25		
Aybasti	Zafermilli		1,247.34		
Aybasti	Pelitozu		3,536.87		
Aybasti	Toygar	744.73			
Aybasti	Esenli	2,722.33	99.89	238.48	
Golkoy	Merkez	3,327.30	2,415.57	2,888.87	
Golkoy	Yuvapınar	3,334.00	11,585.87	3200.13	
Golkoy	Suleymaniye	293,03			
Golkoy	Haruniye	228,65			
Golkoy	Duzyayla	1,356.07	35.23	19.23	

Korgan	Terzili	2634,36			
Korgan	Tepealan	4882,06			
Korgan	Beypinari	424,61			
Korgan	Cayirkent	3519,42			
Korgan	Belalan	658,89			
Mesudiye	Mahmudiye	1170,85	1371,52		
Mesudiye	Derebasi	386,86			
TOTAL	(%100) 207,061.31	(%21) 44,409.06	(%57) 117,556.54	(%22) 45,095.71	

In terms of livestock activity in the region, it was considered appropriate to be evaluated and detailed the condition of pastures and activity of livestock husbandry together in next section.

Livelihood Depends on Vegetative Production and Livestock Assets

This section aims to reveal general condition of livelihood depends on agricultural activities in Bolaman River Basin. Agriculture has traditionally been the most important sector despite the fact that it has still been subsistence-based and conventional techniques concentrated in the basin area. With the ratio of production, hazelnuts have obviously been the dominant product of the region. As for the verification of this statement, district based hazelnut production has been examined by using TurkStat data and detailed in the Table 6-44 and following heading.

Table 6-44. Fruit Production Land by Districts (2012-2019)

Districts of Project Area	Hazelnut Production Land (decare)			Walnut Production Land (decare)			Kiwi Production Land (decare)		
	2012	2019	Variation	2012	2019	Variation	2012	2019	Variation
Districts/Years	2012	2019	Variation	2012	2019	Variation	2012	2019	Variation
Aybastı	89,400	91093	1693	116	120	4	0	0	0
Başçiftlik (T)									
Çamaş	70,126	70,130	4	0	0	0	21	23	2
Çatalpınar	48,655	48,650	-5	10	54	44	7	6	-1
Fatsa	269,690	269,690	0	385	344	-41	345	390	45
Gölköy	140,677	140,680	3	0	22	22	11	11	0
Gürgentepe	101,284	101,280	-4	127	220	93	8	10	2
Kabataş	47,361	46,690	-671	66	67	1	0	0	0
Korgan	87,463	87,526	63	36	56	20	0	0	0
Kumru	117,740	117,780	40	36	85	49	22	22	0
Mesudiye	30,439	30,439	0	0	50	50	0	0	0
Niksar (T)									
Perşembe	193,300	193,300	0	172	176	4	347	570	223
Reşadiye (T)									
Ulubey	176,745	176750	5	117	149	32	127	130	3
TOTAL	1,372,880	1,374,008	1128	1,065	1343	278	888	1162	274

Source: TurkStat, 2012; TurkStat, 2019

Moreover, it has been seen that activity of the vegetative production for domestic consumption includes a wide range of fruits and vegetables. However, it is stated in the Scoping Report that this production is not made for commercial purposes in Project Area. Main fruits produced are apple, pear, cherry, walnut, mulberry, plum, quince, peach, grape, fig and main vegetables produced are potato, tomato, pepper, onion and bean. These products are usually grown in the gardens near the settlements, even in the gardens nearby the residences. Most of these gardens are not registered to the system, therefore, there is no available data on exact amount of production for these products. Nevertheless, the presence of production activities for domestic consumption is indicative of conditions suitable for alternative products in the region.

The main reasons why the hazelnut dominates the region instead of alternative products are that it emerges as a product which is economically competitive and it is governmentally supported for its production. Currently, there are two main support mechanisms driven by the government on hazelnut production. These are area-based supports to registered parcels of farmers via MoAF and price interventions regulated by the government, through Turkish Grain Board (TGB).

With respect to the communique on the area-based supports⁵, it was decided to pay 170 TL per decare income support in 2016. The support amount announced on the website of the Ministry of Agriculture and Forestry for 2019/20 continues the same since 2016⁶. Regarding the government interventions, the purchase guarantee resides except for the period of temporary cancellation from 2009 to 2017. Today, hazelnut prices are regulated through the purchase guarantee of TGB.

Hazelnut Production in Project Area

This section aims to reveal district-based condition of hazelnut cultivation by years in the Project Area. In accordance with this purpose; tendencies based on variations in years, productivities and main issues in hazelnut production have been revealed with the current condition using by statistics and literature reviews. Additionally, statistics and reviews will be supported with primary data collected from the field via HHQ.

Turkey is the largest hazelnut producer (approximately 70% in total) in the world. Countries; Italy, U.S. Azerbaijan, Georgia and Spain are main followers of Turkey in the amount of production (INC, 2020). Moreover, the majority of the world hazelnut production in proportion to the amount of planting area is still Turkey, which has 728,380 hectares of hazelnut production area in 2019 according to TurkStat. Great amount of hazelnut production of Turkey is being cultivated in Ordu, Giresun, Samsun, Sakarya, Trabzon, Düzce provinces. Ordu has the largest land of hazelnut production and with regard to registered hazelnut producer has the largest number with 123,416 as well (Hazelnut Report, 2020). As mentioned in previous section

Table 6-45, total number of agro-enterprises have been mostly performing hazelnut cultivation within the boundaries of Project Area is nearly 78,000 with a strong prediction in 2019. A

⁵ <https://www.resmigazete.gov.tr/eskiler/2016/09/20160927-11.htm>

⁶ <https://www.tarimorman.gov.tr/Konular/Tarimsal-Destekler/Alan-Bazli-Destekler/Findik-Alan-Bazli-Gelir-ve-Alternatif-Urun-Destegi>

district-based analysis of hazelnut production was made in the Scoping Report and with this analysis; production areas, quantities and average efficiency of the basin were analyzed to be revealed.

Table 6-45. Production Areas (Decare) of Hazelnut by Districts

Districts/Years	2013	2014	2015	2016	2017	2018	2019
Aybastı	90,054	90,054	90,054	90,054	90,054	90,054	91,093
Fatsa	269,690	269,690	269,690	269,690	269,690	269,690	269,690
Gölköy	140,677	140,677	140,677	140,677	140,677	140,677	140,680
Gürgentepe	101,280	101,280	101,280	101,280	101,280	101,280	101,280
Kabataş	46,687	46,687	46,687	46,687	46,687	46,687	46,690
Korgan	117,740	117,740	117,740	117,740	117,740	117,780	117,780
Kumru	30,439	30,439	30,439	30,439	30,439	30,439	30,439
Mesudiye	193,300	193,300	193,300	192,366	192,366	192,346	193,300
Perşembe	176,745	176,745	176,745	176,745	176,745	176,745	176,750
Ulubey	87,463	87,463	87,463	87,463	87,463	87,526	87,526
Çamaş	70,126	70,126	70,126	70,126	70,126	70,126	70,130
Çatalpınar	48,650	48,650	48,650	48,650	48,650	48,650	48,650
Total	1,372,851	1,372,851	1,372,851	1,371,917	1,371,917	1,372,000	1,374,008

Source: TurkStat, 2019

In this section of the SESA report, it is targeted to define and evaluate hazelnut production in detail for Bolaman Basin. As described in the previous section, 86.6% of the arable land in the Ordu province is reserved for hazelnut production (Agriculture Master Plan for Ordu, 2012). In Turkey, Ordu has been maintaining its first rank in arable land of hazelnut which is area of 1,372,851 decares in the districts of the Project Area. Since distribution of the districts within boundaries of the basin are not equal, village based map of the hazelnut production has been prepared to see (Figure 6-18) exact amount of registered lands in the Project Areas.

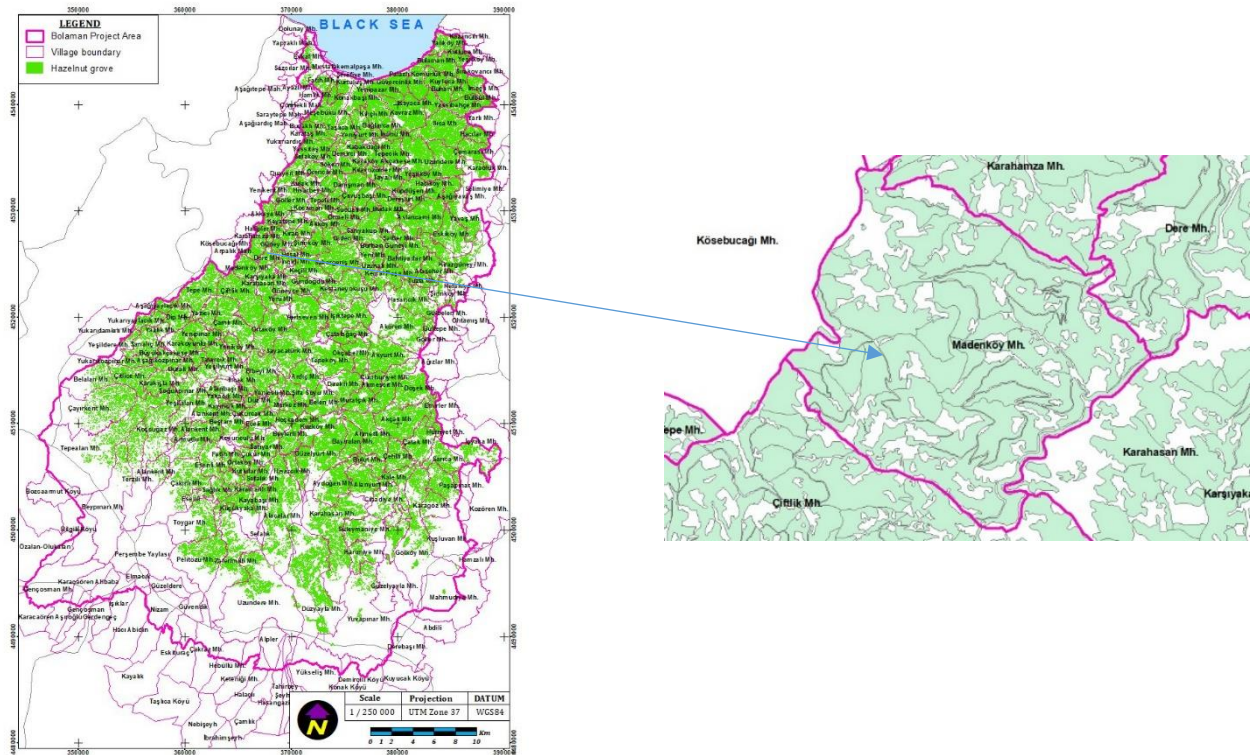


Figure 6-18. Hazelnut Production Map – [Access Link](#)

According to the LPIS analysis, 97.7% of total arable land (756,261.70 decares) in Project Area has been cultivating for the purpose of hazelnut production (738,978.20 decares). Fragmented land cover of the hazelnut parcels in the area also demonstrated and Madenköy neighbourhood selected randomly to see condition of the fragmentation problem (Figure 6-18). Considering high percentage of the hazelnut area, it might be interpreted that the fundamental livelihood in the region is maintained based on hazelnut production. However, agricultural income appears as a secondary source of livelihoods according to the HHQ although it revealed that majority of the population was generating income from agriculture (Table 6-36). As a result of the social survey conducted with a high level of reliance at the society level, it is understood that hazelnuts income in the region can only be an additional income for a household. It forces its producers to work another economic activity.

Table 6-46. Table of Production (Tons)

Districts/Years	2013	2014	2015	2016	2017	2018	2019
Aybastı	6,259	0	6,318	2,222	7,463	7,985	6,544
Fatsa	22,903	18,254	26,747	12,059	32,031	17,955	26,485
Gölköy	9,460	0	9,346	2,613	9,266	16,968	10,549
Gürgentepe	6,810	0	7,353	1,963	4,971	12,606	6,357
Kabataş	3,197	0	3,459	1,676	4,456	4,235	4,520
Kumru	6,210	0	7,132	2,817	6,103	5,486	8,214
Mesudiye	9,697	0	9,051	5,159	7,792	6,901	11,052
Perşembe	1,681	0	2,284	589	2,375	3,667	2,436

Ulubey	15,363	16,610	17,981	7,495	18,431	9,841	17,739
Korgan	14,581	3,162	15,930	7,577	18,957	20,806	20,876
Çamaş	5,927	2,837	6,114	2,942	6,867	3,660	8,607
Çatalpınar	2,993	1,785	4,014	2,356	4,449	3,182	5,068
Total (Tone)	105,081	42,648	115,729	49,468	123,161	113,292	128,447

Source: TurkStat, 2019

However, there is no doubt that hazelnut still determines standards of the living conditions in entire Ordu as well as districts in Project Area. Therefore, it is a great importance to demonstrate hazelnut productivity and its trends for the region. Below mentioned table (Table 6-47) aims to reveal trends of productivity in Project Area. Average productivity of the basin is 67.25 kg/da in years between 2012-2019 in spite of the fact that productivity is on average 81 kg/da in Turkey and 72.6 kg/da in Ordu. It is seen that the hazelnut productivity in the basin is under both averages and has low productivity rate.

Table 6-47. Productivity (decare/kg) of Hazelnut by Districts

Districts/Years	2013	2014	2015	2016	2017	2018	2019	Average Productivity (2012-2019)
Aybastı	69,50	0,00	70,16	24,67	82,87	88,67	71,84	58,24
Fatsa	84,92	67,69	99,18	44,71	118,77	66,58	98,21	82,86
Gölköy	67,25	0,00	66,44	18,57	65,87	120,62	74,99	59,10
Gürgentepe	67,24	0,00	72,60	19,38	49,08	124,47	62,77	56,51
Kabataş	68,48	0,00	74,09	35,90	95,44	90,71	96,81	65,92
Korgan	71,00	0,00	81,54	32,21	69,78	62,68	93,85	58,72
Kumru	82,36	0,00	76,87	43,82	66,18	58,59	93,84	60,24
Mesudiye	55,23	0,00	75,04	19,35	78,02	120,47	80,03	61,16
Perşembe	79,48	85,93	93,02	38,96	95,81	51,16	91,77	76,59
Ulubey	82,50	17,89	90,13	42,87	107,26	117,72	118,11	82,35
Çamaş	84,52	40,46	87,19	41,95	97,92	52,19	122,73	75,28
Çatalpınar	61,52	36,69	82,51	48,43	91,45	65,41	104,17	70,02
Total (da/kg)	72,83	20,72	80,73	34,24	84,87	84,94	92,42	67,25

Source: TurkStat, 2019

Moreover, land ownership and productivity rate of hazelnut area have been requested to verify with primary data of HHQ. As a result of the analysis on percentage of households who own land which is 10.0 decares and below in size is almost 77% and more than 88% of land assets are 20.0 decares or smaller size. It is a confirmative indicator of the small land ownership in the Project Area. Also, considering hazelnut as a source of livelihoods, size of a hazelnut area with sufficient income for a household was stated as 28 decares according to the Hazelnut Report. When compared with the HHQ, it might be underlying reason why agricultural income seen as secondary source of income.

Table 6-48. Size of the hazelnut gardens own by households

Decares	Number	Valid Percent	Cumulative Percent
1.0 – 5.0	33	32.0	32.0
5.5 – 10.0	46	44.6	76.7
11.0 – 20.0	12	11.8	88.3
24.0 – 30.0	7	6.9	95.1
+ 30.0	5	4.9	100.0
Total	103	100.0	-

Source: SESA HHQ survey, September 2020

Furthermore, almost 51% of the households harvest 700 kg hazelnut or less and 82.4% of the households harvest annually 1,000 kg or less according to the HHQ. If the average land assets of agro-enterprises are accepted as 12.67 decares, average productivity of the basin might be calculated in between 55.24-78.92 by years 2012-2019.

Table 6-49. Annual hazelnut production per household

Kilogram	N	Valid Percent	Cumulative Percent
50 – 200	14	13	13.0
250 – 400	20	18.6	31.5
450 – 700	21	19.5	50.9
750 – 1,000	34	31.6	82.4
1,200 – 1,700	8	7.5	89.8
2,000 – 3,000	8	7.4	97.2
4,000 +	3	2.8	100.0
Total	103	100.0	-

Source: SESA HHQ survey, September 2020

According to 2020 Hazelnut Report prepared by the Hazelnut Institute, the reasons for low productivity in hazelnut production in the basin are listed as follows:

- Extreme/irregular cold or hot weather conditions due to climate change, as well as storm, hail, frost events,
- Insufficiency/unconsciousness; both in combating hazelnut diseases, pests, and in plant nutrition,
- Hazelnut orchards that have completed their economic lifespan and soil exhaustion,
- Land structure which makes challenging to do activities in the agricultural calendar causes the loss of efficiency and quality.

Despite these challenges, the basin and its geographical location has significant potential for more productive hazelnut orchard, alternative horticultural cultivation, improved livestock husbandry and value chain enhancement. In order to use hazelnut orchards more productively in the basin, the same report provides following suggestions:

- Agro-enterprises should be informed about the measures that can be taken against abnormal weather caused by climate change, and it should be ensured that producers can easily access these measures and their implementation should be monitored,
- Agricultural Extension Activities; highlighting biological and biotechnical methods in the trainings, emphasizing that chemical control is the last solution and increasing support in organic hazelnut production, and
- Providing technical and financial support for the renovation of hazelnut orchards; which should be evaluated, selected, and renovated within a project and implemented by experts. Also during the renovation processes, soil treatment precautions, which will not cause/accelerate erosion, should be implemented.
- Terracing; during the renovation of the orchards, appropriate terracing systems should be applied taking into account to slopes of the land (soil treatment precautions, which will not cause/accelerate erosion, should be implemented).

Livestock Husbandry in Project Area

This section aims to discuss district-based condition of livestock husbandry in Bolaman River Basin. In light of the in-depth literature review, analysis of statistical data and the information contained in the Scoping Report and site observations, it is seen that the animal husbandry, especially cattle breeding, is maintained on a very small scale and as a cultural element of rural life in Project Area. It is clearly seen on maps of bovine and ovine assets (Figure 6-19) that this culture is suitable as a wide-up activity throughout the basin. In relation to poulance, it is seen that egg poulance-type poulting activity Figure 6-21 is accepted in the region. Finally, it is observed that beekeeping activity is carried out considerably and extensively in the region Figure 6-20. These determinations will be detailed under the subheadings given below.

- Bovine and Ovine Husbandry
- Poultry
- Beekeeping Activity
- Bovine and Ovine Husbandry

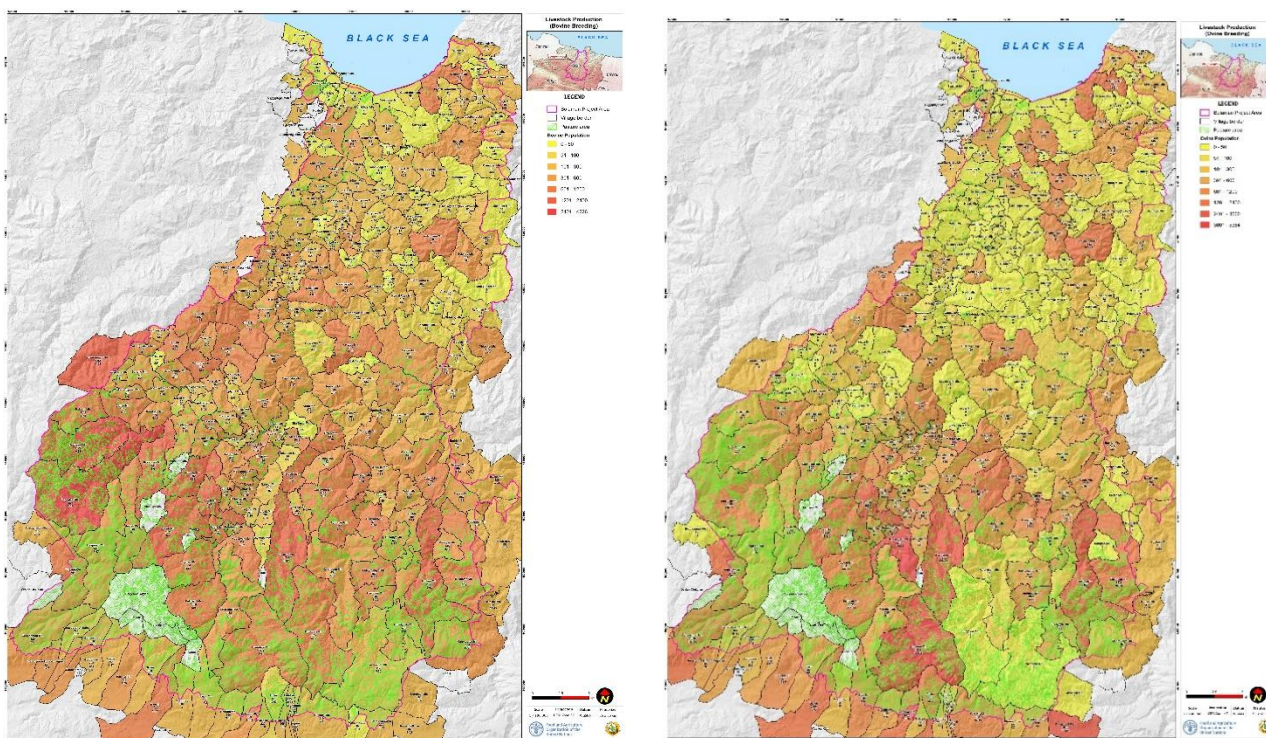


Figure 6-19. Maps of Bovine ([Access Link 1](#)) and Ovine ([Access Link 2](#)) Assets

Based on the data given in Table 6-50, from 2012 to 2019 there has been decrease in total number of cattle from 2012 to 2019, despite the total number of buffalo increase to 1,183 in Project Area. Korgan District had the highest number of cattle with 14,778 in 2012 but the second lowest number of beehives. As for the buffalo husbandry, Mesudiye district has the highest number (485) and the second highest number of sheep raising. For the ovine husbandry, Aybastı has the highest number of sheep (16,870). Total goat husbandry is 1,834, dominated with the number of 1,707 in Mesudiye district.

Table 6-50. Number of Livestock Assets and Trends

Type of Livestock	Number of Bovines						Number of Ovines					
	Cattle			Buffalo			Sheep			Goat		
Districts/Year	2019	2012	V*	2019	2012	V*	2019	2012	V*	2019	2012	V*
Aybastı	10,777	12,219	-1,442	263	113	150	16,870	15,019	1,851	0	0	0
Başçiftlik (T)												
Çamaş	2,743	3,460	-717	0	0	0	877	300	577	0	0	0
Çatalpınar	5,525	5,420	105	10	10	0	1,612	810	802	0	0	0
Fatsa	7,153	5,853	1,300	29	0	29	7,875	3,725	4,150	88	41	47
Gölköy	11,380	14,779	-3,399	78	95	-17	8,620	14,200	-5,580	0	0	0
Gürgentepe	3,274	4,859	-1,585	1	0	1	2,958	1,332	1626	6	0	6
Kabataş	6,178	5,150	1,028	66	40	26	6,000	5,100	900	2	0	2
Korgan	14,778	8,999	5879	109	41	68	5,510	5871	-361	0	0	0
Kumru	12,598	16,784	-4186	98	0	98	9,138	5,246	3892	7	0	7

Mesudiye	8,927	9,018	-91	485	310	175	12,712	18,359	-5647	1,707	1,725	-18
Niksar (T)												
Perşembe	4,683	3,297	1,386	4	0	4	5,550	4,580	970	24	4	20
Reşadiye (T)												
Ulubey	7,189	6,070	1,119	40	24	16	8,710	5,618	3,092	0	0	0
TOTAL	95,205	95,900	- 603	1,183	633	+550	86,432	80,160	6,272	1,834	1,770	64

Source: TurkStat, 2012; TurkStat, 2019; (V*: Variation)

According to 2012 data from Agricultural Master Plan (AMP) for Ordu Province, average number of cattle per agro-enterprises is only three, and the average number of sheep per agro-enterprises is 113 in Ordu province. Observations during the initial scoping trip have shown that family scale bovine husbandry has a deep-rooted history and almost every single household has a number of animal. It was also observed in the field that livestock raising activities are commonly based on pasture feeding and seasonally depends on supplementary feeding. On the contrary, when the animal owners asked where did they feed their animals (Table 6-51) and barn was most mentioned place (82%). These households were using the combination of different feeding places. Barn was followed by land owned by the household (66%), pasture land (25%) and somebody else's land (9%).

Table 6-51. Where do households feed their animals?

Where do you feed your animals? (N=39)	Times mentioned	Percentage of households
Barn	32	82.1
Own land	21	65.6
Pasture land	8	25.0
Somebody else's land	3	9.4

Source: SESA HHQ survey, September 2020

Also cost increase because of supplementary feeding and labour force loss due to internal migration especially for young generation from rural to urban and transportation and/or accommodation problems to/in pasture land are recorded as the main sources of pressure for livestock raising system which is extra-income generating and small-scale family farming tradition in the Basin. When the households who owned cattle were asked in what way their number of animal ownership had changed over the last ten years, only two households mentioned that the number had increased.

Table 6-52. Changes in the number of animal ownership

In what way their number of animal ownership had changed over the last 10 Years?	Number	Valid Percent	Cumulative Percent
Yes, it increased	2	4.9	4.9
No, it didn't change	23	56.1	61.0
Yes, it decreased	16	39.0	100.0
TOTAL	41	100.0	100.0

Source: SESA HHQ survey, September 2020

However, almost four out of ten respondent emphasised that their number of animals had reduced over the ten years (See

Table 6-52). Most people that their number of animals decreased over the ten years explained that increased feed prices were the main reason for this. Not being able to meet the increasing costs sold some of their animals.

Table 6-53. How do households feed their animals

How do you feed your animals? (N=39)	Times mentioned	Percentage of households
Straw	33	84.6
Forage / animal feed	31	79.5
Fresh grass	23	59
Other	1	2.6

Source: SESA HHQ survey, September 2020

When the animal owners asked how did they feed their animals and straw was most mentioned feed (82%). These households were using the combination of different animal foods. Straw was followed by forage (79,5%), and fresh grass (59%) (See Table 6-53).

Beekeeping Activity in Project Area

According to Agriculture Master Plan 2012, beekeeping culture has maturity in the province and in the Project Area district-based total number beehives as given in

Table 6-54 were 327,186. Turkey’s first Beekeeping Research Institute Directorate was established in Ordu and continues its activities as a station. Also based on the 2019 Agricultural Study Report, Ordu ranks first with 573,358 beehives in Turkey. When the tables are compared, it is seen that the number of beehives increased from 327,186 to 423,869 in seven years. Within the boundries of Bolaman River Basin, Ulubey has the first place in this activity with the number of 76,147 and Gürgentepe, Gölköy, Perşembe districts has also great numbers of beehives 75,000, 72,600 and 67,200; respectively.

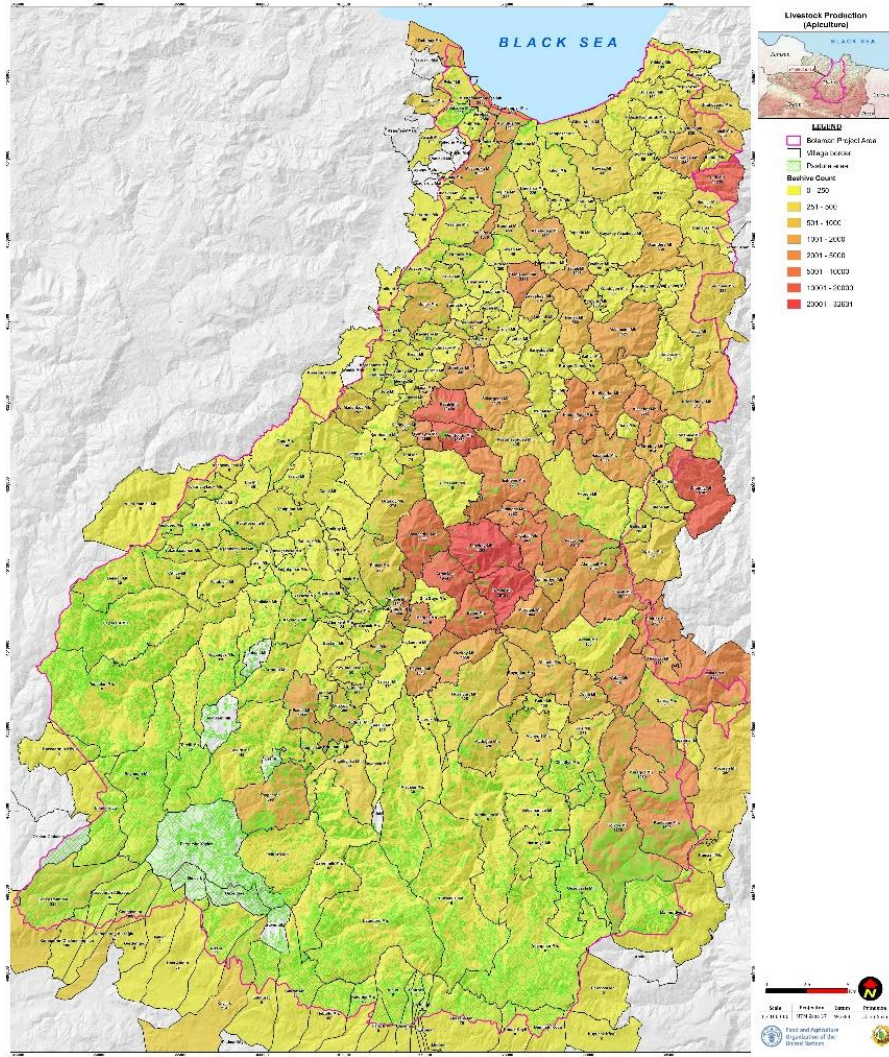


Figure 6-20. Apiculture Map -[Access Link](#)

Table 6-54. Trends in Beekeeping Activities by Districts (2012-19)

Districts	Beekeeping Activities in 2012			Beekeeping Activities in 2019		
	Total Number of Beekeepers	Total Number of Beehives**	Average Number of Hives per Beekeeper	Total Number of Beekeepers*	Total Number of Beehives***	Average Number of Hives per Beekeeper
	8	3,162	395	30	4,100	137
Başçiftlik (T)						
Çamaş	14	7,912	565	77	11,992	156
Çatalpınar	15	35,000	2333	190	33,500	176
Fatsa	67	26,000	388	152	32,200	212
Gölköy	21	55,000	2619	290	72,600	250
Gürgentepe	27	62,800	2326	305	75,000	246
Kabataş	11	29,500	2682	143	40,000	280
Korgan	4	350	88	14	1,150	82

Kumru	10	4,402	440	56	8,870	158
Mesudiye	8	5,560	695	32	1,110	35
Niksar (T)						
Reşadiye (T)						
Ulubey	38	57,500	1513	316	76,147	241
TOTAL	267	327,186	1246	1907	423,869	183

Sources: *TurkStat, **AMP, *** 2019 Agriculture Study Report- Provincial Directorate of Agriculture and Forest

Field study observations and desktop literature review suggest that beekeeping is also essential alternative income generating activity for the village communities especially among women-farmers living in the districts of the basin. At this point, it is necessary to highlight that farm labour is highly integrated in the household as well as across the entire villages of the province. However, while examining the beekeeping activities in Project Area, it is determined that the number of beekeepers has enormously escalated since then 2012.

According to the information provided by the Provincial Directorate of Agriculture and Forest, individual-based agricultural supports and incentives have reflected the increase in the registration rates in household and this encouraged the individual beehive ownerships instead of integrated farming tradition. Second theory on increase of beekeepers is that mobile beekeepers have been started to be taken into account after 2012. Additionally, according to the information received from Ordu Beekeepers Association, there are 2,800 active beekeepers/enterprises which are members of the association.

Poultry Farming in Project Area

In Project Area, there are three main poultry farming activities; broiler, egg poultry and goose raising based on the literature reviews and outcomes of initial scoping trip. TurkStat data has been examined to confirm this statement and current condition of poultry farming in Project Area demonstrated in Table 6-55. After 2012, it is seen that commercialized boiler type poultry facilities have recently established in Fatsa (41,000) and Çamaş (25,000) based on the data from the table. Nevertheless, almost in every districts of Project Area are producing egg for internal household consumption.

There are total of 115,195 egg poultries of which 35,000 is in Fatsa; 28,000 is in Çamaş and 23,300 is in Perşembe districts. On the other hand, it is seen that there are 3,093 geese within the boundaries of the basin. Mesudiye has also placed at the first rank with the number of 855 geese. Since 2012, the number of variations is revealed that all types of poultry farming have gradually grown in the Project Area.

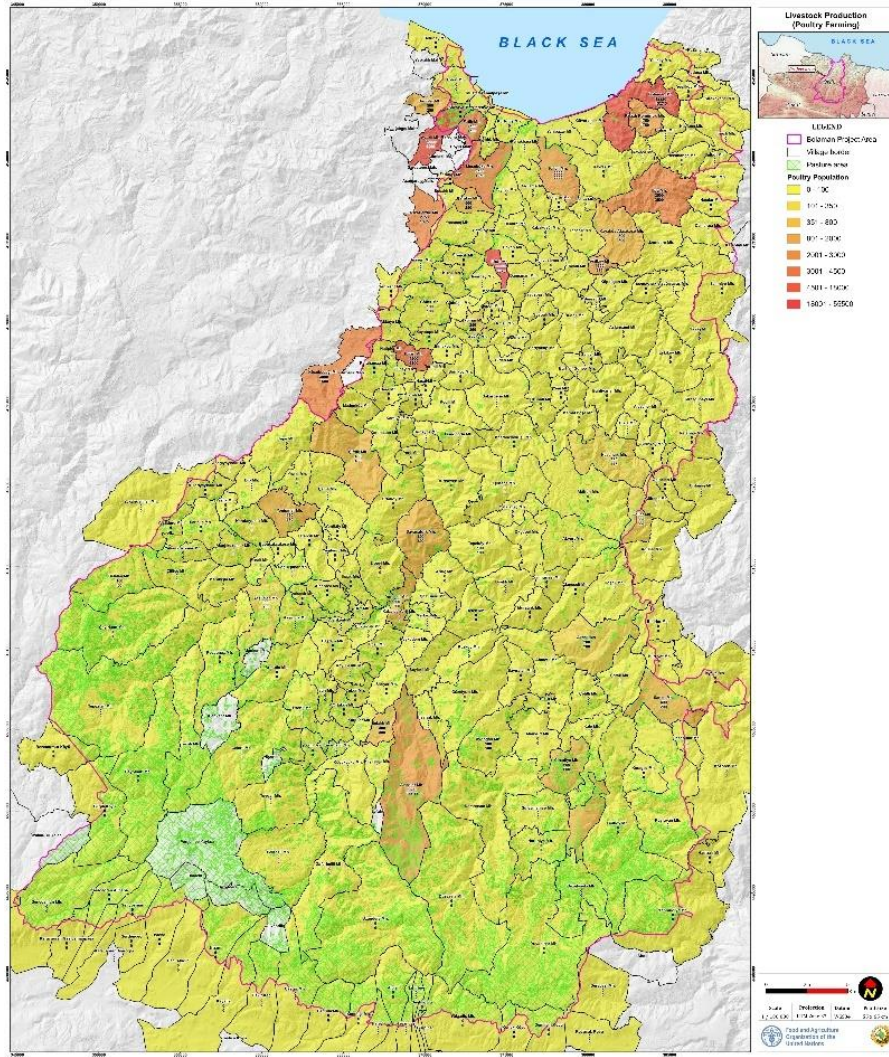


Figure 6-21. Poultry Farming Map – [Access Link](#)

Table 6-55. Number of Poultry Assets

Districts	Number of Poultry								
	Broiler			Egg Poultry			Goose		
Years	2019	2012	V*	2019	2012	V*	2019	2012	V*
Aybastı	0	0	0	4,250	2,659	1,591	320	12	308
Başçiftlik (T)									
Çamaş	25,000	0	25,000	28,000	27,493	507	8	5	3
Çatalpınar	0	0	0	4,750	3,350	1,400	0	0	0
Fatsa	41,000	0	41,000	35,000	32,500	2,500	115	16	99
Gölköy	0	0	0	6,380	15,300	-8,920	350	0	350
Gürgentepe	0	0	0	1,050	1,700	-650	300	0	300
Kabataş	0	0	0	1,250	4,100	-2,850	0	65	-65
Korgan	0	0	0	2,465	1,000	1,465	400	0	400
Kumru	0	0	0	1,000	3,500	-2,500	625	8	617

Mesudiye	0	0	0	25,00	2,350	150	855	0	855
Niksar (T)									
Perşembe	0	0	0	23,200	15,000	8,200	70	12	58
Reşadiye (T)									
Ulubey	0	0	0	5,350	3,224	2,126	50	0	50
TOTAL	66,000	0	66,000	115,195	112,176	3,019	3,093	118	2,975

Source: TurkStat, 2012; TurkStat, 2019; (V*: Variation).

Use of Natural Resources and Forestry

Based on the literature review, it is stated that the almost entire land within the boundaries of the Bolaman Project Area has suitable conditions for forest formation. However, it is emphasized that the forests, which spread over a much larger area are heavily destroyed except for high altitudes due to the economic activities especially for hazelnut production throughout the history of the region. Nevertheless the amount of forest lands are more common compared to the overall average of Turkey. All forests in the Project Area belong to the state and managed by OGM.

The lands for agriculture and pasture (a crucial determinant of income) are severely limited in mountainous forest villages. On the average, households in forest areas have access to 25 decares of land which is much lower as compared with the average of 64 decares for all rural households in Turkey, while 44% of registered agricultural lands are in between only 0.1 to 20 decares. It shows that land access and efficient usage of lands are common problem for both forest and all rural villages in Ordu. Diversely, the scarcity of good farming land in mountains and other forested areas lead communities to be dependent on mixed land uses, including grazing, making livestock management a much more important livelihood strategy in these areas than most other farming options (NBM Strategy Document, 2010, p.7). Locations of Rural, Rural&Forest and Forest villages are shown in Figure 6-22 to clarify the characteristics of the villages in the Project Area.

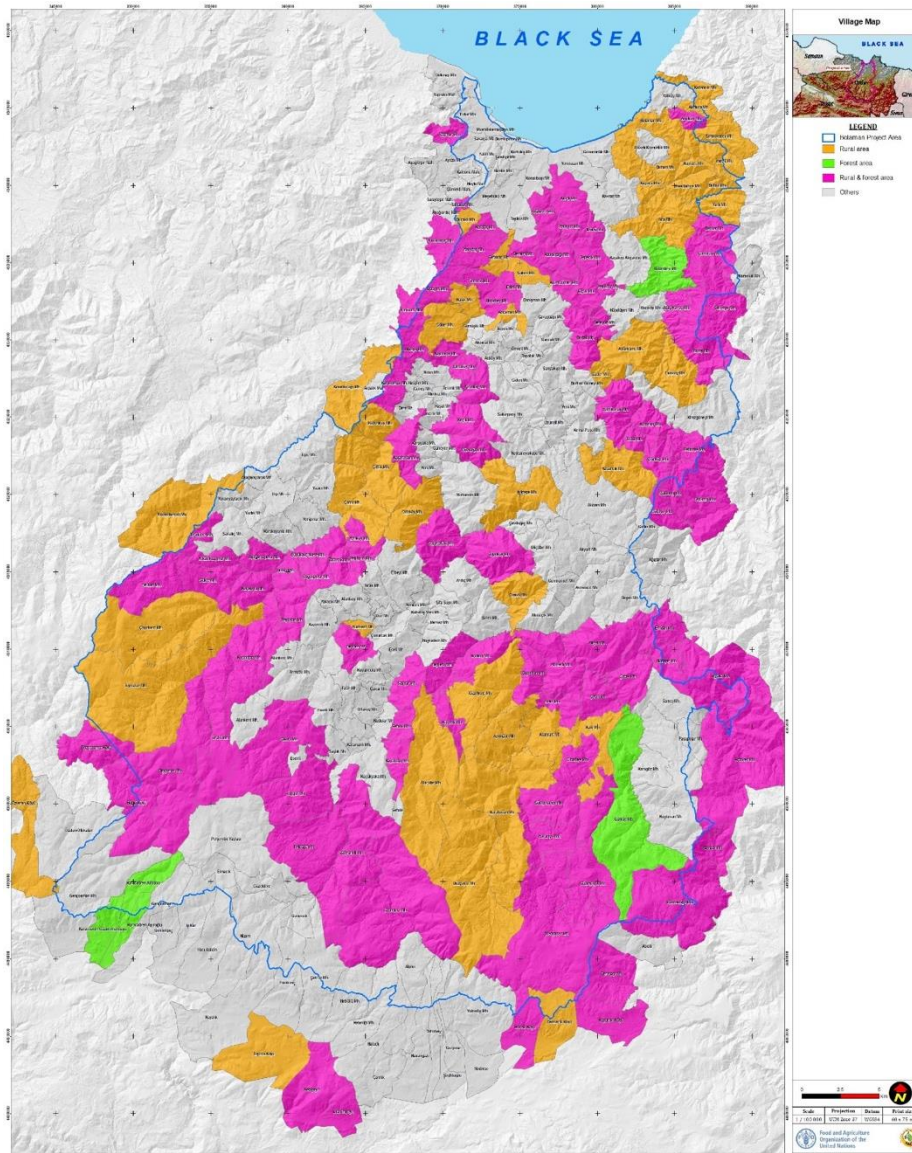


Figure 6-22. Map of Rural and Forest Villages in the Project Area

Increasing the productivity of forest resources represents one of the key components of OGM's Strategic Plan (2017-2021) for promoting sustainable development and better forest management. The degree of forest dependency of poor households in forest villages further validates the pursuit of better forest management (World Bank, 2017). Under the consideration of these facts, income generation among forest product categories will be mentioned in details with wood forest products (WFP), non-wood forest products (NWFP) sub-headings.

Wood Forest Products (WFP)

In Bolaman Project Area, utilizing forests as a wood resource has traditionally been the primary purpose and method of use. Also, the amount of employment created in wood production works is important for forest villagers in the Project Area. Considering the the wood forest products (WFP), GMO is the institution that determines the conditions to benefit from forests and the use of wood-based products in forest villages is maintained in a controlled manner.

In the HHQ survey the households were asked whether they used natural or forest products from the forest, six out of ten households answered positively (See Table 6-56).

Table 6-56. Do you use natural / forest products?

Answer	Number	%
Yes	73	58,4
No	52	41,6
Total	125	100

Source: SESA HHQ survey, September 2020

However, when the data is examined in detail, it has been revealed that wood was the most used forest product and 73 families involved in this. Other products such as natural herbs, mushrooms and so on also collected by the households but they were mainly for domestic use. Table 6-57 shows amount of wood collected from the forest per household.

Table 6-57. Amount of wood collected by households from forests

Amount (M ³)	Number	%	Total %
2-5	31	42.5	42.5
6-10	16	22.0	64.4
11-18	23	31.6	95.9
19-30	3	4.2	100.0
Total	73	100.0	-

Source: SESA HHQ survey, September 2020

Non-Wood Forest Product Sector (NWFPs)

The total income obtained from the export of NWFPs; OGM 3%, forest villages 30% while; collectors, intermediaries and exporters get a 67% share. Considering this distribution, it is seen that OGM and forest villages receive a very small share from the total income (DOKA, 2015). According to another research, 7% of the export income of non-wood forest products goes to forest villagers (Anonymous, 2013). Also forest villagers who benefit from these products do not prefer cooperatives or other organizational models for reasons such as insufficient equity, not purchasing all of the product, late payment of the purchased product, and therefore intermediaries make a very comfortable product purchase and sale. In accordance with this determination, there are no strong organizational structures in Bolaman Project Area that will allow a sufficient collection of non-wood forest products for the whole livelihood. Although it is observed in the HHQ results that non-wood products are mostly collected for household consumption in the Bolaman Project Area, it is seen that forests have still an significant potential for these products.

Based on information given in the NBM Strategy Document (2010), land degradation has significantly reduced the carrying capacity of rangeland and the fertility of agricultural land in the upper catchment areas and thus negatively affected farming households' ability to derive a livelihood in the upland regions, with resulting higher poverty rates in these areas. Reduced vegetative cover has led to marked reductions in soil moisture content thus subjecting agricultural lands to significantly higher vulnerability to drought. Land degradation has also led

to unstable and increasingly torrential river flows with increased incidence of flooding and growing sedimentation problems. Landslides have also become a growing problem.

According to the Project Area Evaluation Meeting notes prepared by OGM, there is also a vicious circle with regard to the degradation of natural resources and poverty. Degradation of natural resources leads to lower productivity of villagers, and this in turn increases poverty levels. People become more dependent on natural resources and natural resources are further degraded. During the initial scoping trip, it has been realized that utilization of forests and income generating economic activities are critically limited in forest villages.

6.2.4 Living Conditions

Infrastructure

In Ordu, urbanization as it is today started in the 19th century. While it was first a small rural residential area inland later it was transformed into a small village on the coast, from there to a port town and then to the city (Ekinci, 2016: 97-98). However, it is difficult to say that the city has become a center of attraction in general, since some of the chronic problems in Ordu have not been solved yet (Yüksel and Yeşil, 2017: 682). Ordu, which became a city center in 1921 and gained the metropolitan status in 2013, is hard to say that its physical development is matched with a social and economic growth at the same rate. Although Ordu province has the perception of being a modern city at the first glance, the industrial sector is not sufficiently developed, and it suffers from economic difficulties, and it has some significant deficiencies in terms of transportation and infrastructure. Its population growth is rather small due to losing population through an outgoing migration. As emphasized there are important deficiencies regarding issues that will directly affect urban life such as transportation, infrastructure and social areas (Günay, 2007: 14-15).

According to a study by Yüksel and Yeşil (2017) which was carried out in the city center area with a large number of participants, the least satisfactory service was health care (12 points out of 100). In fact, as we shall see below, the number of hospital beds and ambulance per capita is close to the country average, but the dissatisfaction could be because of access to and the quality of the service. Another issue to be considered here is that if this is the case in the city center, we can assume that the satisfaction level with the health care services in the isolated rural areas of the Project Area will not differ much. While environmental satisfaction gets an average of 21 points out of 100, this rate is 24 for public safety. These are followed by satisfaction point of 27 with infrastructure, with transportation 45 points and with recreation facilities the same score. Another point to be emphasized here is that the average of the satisfaction level with services is below 50% in all mentioned areas.

In the same study, the participants were asked about the most important three problems of Ordu. The infrastructure related problems are seen to have an important place in the responses of the participants (See

Table 6-58 for answers).

Table 6-58. Three Most Important Problems of Ordu (2017)

Issue	Number	%
Traffic	201	50
Structure/infrastructure	173	43
Transport	97	24
Uneven urbanization	82	21
Unemployment	75	19
Lack of recreation areas	55	14
Pollution	50	13
Parking problems / lack of car parks	49	12
Shopping malls	39	10
Lack of social and cultural activities	35	9
Rubbish/Garbage collection	31	8
Living expenses	27	7
Drinking water	27	7
Landscaping	26	7
Lack of Industry	23	6
Level of education	14	3
Employment opportunities	13	3

Source: Yüksel and Yeşil, 2017: 689

It is important to adopt a participatory approach in determining the most important problems of the settlement in the Project Area. The data presented above is not enough to draw a picture for the Basin, because it is obtained in the city center of Ordu. This data needed for SESA utilized with the community level questionnaire (CLQ). The information obtained from the survey enabled the mapping of the most important problems of the Basin and the place of the infrastructure related items (i.e. water, transport and so on) within these problems.

Muhtars were asked about five most important problems in their communities. 73 muhtars provided 304 problems and most of them pointed in the same directions. Lack of water or inadequate water services emphasized by 63 muhtars and this corresponds to 86% of the communities. This was followed by road related problems (n=63) as them being lacking maintenance, not being adequate and sometimes the absence of them was a problem. These were followed by electricity related problems (n=39), regular power cuts mentioned quite often and sewage problems (n=37) as there were no sewage system in most of the settlements. Another important problems were livelihood problems and unemployment (n=28); lack of health service provisions (n=14); inadequate rubbish collection (n=10); lack of social facilities (n=10) and inadequate infrastructure (See

Table 6-59 for further details)

Table 6-59. Most important five problems in settlements

Categorisation of the problems	Number of mentions	Percentage among settlements (%)
Inadequate water supply	63	86
Road related problems	61	84
Electricity related problems	39	53.42
Sewage related problems	37	50.68
Livelihood problems and unemployment	28	38.35
Health service related problems	14	19.17
Collection of rubbish	10	13.69
Inadequate social facilities	10	13.69
Inadequate infrastructure	10	13.69
Education related problems	9	12.32
Difficulties in farming and husbandry	7	9.58
Inadequate communication facilities	5	6.84
Housing and heating problems	3	4.10
Risk of landslide	2	2.73
Other problems (river rehabilitation and so on)	6	8.21
Total	304	-

SESA Gap filling field study (CLQ), September 2020 (N=73)

In DOKAP report (2015), it is argued that between 2003 and 2015 four drinking water facilities were built in Ordu and the city's water problems were resolved until the year 2040 (DOKAP, 2015: 152). However, drinking water problem was one of the most mentioned problems in all districts of the Basin in the literature and in the community level surveys. In the survey there were set of questions about the facilitates in the settlement and their quality (whether they were adequate or not).

When muhtars were asked about the adequacy of drinking water in their settlements only 25% of them were affirmative. However, 44.2% of the respondents mentioned that the water was not enough and a further 30.8% said that they experienced water problems at high seasons (See Table 6-60).

Table 6-60. Is drinking water enough?

	Number	%
Yes	13	25
No	23	44.2
It is not enough in the high season	16	30.8
Total	52	100

SESA Gap filling field study (CLQ), September 2020

All the villages in the Project Area have electricity. When the muhtars were asked about the adequacy of the electricity in their settlements only about 27% of them said it was adequate. However electricity supply was not adequate for the 73% of the settlements (See Table 6-61). Some muhtars also explained why it was so:

“Electricity is terrible here. It was brought in back in 1973 and nothing has changed since then. It keeps breaking down every day. It is the same for the last 10 years. Every day is struggle for us. In winter we got at least three times electricity cut in a day. In the summer it is different because of the irregular voltages our electrical equipment get destroyed.”

“It is inadequate especially the street lighting. The system was built back in 1979 and when it gets crowded in the summer we experience electricity cuts.”

Table 6-61. Is electricity supply adequate enough?

Answer	Number	%
Yes, adequate	19	26.76
No, inadequate	52	73.23
Total	71	100

SESA Gap filling field study (CLQ), September 2020

When the muhtars were asked about the adequacy of the roads in their settlements two of them said they did not have any roads. Over half of the respondents (55.7%) emphasized that roads in their settlements were not adequate. Another 11.5% said that it was adequate but in need of maintenance, repairs and surfacing. Only one third (32.8%) of the respondent mentioned that roads in their settlements were adequate enough (See Table 6-62).

Table 6-62. Are roads adequate in your settlement?

Answer	Number	Percent
Yes, it is adequate	23	32.85
No, it is not adequate	39	55.71
It is adequate but needs maintenance / resurfacing/ repairs	8	11.42
Total	70	100

SESA Gap filling field study (HHQ), September 2020

According to the muhtars, 25% of the settlements did not have any internet facility (See Table 6-63).

Table 6-63. Do you have internet in your settlement?

Answer	Number	%
Yes	57	75
No	19	25
Total	76	100

SESA Gap filling field study (CLQ), September 2020

According to muhtars of the 54 settlements which had the internet 57% had an adequate facility and 43% did not (See Table 6-64).

Table 6-64. Is the internet in your settlement adequate?

Answer	Number	%
Adequate	31	57.40
Not adequate	23	42.59
Total	54	100

SESA Gap filling field study (CLQ), September 2020

Almost 91% (n=69) of the villages had telephone lines. Only about 19% of the settlement that had phone line reported that it was not adequate. It has been reported that about 17% of the settlements did not have public transport. Out of sixty-two settlements that had public transport 13 of them stated that the public transport was not adequate. Overwhelming majority (85,5%) of the villages in the sample group lacked bazaar (fruit and vegetable market) and again only 59% (n=45) of the settlement had a shop and 41% (n=31) did not have. However, all the villages had mosques. Apart from one settlement all the others had cemeteries.

A substantial proportion of the villages did not have an elementary school (79%) (See Table 6-65 for further details). As far as the secondary school was concerned 84,2% (n=64) of the settlements did not have any secondary school. Only 5,3% (n=4) had a high school and 94,7% (n=72) did not have. The lack of kindergarten in the settlements of the Project Area was also widespread. Out of 76 only 12 (15,8) of the settlements had a kindergarten. Again only 4 (5,3%) settlements out of 76 had a public education centers.

Muhtars were asked about what people used for heating in the settlements. According to muhtars some people used the combination of different materials such as wood as well as coal. Table 3-65 demonstrates how many times different heating materials mentioned per settlement. Most mentioned material is wood and it is used in 73 settlements (96,0%) out of 76. This was followed by coal (73,6%) and hazelnut shell (43,4%). Solar power (7,8%) and electric were least used sources for domestic heating.

Table 6-65. What people use for heating in the settlement?

Answer	Number	%
Wood	73	96.05
Coal	56	73.68
Hazelnut shell	13	43.4
Solar power	6	7.89
Electric	4	5.26

SESA Gap filling field study (CLQ), September 2020 (N=76)

Muhtars of the 63 settlements out of 76 emphasized that their solid waste was taken away by the municipality in some districts up to three times a week in others once a week. Many of the Muhtars also expressed their dissatisfaction with the solid waste collection services of the municipalities. The irregularities in the waste collection and not taking away all the waste were the main points of dissatisfaction. The remaining 13 settlements were using their own resources for the solid waste disposal, used multiple ways. Muhtars of all 13 settlements declared that they throw their solid waste into the rivers. As well as throwing the waste into the rivers again all these settlements also dispose their waste by burning them. The muhtars of the two of the settlement as well as using these ways they stated that they also bury their solid waste.

When the muhtars were asked whether there was any sewage system in their settlements, only 18 (23.7%) out of 76 said they had and overwhelming majority of the settlements (73.6%) did not have any sewage system (See Table 6-66).

Table 6-66. Is there a sewage system in you settlement?

Answer	Number	%
Yes	18	23.7
No	58	76.3
Total	76	100

SESA Gap filling field study (CLQ), September 2020

Muhtars of the 58 settlements where there was no sewage system were asked what they did with their sewage. Twenty-five of them said that they discharge the sewage into the rivers, 23 used septic pits, five (5) said they let it go into the gardens, three (3) mentioned about rivers as well as septic pits and another two again mentioned rivers as well as gardens (See Table 6-67 for further details).

Table 6-67. Where the settlements' sewage being discharged

Place of discharge	Number	%
Rivers	25	43.10
Septic pits	23	39.65
Gardens	5	8.62
River and septic pit	3	5.17
River and gardens	2	3.44
Total	58	100

SESA Gap filling field study (CLQ), September 2020

Community Health and Safety

Natural disasters such as landslides, floods and decrease in agricultural production (per capita) and animal husbandry in the Project Area are contributing factors to the outgoing migration.

The mountains rising steeply from the shore in Project Area cause the population to densely concentrate in a narrow shore line. However, from coastal areas to the inner parts, the population spreads to a wide area because of the impact of both physical and economic conditions. The natural events that happen in non-residential areas regarded as normal as the nature takes its course however, in settlements where natural balance is disturbed these incidents take the form of disasters causing loss of life and damage to property and infrastructure. In fact the Basin had witnessed some severe natural disasters in 1967, 1971, 1972, 1973, 1974, 1977, 1979, 1983, 1988, 2006, 2007 and 2019. According to Dölek (2008), 33.1% of the Project Area is under a high or very high risk of flood and 17.1% of it under a high or very high mass movement risk. Again, 71.7% of the basin carries a high or very high risk of erosion. The rate of landslide being high or very high in the Basin is 46.1%. In the basin, there are 16,984 structures under the impact of natural disasters with risks ranking from high to very high. Of these, 15,824 are houses, 110 are schools and 50 are mosques and these are the places where people could be found in big numbers (Dölek 2008: iv).

In order to explain the above risks better, it should be emphasized that the variable land structure in the basin coincides with the risks of variable natural disasters. In Table 6-68, values between 1 and 5 are assigned to the sub-units of parameters based on natural disaster risk, depending on the relation of decrease or increase. The qualitative equivalent of these

numerical values are: very low (1), low (2), medium (3), high (4), and very high (5). As also presented in the table in some detail, natural disasters such as high-water and overflow are effective between 0 and 100 meters, while natural disasters such as mass movement and landslide between 100 and 450 meters are more common. Natural disasters like rain-wash and flood are more likely to occur in areas between 450 and 700 meters high from the sea level. In other words, the risk of exposure to different types of natural disasters in all areas of the basin is quite high.

Table 6-68. Risk Impact Values by Height and Disaster Types

Altitude	Rain-wash	Flood	High-water/overflow	Mass movement/landslide
0-50	1	1	5	2
50-100	1	1	5	5
100-150	2	1	3	5
150-200	2	2	3	5
200-450	3	3	2	4
450-700	5	4	2	3
700-950	5	4	1	3
950-1500	4	2	1	5
1500-1700	3	1	1	5
1700-	1	1	1	1

Source: Dölek, 2008: 19.

Erosion has not been mentioned in the Table 6-68 above since it is related to the slope of the land rather than the height, but with the steeply sloped land conditions in the Basin, the risk of erosion constitutes to be a high risk factor in almost entire basin except for the coastal strips and very high plateaus. Ninety-two percent of the Project Area has a slope degree greater than 5 degrees and within this the land with a slope of 20 degrees or more is more than 40%. In these areas, a large part of the rainwater falling on the surface flows (rather than being absorbed) which initiates the erosion activities in places where vegetation is low or weak. In this sense, almost all the areas used as agricultural land are problematic and prone to natural disasters.

In the HHQ survey respondents were asked about experiences of any disasters in their houses. Out of 124 households responded to this question 102 (82%) of them said no. However 18% of the respondents had experienced flood (9%), landslide (6%) and fire and other disasters (3%). Another question about experiences of any natural disasters on their land was also asked. Respondents has experienced relatively more natural disasters in their lands compared to their houses. Out of 117 respondents 94 (80%) said they did not experiences any natural disasters on their land. However 20% did and 9% of them experienced landslide; 7% flood; 3% rain-wash; and another 3% erosion.

The fact that natural disasters are frequent in the region requires good emergency response planning. When the muhtars were asked whether there was any emergency communication data in their settlements, only 15 (19.7%) out of 76 said they had and overwhelming majority of the settlements (76%) did not have any emergency communication data (See Table 6-69).

Table 6-69. Is there any emergency communication data in you settlement?

	Number	%
Yes, there is	15	19.7
No, there is not	61	80.3
Total	76	100

SESA Gap filling field study (CLQ), September 2020

In this regard, information such as emergency response plans, emergency response teams, emergency assembly areas prepared for the region have been requested from AFAD. Additionally, emergency drills have been organized with the participation of local community and actions should be taken regarding the problems that occur during the drills. Earthquake preparation containers, volunteer search and rescue teams information and emergency communication data have also been requested from AFAD during the Scoping stage.

Muhtars of 5 settlements declared that there were fire incidents in their settlements. One of these fires was caused by the spread of uncontrolled weed burning into the forest area. Other fires were electrical fires in the center of the settlement. Approximately 70% of muhtars stated that similar hazards are still existing. In the light of this information, appropriate type and number of fire extinguishers have been placed where schools, mosques etc. and drills have been organized on how to use fire extinguishers in case of fires.

Social Services (Health and Education)

According to 2017 data, the total number of people who are illiterate; illiterate but have not completed any formal education; and only graduated from primary school is 32,086. According to the data in Table 6-70, people with lower education level in the province mostly reside in rural areas; we can say that the proportion of this population in the rural population is more than half. This data also means that people migrating from rural Basin to urban areas work mostly in unqualified jobs in the labor market due to their low education levels. As a matter of fact, in the Project Area villages that the immigrant male population worked mainly in the construction sector in large cities. The sector predominantly occupied by unskilled manual laborers.

Table 6-70. Education level in Ordu according to different settlements (2017)

Education	Total number of people in Province	Number of people in Rural area	Ratio of rural to urban (%)
Illiterate	42,294	27,220	64.1
Can read and write but no qualification	84,718	39,450	46.6
Elementary School Graduate	200,874	91,892	45.7
Sub-total	328,086	158,562	48.3
Secondary School Graduate	151,540	54,753	36.1
High School Graduate	12,326	30,132	24.4
Sub-total	274,806	84,885	30.9
University graduate	68,939	12,392	18.0
Post graduate degree	4,449	573	12.8

Education	Total number of people in Province	Number of people in Rural area	Ratio of rural to urban (%)
Doctorate degree	1,000	144	14.4
Sub-total	74,433	13,109	17.6
Under 6 years old	60,841	15,622	25.7
Unknown	4,175	1,406	33.7
Total	742,341	273,584	36.9

Source: Adopted from TurkStat, 2017

There is a very clear separation in terms of education level in rural and urban areas. The low level of education of the population residing across the rural parts of the Project Area could be problematic in terms of the achieving the targets of the project where some aspects of these targets rely on the human capital of the Basin. In order to better diagnose this situation, more detailed information is needed about the current status of education level in the districts of the Project Area. Furthermore, there is no information about the ties of the rural migrant population to the Basin and whether migrants return back periodically or possibilities about them returning back permanently to their home communities.

Community level surveys provided some detailed information about the education level of the residents of the Project Area. As can be seen according to the survey settlements on average about 5% of the population is illiterate. In some neighborhoods there were no illiterate people but in some others 20% of the population was illiterate. Average percentage of people without formal education but could read and write was 6,84%. In some neighborhoods this percentage was as high as 25%. Over 53% percent of the population in the basin did not study further than elementary school. In some neighborhoods just elementary school graduates were as high as 95%. On average 22.46% of the people were secondary school graduates in the survey neighborhoods. In some neighborhoods the percentage of secondary school graduates were as high as 60.4%.

On average 15.5% of the people living in the Project Area settlements were graduated from high school and the average university graduates within the population of the basin is 6.2% (See Table 6-71 for further details). During the community surveys many muhtars emphasized that the educational level in the neighborhoods among the current residents would have been better if the higher educated proportion of the population had not migrated.

Table 6-71. Level of Education in the Basin

Level of Education	Number of settlements	Minimum percentage in a settlement	Maximum percentage in a settlement	Average Percentage for all settlements
Illiterate	60	0	20.00	4.93
Can read and write without formal education	57	0	25.00	6.84
Elementary school graduate	70	9.09	95.00	41.30
Secondary school graduate	68	1.00	60.47	22.46

High school graduate	68	2.00	43.75	15.56
University graduate	62	1.00	17.77	6.22

SESA Gap filling field study (CLQ), September 2020

High level of percentage (53%) of elementary school graduation and below is the function of economically active population (14-65 age group) left the Basin for better economic and social opportunities. Elderly people are more likely to be lower educated because of the conditions of schooling at their younger years. It is also known from the literature as well as survey study that more educated people more likely to migrate. This could also explain the high proportion of lower education of the current residents.

As emphasized earlier the fertility rate is low in the basin due to outgoing migration of the population at fertile ages. One of the outcome of this is the lower population proportion for the ages between 0 and 14. Because of the lack of the young age population and geographically dispersed nature of the settlements many of the neighborhoods in the Project Area witnessed school closures in their local communities. When the muhtars of the 76 settlement in our sample group were asked about the school closures in their neighborhoods, 61 of them reported school closures in their settlements (58 of them were elementary schools, 2 were primary schools and one was a secondary school) (See Table 6-72).

Table 6-72. What schools were in the settlement in the past

	Number	%
Elementary School (8 years)	58	95.1
Primary school (five years)	2	3.3
Secondary School (3 years)	1	1.6
Total	61	100

SESA Gap filling field study (CLQ), September 2020

Muhtars were also asked about the years of closure of the schools. As can be seen Table 6-73 although there had been some school closures since the 1980s most of the schools in the basin closed down between 2000 and 2006 and in 2020 there has been some increase (See Table 6-73 for further details).

Table 6-73. The year of the school closure in the settlements

Year of closure	Number	%
1980	1	1.7
1990	2	3.4
1992	2	3.4
1997	1	1.7
2000	6	10.3
2004	2	3.4
2005	17	29.3
2006	6	10.3
2007	1	1.7

Year of closure	Number	%
2008	1	1.7
2009	1	1.7
2010	4	6.9
2011	2	3.4
2012	1	1.7
2013	2	3.4
2014	1	1.7
2015	2	3.4
2016	1	1.7
2020	5	8.6
Total	58	100

Out of 75 of the settlements only 14 of them had elementary schools (See Table 6-74). Further information provided by the muhtars showed that these 14 elementary school had about 970 students from their immediate neighborhoods. However these schools also received about 870 pupils from neighborhoods where there was no elementary school. This highlights the fact that only neighborhoods with large populations had elementary school and the pupils from other settlement travelled wide and far to have access to schooling. The proportion of boys and girls attending these schools in their communities or traveling to attend were similar.

Table 6-74. Is there elementary school in your settlement?

	Number	%
Yes	14	18.7
No	61	81.3
Total	75	100

SESA Gap filling field study (CLQ), September 2020

A further data analysis suggests that in total there were 1767 children at the age of elementary school in the 61 of the settlements where there were no elementary school. These children travelled to some other neighborhoods in order to gain access to elementary schools.

Out of 76 settlements only 12 of them had secondary schools and 3 of them had high schools (See

Table 6-75). According to muhtars' reports these 12 secondary schools had 1,005 students from their neighborhoods but further 513 students came from other neighborhood in the immediate vicinity. Three high schools had 400 students from the settlements but a further 700 students came to these settlements from the neighborhood from the immediate vicinities.

A further data analysis suggest that from the settlements which did not have any secondary and high schools about 2,500 students travelled to other settlements in order to have access to education at these schools and of course the number of students at these category is much higher when the 265 settlements in the Project Area are taken into account.

Table 6-75. The number of settlements with secondary and high schools

	Secondary School	High School
Yes there is	12	3
No there is not	64	73
Total	76	76

SESA Gap filling field study (CLQ), September 2020

In order to fill some data gaps official data was requested from the Ordu provincial directorate of national education. Table 6-76 shows that 88,7% of the neighbourhoods in the Project Area rely of bussed education in order to have access to nursery, elementary, secondary and high school education.

Table 6-76. Bussed education distribution in districts and neighborhoods

Districts	Neighborhoods with bussed education only	Neighborhoods without bussed education	Total number of neighborhoods	The rate of Neighborhood with bussed education (%)
Aybastı	19	2	21	90.47
Çamaş	22	1	23	95.65
Çatalpınar	21	2	23	91.30
Fatsa	44	10	54	81.48
Gölköy	24	3	27	88.88
Gürgentepe	19	3	22	86.36
Kabataş	16	2	18	88.88
Korgan	29	0	29	100
Mesudiye	2	1	3	66.66
Perşembe	9	1	10	90.00
Ulubey	0	2	2	100
All Districts	205	27	231	88.74

In the household survey questionnaires there were also questions about for education attendance and progress of the household members. As far as the university degrees were concerned, there were in total 41 university graduates amongst 132 households a quite a few of the households had more than one university graduate members but on average university graduate per households was 0.3. In other words there were one university graduate for every 3 households. However, 63.4% (26) of these university graduates were male and only 36.5% (15) were female (See Table 6-78 for further details).

Table 6-77. University graduates according to HHQ Surveys

Number of households	University Graduate Males	University Graduate males	Total University Graduates	University graduate per household
132	26	15	41	0.31

Source: SESA HHQ survey, September 2020

According to the General Directorate of Health Services data (2018), there are 1,072 doctors, 248 dentists, 298 pharmacists, 1,804 nurses, 703 midwives and 1803 other health personnel in the province of Ordu. The number of hospital beds per capita for the city, the number of family physicians, the number of ambulance, doctor and dentist visits per capita statistics saw similar patterns with the national average (for detailed information See Table 6-78, Table 6-79, Table 6-80).

Table 6-78. Some Health Indicators Ordu vs Turkey – 1 (2018)

Province	Number of Hospital	Number of Hospital bed per 10,000 population	Proportion of Qualified Bed (intensive care beds are not included)	Intensive Care Unit Bed per 10,000 Population
Ordu	17	27.8	67.2	3.8
Turkey	1,534	28.3	71.9	4.6

Source: General Directorate of Health Services

According to Table 6-78, the number of hospital bed per 10,000 population is 27.8, proportion of Beds with equipment (intensive care beds are not included) is 67.2 and Intensive Care Unit Bed per 10,000 population is 3.8.

Table 6-79. Some Health Indicators Ordu vs Turkey – 2 (2018)

Unit	Number of Family Medicine Unit	Population per Family medicine Unit	Number of 112 Emergency Care Station	Population per 112 Emergency Care Station	Number of 112 Emergency Care Ambulance	Population per 112 Emergency Care Ambulance
Ordu	226	3,416	41	18,818	58	13,309
Turkey	26,252	3,124	2,735	29,983	4,910	16,701

Source: General Directorate of Health Services

According to Table 6-79, number of family medicine unit is 226, population per family medicine unit is 3,416, number of 112 Emergency Care Station is 41, population per 112 Emergency Care Station is 18,818, number of 112 Emergency Care Ambulance is 58 and population per 112 Emergency Care Ambulance is 13,309.

Table 6-80. Some Health Indicators of Ordu and Turkey – 3 (2018)

	Per Capita Physician Visits	Per Capita Dentist Visits
Ordu	9.4	0.62
Turkey	9.5	0.65

Source: General Directorate of Health Services

According to Table 6-80, per capita physician visits is 9.4 and per capita dentist visits is 0.62. However, there is no detailed information about whether these statistics differ in terms of urban centers and rural settlements in the basin. It could be assumed that this difference is important as the settlements in the Basin scattered over a rough terrain.

In the community level surveys muhtars were asked whether was there any community health center in the settlements. Only 15 (19,7%) out of 76 settlements had (See Table 6-81). However, only 8 of these center had permanent doctors for the working days the others provided services for once a week and some other a couple of days a month. A quite a few

number of muhtars also emphasized complains of the local residents about the poor health service provisions by these community health services.

Table 6-81. Is there any community Health Center in your settlement?

	Number	%
Yes there is	15	19.7
No there is not	61	80.3
Total	76	100

SESA Gap filling field study (HHQ), September 2020

Therefore many people from the substantial majority of the settlements had to travel some distances in order to have access to these community health centers. Here are some of the first person accounts to highlight the access problems to health services in the Basin:

- “The nearest health center to our neighborhood is in Aybastı which is 10km away.”*
- “We are located just in the middle of Perşembe and Niksar those places have the health services and we need to travel for 46km.”*
- “The nearest health Clinic is in Camaş which is 12km away.”*
- “We have to travel 12 km to Fatsa to see a doctor.”*

As emphasized here many communities in the Project Area lacks very basic services of education and health. Because of the transport needs for schooling and access to health services the infrastructure facilities are very important for the proper functioning of the everyday lives of the residents as they heavily rely on the public transports and roads for transportation.

Social security coverage of the household members were investigated as part of the HHQ surveys. There were 200 people covered by the Social Security Institution (SGK), 51 people covered by social security by self-employed (Bağkur) and there were only 3 people by private insurance. In all these categories there were more man covered by social security than women. However there were 97 people with green card and this indicates a high number of poor people in the households and in these category there are more women than men (See Table 6-82 for further details).

Table 6-82. Social Security Coverage of Household Members

Green Card			Social Security Institution (SGK)			Social Security for self-employed (Bağkur)			Private insurance		
Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
45	42	97	81	119	200	20	31	51	1	2	3

Source: SESA Gap filling field study (CLQ), September 2020

Spare Time Activities

The data provided here comes from a survey questionnaire completed in 2015 with 400 residents of Ordu about recreation and their city (Yüksel ve Yeşil, 2017). As can be seen from the Table 6-83, when their answers of “always” and “frequently” combined together to the question of how often they perform a particular spare time activity, 41% of them spend their free time by shopping, 47% reading books and newspapers, 55% listening to music and 67% browsing the internet. It can be said that the above activities, except for shopping, are generally

performed indoors, and the city has limited opportunities for open spaces and related activities. On the other hand, when the “rarely” and “never” options considered together, the percentage of participants who rarely or never go, on holiday; to a cafe; to a cinema; to various courses; to a theater; to a concert were 47, 57, 62, 67, 72 and 77%; respectively. These high percentages can be explained by the insufficiency of the opportunities offered by the city in these areas. Also, only 24% of the participants do sports can be explained within this framework. Consequently, considering all these activities, it is seen that the city has important deficiencies in the social life activities. In this context, the findings of the above mentioned study are in line with the results of the *Life Index Survey in Cities* conducted by TurkStat in 2015.

Table 6-83. Free time activities amongst Ordu residents (2015)

Activities	Always		Often		Sometimes		Rarely		Never	
	N	%	N	%	N	%	N	%	N	%
Watching TV	29	7.3	81	20.2	206	51.5	76	19.0	8	2.0
Reading books and newspapers	58	14.5	128	32.0	143	35.8	64	16.0	7	1.8
Going to cinema	4	1.0	19	4.8	130	32.5	196	49.0	51	12.8
Going to the theatre	6	1.5	14	3.5	82	20.5	190	47.5	108	27.0
Going to concert	4	1.0	10	2.5	79	19.8	196	49.0	111	27.8
Going on vacation	11	2.8	46	11.5	158	39.5	134	33.5	51	12.8
Listening to music	85	21.2	135	33.8	116	29.0	51	12.8	13	3.2
Sport	26	6.5	69	17.2	165	41.2	104	26.0	36	9.0
Friend meetings	40	10.0	112	28.0	168	42.0	71	17.8	9	2.2
Going to picnic with family members	18	4.5	69	17.2	191	47.8	105	26.2	17	4.2
Shopping	36	9.0	128	32.0	163	40.8	64	16.0	9	2.2
Visiting relatives	35	8.7	102	25.5	174	43.5	77	19.2	12	3.0
Going to various courses	7	1.7	24	6.0	99	24.8	157	39.2	113	28.2
Going to coffeehouse (Kahvehane)	13	3.3	17	4.2	32	8.0	73	18.2	265	66.2
Going to cafes	17	4.2	30	7.5	127	31.8	131	32.8	95	23.8
Internet (news, information, social media, etc.)	117	29.3	152	38.0	67	16.8	32	8.0	32	8.0

Source: Yüksel, M & Yeşil, M. (2017) Kent ve Rekreasyon (Ordu Kenti Örneği). *Mavi Atlas* 5(2), 355-382.

It is clear from the data provided in the previous sections that due to the lack of internet facilities and low education level spending spare time by using these mediums are limited. As most of the settlements lack the most basic services of education and health the existence of cinemas or theatres for the overwhelming majority of the settlements out of question. In fact also seen above most communities lack shops and coffeehouses. In the community level surveys muhtars were asked about the existence of social and cultural facilities. Out of 75 responses to this question only 25 of them (33,3%) said yes and majority of them said no (66,7%) (See Table 6-84). Most muhtars emphasized that old and unused school building turned in to

wedding halls and so on and a quarter of them also emphasized about the inadequacies of the existing social and cultural facilities.

Table 6-84. Is there any cultural or social facility in your neighborhood?

Answer	Number	%
Yes	25	33,3
No	50	66,7
Total	75	100

Source: SESA Gap filling field study (CLQ), September 2020.

Opportunities for Socializing

Due to lack of road networks, the access to services such as education and health is another issue for some remote villages with very small populations and the geographical conditions in the Basin makes the access in all kinds very difficult. In sociological, economic and cultural terms it can be argued that the people in the Basin are socially excluded. The main social activities in the basin centers around going to a mosque for prayer (almost exclusively for men), coffeehouse for time killing (almost exclusively for men) and socializing and neighbor visits. The environmental conditions affecting agricultural activities can also be expected to affect social life. For example, according to DMIG data, the average annual frost days in Project Area and its immediate surroundings are in Fatsa (22.6); Korgan (117.6) and Aybastı (157.9). In contrast, the number of days with frost in the city center is less than 10 days.

6.2.5 Social Relations

Intercultural interactions

Bolaman is a basin that also contains a cultural richness in its social life. One of the notable outcomes of the Ottoman–Russian war of 1877–78, known also as “93 Harbi”, was the mass migration of Muslim Georgians from the Batumi region to the central Black Sea region between the towns of Ordu and Samsun. They were first transferred to temporary destinations and in time, new immigrant villages emerged in the countryside. Today, the oral information from third generation Georgian immigrants tells that their grandparents came to the central Black Sea town of Ordu and the surrounding districts of Fatsa and Ünye during the years following the “93 Harbi” (Özel, 2010). Therefore, today there are quite a few Georgian villages or quarters in the Project Area and Cihadiye in Gököy, Kabakdağ in Fatsa; Alacalar in Aybastı, Alankent Düz Mahalle in Kabataş serve as an example for these settlements. According an online review there are also 37 Alevi villages in Ordu and some of them are located in the Basin and Işıktepe in Fatsa is one of them. There are quite a few Armenian and Greek minorities living individually in certain settlements in the Project Area. However there are no known open conflicting issues amongst these cultural groups.

18 neighbourhoods out of 76 had communities reported that some of their residents spoke another language apart from Turkish. This was the indication of the existence of different ethnic groups in the Project Area. Apart from Turkish most widely spoken language in the communities of the Project Area was Georgian, this followed by Kurdish and Azerbaijani and others. Approximately 800 citizens of Georgian origin live in the villages in the sample, but they

can speak Turkish. 43 Kurdish and 145 Azerbarjani were identified. A number of citizens of Israeli and Romanian descent were also mentioned.

Muhtars were also asked about different religious denomination or sects apart from the dominant Sunni sect. There were at least 6 settlements out of 76 that had a substantial numbers of Alevis and two other settlements had different religious sects (such as Hanafi and Şafi) living in their communities. The number of Alevis was approximately 4,200, and the number of those from other sects (Hanafi and Shafi) was approximately 160.

Muhtars were also asked whether there was any conflict amongst different group in their communities only five (about 7%) settlement reported such internal conflict but these settlements did not have any communities of different religious sects or different language communities.

Social conflicts on specific issues within settlements

Muhtars were also asked about the level of conflicts on specific issues over the last ten years in their neighbourhoods. The first issue highlighted was the conflict over the natural resources (such as land, water and the local habitat). Seven communities out of 75 reported conflict about these issues. Almost all these problems have been taken up to the local courts and some of them are still on going for the last 13 years. Muhtars were closely involved in these issues as one of the parties as the issue were mainly between the settlements and the wider authorities.

One of the most experienced conflict in the settlements was the conflict over the land and its deeds. One in five neighborhoods reported this issue. The problem was mainly between relatives but sometimes also between neighboring communities. Some of these conflicts are still going on as the parties sometimes different neighborhoods do not talk to each other. Involvement of the security forces also being mentioned. There are also many pending court cases

Conflicts about employment, income sources, about cultural and religious differences and also about political differences are hardly observed in the settlements of the Project Area. However, most widely spread and reported (25% of the settlements) conflict was family related conflicts. These were mainly between partners and also between different relatives. Two deaths as a result of these conflicts were reported by one muhtar in his settlement during the last ten years

Muhtars were specifically asked about domestic violence and 20% of them reported cases of domestic violence in their villages. Most of the conflicts stemming from domestic violence had been resolved with the involvement of the close relatives. However, there were also quite a few pending court cases.

6.2.6 Vulnerable Groups

Seasonal Agricultural Workers

In 2018 the Pikolo Association in partnership with the Fair Labor Association completed a study called “Agricultural Intermediary Profile Studies” in Düzce, Sakarya and Ordu. For our purpose here we are concentrating on the findings related to Ordu. The study is about seasonal migrant labor working on the Hazelnut cultivation. Findings of the study is based on interviews with 163

agriculture intermediaries (*Çavuş* or *Dayıbaşı*) in Ordu (in total there were 309 interviews in 3 cities). These interviews in particular focused on the housing and the working conditions of the seasonal agricultural workers. Ninety-six per cent of these intermediaries worked as seasonal agricultural workers in the past or/and were still working (Pikolo 2018). As far as the demographic characteristics of the workers recruited by them were concerned, there were 12,741 of them in Ordu in 2017. 56% of these workers were female and 44% male. Over 75% of these workers aged between 16 and 30 and just over 12% of them were aged 15 and below. All these children worked in harvesting, in addition 51% of them carried sacks, 21% collected sprouts and 7% performed others tasks. The data reveal that there is no significant difference between adult workers and young seasonal agricultural workers with respect to the tasks performed. However, children and young people who engage in arduous tasks are more likely to face future health problems, particularly musculoskeletal disorder.

62% of these laborers worked in other crops during other seasons in other places too (tomato in Antalya; apple in Amasya; strawberry in Bursa and so on) and 38% just work in one crop. These workers were Kurdish mainly from Diyarbakır, Mardin, Şanlıurfa, Şırnak and Batman. Almost half of the intermediaries get their pay from seasonal workers. Almost all workers get their pay directly from intermediaries at the end of the harvest. Seventy-three percent of the workers cover their own transport costs. They travel collectively by bus or minibuses. During the harvest they usually access to the fields by tractors. In Ordu for all the workers' accommodations provided by the employer and these 'houses' had significant deficiencies and lacked physical sufficiency and hygiene. In addition to their cut, about 44% of the intermediaries made further cuts from workers' wages. In Ordu, over 96% of the laborers worked minimum 9 hours a day and 36% of them as long as 12 hours.

There were quite a few questions about the use of seasonal agricultural workers, particularly about their social and economic conditions. As can be seen from Table 6-85, 58 (77;3%) of the settlements out of 75 use seasonal agricultural laborers.

Table 6-85. Use of seasonal agricultural workers in the settlement

Answer	Number	%
Yes	58	77,3
No	17	22,7
Total	75	100

SESA Gap filling field study (CLQ), September 2020

As can be seen from Table 6-68 all these seasonal agricultural laborers come to Project Area for the hazelnut harvest.

Table 6-86. Which jobs the seasonal agricultural workers do

	Number	%
Work in hazelnut harvest	58	100

SESA Gap filling field study (CLQ), September 2020

Muhtars were also asked about the geographical origins of the seasonal agricultural workers come to their neighborhoods. The most mentioned places for the geographical origins were Urfa (28 times), Diyarbakır (27 times), Mardin (7 times), Batman (6 times), and Georgia (5

times), however there were so many different locations where these seasonal agricultural workers came from but an overwhelming majority of them came from Eastern and South Eastern Anatolia (See Table 6-87 for further details).

Table 6-87. Where do seasonal agricultural workers come from?

Area	Number of mentions
Urfa	28
Diyarbakır	27
Eastern / Spouth Eastetn Anatolia	13
Mardin	7
Batman	6
Georgia	5
Gaziantep	3
Adiyaman	2
Bitlis	2
Neighbouring village	2
Ordu center	2
Tokat	2
Van	1
Mersin	1
Sivas	1
Hakkari	1
Samsun	1
Muş	1
Erzurum	1
Malatya	1
Elazığ	1

As can be seen from Table 6-88 almost all seasonal agricultural workers (96,5%) arrive in August although a small minority (3,5%) of them arrive in July.

Table 6-88. Month of arrival for the seasonal agricultural workers

	Number	%
July	2	3,5
August	55	96,5
Total	57	100

SESA Gap filling field study (HHQ), September 2020

As it has been reported by the muhtars that 98,7% of these workers stay for one moths as can be seen from the Table 6-89 an overwhelming majority (94,7%) of them leave the Project Area in September.

Table 6-89. Month of departure for the seasonal agricultural workers

	Number	%
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August	2	3,5
September	54	94,7
October	1	1,8

SESA Gap filling field study (CLQ), September 2020

When the average number of seasonal agricultural workers in their settlements were asked the responses of the muhtars varied between 15 workers to 1,250 workers (See Table 6-90 for further details). However, further data analysis suggest that on average each settlement (n=55) receive 198 seasonal agricultural workers.

Table 6-90. On average how many seasonal agricultural workers come?

Number of seasonal workers	Number	%	Cumulative number of seasonal workers in 55 settlements
15	1	1,8	15
20	1	1,8	20
30	4	7,3	120
40	3	5,5	120
50	7	12,7	350
60	1	1,8	60
70	1	1,8	70
80	1	1,8	80
100	7	12,7	700
150	5	9,1	750
170	1	1,8	170
200	5	9,1	1000
300	8	14,5	2400
500	4	7,3	200
600	3	5,5	1800
800	1	1,8	800
1000	1	1,8	1000
1250	1	1,8	1250
Total	55	100	

SESA Gap filling field study (CLQ), September 2020 (Note: 198 seasonal workers per settlement out of 55 settlements)

According to our representative sample it is estimated that in the entire Bolaman River Basin there are 198 villages that receive seasonal migrant worker each for the hazelnut harvest season. As emphasized the average number of seasonal agricultural workers each settlement receive is 198 and it is estimated that for the year 2020 on average 39,204 agricultural workers came to the Basin to work.

As reported by the muhtars and can also be seen from Table 6-91 only about 2 out of 10 seasonal agricultural workers receive their earning directly from the employer (product owner).

The most common form (62,5%) is that *Dayıbaşı* (middle person) receives the payment directly from the product owner and in some other cases (14,4%) *Çavuş* (the team leader) receive the wages on behalf of agricultural workers on these instances as emphasized earlier the cuts from the wages of workers by these intermediaries are more likely.

Table 6-91. Who receives the payment?

	Number	%
Middleperson (<i>Dayıbaşı</i>)	35	62,5
Workers themselves	13	23,2
Team leader (<i>Çavuş</i>)	8	14,3
Total	56	100

SESA Gap filling field study (HHQ), September 2020

According to muhtar's responses majority of the agricultural seasonal workers are women. Muhtars reported the percentage of women among agricultural seasonal workers coming to their neighborhood (See Table 6-92) and accordingly in the 88.5% of the settlements (46 out of 52) the proportion of women seasonal agricultural workers is 50% percent and above. In 20 settlements women workers make 50% of the seasonal workers, in 9 settlements 60%, in 2 settlements 65%, in 11 settlements 70%, in 1 settlement 75 % and in 3 settlements 80% percent of the seasonal agricultural workers are women.

Table 6-92. Percentage of women amongst seasonal agricultural workers

Percent of women	Number	%
20-30	4	7.6
40-50	22	42.3
60-70	22	42.3
75-80	4	7.6
Total	52	100

SESA Gap filling field study (HHQ), September 2020

In the community level surveys type of accommodation provided for the seasonal agricultural workers were also asked. Huts and shacks mentioned quite a few times, also old and unused school buildings and unused houses in the settlements however, the majority of them stayed in the accommodation provided by the product owners. As detailed earlier in the Project Area residents themselves experienced some serious problems with water, electricity and so on especially at peak seasons as hazelnut harvest is part of this season so seasonal agricultural workers are not unaffected from these negative conditions. It is also expected because of the locations of their accommodations the seasonal agricultural workers were more likely to face negative aspects and this was also confirmed by the muhtars of the settlements. As poor quality of water supply, lack of bathroom and toilet facilities were mentioned.

Muhtars were also asked about whether there was any conflict between the local communities and seasonal agricultural workers and 7,7% of the muhtars reported such problems in their neighborhoods. Muhtars also provided reasons for these conflicts and in their opinion they stemmed from cultural differences and disagreements over the payment of wages.

In order to fill some data gaps related to seasonal agricultural labor in the Project Area some official data was requested from the local government agencies. Governorship of Ordu back 2017 started a project for Improving Work and Social Lives of Seasonal Agricultural Workers (METİP). This project involves establishing camp sited with various facilities including security guards. Table 6-93 below provides breakdown of the seasonal agricultural workers using these sites in 2019. As can be seen from the table only under a thousand workers benefited from these facilities.

Table 6-93. Workers from the METIP Project

District	Neighborhood	Number of Women	Number of men	Total
Çamaş	Akköy	8	6	14
Çamaş	Akpınar	30	21	51
Çamaş	Sakargerış	8	4	12
Çamaş	Söken	5	4	9
Çamaş	Taşoluk	5	6	11
Fatsa	METİP camp site	207	244	451
Perşembe	METİP camp site	90	110	200
Ulubey	Refaiye	72	104	176
Total		425	499	929

Soruce: METİP

Child Labor in Agriculture Sector

Child labor is still a problem in seasonal agricultural work. During peak work periods, children do not maintain regular school attendance and fall behind in their classes and are unable to make up for this when they return to school. For these reasons and as the children who engage in this type of work are very young, this sector was considered a priority. The very nature of seasonal agricultural work exposes families to all types of risks, to which children are the most vulnerable. For economic and social reasons, children of adult seasonal workers usually accompany their parents from place to place. As a result, children alongside their parents and other adults are found in work that is unsuitable for their age, in order to secure the subsistence of their families.

Child labor in the agricultural sector can be handled in two groups (Gülçubuk 2012). First group is the children who work in the family business or in another business for free or for a fee. These children work during the day when they find a job, spend the evenings or unworked days at home. Working and sheltering conditions are related to the structure of the settlement they live in continuously.

In the second group, there are children who go to work in other regions with their families and relatives seasonally, for periods approximately between 3-7 months. These children continue their lives in inappropriate living and accommodation conditions without any infrastructure services. They do not have any profession and ability to use other than labor, so constitute the "Worst Forms of Child Labor" in agriculture.

Child labor carries great risks for children. The negative sheltering, nutrition, health and working conditions that working children are exposed to can cause chronic health problems throughout their life, deprive children of play, sports and sociocultural activities and affect their personality development negatively.

On the other hand, one of the main problems for child workers is education. Working children often fail to attend school or children who both work and go to school fail their compulsory education by not being successful enough in school. It does not only mean that children cannot learn basic information because of the early participation in working life and stay away from education by also mean that they lack the necessary competence for their future working life. The fact that the child leaves the education process early or cannot get enough education causes the continuation of poverty and deprivation in child's future life. Inadequate education causes child to become an unqualified workforce in the future like family members and thus a vicious circle of poverty occurs.

Agriculture is one of the sectors where child labor is most common. Risks such as the danger of machinery and equipment caused by mechanization in agriculture, exposure to pesticides and various chemicals, long working durations, exposure to harsh climatic conditions, heavy lifting-carrying, physical strain, scorpion, snake and insect bites are the most common health and safety risks child workers face. Working in the agricultural sector increases the child's risk of having occupational accidents and diseases. In hazelnut orchards, which are mostly located on steep slopes, the possibility of accidents that will result in injury is high in any loss of balance. Children are among the most vulnerable groups to occupational accidents due to their insufficient experience with current conditions.

Agriculture is an informal sector in terms of child labor, and children working in an informal sector have no occupational health and safety, cannot be paid if they are injured or sick, and cannot seek protection from employers' negative behavior.

As a result, working in seasonal agricultural work has been identified as a priority area in preventing child labor for reasons such as preventing or making it difficult for children to receive education, causing young and unprotected employment, adversely affect all kinds of development, carrying high risk of physical and emotional neglect and abuse.

Hazelnut harvest is one of the areas where seasonal agricultural workers are most common. Seasonal workers migrate mostly from Eastern and Southeastern Anatolia to the Western Black Sea Region in August and September to work in the hazelnut harvest. The high tendency of worker groups to migrate with the whole family makes children a part of the migration process. Children are the most affected part by this migration. While child workers who actively work in the hazelnut harvest are exposed to the above-mentioned dangers, children who are in the region with their families during the harvest period, even if they do not work, are subject to the same living conditions as their families in terms of health, transportation, shelter, nutrition, access to clean water and these children may have to waive their right to education.

The ability of children who dropped out of their education due to the working period or did not start at all to continue their compulsory education is of great importance for the future of them. Children engage in hard physical labor under working conditions that cannot be considered decent even for adults. They live in temporary settlement areas that mostly lack basic

infrastructure and in conditions that are well below minimum standards for approximately 4-7 months in a year. It seems that life in temporary tents exists with many deficiencies and deprivations. Difficulty in accessing potable and utility water, toilets and bathrooms do not have enough hygiene conditions, not disposing of solid wastes under appropriate conditions, inconveniences in the preparation and storage of foods are the biggest problems related to sheltering conditions. On the other hand, the majority of temporary tents are located far from settlements. This situation brings along a security and SEA/SH problem for all hazelnut agriculture workers, especially children.

In addition, there are some basic problems such as the care and education of pre-school children of hazelnut harvest worker families. Considering the working environment of families, it seems very difficult for these children to reach pre-school education which is necessary for personal care, individual language development, mental perception, psychomotor abilities. The most perilous situations occur when parent cannot find childcare for preschool children. With no reliable source of childcare families are forced to bring their preschool children into the fields during the lengthy workday, exposing the children to poisonous chemicals and dangerous farming equipment. If families do not bring their children into the fields, they may be forced to leave them with an older sibling who may not be mature or knowledgeable enough to care for small children. The final option is that families leave their children with someone that they know well. Each of these choices is a potentially dangerous childcare situation.

A special research called *Child Labor Research* was applied to children between the 5-17 age in the last quarter of 2019 (October-November-December) by TurkStat. According to survey data the number of children between 5-17 age group working in an economic activity was determined as 720,000. It was seen that 70.6% of this number was made up of boys and 29.4% was made up of girls. It was determined that 34.3% of working children did not continue their education.

According to the survey data, it is understood that children working in the agricultural sector are in the second place with a rate of 30.8% and the first one is service sector with a rate of 45.5%.

When data was analyzed by age, it was seen that children working between 5-14 ages are in the agricultural sector with a rate of 64.1%.

When the factors were examined in the working environment that negatively affect physical health of children, it was seen that children were working in unsuitable weather and thermal conditions, exposure to chemicals, dust, smoke or harmful gases. On the other hand, it was determined that 6.4% of working children under the risk of accidents, while 4.6% are at risk for eye fatigue or visual focus in the workplace where they work (Source; TurkStat Labor Force Survey, 2019).

One of the factors to be considered in child labor is the effects of the Covid-19 pandemic period on the Project Area. With the increase of corona virus spread in the Project Area, the interruption of education and the transition to distance education measurements can be applied. This situation likely to increases the risk of child labor in agriculture.

In the community level surveys the use of child labor in the hazelnut harvest was asked and it has been reported that in 26 settlement out of 55 child labor under the age of 16 were used. In over 60% of the settlement child laborers made up between 5 and 10% of the seasonal agricultural workers and in some in tow settlements this was as high as 50% (See Table 6-94 for further details).

Table 6-94. Children under Age 16 amongst seasonal agricultural workers

Proportion of child labour (%)	Number	%
5	4	15,4
10	12	46,2
15	2	7,7
20	4	15,4
30	2	7,7
50	2	7,7
Total	26	100

SESA Gap filling field study (CLQ), September 2020

Refugees

Based on the information gathered we could say that there are no refugees living as communities in the Project Area and they were not involved in agricultural activities. However, within the scope of SESA, the information about the refugees in Ordu obtained in the literature review is presented below.

The case study⁷ published in his research paper by Bulut, C. in 2018 provides important facts about the asylum-seeking and refugee children of ages 13-18 in Altınordu district of Ordu. The case study was based on a population sample of 58 children attending to high school level education in Altınordu district. The majority of the refugees and refugee children in Ordu province are from Iraq and they left their countries due to war and terror.

In Bulut’s case study, 67% of the children were girls and 33% were boys. Most of the children were at the age of 16 (37.9%). 69% of them lived with their families (i.e. with parents and other siblings). 26% of the mothers and 38% of the fathers had postgraduate education. 81% of children left their countries because of war and terror, the remaining 5% for economic reasons, 2% because of religious persecution and 2% for another reasons. It was observed that 82.8% of the children came from Iraq, 3.4% from Iran, 6.9% from Afghanistan and 6.9% from other countries. 48.3% of the children lived in Ordu for more than 3 years and 44.8% of the children did not find themselves successful enough as far as their education is concerned, and 34.5% of children have difficulty in reading and writing.

In Bulut’s study the social profiles of children who continue education did not vary much, and their socio-economic situation resembles each other. It was seen that language problem is one of the biggest common problems. Most of the refugees were highly qualified but they did not

⁷ Bulut, C. (2018). Socio-demographic Profile of Assylum-seeking and Refugee Children of Ages 13-18: Case from Ordu Province.

get the opportunity to realize their full capacity and their living standards in Ordu below the average.

According to the statements of officials of the Provincial Directorate of Migration Administration in 2018: “when we look at the current figures of 2018 and distribution of Syrians refugees by provinces, there are about four thousand refugees in Ordu. The refugees in the city are Iraqi, Afghan, Iranian and Syrian and there are 659 Syrians living in Ordu. These numbers vary because they are constantly on the move. The reason is the availability of employment. They leave as soon as they find another job. When we look at the foreigners in our country with a residence permit, there are 832 Iraqi and Iranian people in Ordu. Since the flow is fast, we can talk about a number between four and five thousands”.

In order to fill data gap about the refugees in the Project Area some further data requested from the local government agencies. The data provided in Table 6-95 presents the number of Syrian and non-Syrian figures who received some services. The type of services include various types of vaccines, post-natal controls, pregnancy monitoring, baby monitoring, child monitoring, contraceptive, condom, TBC scan and so on. A total of 826 refugees received these services in 2019 and 254 of them were Syrian refugees. The districts where these services provided perhaps also the indicator of where these refugees are concentrated. The provinces where refugees received these services most include Kumru, Perşembe and Fatsa (See Table 6-95 for further details).

Table 6-95. Refugees Who Used Services in the Project Area (2019)

Districts	Number of non-Syrian refugees	Number of Syrian refugees
AYBASTI	32	0
ÇAMAŞ	8	0
ÇATALPINAR	12	1
FATSA	186	20
GÖLKÖY	6	1
GÜRGENTEPE	5	1
KABATAŞ	5	1
KORGAN	21	0
KUMRU	222	203
MESUDİYE	7	3
PERŞEMBE	65	21
ULUBEY	5	1
TOPLAM	574	252

Source: Provincial immigration administration, 2019

Other Vulnerable Groups

Out of 76 settlements most reported vulnerability was poor peasant women living on social assistance this was reported in 60 settlements and the average number of women in this category per settlement was almost 30. As far as the men concerned in the same category out of 56 settlements the average number per settlement was just over 23 men. Women head of

household was another most reported vulnerability as this was reported in 57 settlements and the average number per settlement was just over 19 women. As far as men and women with physical disabilities were concerned these were reported in 60 and 58 villages respectively. On average, around there were six physically disabled men and six women per settlement. Women with mental disability reported in 38 settlements and the average number per settlement was almost three women. However, men with mental disabilities were reported in 50 settlements and the average number per settlement was just over three men. Men and women being home dependent due to chronic illnesses showed similar patterns these were reported in 27 and 32 settlements respectively. On average per settlement there was six men and six women per settlement in this category. Women being home depended due to care giving responsibilities for disabled, elderly or ill household member reported in 47 settlements and on average there were three women per settlement in this group (See Table 6-96) for further details).

Table 6-96. Vulnerable Groups in the Settlements

Vulnerability	Number of Settlements – as reported	Average number of people per settlement	Total number of people- as reported
Women with physical disability	58	5.8	334
Men with physical disability	60	6.3	378
Women with mental disability	38	2.81	107
Men with mental disability	50	3.28	164
Women - home dependent due to her chronic illness	32	6.28	201
Men - home dependent due to his chronic illness	27	6.37	172
Home dependent women due to care giving to disabled, elderly or ill	47	3.01	254
Women head of household	57	19.17	1,093
Widow without children	23	4.86	112
Poor peasant woman living on social assistance	60	29.63	1,778
Poor peasant men living on social assistance	56	23.35	1,308

Source: SESA Gap Filling Field Study (CLQ), September 2020

6.3 Cultural Heritage

Tourism sector is an important contributor to the economy of Ordu Province. The natural and cultural structure of Ordu Province enables the development of nature and cultural tourism. According to 2017 Ordu Province Environment Situation Report (2018: 2), the city has 36 archaeological sites. In addition, there are 475 historical monuments preserved on a single building scale. Of these, 291 are civil architecture examples, 54 are religious buildings, 52 are

cemeteries, 48 are cultural buildings, 9 are ruins, 8 are administrative buildings, 7 are military buildings, and 6 are industrial and commercial buildings (Black Sea Cultural Inventory⁸). The online inventory is an output of the "Black Sea Culture Inventory Project" carried out by the Eastern Black Sea Project (DOKAP) Regional Development Administration, where each province's lifestyles, traditional clothing, folk dances, local music, instruments and dishes were tracked and researched for two years to create the region's very own cultural inventory.

The list provided by the authorized institutions provides detailed information on cultural assets in the Project Area (See Annex-4).

Community level surveys revealed that there are cultural heritage sites which were not officially recorded but highly valued by the local communities. They include historic graveyards, watermills, historic baths, trees and fountains and so on. These sites will need to be identified by subproject ESIA's when site locations are known.

There are no official records for intangible cultural heritage. According to UNESCO, intangible cultural heritage is traditions or life experiences such as oral traditions, performing arts, social practices, rituals, celebration events, knowledge and practices about nature and the universe, or knowledge and skills related to the production of traditional arts, which we inherit from our ancestor and will pass on to our future generations. As in general in Turkey there are ceremonies and cultural practices as intangible cultural heritage in the Basin such as ceremonies related to birth, death, wedding, circumcision. This has been investigated further in the community level survey. Also, in the Black Sea Cultural Inventory Ordu's intangible cultural heritage is presented in some details including oral literature, traditional ceremonies, and culinary culture and so on.

Community level surveys revealed some of the traditional technology used in the settlements, over 43% (32 out of 74) of the communities reported a regular use of these sort of technology. They included hand mills, flour mills, water mills, and sharpening stone and so on.

Community level surveys also revealed the existence of very rich intangible cultural heritage in the settlements of the Project Area. Particularly related to birth, death, and funeral, weddings and marriages. For example as far as death and funeral rituals were concerned funeral dinner, condolence visit, reading the Qur'an 3 evenings, mawlut ceremony on the 7th and 52nd days, solidarity between neighbours, mourning, and roasting halva mentioned regularly. The traditions settled in marriage and wedding ceremonies were mentioned; henna night, village/country wedding, boiling keskek, reading mawlut, entertainment, solidarity between neighbours, wrapping the groom's turban. The tradition of sending conscripts to the military is perhaps one of the most elaborated traditions; soldier night, reciting mawlut/Quran, soldier convoy, farewell with drums, money collection, soldier henna mentioned regularly. Oral art and oral culture come to the fore especially in Georgian and Alevi villages. Cem and semah rituals, singing together can be given as examples. Semah rituals and ceremonies in the Alevi communities were highlighted in particular.

⁸ <https://karadeniz.gov.tr/ordu-kulturel-tasinmaz-varliklar/?&sahife=3>

Food culture is again one of the most emphasized issues. There were tens of food referenced as specific to the Project Area. Black beat was one of the main ingredients of the local cuisine. Issues such as the traditions of Ramadan and traditional agricultural practices, such as imece, have also been emphasized several times. Although there are many known folk songs about the region (such as the streams of Ordu and Hekimoğlu), there was not mention of tradition music culture, traditional dance, traditional clothing, traditional folk medicine, traditional animal medicine, traditional forestry methods, handicraft, apart from a few medicines for burns and a few other cultural traditions have begun to be forgotten already in the communities of the Project Area. Locations of the cultural heritage demonstrated in the map (Figure 6-23) were

listed

in

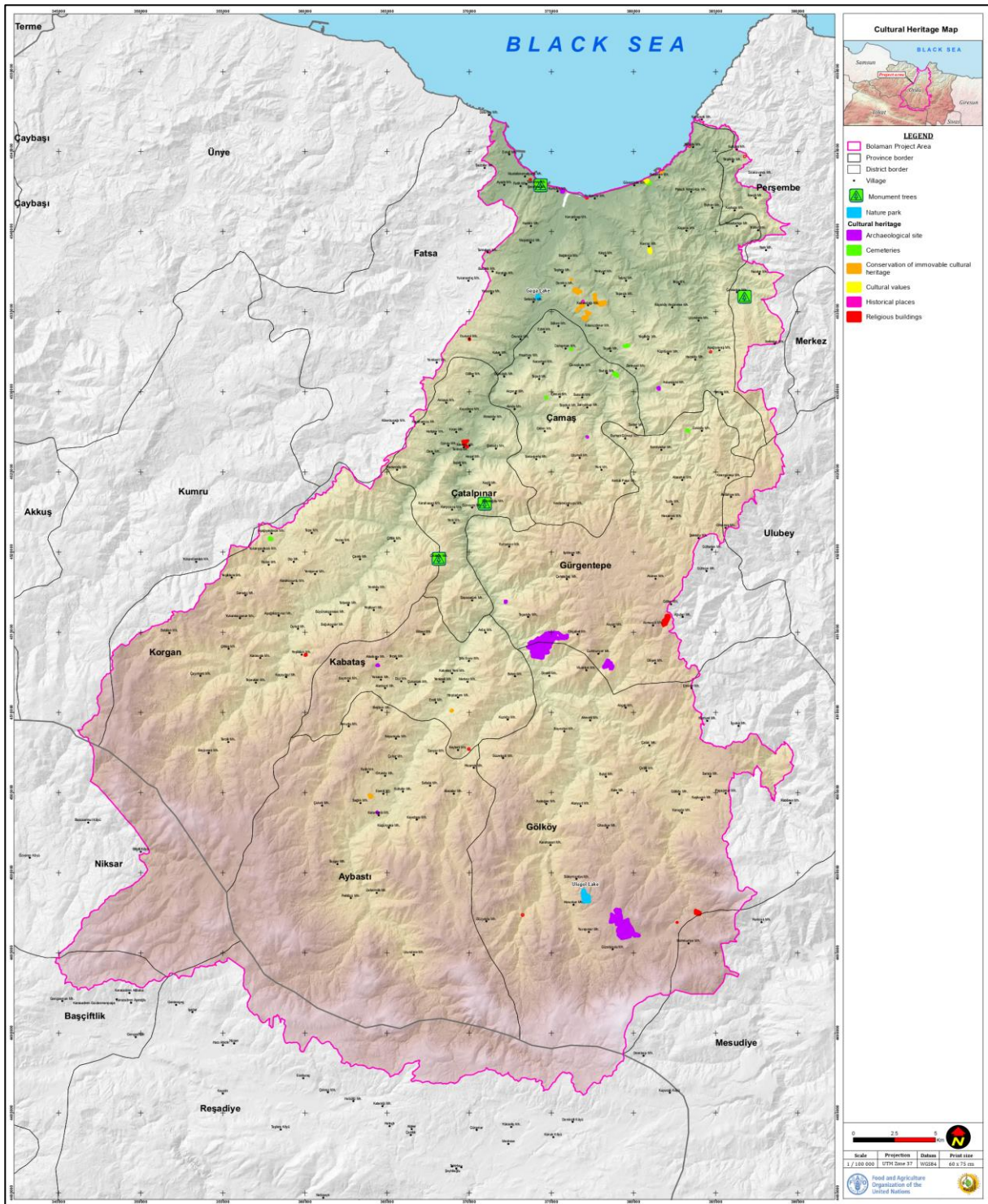


Figure 6-23. Cultural Heritage Map -Access Link

Table 6-97.

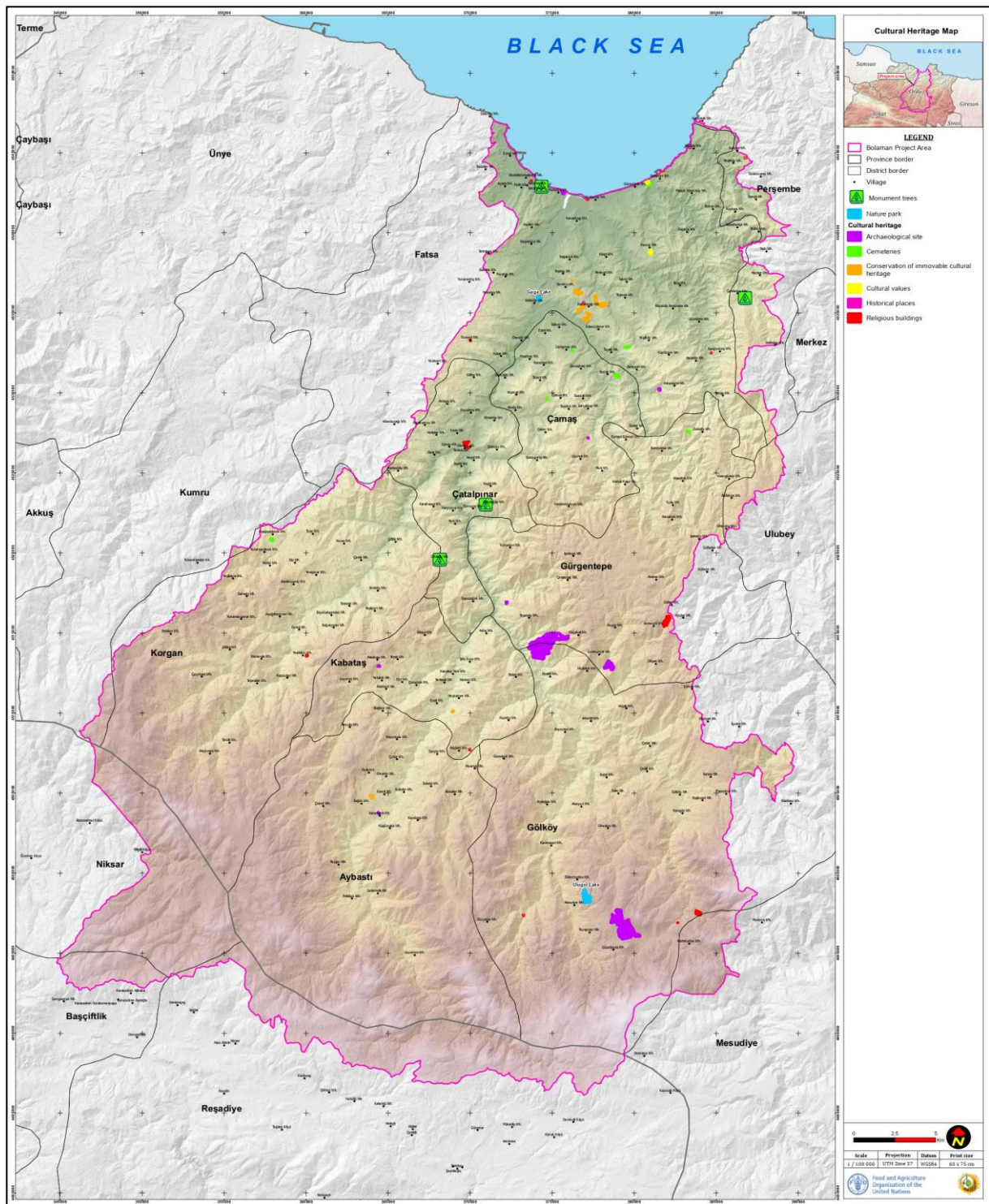


Figure 6-23. Cultural Heritage Map - [Access Link](#)

Table 6-97. Locations of the Cultural Heritage

No	Type of Cultural Site	Name of the Cultural Site	District	Village
1	Archaeological site	Rock tombs	AYBASTI	Esenli
2	Archaeological site	3rd degree Archaeological SITE	AYBASTI	Akmescit
3	Archaeological site	Rock tombs	ÇAMAŞ	Sarıyakup
4	Archaeological site	Rock tombs (4)	FATSA	Aslancami bld/merkez
5	Archaeological site	Rock tombs (4)	FATSA	Aslancami bld/merkez
6	Archaeological site	Rock tombs (4)	FATSA	Aslancami bld/merkez
7	Archaeological site	Kilise Binası ve çevresi 1.ve 3.derece Arkeolojik sit	FATSA	Kurtuluş
8	Archaeological site	Rock Tomb	GÖLKÖY	Güzelyayla
9	Archaeological site	Asar Kalesi (1. derece arkeolojik sit)	GÖLKÖY	Direkli/yenimaha lle
10	Archaeological site	Rock tombs	GÜRGENTEPE	Tepeköy
11	Archaeological site	3rd degree Archaeological SITE	GÜRGENTEPE	Akmescit
12	Archaeological site	Rock tombs	KABATAŞ	Alanbaşı
13	Cemeteries	Rock tombs	ÇAMAŞ	Örmeli
14	Cemeteries	Tomb	ÇAMAŞ	Danışman
15	Cemeteries	Ottoman Era Tomb	ÇAMAŞ	Budak
16	Cemeteries	Tomb (3)	FATSA	Bolaman
17	Cemeteries	Cemetery	FATSA	Tayalı
18	Cemeteries	Cemetery	GÜRGENTEPE	Eskiköy-merkez
19	Cemeteries	Tomb	KORGAN	Korgan-aşağıyaylacık
20	Conservation of immovable cultural heritage	Old rural building	AYBASTI	Esenli
21	Conservation of immovable cultural heritage	Old rural building	AYBASTI	Esenli
22	Conservation of immovable cultural heritage	Old rural building	AYBASTI	Esenli
23	Conservation of immovable cultural heritage	Old rural building ve müştemilatı(serender)	AYBASTI	Esenli
24	Conservation of immovable cultural heritage	Old rural building	AYBASTI	Esenli
25	Conservation of immovable cultural heritage	Kademoğlu Mansion	FATSA	Bolaman
26	Conservation of immovable cultural heritage	Old mansion	FATSA	Bolaman
27	Conservation of immovable cultural heritage	Old mansion	FATSA	Bolaman
28	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
29	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı

30	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
31	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
32	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
33	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
34	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
35	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
36	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
37	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
38	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
39	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
40	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
41	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
42	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
43	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
44	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
45	Conservation of immovable cultural heritage	Old rural building	FATSA	Bolaman
46	Conservation of immovable cultural heritage	Old rural building	FATSA	Bolaman
47	Conservation of immovable cultural heritage	Field	FATSA	Bolaman
48	Conservation of immovable cultural heritage	Old rural building	FATSA	Bolaman
49	Conservation of immovable cultural heritage	Old rural building	FATSA	Kabakdağı
50	Conservation of immovable cultural heritage	Old rural building	KABATAŞ	Hoşkadem
51	Conservation of immovable cultural heritage	Aslanoğlu Mansion	PERŞEMBE	Kabakdağı
52	Cultural values	Tombstone	FATSA	Korucuk
53	Cultural values	Tombstone	FATSA	Bolaman
54	Historical places	School	FATSA	Kabakdağı
55	Religious buildings	Wooden mosque	ÇATALPINAR	Merkez
56	Religious buildings	Wooden mosque	ÇATALPINAR	Merkez

57	Religious buildings	Wooden mosque	FATSA	Aşağıyavaş
58	Religious buildings	Wooden mosque	FATSA	Duayeri
59	Religious buildings	Hacı Hulusi Mosque	FATSA	M.k.paşa
60	Religious buildings	Yalıköy Mosque	FATSA	Yalıköy
61	Religious buildings	Yenipazar Mosque	FATSA	Bolaman
62	Religious buildings	Old Mosque	GÖLKÖY	Düzyayla/cibiyazlık
63	Religious buildings	Old Church	GÖLKÖY	Gölköy
64	Religious buildings	Old Church	GÖLKÖY	Kuşluvan
65	Religious buildings	Old Mosque	GÜRGENTEPE	Döşek
66	Religious buildings	Beylerbeyi Wooden Mosque	KABATAŞ	Beylerli
67	Religious buildings	Central Mosque	KORGAN	Yeşilalan
68	Religious buildings	Wooden mosque	PERŞEMBE	Kutluca

7 IDENTIFICATION of KEY E&S ISSUES

The SESA focuses on key environmental and socio-economic issues directly related to Project Area. These issues were initially stipulated in the Scoping Report from stakeholder concerns as well as observations during the field visits and initial data collected. This chapter will make use of assessment of the baseline in order to verify and prioritize the key issues identified at the scoping stage.

In this chapter, the key issues identified in the scoping report are revisited with a view to analyzing drivers and priorities in the light of updated information. Thereby, a series of thematic studies have been performed to verify the issues raised at local level by communities and representative of provincial and district-level authorities.

Identification of key issues is based on analytical work using GIS analysis, case studies and participatory rural appraisal methods. GIS analyses are performed by mapping and overlaying different sets of data to identify critical areas of concentration of environmental and social issues. Case studies are used in order to understand inter-sectoral linkages. Results of stakeholder surveys are used as a participatory rural appraisal tool at the community level.

7.1 Key Environmental Issues

When the characteristics of the Bolaman River Basin are evaluated, some environmental key issues that should be considered in the implementation of the subprojects within the scope of TULIP have been identified as summarized in Table 7-1.

Table 7-1. Key Environmental Issues

Issues/Sensitivities	Description	Validation and Assessment Tools
Floods, landslides, water erosion	<ul style="list-style-type: none"> • Heavy rains and basin geomorphology are main reasons for the floods and landslides. • Based on steep slopes, geology and lack of measures, severe landslides may occur with severe disaster impacts on communities' health and safety. • Floods also contribute to the carriage of land contamination (i.e. nitrates from agriculture). 	<ul style="list-style-type: none"> • GIS based overlaying of maps in order to identify the risks of occurrence of floods and landslides.
Limited domestic water supply capacity and polluted surface water flows	<ul style="list-style-type: none"> • Insufficient water supply is a major problem especially in summer months when population is at maximum levels. • Lack of sewerage network and cesspits in rural parts, direct discharge of wastewater into creeks, worsening the quality of possible water resources. • Local stakeholders indicate turbidity of drinking waters. 	<ul style="list-style-type: none"> • Verify the reasons: whether lack of infrastructure, over-exploitation, leaks and losses. • Review of available water quality analyses. • Reasons for low quality of water. • Water quality records, health records, location map for groundwater resources, surface water resources.
Regional Soil Contamination	<ul style="list-style-type: none"> • Extensive use of fertilizers and pesticides for hazelnut farming. 	<ul style="list-style-type: none"> • Soil quality records • Groundwater quality records

Issues/Sensitivities	Description	Validation and Assessment Tools
	<ul style="list-style-type: none"> Waste from livestock grazing may cause soil and groundwater contamination. 	
Biodiversity	<ul style="list-style-type: none"> Rare threatened and endangered species / indicator species, special protection areas and legally protected areas are found in the basin. 	<ul style="list-style-type: none"> Check and assess habitat maps, site assessments.

7.1.1 Critical Zones Prone to Natural Hazards

The basin is characterized by severe natural disasters (landslides and floods) due to the climatic conditions and geomorphology. Landslides and floods have caused major damages on settlements and ecosystems till today. Designation of critical zones prone to natural hazards will provide guidance for sound and resilient siting of subproject activities. Where necessary, subproject locations will be shifted as appropriately. In addition to spatial decision-making, zoning practice will be supported with recommendations for enhanced climate-resilience of planned investments.

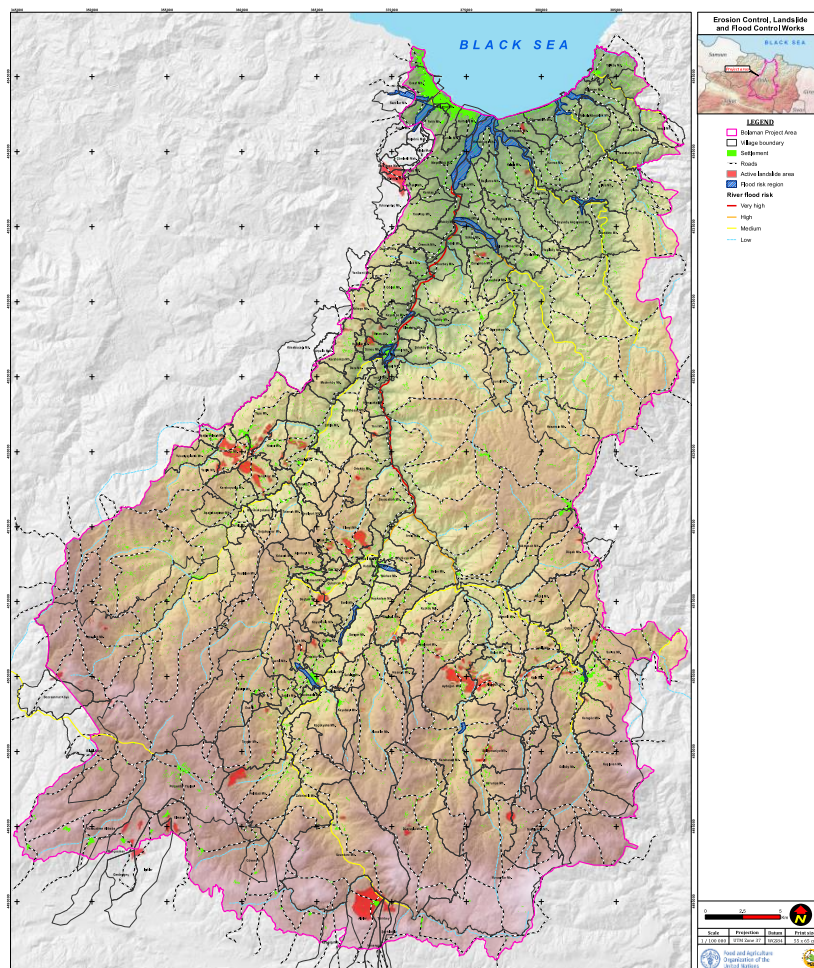


Figure 7-1. Critical Zones Prone to Combined Risks of Landslides and Floods

[-Access Link](#)

The resulting map provides an indication to spatial planning of settlements and siting of investments in the basin. As it is shown in Figure 7-1, some settlements and roads are threatened from the active landslide and flood risks. Road structures which uses the natural valleys are prone to active flood risks. In several cases, densely populated urban areas and road junctions are critical zones susceptible to risks of both floods and landslides; such as the following settlements which are susceptible to the hazards of combined risks of floods and landslides:

- Dip, Yenipınar, Yazlık and Yazıcı settlements are prone to serious landslide risks in Korgan District;
- Güney, Merkez, Haşal, Terimli, Kayatepe settlements in Çatalpınar district are prone serious flood risks; whereas, Hatipler and Kiran settlements are prone to land-slide risks;
- Danışman settlement in Çamaş is prone to serious land-slide risks; neighboring villages in Fatsa Kılavuzömer, Söken, Sefaköy, Demirci are prone to serious flood risks. Moreover, Kurtuluş, Taşlıca, Konakbaşı, Bolaman, Kayaköy villages are also in risk of floods;
- Some settlements in Güzelyurt, Alanyurt, Aydoğan, Sarıca, Kale, Karagöz, Süleymaniye and Çatak villages are prone to serious land-slide risk and minor flood risks;
- Some settlements in Tahirbey and Alpler villages in Reşadiye District are prone to severe land-slide risks;
- Some settlements in Pelitözü and Toygar villages in Aybasti District are prone to landslide risks. Aybasti district center and its villages such as; Yamanlı, Esenli, Fatih, Sarıyer, Çukur villages are prone to serious flood risks. Settlements in Beştam village in Aybasti is also prone to landslide risk;
- Some settlements in Karacaören (Başçıftlık), Elmacık (Çatalpınar) villages are prone to landslide risks; and
- Ilıcak, Elbeyi in Kabataş District settlements are prone to serious landslide risks.

Based on the combined risk map, macro level land-use decisions should consider the following:

- Avoiding settlements (housings, industrial facilities, etc.) by prohibition and restriction to development, if possible
- Developing activities
- Siting of control elements
- Emergency planning
- Developing measures for disaster preparedness until all subprojects for control measures are in place
- Awareness raising and stakeholder engagement to prevent marginal housings
- Preparing evacuation plans, warning systems and resettlement plans
- Preparing Plan for remedial actions against possible disasters

Landslide incidence in Sağlık Neighbourhood, Aybastı, Ordu, February 2019

As a result of the landslide, 20 houses were damaged, with cracks of up to 10 cm in some buildings and on the the ground. In May 2019, the landslide zone started to move again, the cracks in buildings continued to grow, severely damaging 63 buildings with 100 households. 22 buildings were completely destroyed. Remaining buildings and social facilities are not used today as the threat still continues.



Box 1: Aybastı Landslide

Flood incidence in Ünye, Ordu, August 2018



Flash floods triggered by heavy rainfall caused serious damage on 8 August 2018 in Ünye District, over the Cevizdere creek. Roads and bridges were destroyed, transportation stopped on the coastal road where hundreds of citizens were stuck. Thousands of tons of hazelnuts were washed into the sea with the floods. Cars and houses were underwater. The organized industrial zone in Fatsa and houses and businesses in nearby neighborhoods were also affected by flooding. Many hazelnut producers lost tens of thousands of tons of harvested hazelnuts to flooding rivers and streams.

Box 2: Floods in Ünye

7.1.2 Water Issues

One of the major problems in Ordu is the limited supply of domestic water particularly in summer months when the population increases.

The water balance calculation (Thorntwaite Method) for the basin verifies that runoff is reduced in summer months (June, July, August) (see Figure 4-2).

	J	F	M	A	M	J	J	A	S	O	N	D	Total
Runoff- from Main Sheet	59.75	25.30	42.66	25.16	49.89	36.16	18.39	18.24	14.24	37.63	23.07	46.10	
Runoff Volume (m3/s)	27.70	12.99	19.78	12.05	23.90	16.76	8.53	8.46	6.60	17.45	10.70	21.37	186.29
Runoff (hm3)	71.81	33.66	51.26	31.25	61.95	43.45	22.10	21.92	17.12	45.22	27.72	55.40	482.87

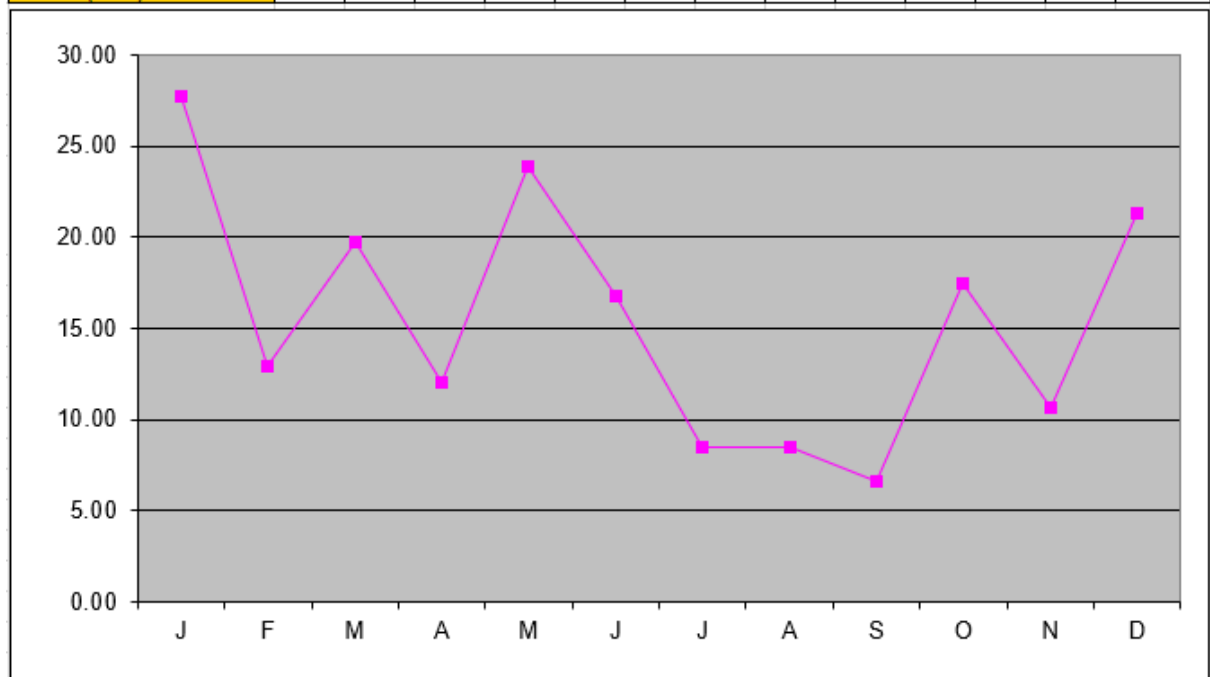


Figure 7-2. The water balance calculation (Thorntwaite Method) for the basin

Nitrate sensitive areas were identified in the basin within the scope of “Sensitive Areas Project⁹”. As a result of this project, only nitrate inputs resulting from agricultural activities are taken into account in determining nitrate sensitive areas. For this reason, when determining nitrate sensitive areas, areas where agricultural activities are carried out are taken into account, and the size of the land being farmed, the type and quantity of fertilizer used, along with information about livestock activities, were determined. Data was collected by the Ministry of Food Agriculture and Livestock at 2610 sampling stations (including 1302 surface water stations and 1308 groundwater stations). As a result, drainage areas of contaminated nitrate polluted waters are identified and designated as “Nitrogen Sensitive Areas”.

⁹ “Identification of Sensitive Areas and Water Quality Targets in Turkey” Project, TUBITAK MAM, 2015

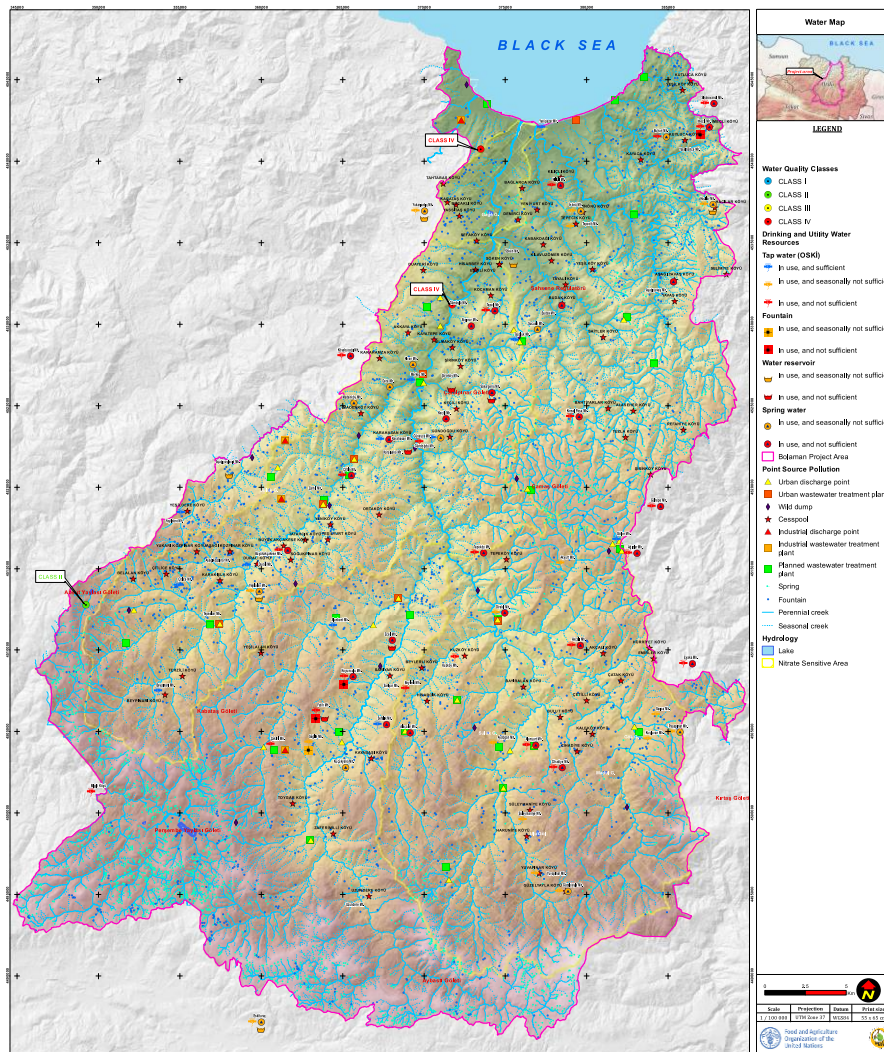


Figure 7-3. Water Resources and Water Quality Map – [Access Link](#)

The map shows that majority of water resources (both surface and groundwater) are prone to nitrate contamination. It can be seen that access to clean water resources is highly limited in terms of geographic extend of land. Therefore, clean water supply sources are considerably far from settlements located on the nitrate-sensitive zones. This demands the need for long transmission lines. This is furthered by the direct sewerage discharges from settlements and contamination from wild dumps (existing and former) in nitrate-free zones, which gradually limits further availability of clean water resources. Hence, to sustain availability of clean water resources, wastewater treatment plants (i.e. Aybastı, Çakırlı, Göller, Ilıca, Yalıköy, Gököy, Güzelyurt, Gürgentepe, Işıktepe, Alankent, Çayırkent, Korgan, Çamaş) planned by OSKI should be realized together with the TULIP subprojects.

7.1.3 Regional Soil Contamination

Figure 7-4 and Figure 7-5 show the non-point source soil pollutants (TN and TP) in the basin. According to the maps provided by TRGM, livestock source of TN can be seen between Niksar and Korgan, where pasture lands are dominant. Fertilizer source of TN is mostly in Fatsa where hazelnut groves are present and also between Mesudiye and Gökçöy where cesspits are dominated.

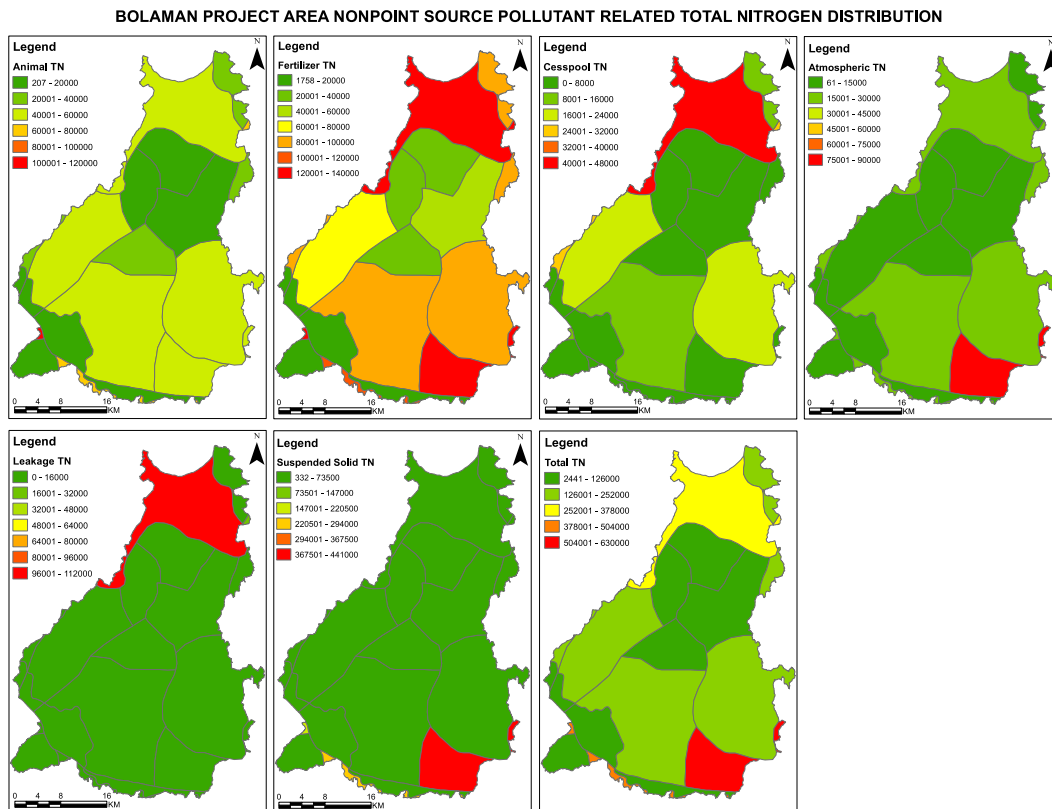


Figure 7-4. Non-Point Total Nitrogen Distribution – [Access Link](#)

BOLAMAN PROJECT AREA NONPOINT SOURCE POLLUTANT RELATED TOTAL PHOSPHORUS DISTRIBUTION

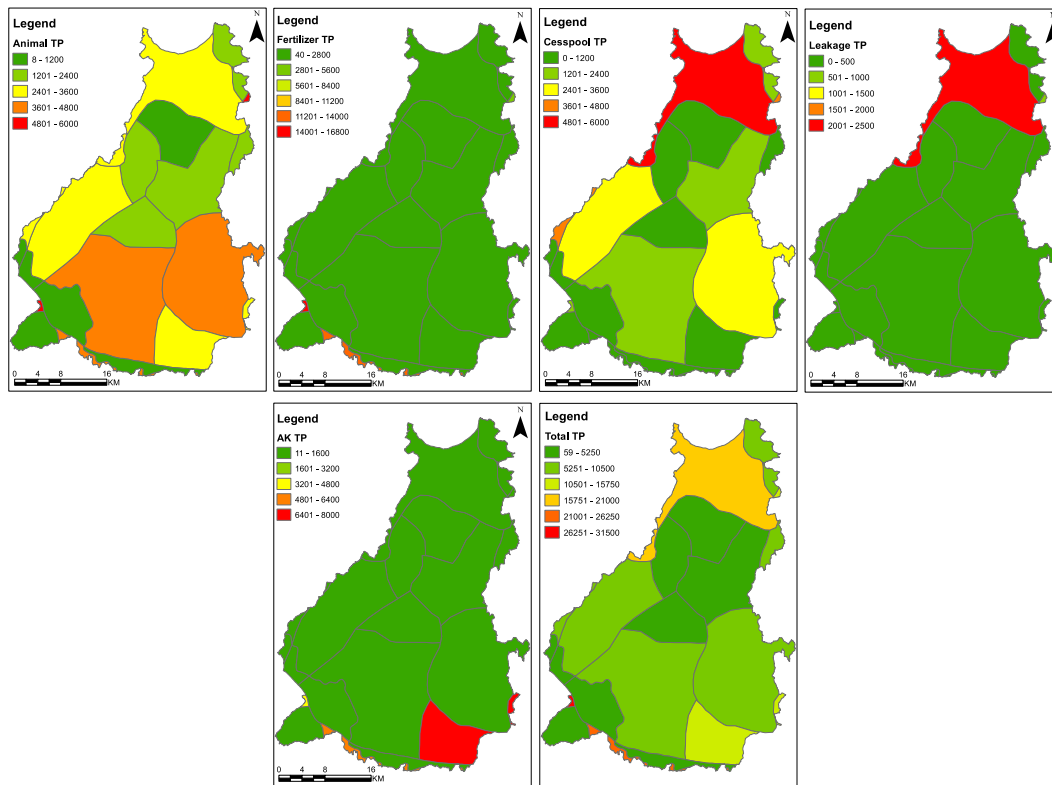


Figure 7-5. Non-Point Total Phosphorous Distribution -[Access Link](#)

7.1.4 Critical Biodiversity Areas

The presence, locations and extent of critical habitats potentially found in the Project Area is assessed using forest stand maps. The potential critical habitats in the forest ecosystem are old-growth forests, forests with high tree species richness such as mixed riparian or local flood-plain forests and permanent or temporary freshwater ponds within forests. Determination of the exact localities and extent of these critical habitats require field surveys. Please see Section 6.1.13 for the results of field survey performed on 27-29 November 2020. Although the forest ecosystem in the Project Area is highly fragmented, there is a great diversity of broadleaved, coniferous forests and mixed forests. Forest stand maps provide hints on the presence and location of forest areas with potential high tree species richness. These potential areas are highlighted in Figure 7-6. They are located mostly in the lower altitude central parts of the Project Area, fragmented by the agricultural activities, however more intact forest areas are present in the south of Gürgentepe comprising mixed, chestnut and hornbeam dominated broadleaved forests.

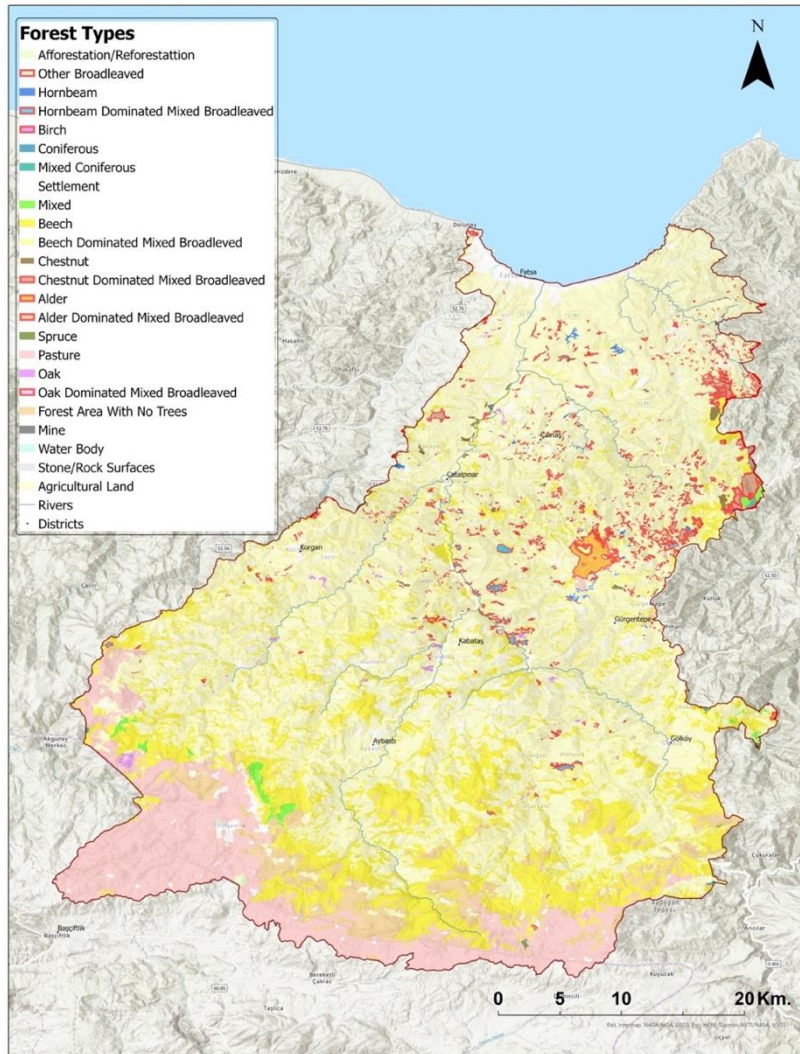


Figure 7-6. Potential forest areas with high tree species richness

Potential old-growth forest areas exist in the Project Area forest ecosystems, as derived from forest stand maps. Forest age-class information provides hints for potential old-growth forests. Also the forest stands neighboring older forest areas classified as ‘degraded’ can represent the high altitude old-growth forests. These areas are mapped as potential old-growth forests and adjacent woodlands (‘degraded forests’) in Figure 7-7. These potential old-growth forests are found on the higher altitudes adjacent to high grasslands.

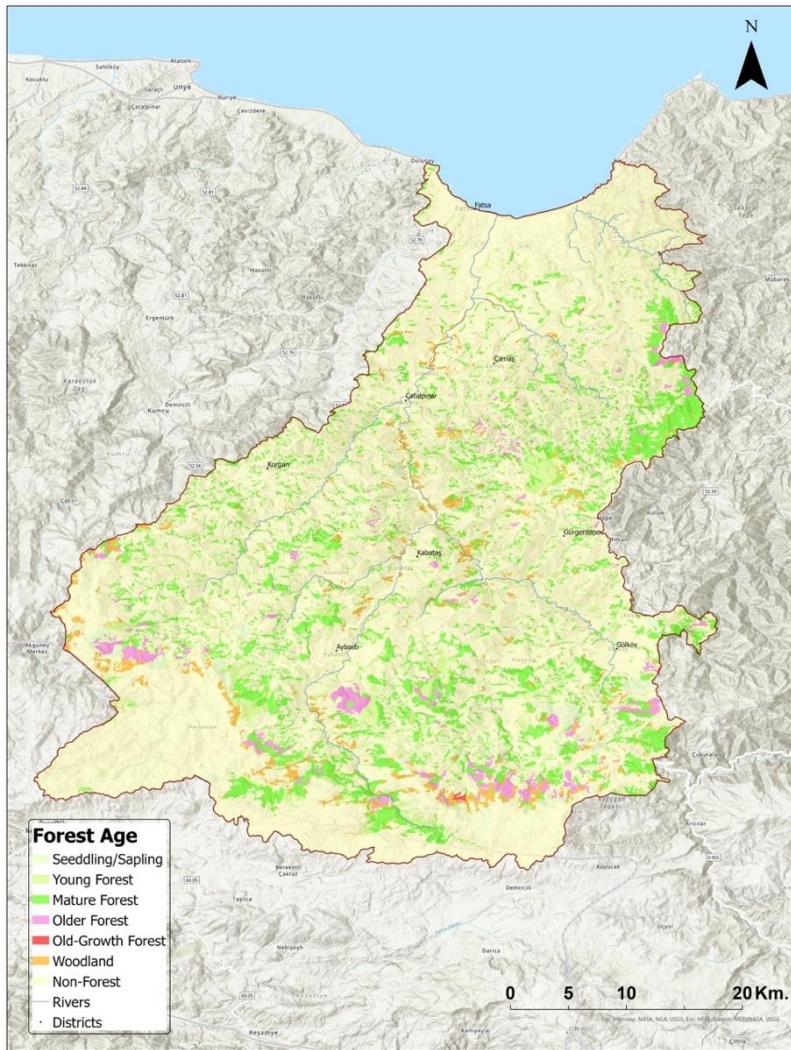


Figure 7-7. Potential Old-growth Forest Areas

Other potential critical habitats that may be found in the Project Area according to the EUNIS habitat map (See Figure 7-8) are the alpine and subalpine enriched grasslands (E4.5) with rare, threatened and endangered plants, local wet grasslands and associated wetlands found in these grasslands, permanent or temporary ponds in forests and grasslands, certain coastal habitats such as local sand dunes and muddy estuaries. Such critical habitats can be found in the Project Area, as both can be predicted from more general EUNIS map and also as reported in the Ordu Province Terrestrial and Inland Water Ecosystems Biodiversity Inventory and Monitoring Work as Special Biodiversity Areas (Figure 7-8).

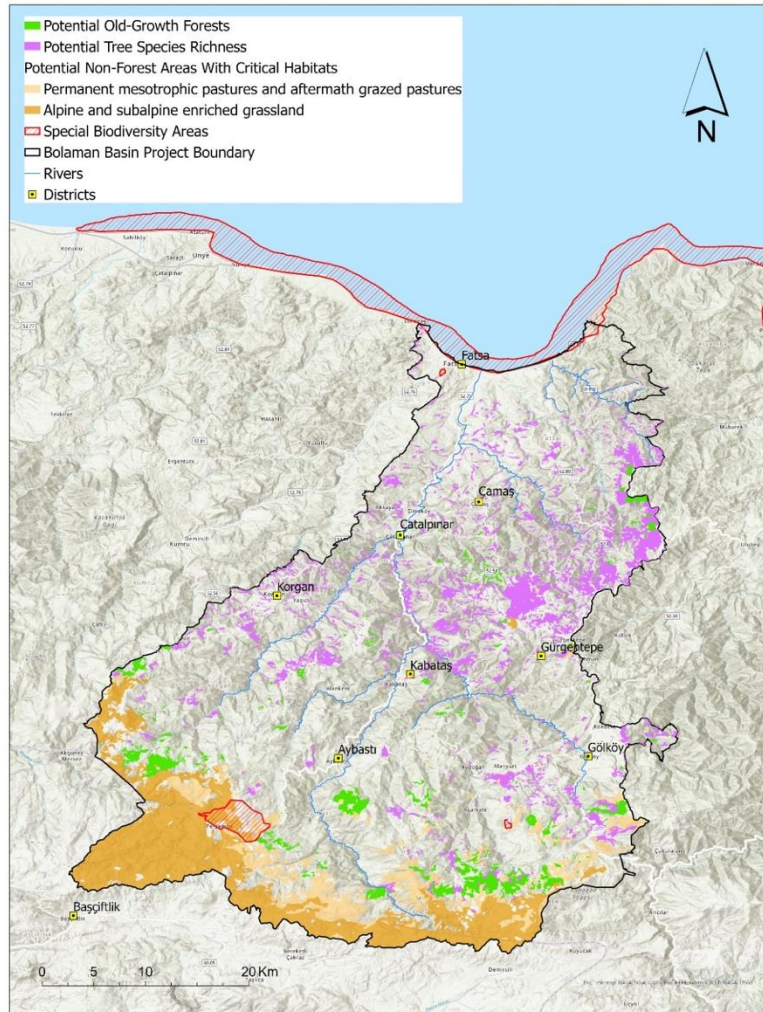


Figure 7-8. EUNIS Habitat Map of the Project Area

7.2 Key Social and Economic Issues

When the characteristics of the Bolaman River Basin are evaluated, some social and economic key issues that should be considered in the implementation of the subprojects within the scope of TULIP have been identified as summarized in Table 4-2.

Table 7-2. Key Socio-Economic Issues

Issues/Sensitivities	Description	Validation and Assessment Tools
1. Population sustainability	There is a constantly fluctuating population structure in the settlements. This situation undermines the continuity of socio-economic activities.	Stakeholder consultation, literature review and population data
2. Low diversity of livelihoods	Apart from agriculture and farming the Project Area has limited economic activities.	Stakeholder consultation, literature review and main livelihood data

Issues/Sensitivities	Description	Validation and Assessment Tools
3. Insufficient basic infrastructure	The most important problems are water shortages, road problems, electricity problems, sewerage problems, healthcare problems. These problems have a push effect on the population and cause permanent or seasonal migration.	Stakeholder consultation and literature review
4. Low SES in the Basin, especially in forest communities	SES of the people in the Basin clearly demonstrated that the population of the Basin is significantly poor compared with many other regions in Turkey. What is more striking is that when earnings of the forest communities in the Basin taken into account the annual income per household in these communities is even lower.	Stakeholder consultation, literature review and SES data
5. Lack of agricultural income for livelihoods	The amount of fragmented and small agricultural lands is extremely high in the basin as compared to the country situation. This is exacerbated by the outmigration which results in land owners residing outside the basin and hence leave orchards and agricultural lands idle and with lack of maintenance. The overall result is inefficient agricultural practice throughout the basin. It is a vicious and expanding circle.	Stakeholder consultation, literature review and agricultural data
6. Critical risk areas for agriculture	The impact of climate change on hazelnut production was demonstrated. Pressure on the hazelnut showed and potential risk on the natural resource and forest mentioned.	Literature review and statistics
7. Sustainable pastures and livestock grazing	It is shown that pasture areas are not used for animal feeding at the expected rate.	Stakeholder consultation, literature review and agricultural data
8. Lack of social facilities	Social and cultural facilities and opportunities were expressed as inadequate in this regard.	Stakeholder consultation and literature review
9. Vulnerable communities	It was determined that there are many people with poor health conditions, disabilities, individuals in need of care and support, women living alone, poor people without land and animals live in villages, and there are villages with people from different ethnic backgrounds and sects in the region..	Stakeholder consultation, literature review and official data
10. Critical cultural areas	There are many cultural assets in the region that need to be protected from the project impact.	Stakeholder consultation, literature review and official data

7.2.1 Population Sustainability

Fluctuating population structure

The permanent population of the settlements (villages and neighborhoods) in the Region varies between 80 people and 7,100 people. The number of households varies between 20 and 1,500. The average number of households per settlement is 241. The number of seasonal residents in the basin is substantial. There are villages and neighborhoods where at least between 15 and 3,250 people live periodically. The average number of expatriate households living in the region periodically is 275. In some villages and neighborhoods, the temporary population can be up to twice the total population.

According to the information obtained from some muhtars in the Bolaman Basin, the population has generally decreased in the last decade. However, there were people who talked about population increase in central neighborhoods. The number of people returning to the village due to the Covid-19 is getting higher. It is also seen that expatriates who migrated to big cities return to their hometown after retirement. As a result of the survey studies, the population changes of some villages are presented in the map below.

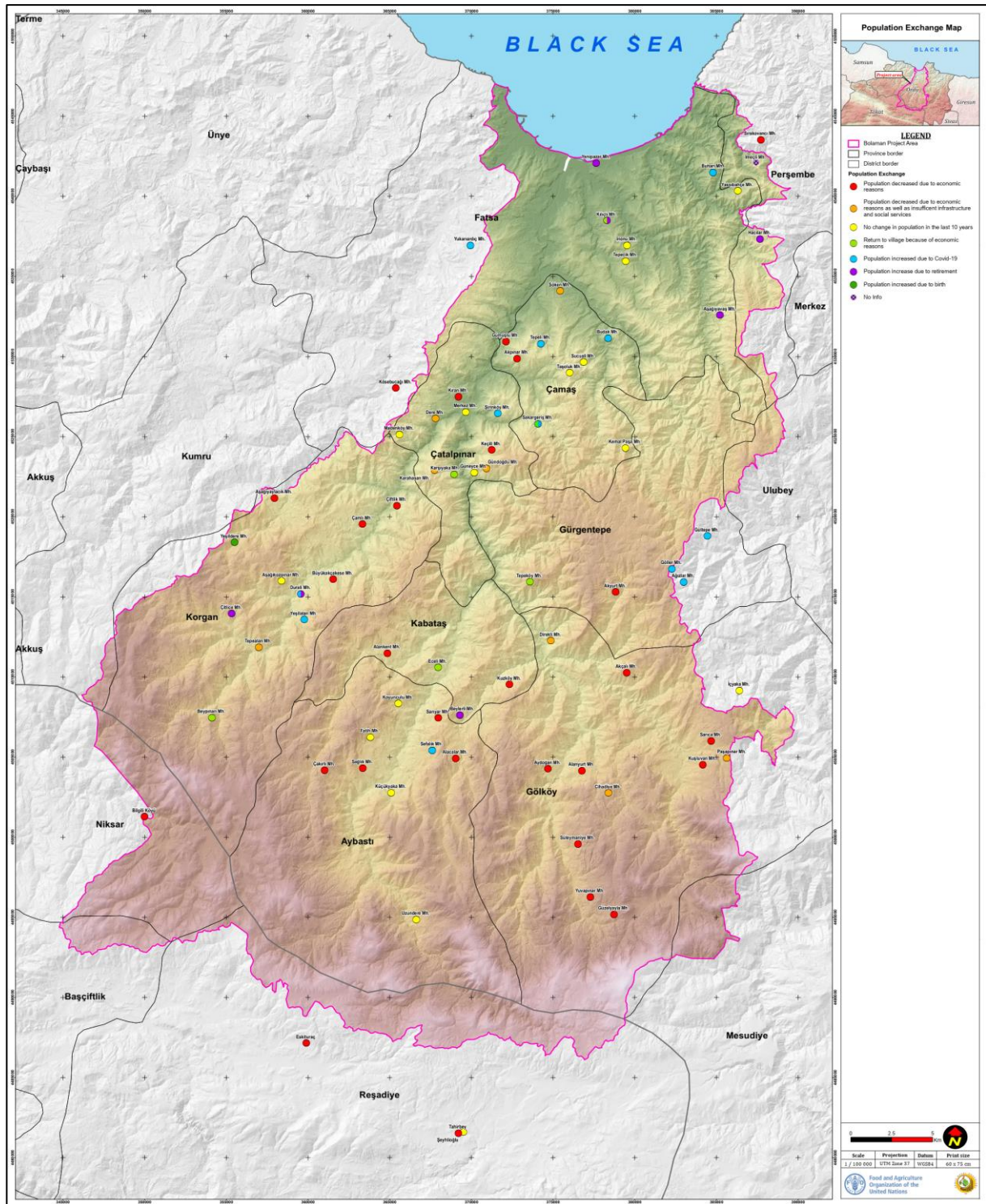


Figure 7-9. Population Changes of Some Villages - [Access Link](#)

According to the results of the survey study conducted in the basin, there is a constantly fluctuating population structure in the settlements. The main reasons for these are:

- Constant migration from the Basin
- Returning migrant due to Covid-19 and retirement

- Quite a few people from the Basin going to other parts of Turkey (especially to the big cities) as a seasonal migrant labour
- Seasonal agricultural labor required by the hazelnut harvest remaining in the Basin over a month in the harvest seasons.

Low percentage of young population

This mobile structure of the population affects everything from livelihoods to infrastructure. The fluctuating population structure causes hazelnut production to be carried out all year long by staying away from the village and disrupting maintenance. For this reason, diversification of livelihoods provides sustainability in terms of projects by providing a more stable structure of the population.

Looking at the age distribution of the population across the basin, it is seen that the 0-6 age group constitutes approximately 8% of the population. The percentage of 7-18 age group is 12. The ratio of the population between the ages of 19 and 35 to the total population is 20%. The biggest segment of the population is 36-64 age group. This group constitutes 36% of the population. The age group that follows it with the largest population is individuals over 65. It is seen that 24% of the individuals in the Project Area are over 65 years old.

Turkey's average in the general population over 65 years is 9%. In this case, it is possible to say that an aging population lives in the Project Area. For this reason, it is important that the project appeals to young people in terms of its sustainability.

7.2.2 Low Diversity of Livelihoods

Apart from agriculture and farming the Project Area has limited economic activities. Majority of the industrial activities in the province is directly related to the agricultural produce, in particular to hazelnut. However, workers in the hazelnut processing industry work seasonally that significantly restricts the employment opportunities of the industry and its contribution to the local economy. The province produces goods and services for its own market therefore it has a closed economic structure and this is an important source of economic problem. Because every new business established in the same sector in the city is disconnected from production and cuts from the profit of the other establishments in the market which makes the survival of these establishments in a shrinking market conditions very difficult.

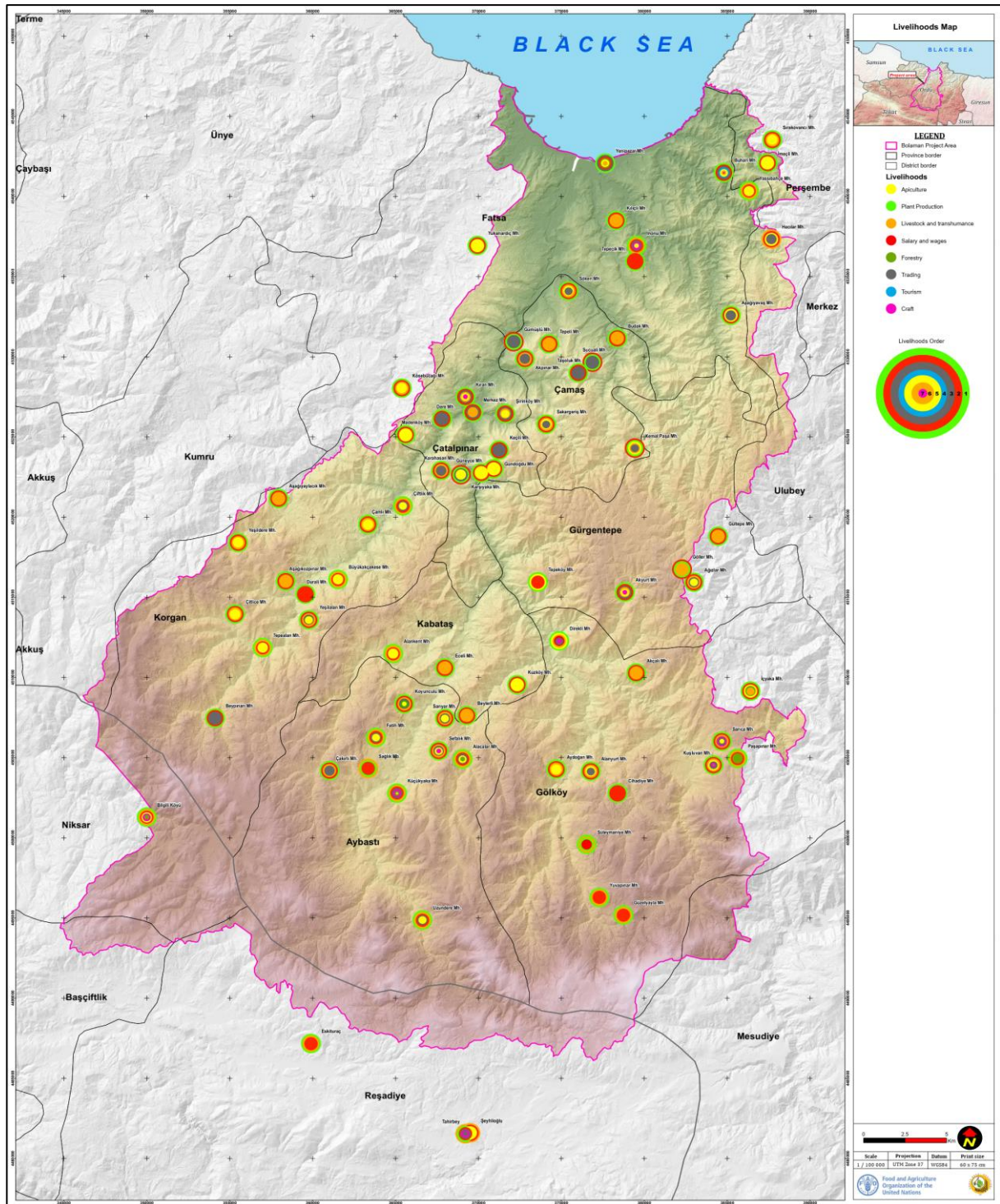


Figure 7-10. Sources of Livelihood Map – [Access Link](#)

7.2.3 Infrastructure Shortage

The quality of life in the Project Area is largely affected by geographical features and infrastructural deficiencies. Seasonal population movements in particular put great pressure on infrastructure, including sewerage and drinking water resources. This mobility was mentioned as the issue that has the greatest impact on the quality of life in the region.

The fact that these groups put pressure on the infrastructure is the main cause of the most important problems expressed in the settlements by the permanent members of the communities. The most important problems are water shortages, road problems, electricity problems, sewerage problems, and healthcare problems except for economic problems. These problems have a driving effect on the population and cause permanent or seasonal migration.

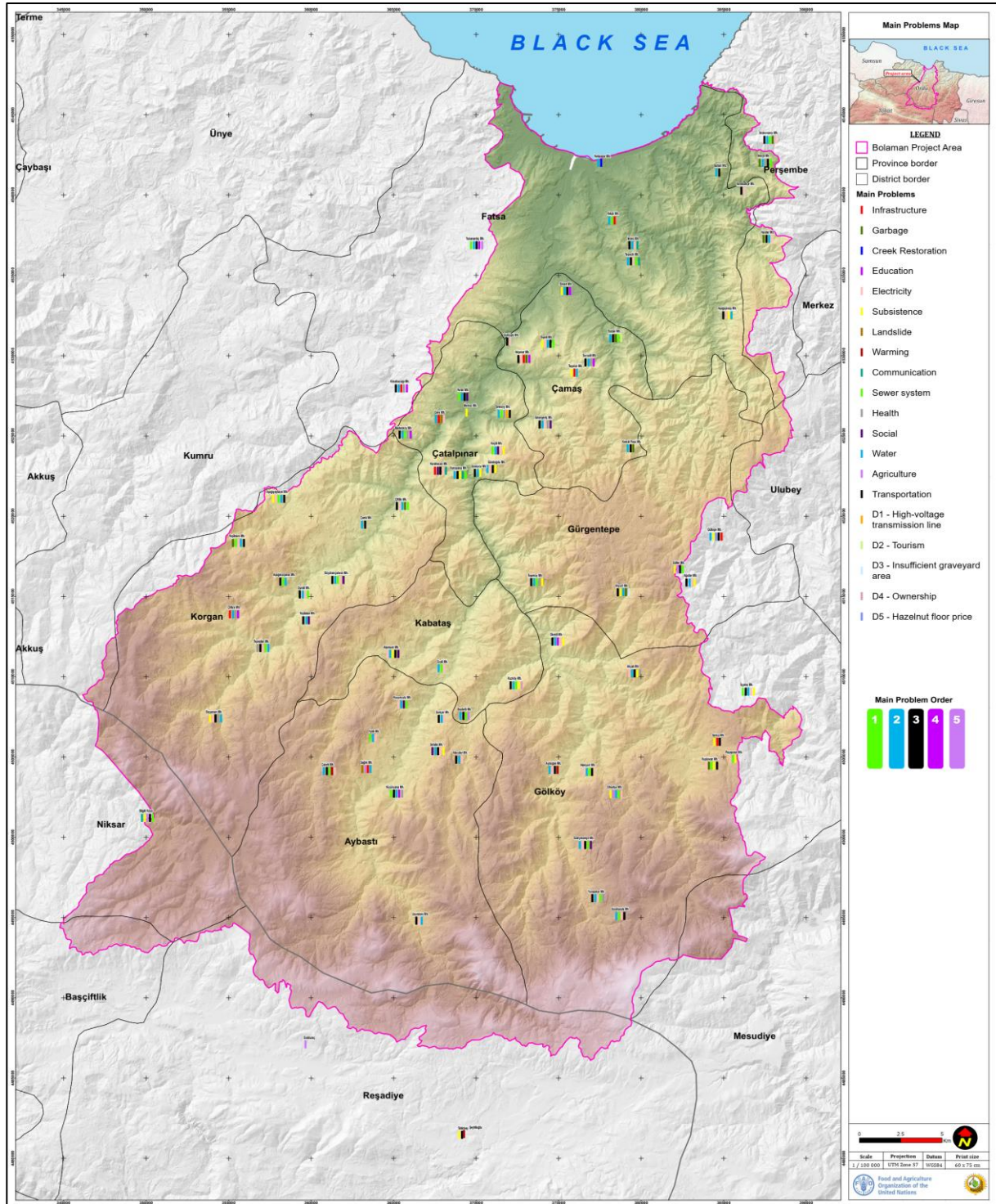


Figure 7-11. Main Problems of the basin -[Access Link](#)

7.2.4 Low SES in the Basin, especially in Forest Communities

According to all the different indicators used to assess SES of the people in the Basin clearly demonstrated that the population of the Basin is significantly poor compared with many other regions in Turkey. What is more striking is that when earnings of the forest communities in the Basin taken into account the annual income per household in these communities is even lower. The lowest income for households in these communities was 6,000TL and the maximum was 40,000. However, the average income per household was 18,480 and this is much lower than the income of an individual living on basic wages.

7.2.5 Lack of Agricultural Income for Livelihood

The amount of fragmented and small agricultural lands is extremely high in the basin as compared to the country situation. It is known for the basin that minimum sufficient land size of hazelnut gardens which covers 97.7% of total arable land of the Project Area is 28 decares per household. According to the average agricultural land assets by the districts is much below the sufficiency limit (see Figure 4-12). It causes lack of agricultural income in the basin and this is exacerbated by the outmigration which results in landowners residing outside the basin and hence leave orchards and agricultural lands idle and with lack of maintenance etc. The overall result is inefficient agricultural practice throughout the basin. It has been a vicious and expanding circle for years.

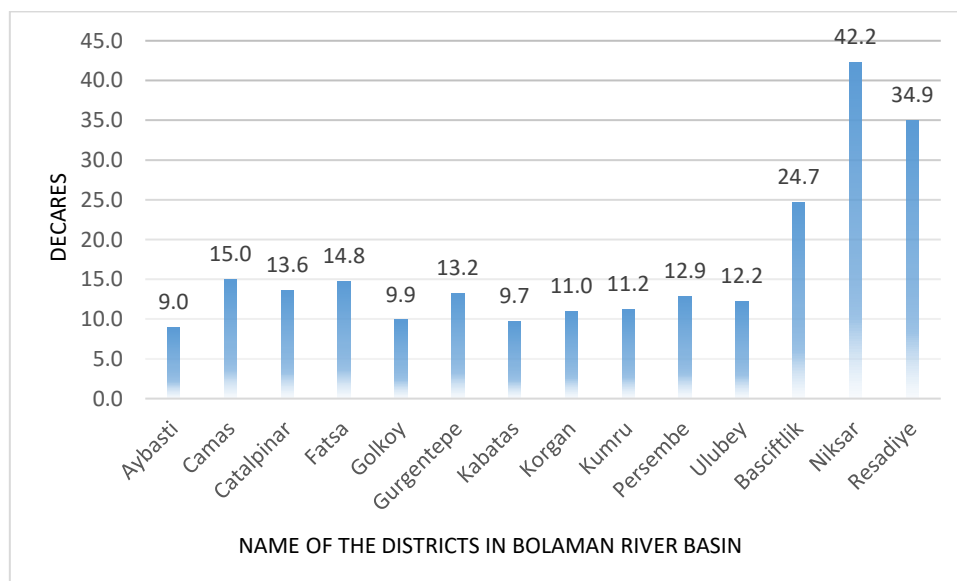


Figure 7-12. Average Agricultural Land Assets

7.2.6 Critical Risk Areas for Agriculture

In Turkey, it is known that the hazelnut can be seen up to an altitude of 1,500 m. Temperature conditions between 13- 16 °C, and rainfall over 700 mm per year are suitable for hazelnut cultivation without requiring irrigation. A specific study determined the possible effects of climate change on hazelnut production sites in Turkey (including the Bolaman Basin).

Temperature and rainfall were presupposed as the foremost two climate parameters for the hazelnut, and temperature and rainfall data were examined for the years 2011-2100 according to A2 scenario obtained via RegCM2 climate model (Figure 7-13) (Ustaoglu and Karaca, 2014).

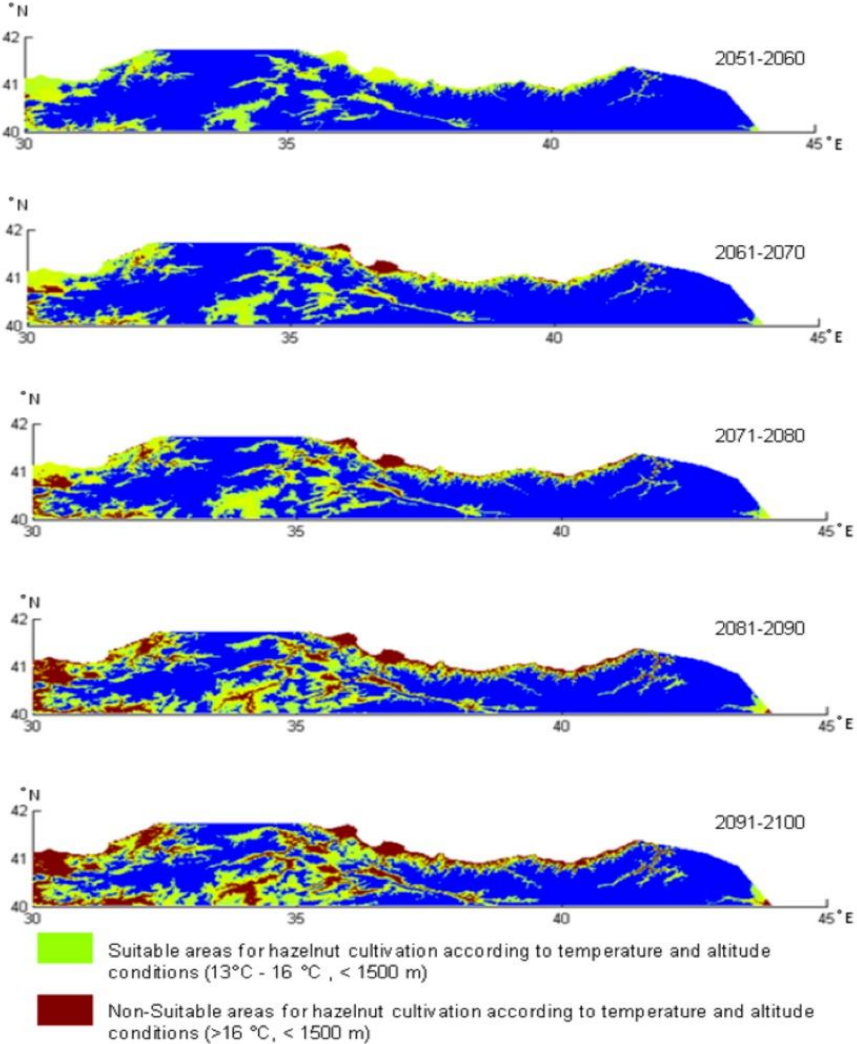


Figure 7-13. Average Temperatures and Altitude of Hazelnut Areas

The simulation results showed that the increase in temperature will be approximately 6 °C in Turkey for the upcoming 90 years, and predicted that a vertical zone shift will occur depending on the decrease in temperature with altitudes in hazelnut cultivation areas. The results show significant increase in rainfall especially in the Eastern Black Sea Region. The study concludes that the changes in the temperature values between 2011–2100 are more significant compared to the rainfall values. Particularly after 2050, horizontal changes (shift from north to south) may occur in hazelnut production areas and this increase may have specific negative effect on hazelnut cultivation activities on the coastline between 0 - 250 m. There is a need to initiate alternative crop cultivation suitable for warmer conditions in the region’s coastline. This shift may also increase the risk for the forests above 1,500 meters where it was so far believed that

hazelnut cultivation was almost impossible. To prevent deforestation and decrease the impacts of this shift, there is need to set a precise monitoring system for the forests in the region.

7.2.7 Sustainable Pastures and Livestock Grazing

Pasture fields are known to be used as walking and grazing areas in terms of livestock activity in the region. Pasture areas of Ordu defined quite suitable for grazing livestock according to the Agricultural Master Plan 2012. Also, almost entire land of Tokat within the borders of the Project Area have pasture land characteristics. It makes possible to improve both bovine and ovine husbandry when considering the potential of pasture assets. Nevertheless, based on the answers from HHQ, households were using the combination of different feeding places. Barn was followed by land owned by the household (66%) and pasture land (25%). It is shown that pasture areas are not used for animal feeding at the expected rate. It is a need to make use of this potential in a region where income sources are limited. However, shepherd conditions in the pastures are not good. According to the results of the observations and statistics in the field, it is understood that the farmers that use pasture in the region do not have enough animals. Moreover, it is seen that the pasture lands in the region are used below their utilization capacity. In the evaluation part, a map (see Figure 7-14) with animal assets, average livestock assets and pasture assets was prepared to examine the situation in more detail.

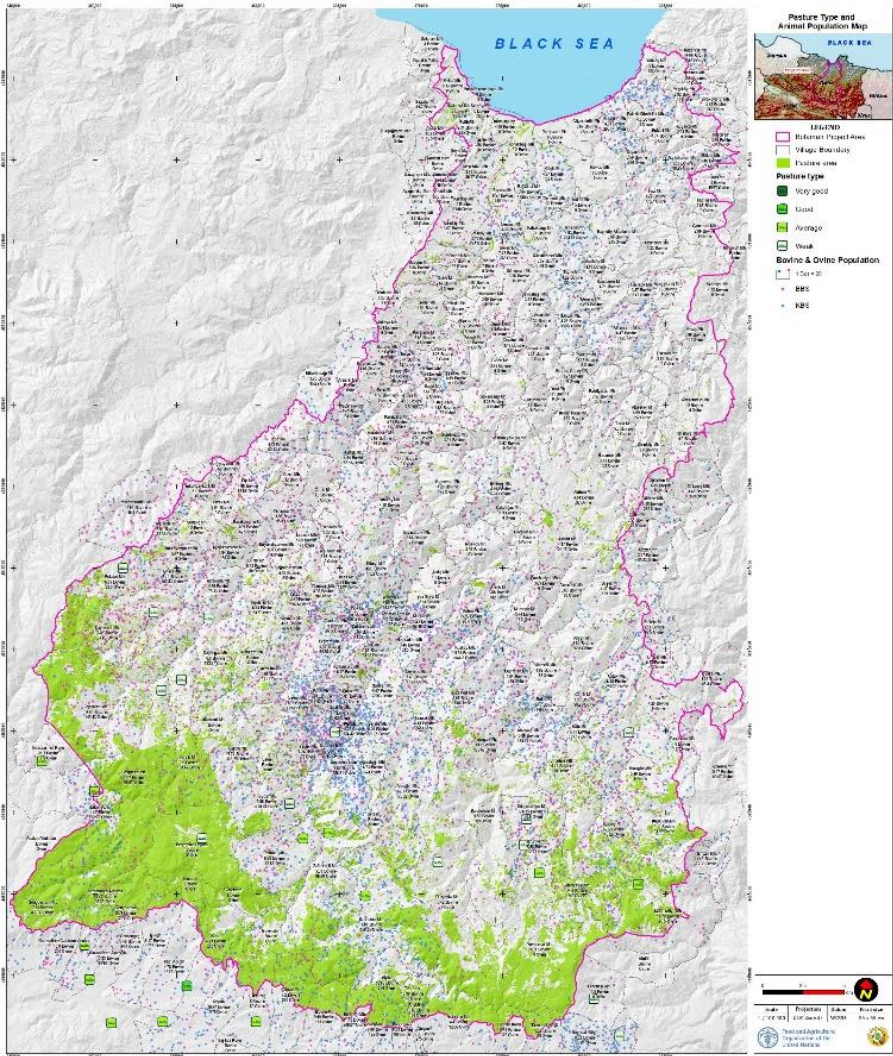


Figure 7-14. Distribution of Livestock Assets and Pasture Land – [Access Link](#)

7.2.8 Lack of Social Facilities

The state of social and cultural facilities and opportunities was questioned in the studies carried out within the scope of SESA and the muhtars of 67% of the settlements expressed the inadequacy in this regard. In the village-based field studies carried out within the scope of SESA, the muhtars were also asked about the five most important problems of their villages. Lack of social facilities was among the top five problems for 13% of the settlements. NGO representatives also stated that there are no social facilities in the Basin.

7.2.9 Vulnerable Communities

The proportion of vulnerable groups that are likely to be adversely affected by the subprojects and who are at risk of not benefiting from the subprojects comprise a significant part of the population. During the field study on 13-14 July 2020, it was determined that there are many people with poor health conditions, disabilities, individuals in need of care and support, women living alone, poor people without land and animal ownership. The places where these people live are shown in the map below. It is presumed that that there is a similar trend in the settlements outside the sample group.

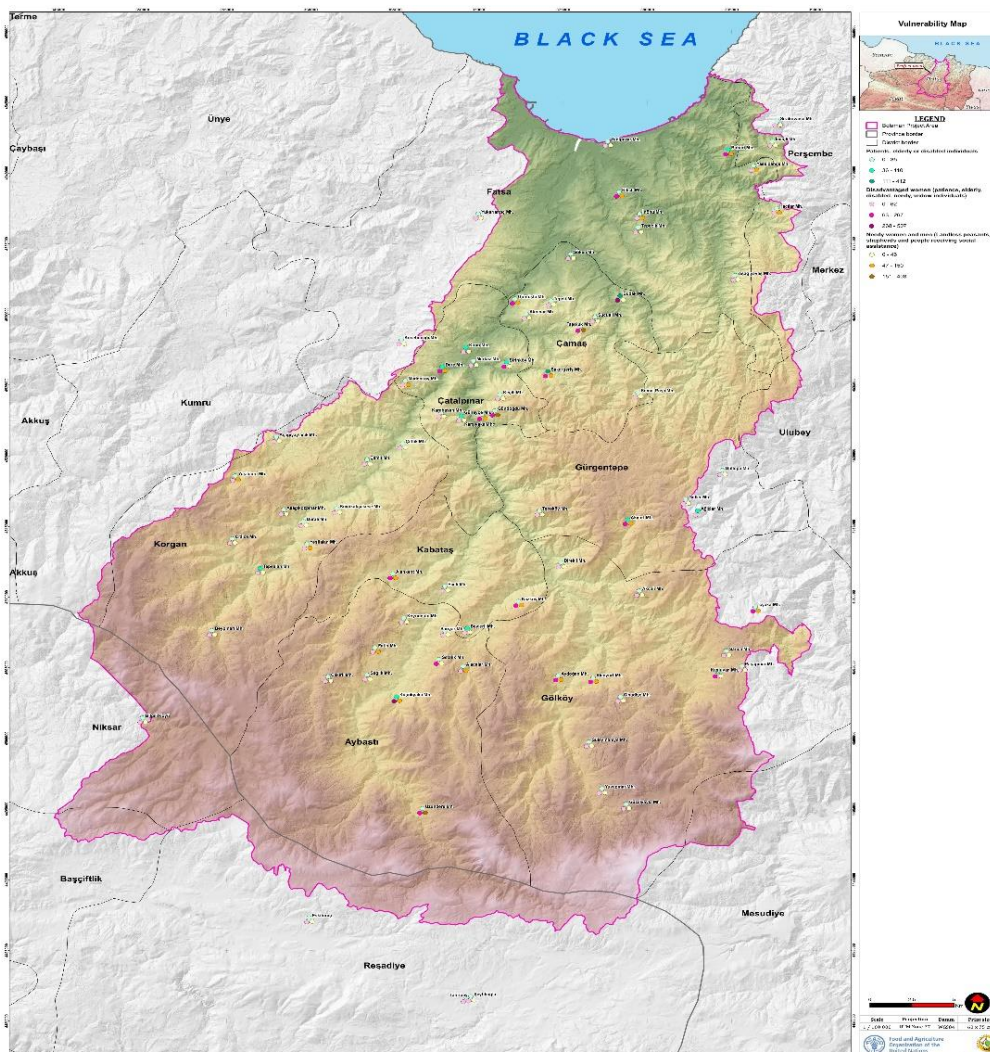


Figure 7-15. Vulnerable Groups Map -[Access Link](#)

7.2.10 Critical Cultural Areas

There are many cultural assets in the region that need to be protected from the project impact. These areas should be protected from both the impact of projects and construction activities. The map below shows the locations of cultural assets that are officially registered.

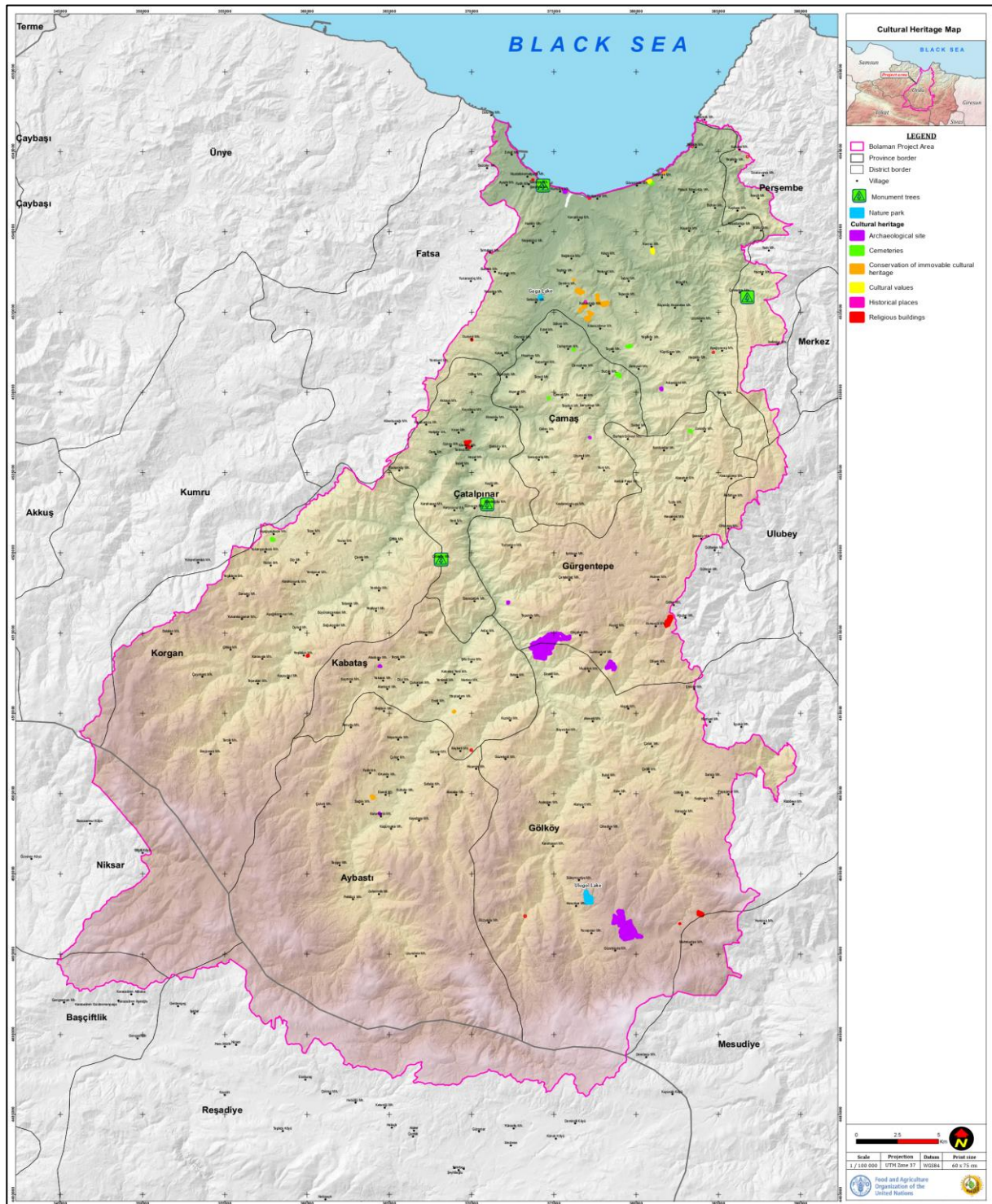


Figure 7-16. Cultural Heritage Map -[Access Link](#)

7.3 Prioritization of the Key E&S Issues

A participatory approach has been adopted in prioritizing the social questions identified in the region. The prioritization strategy is presented in the methodology section. Online surveys were organized on the project website to determine a priority order among the social problems identified during the SESA fieldwork. The surveys were open to access from 1st to 25th of December 2020. The surveys were open to access from 1st to 25th of December 2020.

Field studies within the scope of SESA have shown that the most important problems are infrastructure and livelihood problems, both of which inevitably work both as a cause and a consequence of population movements. One of the many data obtained during the field studies is responses to the question "What are the five most important problems of your village?". Accordingly, it is noteworthy that infrastructure deficiencies are an important complaint issues. (See Figure 7-17).

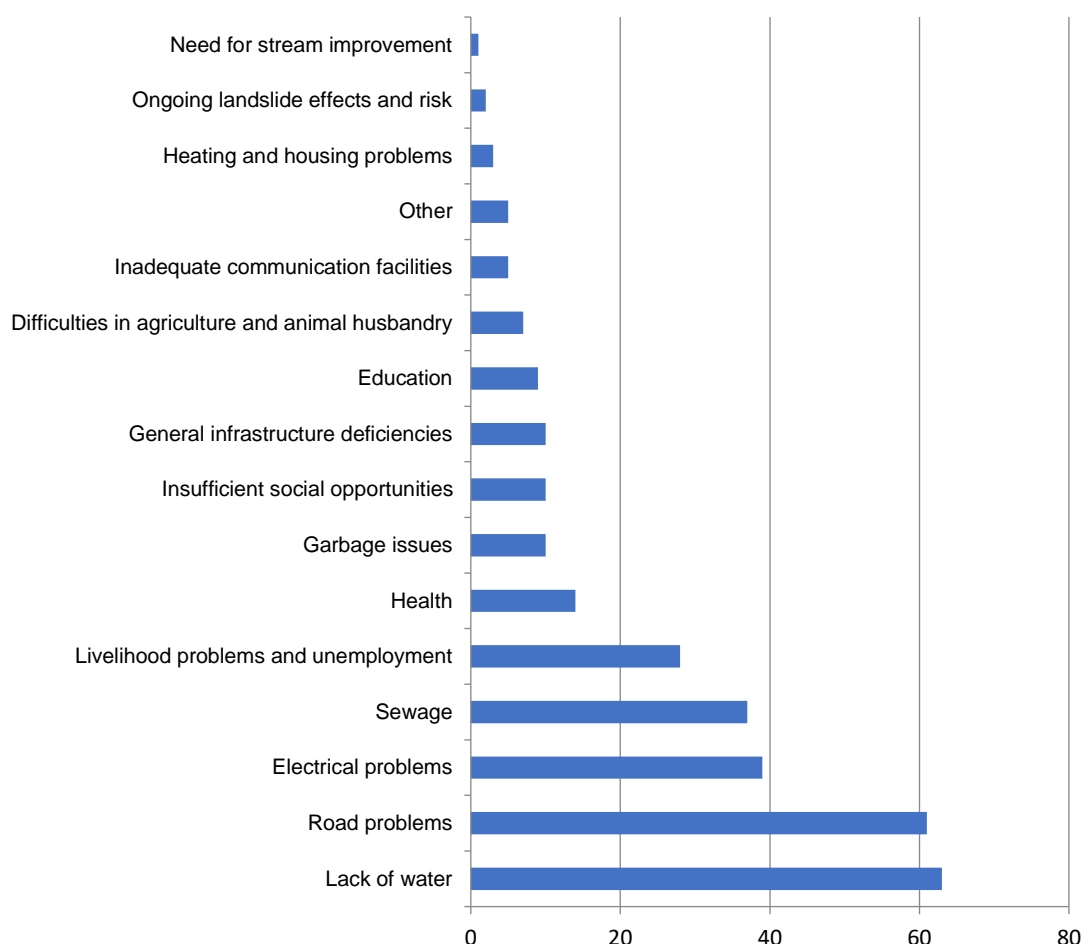


Figure 7-17. The most important problems in the Project Area

It has been learned that these problems are experienced especially during the summer months due to weather conditions and population pressure. Especially drinking water and road problems have been attributed to seasonally increasing population.

These population movements are closely related to hazelnut production. Hazelnut production is the main economic activity of the region. Hazelnut gardens are fragmented and small. For this reason, hazelnuts alone do not allow households to earn a living. This situation causes the need for additional livelihoods. However, another important problem of the region is the low diversity of income sources. Lack of income causes local people to either work seasonally in another city or move to another city and return to their hometown for seasonal hazelnut harvest. Since hazelnut production can be carried out with one month of activity, it allows such a population movement. However, this situation causes hazelnut orchards to be neglected, further reducing productivity.

As can be seen, the three main problems of the region exhibit an intertwined structure.

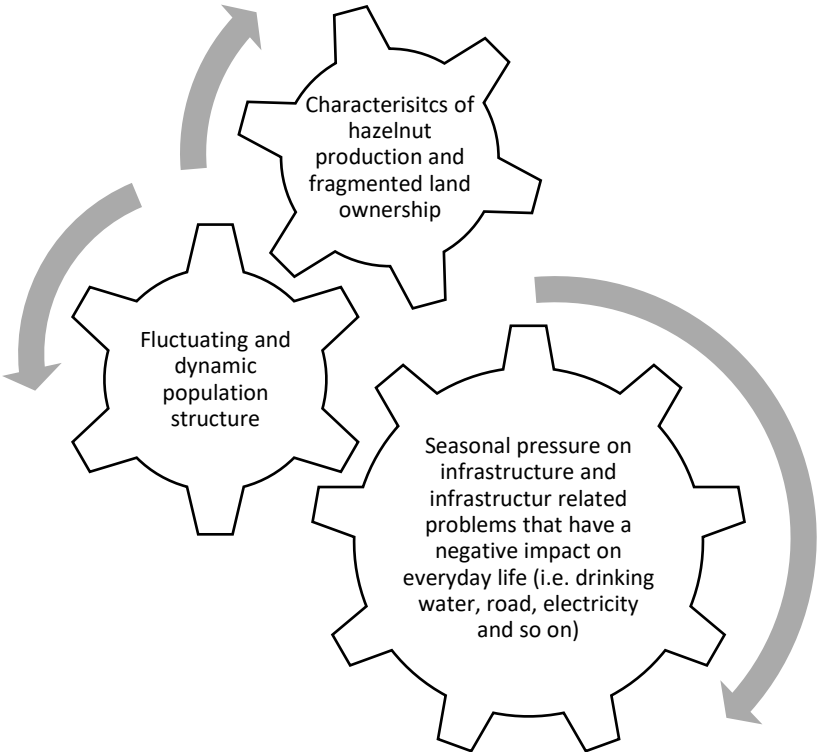


Figure 7-18. The Relationality of the Prior Problems of the Project Area

Diversifying income sources and increasing the efficiency of hazelnut production will cause a decrease in population movements and social integration will be achieved. Ensuring a stable population structure will also provide a balance in terms of infrastructure demands. In this case, population depends on the improvement of other conditions as a dependent variable. Therefore, an integrated investment plan (such as TULIP) to ensure population stability is the most basic requirement of the region. Priority social issues that are important for TULIP can be presented under two headings as given in Table 4-3.

Table 7-3. Social Priorities

Economic investments that will ensure permanent residence	Infrastructure investments that improve the conditions of living
<ul style="list-style-type: none"> • Diversification of economic income opportunities sufficient to generate income in summer and winter • Increasing hazelnut productivity • Development of activities such as animal husbandry and beekeeping • Providing remedial conditions to meet the need for shepherding • Completing the industrial and commercial parts of agricultural activities • Widening of high value-added crop cultivation through practices including trainings due to the fragmented and sloping soil structure • Developing projects to appeal to young people • Development of forestry activities • Solving water problems • Combating factors that cause erosion and drought • Prioritizing vulnerable groups, minorities and women 	<ul style="list-style-type: none"> • Solving drinking water problems • Improving road and transportation facilities • Solving waste and waste water problems • Improving housing and heating facilities • Improving the electrical and communication infrastructure • Providing safe routes to access health and education • Elimination of losses due to landslide • Elimination of the landslide risk • Providing social opportunities • Prioritizing vulnerable groups, minorities and women • Improving the housing conditions of seasonal agricultural workers¹⁰

Communications with NGOs took place between November and December 2020. According to the information received from four NGOs so far, the priority problems of the region include:

- Infrastructure and sewerage deficiencies
- Inefficiency in agriculture and animal husbandry activities
- Transportation problems
- Insufficient social and cultural opportunities
- Lack of agricultural training among farmers
- Insufficiency of tourism investments
- Lack of rural development

These problems, which are repeatedly stated, confirm the priority of problems presented in Figure 7-17 to a certain extent. Despite these responses from both village representatives and NGO representatives, it was observed that household representatives emphasized relatively more economic difficulties (i.e. livelihood related problems). In other words, when the basic problems of the basin and settlements are mentioned, more common problems are expressed, and when the individual problems of the households are asked, issues such as insufficiency of income sources, costs and difficulties of agricultural activity and animal husbandry are expressed more often. Therefore, it should be considered that infrastructure problems are of the same importance as economic problems.

¹⁰ Problems of the region such as the need for drinking and utility water are also valid for seasonal agricultural workers. The solution to this common problem will benefit both local residents and seasonal agricultural workers. A consultation representing seasonal agricultural workers has not yet been held. It is planned to provide more detailed information on this subject in the upcoming SESA drafts.

8 GENDER ANALYSES

8.1 About Gender Assessment in the TULIP Project

The overall objective of the gender assessment study is to mainstream gender issues into the SESA process and ensure the implementation of gender-responsive scoping, identification, assessment, and evaluation stages of the TULIP. Specific objectives of the gender analysis are as follows:

- To collect existing and baseline gender-disaggregated information relevant to the scope of the SESA.
- To identify the types of gender-related environmental and social impacts, risks, and mitigation measures.
- To map key women stakeholders and ensure women’s involvement in stakeholder analysis in the Project Area. Analyze women community members, including the most vulnerable ones and female-led institutions’ interests, concerns, and incentives, and ensure that their opinions are taken into account in the SESA.

Gender equality assessment were embedded into three stages of the SESA study.

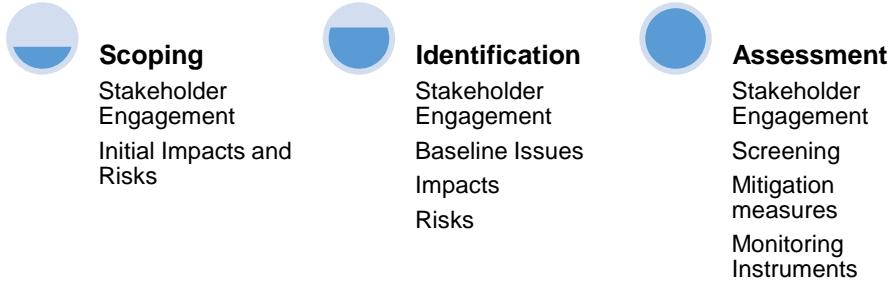


Figure 8-1. Gender assessment entry points in SESA process (Holistic based)

The scoping phase allows for an initial understanding of potential risks and impacts that are typical for the type of subprojects, location, and context. Scoping plays several roles concerning inequalities that arise due to gender norms¹¹. The scoping was carried out with substantial stakeholder inputs. The stakeholder analysis intended to identify the main stakeholder groups in the basin, including local communities and vulnerable and marginalized groups.

Scoping identifies relevant project issues and affected stakeholders, including female stakeholders. Potential barriers such as attitudes, norms, communication limitations, legal restrictions, or physical barriers that may result in the exclusion of women and girls were identified during the scoping process.

¹¹ Source: The World Bank Good Practice Note Gender

Based on the results obtained through the scoping period, key gender-related impacts, both positive and negative, as well as risks, were identified to inform the selection of gender priorities. To identify key gender issues and risks, a methodology was developed. Key gender issues were assessed and prioritized via reviewing existing data, desktop studies, and also field studies.

Assessment of the gender characteristics regarding prioritized issues were made through gender mapping method and gender analysis. Mapping of existing data such as social services, education situation, sex-disaggregated data supported the assessment section. Assessment included the impacts of the subprojects on gender issues, including women’s vulnerabilities. The processes and procedures for the detailed consideration of the impacts was developed by the Environmental and Social Management Framework (ESMF).

Sound mitigation measures were identified during the assessment phase and can result in an inclusive project, and also raise awareness of stakeholders on gender gaps and the accomodating needs of vulnerable groups.

8.1.1 Gender and Environmental and Social Standards

Gender issues are clearly defined in the Environmental and Social Standards (ESSs) of the World Bank. The below information presents the relevant requirements under each standard, with the focus on ESS1, 2, 4, 5, and 10, where gender equality and inclusion play a key role.

Table 8-1. Gender and the ESS¹²

<p>ESS1: Assessment and Management of Environmental and Social Risks and Impacts</p>	<ul style="list-style-type: none"> • Threats to Human Security through the escalation of personal, communal, or inter-state conflict, crime, or violence (para 28). • Assess risks and impacts that project impacts fall disproportionately on the disadvantaged or vulnerable (which include inequalities between males and females) and any prejudice or discrimination toward such groups in providing access to development resources and project benefits (para 28). • Ensure that projects do not inadvertently compromise existing legitimate rights for land and natural resource tenure and use (including collective rights, subsidiary rights, and the rights of women) or have other unintended consequences, particularly where the project supports land titling and related issues (footnote 29). • Implement differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable. They are not disadvantaged in sharing any development benefits and opportunities resulting from the project (para 29).
<p>ESS2: Labor and Working Conditions</p>	<ul style="list-style-type: none"> • Specific measures against gender based violence will be taken through labor management procedures including grievance mechanism. (Unofficial statement)
<p>ESS4: Community Health and Safety</p>	<ul style="list-style-type: none"> • Evaluate and address the risks and impacts of the project on the health and safety of the affected communities during the project life-cycle, including the vulnerable (para 5). • Avoid or minimize the potential for community exposure to water-borne, water-based, water-related, and vector-borne diseases, and communicable and non-communicable diseases that could result from project activities, considering differentiated exposure to and higher sensitivity of vulnerable groups (para 15).

¹² Source: WB Good Practice Note, 2019

	<ul style="list-style-type: none"> Applying the concept of universal access in environmental design may increase women's safety and security (para 7 and 9).
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	<ul style="list-style-type: none"> Ensure in the consultation process that women's perspectives are obtained, and their interests factored into all aspects of resettlement planning and implementation. Addressing livelihood impacts may require intra-household analysis in cases where women's and men's livelihoods are affected differently. Women's and men's preferences in terms of compensation mechanisms, such as replacement land or alternative access to natural resources rather than in cash, should be explored (ESS5 para 18). Documentation of ownership or occupancy and compensation payments in the names of both spouses or single heads of households as relevant, and other resettlement assistance, such as skills training, access to credit and job opportunities, should be equally available to women and adapted to their needs. Where national law and tenure systems do not recognize the rights of women to hold or contact in property, measures should be considered to provide women as much protection as possible with the objective to achieve equity with men (ESS5 footnote 18) Establish in the resettlement action plan the entitlements of affected persons and/or communities, paying particular attention to gender aspects and the needs of vulnerable segments of communities, and ensure that these entitlements are provided in a transparent, consistent, and equitable manner. The plan will incorporate arrangements to monitor the effectiveness of livelihood measures during implementation, as well as evaluation once implementation is completed (ESS5 para 33).
ESS 10: Stakeholder Engagement and Information Disclosure	<ul style="list-style-type: none"> Identify the disadvantaged or vulnerable (ESS10 para 11) Describe in the Stakeholder Engagement Plan (SEP) the measures used to remove obstacles to participation, and how the views of differently affected groups will be captured. Where applicable, the SEP will include differentiated measures to allow the effective participation of the disadvantaged or vulnerable (ESS10 para 16) Provide stakeholders with access to the information on potential risks and impacts that might disproportionately affect the vulnerable and disadvantaged and describing the differentiated measures taken to avoid and minimize these (ESS10 para 19) Disclose information in relevant local languages and in a manner that is accessible and culturally appropriate, taking into account any specific needs of groups that may be differentially or disproportionately affected by the project or groups of the population with specific information needs (such as disability, literacy, gender, mobility, differences in language or accessibility) (ESS10 para 20).

Each component (scoping, identification, and assessment) of the SESA Study provides appropriate entry points in promoting gender equality. Promoting gender equality and inclusion of women are considered at implementation levels of SESA that was structured as followed:

- Scoping (Initial gender issues and impacts in the region)
- Identification of key gender-related project risks and impacts
- Assessment of the gender-related risks and impacts and designing mitigation measures
- Gender-responsive stakeholder engagement
- Gender-responsive monitoring instruments

8.1.2 Gender Responsive SESA Implementation

To ensure a gender-responsive SESA implementation, specific activities designed and conducted during the process:

- Gender briefings to the SESA team
- Gender briefings to the OMO field team
- Gender balanced SESA FAO team
- Gender methodology and gender-sensitive questionnaire designs
- Recruitment of a gender consultant
- Collection of sex-disaggregated data
- Gender specified section in scoping report, SESA report, and the SEF
- Inclusive stakeholder engagement
- Field team (survey implementation) including women and men members
- Strong network among the women NGOs and key institutions in the Project Area

8.1.3 Gender Analysis

Developed by FAO in 1993, the Socio-Economic and Gender Analysis (SEAGA) approach is based on analyzing socio-economic patterns and participatory identification of women's and men's priorities and potentials. The tool help clarify the division of labour within a community, including divisions by gender and other social characteristics and facilitate the understanding of resource use and control, as well as participation in community institutions (ILO 2009).

Data for the gender-sensitive assessment was collected through gender analysis. A gender analysis was conducted during desk review and fieldwork, and it identified what women and men do with the natural resources (for example, livestock, soils, forest, water, and land) as well as their coping strategies against disasters (landslides). By doing this, a supplementary action to build a gender baseline was conducted.

Gender analysis questions to answer during the SESA process within the scope of natural resources and natural disasters are as follows:

- Who **does** what?
- Who **has** what?
- Who **needs** what?
- Who **decides**? How?
- Who **gains**?
- Who **loses**?
- Which **women**? Which **men**?

Gender analysis is conducted to understand the level of participation of women and men in decision-making and their control over natural resources. Coping strategies of women and men against landslides, their experiences of development challenges such as poverty, different

outcomes from the same initiative: education services, specific vulnerabilities, and inequalities such as older women, female-headed households, disabled women, cultural and social patterns. Good gender analysis helps to understand better:

- Gender division of labor
- Gender differentials in activities surrounding access to control over resources
- Power and decision making
- Legal rights and status
- Women's priorities, restraints, and motivation
- Time poverty

Gender analysis was conducted both as a part of socio-economic research and separate supplementary action. In line with the FAO SEAGA approach, gender analysis was conducted from the field level (micro), intermediate level (meso), and policy and plan level (macro) and across all sectors.

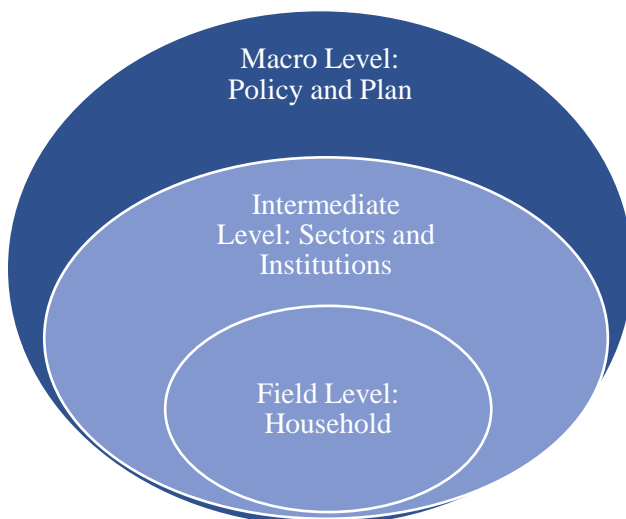


Figure 8-2. Three level of gender analysis

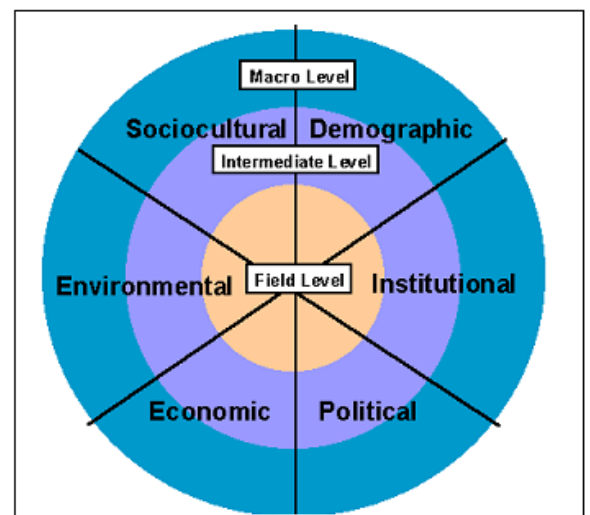


Figure 8-3. Gender analysis at socio-economic context (FAO SEAGA, 2003)

Macro Level: Policies and Plans. Both international and national, economic, and social, including trade and finance policies and national development plans.

Intermediate Level: Sectors and Institutions. Sectoral level and associated organizations and institutions. Focuses on structures. The links between the macro and field levels, including communications and transportation systems, markets and extension, health, and education services.

Field Level: Households. Focuses on people, including women and men as individuals, socioeconomic differences among households and communities as a whole. The analysis should focus on how to identify their specific needs and priorities and examine the extent to which gender roles, relationships, and cultural issues.

8.1.4 Research Design

The main question of the assessment is what gender-related impacts, risks, opportunities, and mitigation measures are associated with the project exist in the Project Area.

Specific Questions of the study is as follows:

Is participation in the TULIP project and subprojects likely to be inclusive of all segments of the population?

- Do any formal or informal barriers restrict women's participation in leadership and decision-making positions related to the project?
- How is labor (visible and invisible) divided and valued between men and women?
- Will subprojects negatively impact women's economic and work opportunity? Do subprojects present any opportunity to increase women's labor market participation, productivity or earnings?
- Will the subprojects have and impact on women's burden of care duties and other unpaid work? Can the project help equalize this burden across the sexes?
- Will the resettlement impact of the project on land and other assets be different for men and women?
- Do the subprojects have the potential to increase exposure to SEA or other forms of risk to women, men, girls and/or boys?
- How can responsible parties prioritize gender responsiveness and ensure that the activities benefit women in implementing the TULIP Project?
- What measures would be needed, so all those identified as disadvantaged have access to project benefits? What implementation arrangements, including appropriate staffing, cost estimation / budgeting of relevant mitigation measures and monitoring indicators, should be designed for impacts on gender equality?
- How women access to credit / loans, especially if credit / loans require formal demonstration of land ownership and women are not listed as land owner in household?
-

8.1.5 Data Collection Tools

Desk Review

Policies, plans, completed and existing gender projects, research reports, and academic studies were reviewed during desk work. Besides, data requests were made to relevant institutions to close the data gap. These requests are structured in the below table:

Table 8-2. Data Gaps for Gender Assessment

Initial Issues	First Round	Second Round
Disadvantaged Rural Women	The number of women and men benefiting from social assistance.	TurkStat relevant statistics
Women's Access to Basic Services	Health – indicators including maternity rates Type and frequency of health services 112 points The number of doctor and nurse Info about temporary health services. Governmental and private hospitals Literacy rates Training facilities	TurkStat relevant statistics
Women's Skill Development including Technology Usage	Info about Public Training Centers	Public Training Center Curriculums
Women Labor and Time Poverty	Child care facilities Info about elderly care	TurkStat relevant statistics
Violence Against Women	Violence data	TurkStat statistics Gendarmerie and Police records
Access to Infrastructure	NA	Roads, bus stops, drinking water and sewerage facilities
Women's Participation in Decision Making Process	The number of muhtars	TurkStat relevant statistics
Traditional Gender-Related Division of Labor on Income Resources	Info about women and men farmers	Information about extension services
Women Entrepreneurship	Existing projects.	TurkStat relevant statistics
Access and Control Over Sources and Land Ownership	NA	TurkStat relevant statistics Land-use information

Community and Household Surveys (Field Level)

Sex-disaggregated questions were embedded into community and household questionnaires.

Table 8-3. Sex-Disaggregated Data Categories in Questionnaires

Data Category	Community Questionnaire	Household Questionnaire
Socio-Demography	No.2 No.3 No.41	Section A and B
Vulnerable Groups	No.8	
Violence	No.13	
Seasonal Workers (Women)	No.16 No.19	
Income Sources	No.30	Section B

In-Depth Interviews with Women

In-depth interviews were conducted to 25 women having vulnerabilities. Each interview lasted approximately 15 minutes, and the aim was to get deepened information about key gender issues and women's vulnerabilities. The list of interviewees were obtained from muhtars, their wives and extension agents during the implementation of community questionnaires.

Through in-depth interviews, answers to the below questions were identified:

Table 8-4. Research and Interview Questions

Category	Interview Question (Generic. Questions Were Specified During Each Interview)
Division of Labor	Could you tell me about your duties (and your family members, as well) in a day?
Access and Control Sources	Who makes decisions about different resources and activities? If you are holding ownership on a property (the answer is optional), have you ever face difficulty in sustaining your ownership or involving intra-household decision making process? Have you ever had a difficulty or restriction in your personal life about the inheritance-related issue(s)? Please explain. Have you ever benefited from agricultural subsidies, credit or seed banks?
Labor and Entrepreneurship	If you intend to work (formal work from 9am to 6pm), what kind of challenges you face? If you are currently working, what kind of challenges have you experienced so far? What other obstacles you face participating in socio-economic life? What are the most important three problems in your livelihood?
Environment and Climate Change	Have you ever faced any difficulties occurred due to climate change?

In-Depth Interviews With Key Informants

In addition to women-focused interviews, a set of interviews were conducted to key informants to obtain more information about social services:

Table 8-5. The List of Key Informants

Key Issues	Institution	Key Informant
Women Labor and Time Poverty	Provincial Directorate of Agriculture and Forestry	Extension agents
Violence Against Women	Ordu Bar	Experts on gender based violence
Women's Participation in Decision Making Process	Empowerment of Women In Ordu Association Union of Turkish Women /Ordu Branch	Chairperson and Members
Traditional Gender-Related Division of Labor on Income Resources	The Ministry of Agriculture and Forestry	Extension Agents
Other	To be identified, if needed.	To be identified, if needed.

Stakeholder Meetings

Stakeholder meetings and engagement tools play a crucial role in identifying gender issues. The stakeholder engagement program under the SESA process is sensitive to those who may experience societal barriers based on their sex within the Project Area.

Minutes of meetings, questions, concerns, and grievances raised by stakeholders during SESA related meetings were used within the scope of gender assessment.

Mapping Studies

The below information were used for mapping studies to support the prioritization of key gender issues:

Table 8-6. Mapping Issues

Indicator (Generic)	Scale (Generic)
Women and men population	Village
Village borders and centers	Village
Land Type (Forest, Agriculture, Pasture, Trade, etc.)	Village
Public Roads	Village
Sewerage and Drinking Water Facilities	District
Bus Stops	Village
Women-Led Entreprises	Village
112 Points, Hospitals, Family Health Centers	Village
Police Stations, Gendarmerie	Village
Women NGOs	District
Violence Data	District
Education Facilities (Schools, Public Training Centers)	Village
Child Care Services	Village

8.1.6 Gender Assessment Process

The gender assessment process consists of five main activities. These are desk review, stakeholder meetings, data collection, conducting gender analysis and findings and recommendations.

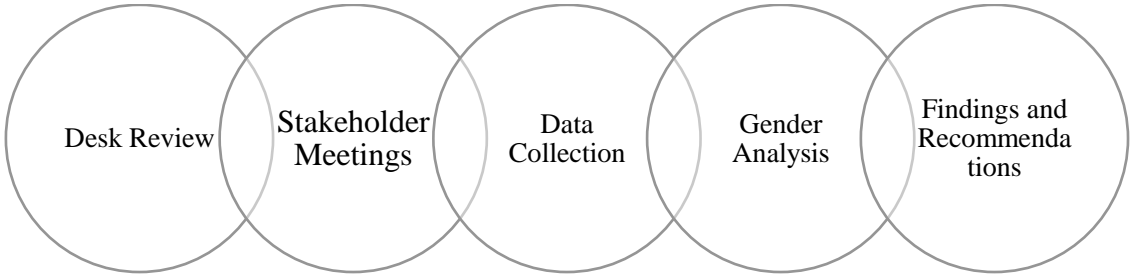


Figure 8-4. Gender Assessment Process (Holistic Based)

Desk Work

The first round of primary and secondary sources were collected and examined at field, intermediate, and macro levels. A preliminary gap analysis was conducted on existing sources based on type, level, context, and up-to-date information. The second round of collection of current sources has been started and is in progress.

Policies, plans, academic studies, maps, news, national and international reports, ongoing and completed projects, supports, and statistics were reviewed during the desk review.

Stakeholder Meetings

A field visit was conducted during the period of 13-17 July 2020. Initial consultations and observations were done during the field visit. Meeting and knowledge sharing platforms were established with various institutions, including governmental bodies, private sector, academia, and civil society organizations.

Findings of the field visits (short interviews with women farmers and meetings with institutions) and field observations were used to identify critical gender issues.

Field Work/Data Collection

To collect sex-disaggregated data in rural areas of the BLB, gender-related questions are embedded into socio-economic community and household questionnaires.

In-depth interviews were conducted (between the period of 25 September-3 October 2020) to women community members by phone.

Additionally, in-depth interviews were conducted (between the period of 25 September-3 October 2020) with the participation of key informants.

Data Analysis

Close-ended questions in the community and household questionnaires were analyzed through SPSS software. Qualitative data and desk review sources were examined through contextual analysis concerning research questions. Analyzed data were interpreted considering the context of gender assessment.

Findings

In the light of initial findings of desk review and stakeholder engagement, gender baseline and gap analysis were structured in the following sections.

8.1.7 The Methodology of Prioritization

Prioritization of gender-related issues during the assessment process were made through below-mentioned steps/

Table 8-7. Prioritization Methodology

Step	SESA Component	Research Level
Identification of existing gender issues.	Scoping and Identification	Macro – Intermediate - Field

Identifying gender differences and the underlying causes of gender inequalities.	Scoping and Identification	Macro – Intermediate - Field
Comparison of data at the field level, meso level, and macro level.	Assessment	Macro – Intermediate - Field
Identification of commonly emphasized gender-related problems and prioritization of gender issues.	Assessment	Macro – Intermediate - Field

8.1.8 Challenges

Below challenges and exit strategies faced during SESA process are identified as follows:

Table 8-8. Challenges and Exit Strategies

Challenge	Exit Strategy
General data gaps in the agriculture sector in terms of gender	<p>To get up-to-date statistics and critical information about the relevant gender issues were collected from relevant institutions.</p> <p>Significant data gaps in relation to gender issues consist of in-depth information and sex-disaggregated data at the village and household level. To close the data gap, community and household level surveys were designed, and gender-related questions were embedded into these surveys.</p> <p>Additionally, in-depth interviews were conducted by phone and/or online if there is a need to get much in-depth information about women's needs, problems, and coping strategies.</p> <p>Briefings were given to both the SESA team and OMO (field team) to consider and enroll women in the decision making process.</p> <p>Three women are included in the field team, and they collected sex-disaggregated data.</p> <p>Phone interviews were used to collect in-depth interviews. OMO has undertaken the fieldwork.</p>
Lack of comparable sex-disaggregated data in rural and urban inhabitants	
No identification in gender indicator set by the Turkish Statistical Institute in gender and agriculture production.	
Limited gender analysis on gender specified data of the Ministry of Agriculture and Forestry	
Old Statistics	
Male-dominated stakeholders	
Male-dominated field team	
Pandemic Situation (Covid-19)	

8.2 Gender Baseline

In light of the findings of gender analysis, gender baseline issues were identified to empower women living in the Project Area. All issues are linked with TULIP subprojects' potential impacts not only for adverse aspects but also for positive aspects. In this context, entry points for gender baseline are structured as follows.

8.3 Gender Responsive Planning

There are a set of laws, policy documents, and plans regarding promoting gender equality. Relevant macro-scale documents assessed for the TULIP project is as follows:

Table 8-9. Relevant laws, Policy Papers and International Conventions

Law	Content
The Constitution Law no : 2709 Official Journal date: 9/11/1982	Articles 41, 66 (2001), Articles 10, 90 (2004), Article 10 (2010).
Turkish Civil Code Law no:4721Official Journal date: 8/12/2001	The law upholds equality between women and men, puts an end to sexual discrimination.
The Law on the Protection of Family and Prevention of Violence against Women Law no:6284 Official Journal date: 8/3/2012	The law includes specific arrangements to end violence against women.
Labour Law Law no: 4857 Official Journal date: 10/6/2003	Any discrimination concerning fundamental civil rights, including sex, could not be made in employer-employee relations.
Restructuring Specific Debts and Amending the Social Insurance Law and Specific Laws and Statutory Decrees Law no:6824 Official Journal date:8/03/2017	The wages and premiums of the times worked shall be paid by the employer.
Turkish Penal Code Law no: 5237 Official Journal date: 12/10/2004	The law includes modern arrangements for gender equality and violence against women.
Civil Servants Law Law no: 657 Official Journal date: 23/7/1965	The personal rights of female employees and parents
The Revenue and Corporate Taxes Law Law no: 193 Official Journal date: 31/12/1960	Women's income by selling the home-made products in the charity sales, festivals, and fairs and at places determined temporarily by the state institution and organizations was deemed exempt of tax.
Laws on Project Support to Investments	Private crèches and day-care centers are exempted from the revenue and corporate taxes for five fiscal/taxation periods.
The Law Amending the Republic of Turkey Retirement Fund of Civil Servants Law no: 5434 Official Journal date:17/6/1949	Female farmers engaged in agricultural activities on their behalves should be the head of the family to be covered by the insurance.
The Prime Ministry Circular No. 2004/7 on Acting in accordance with the Principle of Equality in Staff Recruitment"	The Circular aimed at preventing sexual discrimination in personnel recruitment.
The Prime Ministry Circular No. 2010/14 on "Increasing Women's Employment and Promotion of Equality in Opportunities"	The Circular aimed at increasing women employment and to implement equal pay for equal work principle for strengthening the socio-economic positions of women
The Rural Development Investments Support Programme by the Ministry of Agriculture and Forestry	In the parts of investment projects with 50% grant; in case that the project owner is a female farmer, extra 2 points are added to the points table according to the pre-assessment criteria; and additional 4 points are also added if the woman is a member of agricultural cooperative or union. In case that female farmers engaged in agriculture apply for machinery-equipment purchases within the scope of the project, they can benefit from a 50% grant for 35 types of machines.

The Law No.5510	Those in insured employment in home-based services shall be considered in the relevant proceedings depending on whether they are recruited less or more than ten days a month. Those recruited less than ten days a month shall be insured against occupational accidents and diseases. Their premiums shall be covered by the employers. The insured shall be entitled to pay their long-term and general health insurance premiums until the end of the following month if they choose to do so. On the other hand, the premiums of those recruited for ten days and longer a month shall be paid by their employers in the scope of accessible employment practices.
Policy Papers and Plans	
11th Development Plan(2019-2023)	Specific targets and situation analysis regarding the empowerment of women were explained in the plan.
East 11th Development Plan Blacksea Regional Plan(2014-2023)	Specific information about the TR90 region – including Ordu Province – exists in the plan.
The Strategy Paper and Action Plan on Women's Empowerment(2018-2023)	The Action Plan aimed at the promotion of women's participation in economic and social life; ensuring women's equal access to rights and opportunities; mainstreaming the principle of equality between women and men into all main plans and programs
The National Action Plan on Combating Violence against Women (2016-2020)	The contribution and participation of institutions and organizations consider the relevant international conventions being a party, particularly the Istanbul Convention and provisions of national legislation, relevant research and evaluation reports, and recent social needs and developments.
The Strategy Paper and Action Plan on Combating Early and Forced Marriages(2018-2023)	The main goal of which is to decrease the early and forced marriages and empower the girls.
Rural Development Special Commission Report (2018)	A separate section on rural women as vulnerable groups exists in the plan.
Ordu Action Plan on Violence Against Women (2018 – 2021)	The plan includes entry points, responsible institutions, and activities fighting violence against women in Ordu Province.
International Conventions	
The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (1979)	CEDAW was submitted for signature on 1st March 1980, after the Second World Conference on Women. The convention adopted by Turkey in 1985 entered into effect on 19th January 1986.
Council of Europe Convention on Preventing and Combating Violence Against Women and Domestic Violence (The Istanbul Convention) (2011)	Strategy Paper and Action Plan on Combating Early and Forced Marriages, including five targets and 29 activities.

Relevant legislation and planning on a macro scale are sufficient and inclusive for the implementation period for TULIP subprojects that will focus on gender equality. Strengthening women in socio-economic life have been elaborated in education, health, economy, land-taking processes, media, violence, and rural development in the laws mentioned above and plans at the national and provincial levels.

The project plans, which will be carried out exclusively for women and where women will participate, are indicated in accordance with the country development plan and rural development strategies. However, based on the areas of activity and the project's efficiency,

alternative project proposals have been developed. These are included in the assessment section.

8.3.1 Women Oriented Projects

In the partnership of institutions, several projects are implemented for supporting women. These are identified in the table below.

Table 8-10. The list of women-oriented projects

No	Project Title	Area	Year	Financial Source	Authorizing Institution/ Officer	Total Budget (TRY)	Resuřts İndicators
1	Local Honey Project	Husbandry	2016	Department of Training, Extension and Publications	Provincial Directorate (MoFA)	20.000	In Altınordu, Fatsa, Perřembe, Ulubey and Ünye districts in total of 37 women
2	Local Honey Miracle Project	Husbandry	2017	Department of Training, Extension and Publications	Provincial Directorate	19.000	580 Propolis traps were circulated in Altınordu, 130 in Fatsa 238 in Gürgentepe, 100 in Perřembe and 182 in Ünye districts.
3	Women's Farming Project	Vegatative Production	2017	Department of Training, Extension and Publications	Provincial Directorate	100.000	Three women
4	Royal Jelly Project	Husbandry	2018	DOKAP	Provincial Directorate	125.000	10 women in Gülgentepe District
5	Plant Project	Vegatative Production	2018-2019	Department of Training, Extension and Publications and ABC Deterjan Sanayi A. ř.	Provincial Directorate	510.000	50 women in Perřembe District
6	Royal Jelly Production Project	Husbandry	2019	OBB	Apiculture Research Institute	500.000	75 women
7	Supporting Women Entrepreneurship Project	Training	2019	Department of training, extension and publications	Provincial Directorate	30.000	67 women in Ünye, Altınordu and Fatsa districts
8	Royal Jelly Production Project – Women initiative	Training	2020	Department of training, extension and publications	Provincial Directorate	26.000	15 women in Altınordu, Gülyalı, Perřembe and Ulubey
9	Women Entrepreneurs in Ordu	Implementation	2020-2021	DOKA	OBB	2.038.682	60 women in Gülyalı District

Source: TRGM 2020

It is very positive that these projects are increasing production and revenue. According to the overall rate, the utilization rate of funding to women in the implemented projects is around 60%. It will be essential to increase the number of women beneficiaries and spread them to all districts covering the basin. Additionally, there is a need for more women-specific project designs.

Diversification of cooperation would be beneficial. When determining beneficiaries in these projects, it is stated that positive discrimination is provided to women and prioritizing in the evaluation process.

8.3.2 Visibility and Awareness

There is a special unit related to Women Farmers within the Provincial Directorate of Agriculture and Forestry among the beneficiaries. All technical and medical personnel are extension agents. Women extension agents are closely working with women farmers. Producers are obliged to provide up-to-date information and data on agriculture and livestock.

Disadvantaged situations of women emphasized during initial stakeholder meetings and the importance of agricultural supports to women farmers, reducing domestic responsibilities of elderly women and empowering situations of women migrant workers were underlined. However, when examining subprojects, the mentioned issues are not reflected in women-specific projects. When the project-based impacts are analyzed, it is essential to set the needs and effects regarding men and women. This can be achieved through increasing awareness of government officials on gender.

It is noteworthy that during field surveys, the muhtars are not able to provide details about women, and some muhtars provided the contact information of men in the household, although it is explicitly stated that the interviews will be conducted with women. Gender awareness will also be important in raising awareness for the muhtars at this point. Gender awareness will also be important in raising awareness for the muhtars at this point. Women are counted as a vulnerable group in the Project Area and specific attention should be paid to disadvantaged women having deeper vulnerabilities in the region.

8.3.3 Vulnerability

Disparities between women and men from disadvantaged socio-economic backgrounds exist in Turkey (The World Bank, CPF Turkey). Women and men community members are affected differently by change, they have different needs, problems and coping strategies and access to resources. These disparities are much clear in rural areas. Especially, people with disabilities, elderly, poor, refugee, seasonal workers, and household heads have deeper vulnerabilities in rural and urban communities.

Elderly Women

According to Turksat 2019 data, a total of 754,198 people living in Ordu. 377,265 of them are women. In Tokat, 307.809 women are living in Tokat and total population is 612,747. Distribution of population by age can be seen for both provinces in below table:

Table 8-11. Distribution of Population by Age, Turkstat 2019

Total Population Ordu: 754,198	Women Ordu	Men Ordu	Total Population Tokat: 612,747	Women Tokat	Men Tokat
Age (0-6)	30,625	32,576	Age (0-6)	25,572	27,010
Age (7-19)	63,627	67,413	Age (7-19)	56,480	59,200
Age (20-34)	73,438	75,378	Age (20-34)	63,219	65,310
Age (35-49)	77,857	79,485	Age (35-49)	60,961	60,900
Age (50-64)	71,808	73,441	Age (50-64)	55,796	55,171
Age (over 65)	59,910	48,640	Age (over 65)	45,781	37,347

The number of women aged over 50 is high in the Project Area. According to the interview data, most of the elderly women live with their children's houses. They are cared for by the younger women – usually wife of their son in the household. They have difficulties in benefiting from health services (in terms of access to hospitals in the district centres due to road and transportation problems) and social services (in terms of recreation areas, wedding hall, coal aid). The high migration rate is considerable in the Project Area. According to TurkStat 2019 data, the population growth rate is 23.2 in Ordu while 0.2 in Tokat. In line with the findings, elderly women complained about the high migration rate in their neighborhoods. They expressed their concerns about decreased number of community members and enterprises in their neighborhoods.

Disabled Women

According to CLQ data, some villages have a very high number of disabled people. Interviews couldn't directly be conducted to disabled women, but interviews were conducted to mothers as primary care-givers. According to interview data, limited infrastructure and lack of health facilities in neighborhoods hinder disabled patients to fully benefit from health services. Some interviewees mentioned that they couldn't send her disabled children to special education services due to the unstabilized village road. The situation on the road is worse, especially in winter.

Mothers in the household are the main responsible person for caring for disabled people. Caring responsibilities play an important role in women's participation in socio-economic life.

Poor Women

According to TurkStat 2015 statistics lavatory system is existent in most households. However, the rate of people facing problems in their houses is 24.5% for Ordu and 18.6% for Tokat. Most of the households have low-income levels. The rate of households having medium and upper-income level is 29.9 in Ordu and 29.7 in Tokat.

Table 8-12. Poor Women

	Lavatory system in the household (%)	Person facing problems as per the house's quality (%)	Savings deposit per capita	Households having medium and upper-income level (%)	Households that can not meet their basic needs (%)
Ordu	99.2	24.5	3,464	29.9	53.0
Tokat	95.2	18.6	2,260	29.7	44.7

Source: Turkstat, 2015

The amount of savings deposit per capita is 29.9% in Ordu and 29.7% in Tokat. The households that can not meet their basic needs, 53% and 44.7% in Tokat. Although this information is not sex-disaggregated, we may conclude that 50% of women face poverty in households.

Women Headed Households

Women headed households are existent in almost all of the neighborhoods. These households are mainly headed by elderly women or women whose husbands migrate for seasonal jobs.

Table 8-13. Number of Family Members in Households

	Total	Single person headed households	Single-family headed households	Households including at least one nuclear family and other persons	Households including no nuclear family but more than one person
Ordu	249,767	52,783	155,394	36,513	5,077
Tokat	185,960	34,937	117,667	29,932	3,424

Source: Turkstat 2019

As it can be seen in the above table, the number of single-person headed and single-family headed households is considerably high.

Women Seasonal Workers

During interviews, it was mentioned by women that many household members organize hazelnut-related works themselves. People having large lands need to recruit seasonal workers. No survey or interview was conducted with women seasonal workers due to offseason of hazelnut harvest.

Refugee Women

There are a limited number of refugee women. No survey or interview was conducted with refugee women due to a lack of contact information.

8.3.4 Education

According to Turksat 2019 data, population of the Project Area (Ordu) is 318,943, of which 158,147 are women. Population of Tokat province (the Project Area) is 108,915 of which 54,437 are women.

Majority of women graduated from primary school (64,785) in Ordu. Number of women graduated from college and faculty is 17,276. The rate is 11.1% in Ordu and 11.8 in Tokat. Encouraging women’s enrollment in formal education is one of the key factors to empower women in the society.

Table 8-14. Education Level in Ordu

	Primary School	Elementary School	Middle School	Highschool	College & Faculty	Ph.D	Not Known
Women	64,785	15,439	31,565	27,018	17,276	113	1,364
Men	59,095	20,091	42,446	44,956	22,597	190	1,301
Total	123,880	35,530	74,011	71,974	39,873	303	2,665

Source: TurkStat, 2019

The basin has a very high rate of illiterate people. A total of 16,595 women are illiterate in Ordu. The number is 3,638 for men. In Tokat a total of 2,401 women are illiterate and the number is 507 for men. It can be concluded that high illiteracy rate is a result of intense elderly population in the Project Area. It is a key issue that hinder women’s participation in socio-economic life and should be considered during design and implementation of subprojects.

Table 8-15 Education

Province	Net enrollment rate in preschool (3-5 age) (%)	Rate of college & faculty graduates (%)	Rate of satisfaction on public education services (%)
Ordu	34.9	11.1	77.8
Tokat	47.9	11.8	78.6

Source: TurkStat, 2019

The rate of satisfaction on public education services is 77.8% in Ordu and 78.6% in Tokat. During interviews, some participants complained about limited education facilities. Most of the neighborhoods (25 neighborhoods of 232 neighborhoods in the Project Area) use bussed education and students face difficulties due to unstabilized roads especially during winter. There is a demand that education facilities should be increased in the neighborhoods.

8.3.5 Health

Rural women face some adverse conditions in health issues such as limited caring services, home birth, gave birth at early age. Additionally, consanguineous marriage is common in the basin (L,Baş., N,Ulukan, 2020) and it would carry some risks on maternal and infant’s health.

On the other hand, working as an unpaid family worker brings the risk of not having social security. Therefore, women may not fully benefit from protective health services in terms of work accidents and occupational diseases (TGNA, 2018).

The basin has a high rate of elderly population. Therefore access to health services is one of the needs of rural women in the Project Area. Specialized health services such as psychiatry and geriatrics are needed. During interviews, it was mentioned by women that existing health facilities and the number of personnel were not enough. Satisfaction level on public health services is 81.6 % in Ordu and 82.1% in Tokat. Some health indicators can be seen below:

Table 8-16. Health Indicators

Province	Baby mortality rate (%)	Life expectancy at birth (%)	Number of registration per doctor	Satisfaction level of people's own health (%)	Satisfaction level of public health services (%)
Ordu	8.4	79.8	6,534	68.6	81.6
Tokat	11.8	77.6	5,591	71.8	82.1

Source: TurkStat, 2015

Limitations on transportation also hinder women's access to health services. Rural women face difficulties to reach hospitals in the case of emergency, treatment and care needs. Limited transportation also a strong barrier for women to access maternal care services.

8.3.6 Skill Development

Rural women face difficulties in accessing vocational trainings and life-long opportunities. To adapt rural women to national and global labor requirements and empower them in socio-economic life, the provision of opportunities for skill development and knowledge sharing platforms is a must. Women need to adapt up-to-date information and increase their skills to meet labor requirements.

Increasing vocational training opportunities has vital to empower women in socio-economic life (Kulak 2011 Aktaran Gazioğlu, 2014). All of interviewed women mentioned that they did not participate a skill development or life long trainings in their neighborhoods.

Women face difficulties in benefiting from agricultural extension services due to their domestic responsibilities, including child care, and due to their low education level (TGNA, 2018). In the Project Area, Ordu Provincial Directorate of Forest and Agriculture provided agricultural trainings a total of 38,857 people. Only 8,135 of them are women. Specific measures such as flexible hours, care facilities, gender awareness trainings should be considered to increase women's participation in vocational and lifelong trainings.

On a separate note, it is critical that women needs innovative, entrepreneurial, multi-functional and participatory trainings. Trainings on traditional gendered areas such as handicraft trainings, bread making, child care would strengthen gender inequality and women's disadvantaged situation in the society.

8.3.7 Technology Use

According to the Turkstat 2015 data, the number of internet subscriptions per hundred person is 7.1% in Ordu and 6.7% in Tokat.

All of interviewed women mentioned that they have no enough knowledge and skills about technology. Innovation and new approaches are key factors that rural women can catch the global trends and adapt themselves in economic life. Modern agricultural techniques and trainings would be key in design and implementation of subprojects.

8.3.8 Employment

Turkey has one of the lowest female labor participation rates among countries with similar income levels (The World Bank, CPF Turkey). Women's labor force participation differs

according to different regions. The ratio of women and men employed in Ordu Province is as follows:

Table 8-17. Employment by Gender

Ordu	Rate (%)
Women Registered Employment (Province)	12.89
Men Registered Employment (Province)	30.45

Source: TEPAV, 2018

According to TEPAV 2018 data, the rate of women in registered employment is only 12.89%. The rate is 30.45% for men. Creation of registered employment and assured work opportunities are key instruments to empower in socio-economic life. In this framework, local registered employment opportunities for women would be crucial in TULIP project.

Table 8-18. Salaries by Gender

	Total	Paid, Salaried and Waged (Total)	Unpaid Family Workers
TR90 Man	648	328	33
TR90 Woman	417	146	184
TR83 Man	667	354	70
TR83 Woman	379	165	181

Source: Turkstat, 2019

When looking at the data for TR90 Region (including Ordu) a total of 146 women are working in registered areas. The number is 328 for men. In Tokat, 165 women are working in registered areas and the number is 354 for men.

Most of the rural women work as unpaid family workers. The number is 184 in TR90 Region and 181 in TR 83 Region. The number is for men is 33 for TR90 and 70 for TR83 Region.

Table 8-19. Labor Force by Gender

	People not in Labor Force	Having No Hope To Work	Seasonal Workers	Dealing With Houseworks	Education and Training	Retired	Unavailable for Work
TR90 Man	306	19	1	0	76	113	68
TR90 Woman	610	15	2	260	85	32	175
TR83 Man	298	13	3	0	60	128	66
TR83 Woman	680	5	2	373	64	34	148

According to TurkStat labor force stats a total of 1290 women do not involve in labor force. The number of seasonal women workers is 4 and 323 women mentioned that they can not work. None of men living in TR90 and 83 mentioned that they are dealing with housework.

8.3.9 Entrepreneurship

Female-led enterprises, including cooperatives, are crucial components for rural development.

Table 8-20. Entrepreneurship by Gender

	Total	Total wage earner	Total employers and self-employed	Unpaid family worker
TR90 Man	648	328	287	33
TR90 Woman	417	146	86	184
TR83 Man	667	354	244	70
TR83 Woman	379	165	33	181

Source: Turkstat 2019

The number of women entrepreneurs is 86 in TR90 Region (including Ordu) and 33 in TR83 Region (including Tokat). The number for men is 33,287 and 244 respectively. The number of women enterprises in the Project Area is quite low and 6 women entrepreneurs were interviewed within the scope of CLQ survey sample. None of women entrepreneurs applied for credits, loans or supports while establishing their own business but they expressed their interest to benefit from such opportunities. Interviewed enterprises are small and medium scale and mainly based on bread making, grocery and tailoring.

Promotion of local women storekeepers, tradekeepers, and women cooperatives, the possibility of local purchasing, and the possibility of new entrepreneurial areas in the agricultural sector were assessed during SESA Process.

8.3.10 Time Poverty

80% of women living in the project area work in agriculture sector, and the unemployment rate is 6.1% in Ordu. Women are the backbone of agricultural production with a total of 16-17 working hours and meet over half of the needs of agricultural production. Women have difficulties involving the labor force due to their domestic responsibilities and work burdens.

8.3.11 Sexual Exploitation and Abuse/Sexual Harasment (SEA/SH)

Violence against women in the form of sexual exploitation and abuse and sexual harrastment remains its importance in gender issues. Violence against women can be a form of physical, emotional, psychological, or sexual. Rural women have additional vulnerability against violence. It reduces their well-being and their ability to work and involvement in socio-economic life. Rural women face a variety of risks, such as fetching wood for fuel from distant locations or walking in dark. Data shows that 38 % of women (married or with an intimate partner) living in the East Black Sea Region were subjected to domestic violence (Gazioğlu, 2014:100).

According to the official records a total of 254 cases of gender-based violence was reported between the period of 2018 – July 2020. There is no ŞÖNİM (Violence Prevention Centre) in Ordu but one guest house operated by the Ministry of Family, Labor and Social Policies for women is located in Ordu. Law enforcement bodies, the Bar of Ordu and mainly Women's Empowerment Association are working on fighting against gender based violence.

Empowering rural women economically would reduce their vulnerability to abuse. Provision of access to land, credit, and other resources and include rural women in decision making bodies would enable the empowerment of rural women. Besides, the subprojects' possibility of having conflict factors will be assessed during process. Especially, gray subprojects includes construction works and the presence of construction workers in the communities may have potential to increase conflict and tension on rural women, as well as gender based violence risks.

8.3.12 Access to Infrastructure (Water, Sanitation and Road)

Infrastructure services mainly clean water, sanitation and road services are the main problems that hinder women’s participation in socio – economic life. Conducted interviews supported the official statistics and SESA surveys. Limited access to water increases work burden of rural women community members. Women complained about stream pollution in their neighborhoods. Especially rural roads – rather than highways – are unstabilized and limited women’s access to district centers, education and health services.

According to CLQ findings, the first four problems in the Project Area is structures as follows:

- Road related problems (61 respondents)
- Limited water (63 respondents)
- Electricity related problems (39 respondents)
- Sewage (37 respondents)

50 % of muhtars mentioned that water resources were soiled in recent years. 32 % of them mentioned that there were activities that caused pollution. Most of them think that measures taken are not enough to prevent the water pollution.

According to Turkstat 2015 data, relevant statistics on infrastructure services can be seen below:

Table 8-21. Statistics on Infrastructure Services

	Rate of population receives waste services	Rate of people facing noise problem	Satisfaction level of municipal cleaning services	Sanitation and clean water access (%)	Access to airport (%)	Satisfaction level of municipal transportation services
Ordu	87.9	15.8	54.5	67.5	85.6	54.4
Tokat	73.6	12.3	61.7	70.9	43.1	65.1

Source: Turkstat 2015

8.3.13 Decision Making Process

In 2017, Ordu Province ranked 37th in Gender Inequality Index in Turkey. The rate was 42 in 2015 (TESEV, 2018). Although many efforts conducted to eradicate gender inequality, data about women’s involvement in the decision-making process should be improved. Currently, there are no female members of Parliaments represent Ordu Province. The same situation exists for Ordu Metropolitan Municipality and District Municipalities. An analysis of the number and ratio of female representatives in city councils is structured as follows:

Table 8-22. Women’s Involvement in Decision-making

Ordu	Rate (%)
The ratio of female member – Ordu Metropolitan Municipality	2.7
The ratio of female member – Ordu District Municipalities	4.1

Source: TEPAV 2018

A total of three women muhtars in the Project Area. All of them are working in Gurgentepe District of Ordu. The name of muhtars’ neighborhoods are Ağızlar, Göller and Gültepe.

Table 8-23. Membership and Participation in Civil Society Activities

	Voter turnout rate (local administrations)	Membership rate to political parties	Participation rate in union/civil society activities
Ordu	86.8	20.6	7.3
Tokat	89.6	27.9	6.8

According to Turkstat 2015 data, participation rate in union/civil society activities is 7.3% in Ordu and 6.8 in Tokat. It is remarkable that no women cooperative is existent in the Project Area. There are limited number of women Civil Society Organizations (CSOs) and they are usually located in district centers. Most of the CSOs working in women’s rights and employment areas. The list of CSOs is as follows:

Table 8-24. List of CSOs

No	Area of Activity	Name	District
1	Women’s Rights Socio – Politic	CUMHURİYET KADINLARI DERNEĞİ ORDU ŞUBESİ	ALTINORDU/ORDU
2	Women’s Rights	ÇAYBAŞI KADINLAR DERNEĞİ	ÇAYBAŞI-MERKEZ
3	Women’s Rights	FATSA KADIN HAREKETİ DERNEĞİ	FATSA/ORDU
4	Women’s Rights, Art	FEMİN & ART ULUSLARARASI KADIN SANATÇILAR DERNEĞİ ORDU ŞUBESİ	ALTINORDU/ORDU
5	Women’s Rights	GÜLSULTAN KADINI GELİŞTİRME DERNEĞİ	ALTINORDU/ORDU
6	Women’s Rights	GÜRGENTEPE GİRİŞİMCİ KADINLAR DERNEĞİ	GÜRGENTEPE/ORDU
7	Women’s Rights	KADIN ELİ DOKUNUYORDU DERNEĞİ	ÜNYE/ORDU
8	Women’s Rights	KARADENİZ KADINLARI SÜRDÜRÜLEBİLİR KALKINMA DERNEĞİ	ALTINORDU/ORDU
9	Women’s Rights, Education, Art	ORDU EĞİTİM KÜLTÜR SANAT VE KADIN DAYANIŞMA DERNEĞİ	MERKEZ/ORDU
10	Employment	ORDU İŞ KADINLARI DERNEĞİ	ALTINORDU/ORDU
11	Women’s Rights	ORDU KADIN EMEĞİ EĞİTİM DAYANIŞMA VE KÜLTÜR DERNEĞİ	ALTINORDU/ORDU

12	Women's Rights	ORDU KADINI GÜÇLENDİRME DERNEĞİ	ALTINORDU/ORDU
13	Women's Rights	PERŞEMBE SAKİN ŞEHİR ÜRETİCİ KADINLAR DERNEĞİ	PERŞEMBE/ORDU
14	Women's Rights	TÜRK KADINLAR BİRLİĞİ DERNEĞİ ORDU ve ÜNYE ŞUBESİ	ÜNYE/ORDU
16	Women's Rights	ÜNYE GİRİŞİMCİ İŞ KADINLARI DERNEĞİ	ÜNYE/ORDU
17	Women's Rights	YEŞİLCE KADINLAR DERNEĞİ	MERKEZ/ORDU

Source: Turkstat, 2015

Subprojects' interest and consideration of women's needs, problems, coping strategies, and vulnerabilities should be considered. If subprojects consider women's needs and challenges and give them a free place for decision-making, it may result in changes in the division of labor, new income areas, and participatory implementation.

8.3.14 Social Life

Women mentioned that they couldn't fully involve in social life. The main reason is that limited social facilities. The need of promenade areas, culture centers and wedding halls expressed by interviewed women. Some statistics on social life can be seen below:

Table 8-25 Statistics on Social Life

	The number of cinema and theatre spectators (one hundred people)	Area of shopping malls per thousand people (m2)	Satisfaction level of social relations	Satisfaction level of social life	Happiness level
Ordu	29.8	10.8	88.4	45.3	58.2
Tokat	27.6	46.8	91.3	60.6	59.3

Happiness level is 58.2% in Ordu and 59.3% in Tokat. In addition people living in Ordu and Tokat have low satisfaction level on social life with 45.3% and 60.6% respectively, which is remarkable.

8.3.15 Control Over Sources and Land Ownership

Women's land ownership and access to natural sources are critical components of rural development. During interviews, it was observed that all interviewees have lands and assets. Lands – especially – hazelnut gardens are multi-pieced and used by household members. Although household members prefer not to share their lands with the newcomers to the family such as bride or grooms, it was mentioned by women that no conflicts arise due to land-sharing issues. As an interesting finding, all interviewed women mentioned that male members of their families respect on women's land and asset ownership. Women mentioned that decisions on assets are taken as a joint decision.

8.3.16 Gender-Related Division of Labor

Women and men community members have different roles and experience various aspects of agricultural production. Ignoring differential gender interests and needs would cause negatively affected production and loss of local knowledge. Agriculture (mainly hazelnut), beekeeping, forest-related products and fisheries are the main income sources of the Project Area. Women and men have different roles and responsibilities during agricultural production. For example, women farmers are usually dealing with collecting, caring of plants while men farmers are dealing with marketing or women are responsible for all livestock – related activities (caring, milking, preparing of dairy products) except marketing. This kind of division of labor is directly related with the traditional gender roles and attitudes and strengthen women’s work burden.

8.4 Key Gender Issues

With reference to gender baseline, key gender issues for the Project Area is structured as follows. It should be noted that impact issues may change for each subprojects and development sectors.

8.4.1 Inclusiveness of Vulnerable Women in the Project Area

Women community members, as a vulnerable group, are at the central of Project Area investments, and additional attention should be given to women having deeper vulnerabilities. Not considering the differential women users would have resulted in lack of involvement of communities in the Project Area investments, limited benefitting from these investments, failure of gender equality policies and plans especially regarding basin management, lack of sustainability of subprojects, increased workload and responsibilities of women and their loss of livelihood opportunities, breaking up of families, inequality in terms of access to land rights, property and credit during resettlement process and poverty of female-headed households. Additionally, ignoring disadvantaged women’s needs, problems, and voices in rural areas would have risks in terms of women’s limited participation and failure in considering inclusiveness (ICIMOD, 2000). Therefore, subprojects were evaluated and ranked whether inclusiveness and participatory approach applied during their design and implementation and they cover all aspects of the rural women living in the Project Area.

8.4.2 Women’s Access to Basic Services

Access and benefit from basic services, especially education and health services, are the main issues in identifying rural women’s socio-economic conditions. Women’s involvement in agricultural production is an obstacle to enroll education services (TGNA, 2018). Most of the women living in the Project Area is graduated from primary and elementary schools. In addition, the Basin has a high rate of illiteracy. Women’s enrollment in formal education and reducing illiteracy rate are key factors to empower women in the Project Area.

Women face difficulties in accessing health and education facilities due to land structure, transportation difficulties, and climate. Additionally, women have obstacles to reach treatment services, especially for chronic diseases and disabilities.

Possible effects and pressure of the subprojects on existing health services in the affected villages and the possibility of project-related effects on chronic diseases and/or existing health problems were assessed during SESA Process. Especially, construction-related impacts such as dust, noise, blasting (if any) and project worker's treatment needs in the construction side was considered. Additionally, possibility of pesticide use in agricultural subprojects were considered.

8.4.3 Women's Skill Development including Technology Usage

Increasing vocational training opportunities has vital to empower women in socio-economic life (Kulak 2011 Aktaran Gazioğlu, 2014). In this respect, whether subprojects include the possibility of learning and using new information and technology in women's income area was assessed during SESA Process. It is expected that especially agricultural and forest related subprojects have potential to include innovative and up-to-date trainings and approaches.

8.4.4 Time Poverty

Ignoring the differential gender roles and responsibilities sustains increased and/or continuing vulnerabilities of women, increased or existing domestic workloads, and few cash benefits for women (ICIMOD, 2000). Additionally, health risks due to workload would arise. If subprojects provide an unequal and rigid gender division of labor, women would be paid less than men.

8.4.5 Related Division of Labor

Women and men community members have different roles and experience various aspects of agricultural production. Ignoring differential gender interests and needs would cause negatively affected production and loss of local knowledge. Agriculture (mainly hazelnut), beekeeping, forest-related products and fisheries are the main income sources of the Project Area . Women and men have different roles and responsibilities during agricultural production. For example, women farmers are usually dealing with collecting, caring of plants while men farmers are dealing with marketing or women are responsible for all livestock – related activities (caring, milking, preparing of dairy products) except marketing. This kind of division of labor is directly related with the traditional gender roles and attitudes and strengthen women's work burden.

Potential impacts of especially agriculture and forest related subprojects were assessed during SESA process whether they re-produce gender division of labor or include innovative approaches to empower women's position in agricultural production.

8.4.6 Promoting Women Entrepreneurs

It is assumed that a need on meal, cleaning, raw material, equipment, accommodation etc. would be arisen in villages during construction works of gray investments. This would carry a positive impact on not only existing female-led enterprises in the villages but also women entrepreneurs who intend to establish a business in the basin. In addition, a specifically designed projects about such as agri food value chains and branding and marketing of agricultural products would increase the quality and number of female-led enterprises.

8.4.7 Gender Based Violence

Rural women have additional vulnerability against violence. It reduces their well-being and their ability to work and involvement in socio-economic life. Rural women face a variety of risks, such as fetching wood for fuel from distant locations or walking in dark.

Empowering rural women economically would reduce their vulnerability to abuse. Provision of access to land, credit, and other resources and include rural women in decision making bodies would enable the empowerment of rural women. Besides, the subprojects' possibility of having conflict factors were assessed during process. Especially, gray subprojects includes construction works and the presence of construction workers in the communities may (theoretically) have potential to increase conflict and tension on rural women.

8.4.8 Infrastructure Services

Women have difficulties in reaching infrastructure services due to conditions of their livelihoods. Additionally, women's limited access to infrastructure services would cause health problems and increase their workload. Impacts of subprojects on the improvement of infrastructure services were assessed during SESA process. Feasibility of road rehabilitation projects including rural and urban ones and controlling projects against landslides were considered to identify the projects' impacts on infrastructure. In addition to this, current and future infrastructure plans were requested from the relevant municipalities to identify future improvement on water, sanitation and transportation services.

8.4.9 Access and Control Over Sources and Land Ownership

The differential access and control over forest and trees would have impacts in terms of affecting household's livelihood and unequal access and control sources. It causes women to have a lesser role in the decision-making of women (or men), lower self-esteem and status and unequal access to inputs such as information, technology, training and limited usage of lands.

8.5 Prioritization of Issues

Gender baseline was constructed and key issues were identified through a set of data collection tools. These tools are the Project related document including Terms of Reference, desk review, household and community questionnaires, in-depth interviews with wome, in-depth interviews with key informants, stakeholder meetings and mapping studies.

Table 8-26. Prioritization of Gender Issues

Priorities - ToR	Desk Review (Including PPlan and Policies)	Household and Community Questionnaires	In-Depth Interviews with Women	In-Depth Interviews with Key Informants	Stakeholder Meetings	Mapping Studies
Gender Based Violence	Gender Based Violence	Infrastructure – (Water, Sanitation, Road)	Infrastructure – (Water, Sanitation, Road)	Gender Based Violence	Infrastructure – (Water, Sanitation, Road)	Gender Based Violence
	Infrastructure (Water, Sanitation, Road)	Migration	Time Poverty	Time Poverty	Time - Poverty	Infrastructure – (Water, Sanitation, Road)
	Time Poverty	Women’s Visibility and Gender Awareness	Gender-Related Division of Labor	Access and Control Over Sources and Land Ownership	Disasters	Access and Control Over Sources and Land Ownership
	Gender-Related Division of Labor		Access and Control Over Sources and Land Ownership	Access to Basic Services (Education)	Migration	Access to Basic Services (Education)
	Access and Control Over Sources and Land Ownership		Access to Basic Services (Education)		Women’s Visibility and Gender Awareness	Access to Basic Services (Health)
	Disadvantaged Groups of Rural Women		Access to Basic Services (Health)			Women’s Participation in Decision Making Process
	Women Entrepreneurship		Disadvantaged Groups of Rural Women			
	Women’s Skill Development		Women Entrepreneurship			
	Access to Basic Services (Education)		Women’s Skill Development			
	Access to Basic Services (Health)		Technology Usage			
	Technology Usage		Women’s Involvement in Social Life			

The methodology of prioritization was explained in Section 1. In line with the findings the first five issues can be seen as below:

- Gender Based Violence (GBV)
- Infrastructure Services – (Water, Sanitation, Road)
- Time Poverty
- Gender-Related Division of Labor
- Access and Control Over Sources and Land Ownership (to be handled in Resettlement Frameworks)

Impacts and magnitudes of prioritized issues are different for each subprojects. A gender action plan should be conducted with the aim of identifying special needs and detailed situation of women during project design and operational phase. Terms of Reference for Gender Action Plan can be seen in Annex-5.

9 SESA for TULIP for BOLAMAN

9.1 Strategic assessment

After an in-depth analysis conducted for the subprojects proposed by the pertinent organizations for TULIP Bolaman landscape, subprojects have been categorized under certain rationales with respect to inter-linkages within and among them for an integrated understanding. This understanding also helps analyse the relations between project groups of different rationales and how integrated the whole approaches of different institutions operating in different service areas but in the same landscape. Rationale categorizations is also helping in assessing the subprojects' relevance as well as the area of intervention with the environmental and social prioritized issues of the Bolaman.

- **Rationale 1:** Improve resilience against landslides, floods and water erosion
- **Rationale 2:** Increasing livestock assets and related livelihood activity
- **Rationale 3:** Enhancing sustainable forests and forest-based livelihoods
- **Rationale 4:** Creating income generation by promoting tourism
- **Rationale 5:** Creating income generation by encouraging beekeeping
- **Rationale 6:** Increasing hazelnut yields in the basin
- **Rationale 7:** Promotion and expansion of non-hazelnut crop production
- **Rationale 8:** Improving drinking water supply

Rationale 9: Improving roadsThe rationales set above are assessed in this chapter in terms of:

- Coordination and Integration,
- Relevance to the environmental sensitivities and E&S priorities in the basin,
- Compatibility with social and environmental vulnerabilities,
- Climate resilience effect (if any),
- Gender sensitivity context,

Assessment is made below as appropriate for each rationale in the following sections.

9.1.1 Rationale 1: Improve resilience against landslides, floods and water erosion

In the scope of this rationale, subprojects related to erosion, landslide and flood control structures to be implemented by OGM and DSI are discussed together. According to the legislations of the institutions, the intervention areas are different and are known to make complementary practices. However, it is assessed that integration can even increase to achieve better results as a whole, considering other investments to be made under the Project. One suggestion for this could be to plan sediment control, flood and erosion preventive structures to be designed such that protecting also the road rehabilitation investments which will be implemented by KGM. As the road rehabilitation routes are studied, it is clear that at

many points, routes are coinciding with the areas prone to landslides, erosion risks and flood risk areas. Obviously KGM is considering these risks while planning, but there may be a chance for better results if joint planning is strengthened. Another suggestion could be that a joint planning effort may focus on the sediment control structures of OGM may also focus on protecting the drinking water reservoirs from sediment load, that eventually help preventing the reservoirs from sediment filling and pollution. Besides, when all infrastructure investments are examined, it is understood that a large amount of stone need will arise during the construction phase of these investments. This will inevitably put pressure on the quarries in the area. Many additional social and environmental impacts can result from this pressure. Joint planning should be made between institutions to manage these effects.

Table 9-1. Projects Related to the Rationale 1

Subprojects	Implementing Institutions
Map of Landslide, Rock Fall, Avalanche, Flood, Water Erosion Galvanized Treillage Constructions Mortared Levees Gabion Box Wall Steel Debris Barriers Retaining Walls Vents In-line Grout Reclamation Benchs Wire Mesh Walls	OGM
Project design and construction of Bolaman River flood control Project design and construction of Bolaman River Levee Construction of Şahsene Stream Flood Control Construction of Fatsa Industrial Zone Flood and Sedimentation Control Construction of Fatsa-Karadere Flood Control Construction of Çatalpınar-Elmaköy Neighbourhood-Şifalısu Position Flood Control Construction of Gököy-Karahasan Neighbourhood-Karaağaç Stream Flood and Sedimentation Control Construction of Korgan-Tepealan Neighbourhood Güllü Stream Flood and Sedimentation Control Construction of Ordu-Çatalpınar County Town Keş Stream Flood and Sedimentation Control	DSI

Relevance

Climate induced disasters (landslides, floods) which are as assessed in Chapter 4 are one of the focal environmental priorities.

As a result of the field study findings and desk-top reviews and mapping analyses, landslides and floods are the main factors that greatly reduce livelihoods. Thereby, above mentioned subprojects under Rationale 1 contribute to the protection of livelihoods. It surely collaborates the measures elimination of the indirect impacts on migration. At the same time, the living conditions in the basin are quite challenging due to the provision of infrastructure services such as housing and transportation. These projects also help prevent the social issues arising from lack of infrastructure by maintaining continuity to access aforesaid essential services.

Environmental and Social Sustainability

The subprojects could be more sustainable by ensuring:

- implementation of the projects coordinated among DSI, OGM and KGM such that a better coordination is attained among protection of roads undergoing rehabilitation;
- protection of reservoirs against sedimentation and landslides by means of selecting implementation locations of OGM investments against landslides;
- structures in/along river beds involve unrevealing green corridors at the river banks, helping improve the green infrastructure which also protects riparian ecosystems especially the riverine shores and edges of the streams;
- structures in/along the river beds designed to allow the movement of terrestrial and freshwater species and especially fish, with seasonal up and downstream migrations;
- mitigating cumulative environmental impacts regarding ecological (in particular the migrating fish, if any) and any impacts on downstream water rights;
- measures which mitigate possible adverse effects on daily life of local people such as transportation and access to small river side banks where vegetable planting (corn, etc.) is done
- measures taken such as utilization of specially rocks and stones accumulated in the river beds during the construction of large retaining walls in order to avoid additional environmental impacts with the use of stone quarries. Removal of rocks and stones will also mitigate any blockage on the river flow.

Climate Resilience

Subprojects are based on the vulnerability of the basin against severe climate conditions that trigger natural disasters such as floods and landslides. It is important that the planned facilities are built with a green infrastructure approach according to local conditions. Basin specific climate change projections should be made and their effects (i.e. change in the frequency, seasonality of precipitation) should be projected to assess the change in the vulnerabilities for floods and landslides spatially and temporally.

9.1.2 Rationale 2: Increasing livestock assets and related livelihood activities

When the subprojects planned within the scope of TULIP Bolaman are examined, it is understood that some of them aim to support animal husbandry activities in the region. The integration of these projects will help in issues such as increasing efficiency, preventing social conflicts, and make integrated natural resource management planning in a more realistic way. At the same time, it is important to consider these projects in a holistic way in order to analyze

possible cumulative environmental impacts to be born as a result of animal husbandry supports that will chance the number of ovines and bovines radically over the following years.

Table 9-2. Projects related to Rationale 2

Subprojects	Implementing Agencies
Rehabilitation Project of Pastures inside Forests and Connected to Forests Ecosystem Reservoirs	OGM
Rangeland/Plateau Rehabilitation and Management Works (in Tokat and Ordu Provinces) Increase of Women Employment in Rural Areas	TRGM
Milk Sheep Breeding Water Buffalo Breeding Dairy Cattle Breeding Development Project	OGM
Milk Sheep Breeding Development Projects Development of Dairy Cattle Breeding Dissemination of Sheep Breeding Animal Pens and Shepherd Homes Projects Dissemination of Goose Breeding	TRGM

Relevance

Livestock is part of traditional life in Bolaman Basin as similar throughout the Black Sea landscape and also for additional income. For a farmer in Turkey, when unavoidable spending occurs, it can be sorted out by selling animals which would not have an impact on continuity of livestock. Farmers in the region also see livestock breeding as a type of insurance to farming especially for the years of bad harvest of hazelnuts which is a recurring event for every two years. If only these reasons taken into account, as per continuity of social life in the countryside, animal husbandry should be encouraged. Especially in the high-altitude forest villages in the basin, the subprojects under Rationale 2 will support the low income.

While animal husbandry is significant for the basin communities and particularly the forest villages, pasture areas are very limited. For this reason, rehabilitation works related to forest adjacent pastures can be designed not to complicate the activities of pasture users as well as the protection of forests. The protection of forests and the development of pastures are related to local sensitivities. Therefore, particular care should be given such that pasture areas are not narrowed and access roads to pastures are not extended.

Especially cattle and buffaloes grazing in Perşembe Plateau disrupt the morphology of springs and small streams, which create critical micro habitat for biodiversity. Wooden groves can be planned to protect springs and small streams from animal oppression.

As per the egg poultries, it is assumed that the limited livelihoods in the basin and the support of chicken farms, as well as projects that enable the development of alternative livelihoods, are associated with the social needs and sensitivities of the region. As planned, when implemented within the hazelnut orchards, few environmental issues are likely to develop.

Social vulnerabilities

In livestock villages around pastures, elderly population is high as compared to young people; whereas, livestock activity highly depends on young population. According to TurkStat data, the share of the population under the age 18 in the forest villages is about 20% while it is about 17% in non-forest villages. Yet, the general tendency for young generation is that they do not want to continue the way of life linked to animal farming. Recommendations in this respect are:

- Shepherding in the region should be encouraged and economic conditions should be improved.
- Development of livestock-related employments should be sought in order to increase diversity of income sources.
- Privatization of the management of pastures should be considered and assessed further.

Social Conflict Concerns

As for the goose breeding subproject, it is important to note that geese can cause great damage to vegetation which may cause social conflicts rather than environmental. In a very narrow terrain, geese may damage all surrounding vegetables and fruits which may lead to social problems between neighbors. Hence, it is not a project compatible with the sensitivities of the region.

Although pasturelands in the region are limited, they are used below their potential due to the difficulty of environmental and physical conditions. Hence:

- Conditions for access to and staying in pastures should be improved, and initiatives should be created to encourage shepherds.
- Yet, biodiversity concerns should be taken into account for planning access to pastures.

Biodiversity Concerns

Rehabilitation of pastures should involve the conservation of any priority biodiversity feature (i.e. rare and threatened species) and critical habitats (i.e. high altitude wetlands, wet meadows, rivers).

Pasture rehabilitation should include estimation of the carrying capacity of the pastures and seasonal and spatial planning of the types and numbers of livestock that would use the pasture. Intensive or even moderate fertilization and seeding of the pastures should be avoided, since this would disrupt the natural vegetation composition of the pasture and can be highly costly, unless deemed highly necessary.

Environmental and Social Sustainability

Livestock supports to be made through TRGM subprojects will be to non-forest villages, which are rather farther from forests. In order to support grazing of livestock distributed by TRGM, shepherding culture can be introduced and encouraged, so that livestock can be taken to distant pasturelands.

OGM could increase the number of livestock support, thus ensuring scale of economy to collect milk even from distant villages.

Job Opportunities for Forest Villagers

The low availability of alternative livelihoods in high-altitude villages, where livestock activity is widely located within communities, can pose pressure on forests and pastures. For this reason:

Forest villages should be given priority in diversifying livelihoods. This would reduce the degrading effects of over-exploiting both pastures and forests. Improving the livelihoods of forest villages will help forest-adjacent people protect forests.

Employing forest villagers in small tasks related to the protection of forests can be considered for income diversification.

On the other hand, particular care should be given on ensuring health and safety conditions of forest villagers in non-forest jobs that they are not trained, nor experienced.

Sustainability of pastures

Pastures within forest areas should be allowed to be utilized by the local communities and no extensive forest regeneration, afforestation or reforestation be made, since this may effectively reduce the pasture land and the established ecological dynamics built upon this long-term silvopastoral use of the land.

With the increasing number of livestock in the region, over-grazing in pastures can result in nitrate pollution. Therefore, carrying capacity of pastures should be assessed in terms of number of livestock, with measures to be planned accordingly.

Grants and Social Sustainability

Grants should be managed with care, from planning to monitoring stages. Conflicts should be avoided, thereby objective criteria should be put in selecting beneficiaries.

Livestock should be monitored for at least five years after they are given; monitoring targets should be set.

Participatory Planning and Management

Cooperation between institutions must be developed in order to plan and monitor pasture reclamation works in accordance with sustainable and restorative pasture management principles. For sustainable and restorative pasture management, the emphasis should be on erosion control in pasture reclamation efforts.

When preparing these plans, a planning tool should be developed with a more participatory approach, taking into account the effects of climate change.

It is also important to develop marketing strategies by conducting value chain analysis in the planning and production of non-wood forest products.

Effective cooperation of the forest and agriculture organization will increase the added value.

Gender Sensitivity

Women are exposed to bigger work loads in all scales livestock activities, such as care and dairy works. Thereby, particular concern should be given to alleviating women's workload.

Women should be given priority in planning of activities, and should be consulted in all decision processes.

9.1.3 Rationale 3: Enhancing sustainable forests and forest-based livelihoods

OGM is an institution with a strong corporate background and legal frame, implementing an integrated approach aiming to sustain forests. To summarize interventions for Bolaman, the OGM with Set 1 subprojects, intends to improve its regional capacity in terms of physically abilities which will then lead to successful implementation for the forest maintenance activities as listed in Set 2. The Set 3 activities are designed to sustain the forests by mitigating the stress risk born as a result of human factor. Specific target for the Set 3 subprojects is to generate alternative incomes to the forest villagers in order to avoid possible damages the forest to generate income. With 3 sets of approaches, the OGM creates a lifecycle of forest management as, (i) develop capacity of provincial organizations to intervene; (ii) implement forest maintenance, improvements and developments; (iii) protect the forest by generating alternative incomes to the forest villagers in order to mitigate the human born stress over forest (such as illegal cutting of trees for firewood, fire starting in forest to create agricultural land).

The three-step cycle is also well integrated between each other. The OGM is mobilizing the forest villages as the community labor force to be used during the Set 1 and Set 2 activities not only to develop belonging to the forest but also support alternate income which continues for a long period of time.

Table 9-3. Projects related to 3rd Rationale

Project	Institution
Subprojects SET 1 Construction of Service Buildings and Multi-Purpose Depots in Kurşunçal and Kemerköprü Nurseries; Irrigation, Electric, Lighting System for Nursery; Purchasing of Tubed Seedling Production Machine and Construction of Soil Sieving Facility; Construction of Seed Stock Centre and Soil Stocking Centre in Ordu Nursery and Construction of Multi-Purpose Depot and Soil Stocking Centre in Tirebolu Nursery;, Construction of Surrounding Walls in Nurseries; Construction of Concrete Roads in Nurseries 2,90 Km; Construction of a Machine Park; Tool-Equipment to be used in Seedling Production; Other Equipment Purchases (Wadding, Seed Extraction, Cultivator, Rotavator, Plough, Generator); Truffle Cultivation Greenhouse and production and maintenance of truffle-infused seedlings; Construction Equipment for the rehabilitation and protection of forests.	OGM
Subprojects SET 2 Maintenance of Young Forests 5730 ha;	OGM

Improvement of Forest Roads in the Basin 898 Km; Planting of Truffle Infused Chestnut Seedlings 20,000 pcs; Project of Utilization of Non-Timber Forest Products like Chestnut, Linden, Medlar; Income Generating Species Afforestation 240 ha; Overhead line 4 pcs; Service Road 4 pcs.	
Subprojects SET 3 Photovoltaic (PV) Systems Orköy Projects; Photovoltaic (PV) Systems Orköy Project; Solar Energy Water Heating Systems; Exterior Thermal Sheathing; Exterior Thermal Sheathing; Roof Coverings 366 House; Project of Village Bakeries Supporting Women; Project of Village Bakeries Supporting Women; Chainsaw; Personal Protection Equipment; From Soil to Table Bread Project (Village Bakeries).	OGM

Relevance

Field data obtained during SESA studies showed that forest villagers are poorer than residents in other settlements. The annual household income of the rural population without forest villages is TL 26,238, while the average annual household income for Forest villages is 18,460 TL. Therefore, projects aimed at diversifying sources of income relate to the needs and sensitivities of forest villages.

Forest maintenance activities under Set-2 are related to the socio-economic sensitivities of the region, as forestry is important in the livelihoods of the people of the region. When the planned ecological forest roads are rehabilitated, this will facilitate forest villagers to reach deeper into the forest and increase their livelihoods by utilizing forest products (food harvesting, medicinal aromatic plant harvesting, mushroom harvesting, hunting, etc.).

However, getting deeper into forests can also mean increasing human impacts on forests. It should be noted that many of the wildfires are human-induced. Problems such as poaching and other forms of pressure will inevitably increase. Another concern is that increased access to the forest will push people to build houses in the immediate vicinities most of the time illegally and forest roads can trigger illegal housing in forest areas. This type of informal dwellings in forest lands can increase tree cutting as well as waste wastewater generation.

These projects can be rated as environmentally sound and conserving forests. However, areas where forest villages are located in the region have more obvious environmental problems. The most important of these is the lack of protection against natural disasters such as landslides and floods.

Reporting and supporting the non-wood forest products and services sector and related secondary works to serve the protection of forests increases forestry activity. Forestry is one

of the main livelihoods of the region therefore it should be noted that forest villagers are the beneficiaries when supporting non-forest products and services.

In afforestation activities, it is recommended that, OGM could:

- establish methods be developed which includes and prevents vulnerable and sensitive groups should be used to identify beneficiaries.
- ensure that traditional roads of the people are not blocked during the rehabilitation activities, and also
- ensure that measures are taken to allow human and animal passages if necessary.

Biodiversity Concerns

- Selection of areas for afforestation should take into account the potential presence of rare, threatened and endangered species and critical habitats, in order not to disturb or destroy these existing natural assets.
- Biodiversity surveys should be made in candidate areas, to determine the presence of such assets and if necessary to develop and implement suitable techniques for afforestation.
- Existing natural vegetation (trees, shrubs, herbs) should be conserved during afforestation.
- No additional forest roads should be built in the basin, as already the forests are highly fragmented and new roads would increase the existing human pressure and fire risk in the more remote forest areas.
- The extent of improvement of existing forest roads should be focused on sole purpose of enabling the forestry activities and not to increase reachability to forest areas for other purposes, as this would be contrary to the aim of protecting and sustainable use of forests.
- No new forest roads should be built on or very close to rivers, streams or temporary water ways. Existing roads in such areas should not be renewed unless no other alternatives are present.
- While planning and implementing the maintenance of young forests, existing tree diversity and natural vegetation should be conserved. Further fragmentation of the forests should be avoided by creating large clearance areas.

Sustainability

OGM is an institution that pays significant importance on giving local people a role in maintenance and conservation efforts for forests and providing satisfactory contributions to them has a positive impact on the protection of forests. However, organizing activities in a way that does not interfere with the activities of local people and local corporate stakeholders contributes further to its sustainability. Social and environmental impacts should be measured in the construction of roads and paths, and attention should be given to the movement routes of people and animals.

- Poverty and lack of infrastructure in forest villages should also be considered as an important factor in regulatory and policy-oriented studies on the protection of forests.
- It is also important to develop marketing strategies by conducting value chain analysis in the planning and production of non-wood forest products. In this regard, effective cooperation of the forest and agriculture organization will increase the added value.

Subprojects related to PV panels and solar heating systems are important for the environmentally sound and climate friendly production and efficient use of energy. Use of PV panels will reduce the demand for firewood and contribute to the protection of forests in the long term.

Climate Resilience:

The effects of climate change should be evaluated in the selection of tree species, and accordingly, local tree species should be preferred. Due to climate change, suitability of the climatic conditions may decrease for certain tree species, hindering the expected benefits to be obtained from these activities. When planning income generating practices for the region, it is important that forest, agriculture and water resources are planned with a joint approach.

9.1.4 Rationale 4: Creating income generation by promoting tourism

Coordination and integration between implementing institutions and other stakeholders is particularly important for planning tourism activities in the basin. Provincial Directorate of Culture and Tourism should be integrated to the planning process so that an appropriate and cohesive articulation can be ensured. From integrated planning point of view, nature tourism-based planning can be enhanced with a comprehensive approach to be developed while establishing tourism network infrastructure that also links cultural and natural attraction points in the region. This approach may also develop some solutions regarding infrastructure needs to be emerged (such as transportation, solid wastes and water-waste water services) as a result of growing tourism. At this point, altering planning of some other subprojects up-to-an extent may help addressing the service needs such as clean water supply and road rehabilitation subprojects.

Another integrated planning issue would be to take Gurgentepe Apitherapy Center to be established by TRGM as an alternate tourism destination, that should also be seen as an integral part of the tourism network. The natural walking tracks to be established between the recreation areas to be built should be designed in a way that combines the cultural heritage and natural heritage points in the region.

Table 9-4. Projects related to 4th Rationale

Project	Institution
<ul style="list-style-type: none"> Establishing a Natural Tourism Network Infrastructure 	OGM
<ul style="list-style-type: none"> Ecotourism Project 6 pcs. 	OGM
<ul style="list-style-type: none"> Type A Recreational Spot Capacity Increase in Korgan District İtençi 1 pcs. Type A Recreational Spot Increase in Aybastı Perşembe Plateau 1 pcs. Type A Recreational Spot Capacity Increase Fatsa District Dolunay 1 pcs. Type A Recreational Spot Increase in Aybastı District Kabaktepe 1 pcs. Type B Recreational Spot Increase in Çatalpınar Olukdüzü 1 pcs. 	OGM

<ul style="list-style-type: none"> • B Recreational Spot in Aybastı District Pamukluboğaz 1 pcs. • B type Recreational Spot in Aybastı District Uzundere 1 pcs. • B type Recreational Spot in Aybastı District Kızılot 1 pcs. • B type Recreational Spot in Akyurt 1 pcs. • B type Recreational Spot in Cinderesi 1 pcs. • B type Recreational Spot Facilities in Çamlıcatepesi 1 pcs. • B type Recreational Spot in Gölköy District Deretam 1 pcs. • B type Recreational Spot in Gölköy District Direkli Neighbourhood 1 pcs. • B type Recreational Spot in Fatsa District Ay Tepesi 1 pcs. • B type Recreational Spot in Fatsa District Kabakdağı Neighbourhood 1 pcs. • B type Recreational Spot in Kabataş District Asartepesi 1 pcs. • B type Recreational Spot in Korgan District Belalan 1 pcs. • Kabataş District Belen Neighbourhood Recreational Spot Capacity Increase (Recreational Spot Facility) • Recreational Facility in Kabataş Kargı Tepesi Ateş Kulesi • Reşadiye District Recreational Spot and Picnic Areas Projects 4 pcs. 	
<ul style="list-style-type: none"> • Reporting and Supporting Non-Timber Forest Products and services • Supporting of Local Handicrafts 323 House • 100 pcs of small establishments for women employment • <u>Establishment of an Apitherapy Centre in Gürgentepe</u> 	OGM-TRGM

Relevance

Given the low economic social and economic standards in the Basin, subprojects that enable the development of alternative livelihoods is a significant planning intervention.

Apart from the income status, access to recreational facilities is understood as a common need for the communities. The current situation related with social and cultural facilities was assessed during the community surveys that indicate at 67% of the surveyed settlements mentioning the inadequacy in this aspect, while 13% of muhtars indicated lack of social facilities among the top five problems. Hence, projects related to the improvement of current facilities and access to natural and cultural recreational facilities are important to the needs of the region.

Tourism is an area of activity that increases trade and make positive socio-economic contributions in the region. It is an economic sector that also would improve the job prospects of local people and also could reverse to an extent the ongoing trends of seasonal migrations to other parts of the country in order to work in construction, mining, manufacturing, etc.

Tourism related projects such as promenades and recreational and picnic areas will cause an increased population movement in the region. However, one of the important social and environmental sensitivities in the region is that the fluctuating structure of the population creates seasonal pressure on infrastructure and roads. When asked about the most important problems of the region mentioned as water shortages and inadequate roads, especially due to seasonal population movements that increase the local repopulation enormously. More tourists coming to the area will increase the pressure on these facilities.

Population pressure that may occur on the infrastructure during the operation phase should be taken into account in the planning phase. The infrastructure needs of the recreation areas should be planned in a way that will not complicate the daily life of the local people. Environmental and social impact assessments should be conducted taking into account the issue of community health and safety.

Well planned and managed recreational areas can serve to decrease the pressure on sensitive natural areas by channeling the recreational demand on pre-determined specific locations. Still, as all tourist activities put pressure on the environment, social impacts should be evaluated together with environmental impacts.

The social sustainability of the project depends on availability and employment of young and qualified persons. Young population residing in other towns and cities can be encouraged to migrate back for increased opportunities along with tourism investments. Training for qualified skills should be incorporated into the planning of the subprojects.

Environmental and Social Sustainability

Intensive construction for facilities in these areas must be avoided or well-scheduled in order to prevent any nuisance and also conserve natural and cultural assets; while infrastructure should be planned as part of the tourism development in order to prevent any environmental pollution of waste and wastewater generation from tourism activities.

Gender Sensitivity

It will be important to prioritize female producers and female entrepreneurs in tourism activities. To encourage women in tourism activities, coordination should be established with municipalities such that women workers should be provided with transportation support in order to access these recreation and tourism facilities.

9.1.5 Rationale 5: Creating income-generation by encouraging beekeeping

Ordu is a privileged province in honey production taking the first place in the year 2017 among other provinces with 16 thousand 799 tons of honey production. Ordu is also unique with its Beekeeping Research Institute founded on 1994. The Institute is a subsidiary of the Ministry of Food, Agriculture and Livestock, General Directorate of Agricultural Research and Policies. It can be claim that, well integrated set of interventions designed subprojects reflects knowledge and awareness of the relevant provincial Institutions'. It is also understood that below mentioned subprojects complements the beekeeping infrastructure already established in Ordu. In the implementation phase, it has been evaluated that it is crucial to benefit from the knowledge of the Beekeeping Research Institute.

Table 9-5. Projects related to 5th Rationale

Project	Institution
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Honey Forests Project 6 pcs. Queen Bee Production 88 House Scientific Beekeeping 360 Household Beekeeping Equipment Production Centre Bee Disease and Pests Control Works Diversification of Apicultural Products Scientific Beekeeping and Diversification of Apicultural Products 7 House Establishment of an Apitherapy Centre in Gürgentepe	OGM-TRGM
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Relevance

Socioeconomically, the basin has an important ranking in Turkey in beekeeping. For this reason, beekeeping related projects are highly relevant and compatible and complementary with the socio-economic status of the bee keeping business in the region.

During the SESA study, it is observed that culture of the beekeeping has reached maturity in Ordu province and also essential alternative income generating activity for both rural and forest village communities especially among women farmers living in the districts. It is not only for the local people but also mobile beekeepers as well. The production of the queen bee has an important role in increasing the number of colonies in the region. By increasing the bee presence in the region, more effective use of the existing beekeeping knowledge and experience can be achieved. Conversion of honey into value-added product, and the conversion of honey to be produced into value-added products and the ability of to sell these products in remote markets with already established link is and will significantly contribute to the local economy. The apitherapy center project to be implemented is a good example to ensure this integration. it is seen that the projects to be applied economically in the region can be implemented in harmony with each other.

Environmental and Social Sustainability

Besides being an economic income generating activity, beekeeping is an integral part of ecological balance. Therefore, this activity will be supported regardless of location. The elevation difference is quite high in the Bolaman Project Area, and correspondingly the flowering period in the region is long. Flowering is observed in the early period in the vegetation cover close to sea level, and vegetation cover that blooms later is observed as the higher altitudes. Additionally, the abundance of sloppy areas in the region reduces the destructive effects caused by human being and creates suitable area for plant growth and pollen formation on the slopes. In topographies such as Bolaman Project Area, the flowering period could be much longer than in flat areas. There is no doubt that the difference in flowering time in the region is a significant factor that will increase honey production.

During the implementation of the gray infrastructure investments, due to cumulative noise and dust, possible blocked roads and intense activity in forest areas may interrupt beekeepers.

As per the honey forests, selection of tree or shrub species to improve the honey production potentially endanger local species, thus prioritization of local and native tree species, instead of exotic ones should be taken into account. (i.e. *Robinia pseudoacacia*).

While establishing queen bee production, locally adapted honeybee races should be favored instead of transferring exotic races from a different region in Turkey, solely on the grounds of higher production. Locally adapted honeybee races are more resilient to local climatic conditions and variations than non-local ones. This would also serve to protect the locally adapted races, by avoiding unintentional genetic mixing.

As a complementary action, to be used in the Beekeeping Equipment Production Centre, there may be small stress which may be generated to forests as a result of timber production. In order to mitigate, appropriate trees may also plant as a logging activity and (cedars and/or pines)

Gender Sensitivity

Female beekeepers should be given priority. The problems and suggestions of experienced female beekeepers should be discussed in detail in the planning phase. Female beekeepers and women interested in beekeeping should participate in the subproject design phases as a stakeholder participation. The economic impact should also be measured by gender-based indicators.

It will be important to specify in employment plans and/or tender documents that women will be given priority and run securely. Flexible hours, safety measures and environmental regulations are implemented if necessary, for women to work comfortably during the implementation period. Monitoring and evaluation of activities should also be detailed with female-oriented indicators.

9.1.6 Rationale 6: Increasing hazelnut yields in the basin

Hazelnut farming constitutes the dominant agricultural economic sector of the region. Hazelnut farming area in the basin is very small and has a fragmented structure; the yield per unit of land is still below the world averages and even averages for Turkey.

Hazelnut farming in the region can be divided into several separate groups. The first of these groups is parcels that are suitable for economic hazelnut cultivation where the land is not fragmented due to inheritance and belonging to a single farmer are more suitable for the project implementations.

The second group is parcels that are too small and jointly own by several farmers and this group of farms could not be operated economically. Because these lands are owned by people who sees the hazelnut cultivation as a second source of income. As they usually work on other cities to maintain their livelihoods. Since this group is not constantly in the field, it is not able to perform the checking, hoeing and other maintenance operations as necessary.

As seen in Table 9-6, subprojects listed under the 6th Rationale are well indicative that “steep slope” criterion is a determining parameter in site selection decisions. Sites with high slopes are areas where land use capacity is reduced and constitute dynamic soil structures with intense erosion and landslide activities.

Table 9-6. Projects related to 6th Rationale

Project	Institution
Creation of Modern Hazelnut Groves Dissemination of Use of Pocket Terraces in Hazelnut Groves Dissemination of Good Agricultural Practices in Hazelnut Groves Establishment of Portable Harvest and Hazelnut Drying Stations	TRGM

Relevance

As mentioned under Section 3.2.3, 97.7% of the total arable land of the basin is covered with hazelnut groves. However, average size (12.67 da) of these groves are much below of the economic sufficiency (28.00 da) for livelihood of a household.

Hazelnut plantations accounted largely for the major cause of forest destruction and fragmentation in the past. This process of conversion of land from forest to hazelnut has been decreasing lately to very low levels today. As a result of this conversion, lands prone to the impacts of floods, landslides and erosion have increased, along with adverse impacts on total biodiversity and habitat connectivity.

Economic concerns

Hazelnut production is an important agricultural activity in terms of bringing in income for the region.

Labour concerns

Project related hazelnut processing will create additional labor demand in the region. It will have a positive effect by shifting the cultivation to periods when the labor requirement is low, not during periods when the labor requirement is high, such as harvest time. In the following years, it will make a positive contribution to the social structure due to its ease of maintenance and harvesting.

Environmental Concerns

One current threat of hazelnut orchards on remaining biodiversity is pollution and destruction of natural flora and fauna due to the use of herbicides and pesticides. In order to decrease this adverse effect, subprojects should be designed to disseminate good agriculture practices, utilizing less and non-hazardous herbicides and pesticides.

Application of pesticides and fertilizers and hoeing activities should be done very consciously in order avoid adverse environmental effects on the adjacent ecosystems and prevent nitrate contamination.

Climate Resilience

Adverse effects of changing climatic conditions can be observed day-by-day. In order to get the best results from the projects to be implemented, selection of the hazelnut orchards should be performed with due care:

- Project locations should be chosen among the areas that can be an example to the region and that can be adopted and expanded by other producers.
- It is necessary to be in constant coordination with the Provincial Directorate of Agriculture and Forestry and Directorates of the District, which are the institutions that know well the conditions of the province and the region well.
- Hence, it is important to assess well the soil movements calculated prior to application of cultivation works.

It will be inevitable that transforming former groves will impose pressure on farmers due to the loss of income in the initial years of new farming areas, which will affect the total yields. Livelihood restoration should be planned ahead, including compensating the initial years income loss.

Environmental and Social Sustainability

Terracing works will create job opportunities, which should better be scheduled for the periods when labour force is not occupied with harvesting, etc. According to İŞKUR data, seasonal employment is common among locals. This causes temporary migration for construction and industrial labour, especially during seasons when local employment opportunities are insufficient. Development of local employment can contribute positively to the socio-economic status by reducing such migrations.

Subprojects under the rationale will create additional labor requirements in the region, which will have a positive effect by shifting the manufacturing to periods when the labor requirement is low, not during periods when the labor requirement is high, such as harvest time.

Climate

Hazelnut is an agricultural product with significant carbon capture capacity. Climate change projections predict that the lower altitude hazelnut orchards (250 m and lower) may get affected negatively due to environmental effects brought up by the climate change, while higher altitude areas, exceeding 1500 m (asl) may become suitable in the future. Planning of hazelnut production should take into account these predictions in a safe and moderate amount to determine the suitable locations and varieties of hazelnut to be used in newly developed projects.

9.1.7 Rationale 7: Promotion and expansion of non-hazelnut crop production

Although subprojects of TRGM are designed to support the basin in a cohesive way, better results can be achieved if integrated with OGM subprojects for non-hazelnut crop production. An integrated approach for implementation is proposed below in Table 9-7 for a complete agricultural value chain (including production, harvesting, processing and marketing), which could create better income for the vulnerable farmers, especially forest villages where income generation is more difficult than others.

For TRGM's subprojects there exist a way of integration taking into account the value chain approach: Step 1 represents investing for production facilities such as greenhouses Step 2

represents investments for new production techniques and crop types; Step 3 represents investments for products alternative to low-yield hazelnuts.

However, due to the financial cut-off, subprojects such as food processing plants and marketing and branding activities have been excluded from the project scope. This will adversely affect the contemporary agricultural value-chain approach.

Table 9-7. Projects related to 7th Rationale

Projects	Implementing Institutions
<p>STEP 1: Investment on production facilities 200 house, each household 250+250 = 500 m², total 100,000 m² Dissemination of Greenhouse Production (each 240m² 100 pcs, each 500m² 100 pcs total 200 modern greenhouse)</p>	OGM and TRGM
<p>STEP 2: Investments for new production techniques and crop types Mushroom Cultivation 44 House Medicinal Aromatic Plant (MAP) Cultivation Blueberry Cultivation 55 House Strawberry Cultivation 36 House Dissemination of Mushroom Production; 20 pcs</p>	OGM and TRGM
<p>STEP 3: Investments for products alternative to low-yield hazelnuts Dissemination of Modern Kiwi Cultivation 400 decare Dissemination of Trabzon Persimmon Production, 100 decare</p>	OGM and TRGM

STEP-1 Greenhouses

Environmental impacts should be taken into consideration for greenhouses. Cumulative impacts from total of 175,000 m² greenhouse installations would mainly include waste plastic covers and vegetable wastes. The plastic covers used in greenhouses are generally replaced every 3 years. Waste plastic covers should be sent to the landfill. Vegetable wastes can be considered as sub-products as long as they are free of other solid wastes. They can be used as food for livestock, however TRGM should ensure that they are traceable. Use of vegetable waste would reduce the cost of food for livestock.

Greenhouse is a labor intensive, capital intensive and knowledge-intensive agriculture activity. The knowledge of the local people about greenhouses is not sufficient, so the District Directorates of Agriculture and Forestry should organize trainings (extension activities) and monitoring programs related with greenhouses.

STEP 2 - Mushroom, Medicinal Aromatic Plant (MAP), Blueberry, Strawberry Cultivation

Given the limited alternative sources of income as one of the main socio-economic problems of the region, hazelnut farmers spend most of the year busy with other jobs in other provinces and return to deal with hazelnut production only for a few months of the year. For this reason,

projects aimed at creating alternative sources of income other than hazelnut production constitutes a strong relevance to the basin conditions.

Production of mushrooms, MAPs and berries in small-scale do not pose significant environmental risks to the environment.

Although the region is suitable for these alternative products, their cultivation is a delicate production process. Thereby households will be supported with training especially focusing on the use of special equipment for production as well as extension services.

STEP-3 Kiwi and Persimmon Cultivation

It is planned to establish kiwi and persimmon gardens in 500 decares areas with water source and suitable soil properties in lands with 10% to 30% slope in Bolaman. Assuming an average parcel size of two decares, around 250 families can be considered. Together with scarcity of lands (steep sloop areas covered with separate forests and hazelnut groves) for farming and even for housing makes it relevant against possible threats to forest areas during implementation.

Kiwi and persimmon are plants sensitive to many fungal diseases, plant pests. Therefore, this activity also may require increasing use of chemicals. Taking into account further spread out of plantation in the region, there may be a risk that beneficial insects in the region can be affected. In addition, due to chemical fertilizer applications to be carried out in kiwi and persimmon cultivation and as the region’s climate conditions (rainy) together with the surface flow is intense, pollution due to fertilizers and pesticides can spread rapidly. Fertilizers and pesticides washed with surface run-off can cause soil pollution.

Gender Sensitivity Note:
It should be clear whether these activities are also specified as a demand or adopted by women. It is well known that agricultural production and related labor in the region are mainly carried out by women. Women farmers who are not registered in the national farmer registry system should be actively targeted to register and also be considered in the supports as to avoid any loss of government supports.
There are no women's cooperatives in the area yet. This project area can be an opportunity for women's cooperatives and organizations. Detailed analyses should be discussed within the scope of gender action plan. Gender-based monitoring and evaluation indicators should be determined.

9.1.8 Rationale 8: Improving drinking water supply

The two drinking water reservoirs to be built by DSI should be protected from erosion and sediment filling risks in terms of both pollution and sediment fillings. From this perspective a better implementation could be achieved with a joint planning of projects under Rationale 1 and 8 before implementation.

Scheduling of construction works will be important, such as water structures to be completed before road rehabilitation works so that road structures are not disturbed or damaged.

In order to sustain the drinking water investments, the joint planning and implementation effort should protect the drinking water reservoirs from human and agriculture induced pollution with considering other subprojects such as increasing livestock assets; and subproject which may in-directly increase human induces pollution (efforts supporting tourism and agriculture)

Water loss and leakages in the water distribution system should be reduced in order to sustain the investments and decrease the cost of utilization, which may develop possible social conflicts.

Table 9-8. Projects related to 8th Rationale

Project	Institution
Project design/Construction of Çatalpınar Reservoir	DSI
Project design/Construction of Aybastı Drinking Water Reservoir	

Relevance

In terms of social sensitivities, lack of drinking and drinking water has been expressed as a problem in 86% of the settlements that make up theses a field study sample. A large number of feedbacks have been taken on the pollution and inadequacy of water resources. Drinking water shortages have been identified in the first place among the most important problems of the region. A fluctuating population structure is characteristic in the Basin. The main reasons for this are: (i) constant exodus (ii) the return to the region for reasons such as Covid-19 and retirement (iii) the community of some of the region's people to major cities for seasonal work (iv) seasonal agricultural workers needed by hazelnut production to remain in the Basin for a certain part of the year. For these reasons, there is a variable population pressure on the infrastructure, especially on the drinking water system. This situation causes the people living in the region to complain about the population. When this situation is considered as a source of social conflict, it will be seen that drinking water projects are highly relevant to regional needs and sensitivities. As a result of investment changes occurred in the Project, majority of the drinking water investments cancelled and complementary investments such as main water distribution lines and treatment facilities are also scoped out of the Project. This has fundamentally changed the issue of compliance of the project to social sensitivities pointed out during the SESA process. Social conflicts between neighbouring settlements due to unbalanced investments in the same basin may occur if cancelled investments can not be realized parallel to TULIP from other fundings.

Water reservoirs change the water flow regime and therefore effect the aquatic biodiversity immensely. Aquatic biodiversity and especially benthic organisms are extremely sensitive to water speed and primarily make their habitat choices according to water flow speed. The slightest change in water flow would alter the distribution and abundance of aquatic biodiversity. In addition to that, reservoirs change the chemistry of the water. As the running

water of the river is slowed down in the reservoir, the aeration rate of the water diminishes, which in turn leads to decreased levels of dissolved oxygen, the necessary element to all forms of life. Natural stream purification processes also require adequate oxygen levels in order to provide for aerobic life forms. Therefore, cumulative impacts of planned reservoirs should take into account their effect on the water regime.

Apart from water regime, reservoirs create a barrier between upstream and downstream populations of aquatic species, including seasonally migrating fish. Fish passages can be built to diminish the effect of these barriers, however their effectiveness on the choice of the correct technology for the correct landscape and ecological processes, and the correct management style.

Water reservoirs also form a barrier to the natural sediment flow through rivers, which not only sustains the downstream biodiversity but also the deltas.

Through rise of water levels towards the neighboring natural areas of the water reservoirs, associated habitats and populations of species are lost. These habitats may contain critical habitats as well as rare, threatened and endangered species of flora and fauna. Therefore, biodiversity assessments should be made prior to planning of reservoirs and avoidance and mitigation measures must be determined and implemented.

Environmental and Social Sustainability

The rate of seepage loss in Fatsa District is 42%. The leakage rate is unknown, but if the current physical structure and operating system is preserved, it is recommended that investments in transmission lines, warehouse and network improvement are prioritized by identifying physical leaks originating from infrastructure in the short to medium term to prevent the loss of 42% of the water from the reservoir. In addition, maintenance and repair work is recommended on a regular basis.

In the short term, it is recommended to determine the rates of loss leakage, to plan for loss and leak reduction and to improve collection and intake systems. Such investments will ensure efficient use of water resources.

The rate of loss and leakage in Kabataş district is stated as 55%. The high loss-leak rate will lead to a continuous increase in operating costs and reduced shares allocated for investment and depletion of water supplies. In the short to medium term, it is recommended to reduce the pressure on water resources by identifying investment priority, physical loss-leaks and giving existing infrastructure.

The high leakage rate will lead to higher operating costs, which will lead to higher water prices and wastewater costs. High operating costs will reduce the share allocated for investment and will lead to disruption to water services that are untimely and drink quality. It is important to determine the rates of leakage, to plan for loss-leak reduction and to improve collection and intake system in the short term. In the short and medium term, it is recommended to identify and improve/re-invest in physical leaks caused by infrastructure, and to carried out maintenance and repair work on a regular basis.

Sewage and industrial wastewater discharges to streams and rivers must be prevented in order for the treatment plant to work efficiently. In order to preserve the surface water, natural treatment options are recommended in small settlements with scattered residential structure and geological features in mind.

Processes/systems operating at low operating costs should be selected at the drinking water treatment plants. It is recommended to choose processes that work efficiently in fluctuations between summer and winter populations.

Drinking water treatment plants will increase operating costs. In case of high leakage rates, the cost of water will increase. Because the socio-economic level of basin people is below the Turkish averages, it can be difficult to afford paying water bills for the residents. It is recommended that water tariffs are determined by taking into account the socio-economic level in the project area and population movements (summer and winter populations).

9.1.9 Rationale 9: Improving roads

In many rationales listed above, integrated planning for the rehabilitation of roads has been mentioned. The road rehabilitation under the TULIP Bolaman investments will be carried out in accordance with KGM's intervention plans that include continuity and integration. These plans also include specific design criteria taking into account the characteristics of the regions where it is applied.

Table 9-9. Projects related to 9th Rationale

Project	Institution
Kabataş - Aybastı Road Aybastı - Gök köy Road	KGM

Relevance

The community surveys and muhtar surveys indicate that the five most important problems of the settlement and the second most received problem was related to the roads and 84% of the settlements reported problems with the roads issue. The main emphasis was on the lack and poor maintenance of village roads. In this sense, road projects are seen to be highly relevant to the needs of the region.

However, the main complaints of the communities were that the roads connecting the villages to the main roads were poorly developed and inadequate. "Bussed education" is important for access to all levels of education (i.e. primary, secondary and high schools) as almost 90% of the settlements rely on bussed education. Almost 80% of the settlements do not have a health service. Hence access to health services is also associated with the suitability of the roads. For this reason, regular renewal of roads is important for travel safety and access to most basic services. During the summer period when the seasonal agricultural workers come to the region, travels between different work stations and travelling between housing and work stations and also transportation of the harvest put extra pressure on the road transport. During the hazelnut harvest season and in the summer months many migrants return to the region on

a temporary basis as emphasized in the SESA report this population movement doubles the local population. Therefore road projects would have a massive impact on the life quality of local people. As a result of investment changes occurred in the Project, majority of the road projects cancelled and this will result in diminishing the positive social impact of the project. Specifically the current road structure which is not resilient to the adverse climate conditions in the region will remain as a problem against basic social services such as education and health.

Roads built on steep or unstable slopes may trigger landsliding, causing disturbance or destruction of a much wider natural area than the road itself, at the down slope along the road, through which sediment is also deposited in stream channels below. Proper measures should be defined and implemented to avoid such disturbances.

Environmental and Social Sustainability

The socio-economic sustainability of related projects is related to implementing or taking necessary measures that will not adversely affect the daily life of local people. Environmental and social impacts that will arise during the construction phase should be measured and necessary measures should be taken. Especially due to the widespread bussed education, the safety of the roads is of great importance. Road safety measures should be developed in accordance with intensive use, considering that road use increases during the summer months.

9.2 Mitigation Measures

Table 9-10 presents the mitigation measures for each rationale and corresponding subprojects discussed in the preceding section. Mitigations are geared to more sustainable, effective, environmentally sound and socially sensitive planning and implementation of the subprojects.

As seen in the table, majority of the mitigation measures essentially depend on cooperation among the IAs and also with other government stakeholders in the project area. In this respect, the role of the Steering Committee would be very important to assure this coordination and cooperation in a timely and fluent manner.

Another significant point regarding the mitigation measures is the OHS context of employing forest villagers in the small construction works. Gaps in the legal frame related with this will largely be resolved with application of ESS 2 requirements, but the legal frame still needs to be considered to account for the labour conditions and OHS standards of forest villagers as the most vulnerable group in this aspect.

Table 9-10. Mitigation Plan

Rationale	Risks	Opportunities	Mitigation Measures	Budget for the Remedy Tool (To be financed from Component 2)
<p>Rationale 1: Improve resilience against landslides and floods</p>	<p>Communities and all subprojects (particularly roads and water reservoirs) would be at risk unless a well-integrated planning of subprojects for control of landslide and floods.</p> <p>Disintegrated planning may weaken the cumulative protection capacity against landslides and floods in the project area, specifically the new investments of other institutions such as KGM.</p> <p>Construction works on streams may block fish migration routes, and may hinder water rights of downstream communities.</p> <p>Extensive construction works will require use of quarries as associated with the subprojects, which may impose additional environmental impacts.</p>	<p>Given that the designs are at conceptual level for the flood control structures and road rehabilitation projects, there still exists possibility for improved and integrated designs.</p>	<p>Coordination will be ensured among DSI, KGM and OGM by means of preparing and implementing an “Integrated Flood and Landslide Management (IFLM) Plan”.</p> <p>The IFLM Plan will be based on a field survey of risk points, in line with the risk maps. The surveys will be performed by the joint action of the three authorities.</p> <p>Final designs of DSI, KGM and OGM projects will be prepared in accordance with the “Integrated Flood and Land-slide Management Plan”</p> <p>River beds will be cleaned of any residues from construction (i.e. rocks and stones) that can inhibit river flow.</p>	<p>Flood and Landslide Management Plan for Bolaman</p> <p>Budget: 90.000 USD</p> <p>*Strategical Environmental Assessment (compulsory if Flood and Landslide Management Plan developed)</p> <p>Budget: 20.000 USD</p> <p>The amounts will be finalized after the approval of the budget by the World Bank</p>

Rationale	Risks	Opportunities	Mitigation Measures	Budget for the Remedy Tool (To be financed from Component 2)
Rationale 2: Increasing livestock assets and related livelihood activities	Cumulative adverse environmental impacts may occur as a result of animal supports that will increase the number of ovine and bovine stock radically over the years. Possible impacts are soil and groundwater contamination from increased livestock waste and increased load on the carrying capacity of grazing lands.	As Table 6.51 shows, only 25% of the surveyed population feed their animals on pasturelands as compared with barns and other lands. Hence it can be assumed that the current grazing pressure on pastures are relatively small and pastures preserve their natural structure.	<p>OGM and TRGM will ensure protection of the pasturelands against the future pressure from increased number of livestock.</p> <p>OGM and TRGM will prevent social conflicts that may rise as a result of sharing scarce grazing resources.</p> <p>OGM and TRGM will cooperate in order to prepare a Grazing Management Plan with a holistic approach and participatory decision making. The management plan will be inclusive of all grazing areas in the project area.</p> <p>OGM and TRGM will cooperate in order to monitor soil and groundwater quality to assess possible nitrate loads from grazing.</p>	<p>Guidelines for Grazing Management Planning</p> <p>Guidelines for Grazing and Livestock Monitoring</p> <p>Baseline Surveys for each project site</p> <p>Grazing Management and Monitoring Plans, which defines at minimum:</p> <ul style="list-style-type: none"> • grazing units and paddock designs, • Water access, • Livestock moves, • Pastoralists' mobility, • Herd sizes and numbers, • Vegetation cover and carrying capacity in different seasons with a sound forecast for climate change, • Key protection areas (bio diversity) • Monitoring plan <p>Budget: 125.000 USD</p>
Rationale3: Enhancing sustainable forests and forest-based livelihoods	Mobilization of (forest and normal) villagers for community labor force to be	WB's ESS 2 defines the minimum conditions of all workers who will	OGM/TRGM will ensure full implementation of Labor Management Procedure (LMP) for the Project.	Budget: Any type of community labor mobilization conflicting ESS 2 shall be

Rationale	Risks	Opportunities	Mitigation Measures	Budget for the Remedy Tool (To be financed from Component 2)
	<p>used during particularly Set 2 activities may possibly impose occupational hazards and traffic accidents during travel to-and-from forest areas.</p> <p>The national legislation of OGM and TRGM for contracting (forest and non-forest) villagers as community workers fail to assure securing social security status of the employees.</p> <p>OGM and TRGM fail to impose occupational health and safety measures during working on sites when mobilize (forest and non-forest) villagers as community workers.</p>	<p>be mobilized during the activities financed by the project.</p> <p>Application of ESS 2 will contribute highly to increased health and safety conditions of village workers.</p> <p>Application of ESS 2 may indirectly lead to review and improvement of the national legal frame in relation to all activities of OGM/TRGM that use labor force from forest /non-forest communities.</p>	<p>OGM/TRGM will ensure that all subprojects under the Rationale 3 will be supported with project-specific Labour Management Procedure in compliance with the LMP, comprising in particular, of:</p> <ul style="list-style-type: none"> • Age and Social Security verification system for the employment procedure • Obligatory OHS Trainings • Monitoring Visits to project sites • Grievance Mechanism • OHS compliant work sites 	<p>upgrade to desired standards as defined in the mitigation box. Thus a financial gap in order to obey defined standards while contracting and employment will be financed by the Loan.</p>
<p>Rationale 4: Creating income generation by promoting tourism</p>	<p>Taking into account the already increasing tourism with the popularization of the Persembe Plateau in Aybasti District, cumulative environmental impacts may occur as a result of increased number of tourism activity,</p>	<p>The project area can be considered to be rich in cultural and natural spots of attraction, which imposes a high potential of tourism activity.</p> <p>The well-functioning waste collection system operated by the</p>	<p>OGM will ensure close cooperation with Ordu Metropolitan Municipality and Ordu Provincial Directorate of Environment and Urbanization, in order mitigate possible impacts associated with increased waste and wastewater loads from increased</p>	<p>No additional budget required from the Project.</p>

Rationale	Risks	Opportunities	Mitigation Measures	Budget for the Remedy Tool (To be financed from Component 2)
	<p>mainly in terms of waste and wastewater generation.</p> <p>Economic benefits from the tourism activities will be at risk unless linked with all tourism activities in the overall project area.</p>	<p>Ordu Metropolitan Municipality also covers the rural parts in the Project Area.</p> <p>Waste disposal system in Ordu is inclusive of transfer stations and a recently completed modern landfill facility.</p>	<p>tourism activities in the scope of the Project.</p> <p>An agreement will be signed with Ordu Metropolitan Municipality and/or district municipalities for securing collection of wastes and wastewater (possibly in cesspits) from the recreational spots and facilities.</p> <p>OGM and TRGM will cooperate with Ordu Regional Directorate of Nature Conservation and National Parks and Provincial Directorate of Culture and Tourism for a better integrated planning for increased income from tourism, while protecting natural and cultural resources.</p> <p>OGM and TRGM will ensure coherence with “Nature Tourism Master Plan for Ordu Province, 2013-2023” and “Eastern Black Sea Tourism Master Plan”.</p>	
<p>Rationale 5: Creating income-generation by encouraging beekeeping</p>	<p>No risks foreseen.</p>	<p>Turkey’s first Beekeeping Research Institute Directorate was established in Ordu and continues its activities as a station.</p>	<p>OGM and TRGM will cooperate with Ordu Beekeeping Research Institute for better planning and implementation of their subprojects.</p>	<p>No additional budget required from the Project.</p>

Rationale	Risks	Opportunities	Mitigation Measures	Budget for the Remedy Tool (To be financed from Component 2)
<p>Rationale 6: Increasing hazelnut yields in the basin</p>	<p>OHS risks associated with the community workers' involvement under subprojects (i) Creation of Modern Hazelnut Groves, (ii) dissemination of use of Pocket Terraces in Hazelnut Groves</p> <p>(Same risks for Rationale 3)</p>	<p>Hazelnut productivity, especially in Ordu province, is decreasing over the years. One of the major reasons for this is small size and fragmented structure of the hazelnut orchards per farmer/agro-enterprise.</p> <p>The other reason can be excessive fertilization with aging of hazelnuts and falling yields. For this reason, obtaining more quality products from a unit area can be a very important solution tool.</p> <p>The subprojects designed for pilot implementation using modern techniques such as pocket terraces, modern hazelnut grooves with good agriculture production standards may reduce use of fertilizers and pesticides as well.</p>	<p>(Same mitigations for Rationale 3)</p>	<p>Same budget for Rationale 3</p>

Rationale	Risks	Opportunities	Mitigation Measures	Budget for the Remedy Tool (To be financed from Component 2)
<p>Rationale 7: Promotion and expansion of non-hazelnut crop production</p>	<p>OGM subprojects appear to lack the integrated and cohesive structure of TRGM subprojects based on the agricultural value chain strategy.</p> <p>Unless the value chain approach is adopted, alternative income generation for forest villagers will not be economically sustainable over the years.</p>	<p>Generating alternative income to the most vulnerable group (forest villagers) perfectly addresses the social issues/sensitivities in the project area.</p> <p>Introduction of new farming practices such as greenhouses, mushroom cultivation, MAP cultivation and berries will eventually eliminate the stress over decreased hazelnut yields which in turn would positively affect by means of decreased use of nitrate based fertilizers and pesticides in hazelnut farming.</p>	<p>OGM will cooperate with TRGM during planning stage for applying the value chain approach.</p> <p>OGM will ensure joint implementation in order to achieve sustainability of its subprojects under this rationale.</p>	<p>No additional budget required from the Project.</p>
<p>Rationale 8: Improving drinking water supply</p>	<p>Sustainability of the drinking water systems is constrained by the quantity and quality of the source.</p> <p>Drinking water resources are scarce and generally polluted in the project area (given the direct discharge of sewerage into rivers).</p> <p>Quantity of drinking water is at risk when if there are leaks in the supply network; quality of the resources are</p>	<p>The Bolaman Project Area is in the legal boundaries of the Ordu Metropolitan Municipality who has vast operational and financial resources and capacity to invest addressing the major risk of system leaks as described.</p>	<p>DSI will establish the baseline conditions at all target resources in joint effort with Ordu Metropolitan Municipality, OSKI and Provincial Directorate of Environment and Urbanization in order to develop an Action Plan prioritizing the protection of the clean water intake zones of the DSI investments.</p> <p>DSI will cooperate with OSKI in order to apply leak detection on the supply system to avoid loss of water and load on the water resource.</p>	<p>Leakage Detection and Recovery Measures</p> <p>No additional budget required from the Project.</p> <p>Wastewater collection and treatment plans and facilities</p> <p>No additional budget required from the Project.</p>

Rationale	Risks	Opportunities	Mitigation Measures	Budget for the Remedy Tool (To be financed from Component 2)
	degraded, nitrate contamination occurs, and insufficient wastewater treatment plants in the overall project area.		<p>DSI will cooperate with Ordu Metropolitan Municipality in order to improve water quality in the water resources by preventing direct discharge of wastewaters into streams and completing the sewerage infrastructure in all settlements.</p> <p>DSI will prepare and implement site specific ESA documents (such as ESMP, ESIA, etc) for its subprojects.</p> <p>DSI will ensure that water reservoirs will be designed to allow for migration of fish in the tributaries. Detailed ecosystem surveys will be performed for aquatic ecosystem in the area of influence.</p> <p>DSI will perform a hydrological modelling study of Bolaman River and its tributaries will be performed in order to assess and mitigate the impacts of water reservoirs on downstream communities.</p>	
Rationale 9: Improving roads	Construction works regarding road improvements and road construction will require materials such as sand and gravel, which trigger need for	Construction waste and debris could be reused as fill material in road improvement works, which would significantly decrease the costs of waste management and	KGM will cooperate with other implementing authorities for possible use of construction and demolition waste as construction material.	No additional budget required from the Project.

Rationale	Risks	Opportunities	Mitigation Measures	Budget for the Remedy Tool (To be financed from Component 2)
	<p>supply from a series of pits and quarries.</p> <p>Operation of pits and quarries calls for additional requirements for environmental and social safeguards.</p> <p>Given the already existing quarry facilities, cumulative impacts would be of concern as related with regional visual aspects as well as dust and noise generation and water consumption.</p>	<p>diminish the need for quarries and associated costs of mitigation measures.</p>	<p>KGM will prepare and implement site specific ESA documents (such as ESMP, ESIA, etc) for its subprojects.</p> <p>KGM will take measures against dust and noise generation during the construction period.</p> <p>KGM will compensate any damage on community assets and housings during construction stage.</p> <p>KGM will ensure that a Traffic Management Plan is in place in order to minimize accident risks and OHS risks during construction and implementation.</p>	

Implementation budget for the above mitigation plan is presented below:

Table 9-11. SESA Implementation Budget

Description	Cost (USD)
ESS Instruments to be outsourced for Bolaman Basin (ESIA/ESMP Documents, additional planning and assessment works, GIS applications, field surveys, etc)	100,000
Management Plans (Integrated Flood and Landscape Plan, Grazing Management Plan, Strategic Environmental Assessment)	225,000
Total	335,000

Mitigation measures are included in the subproject designs, hence no additional costs are envisaged. Project-specific Management Plans and ESS instruments will be prepared by implementing authorities.

10 CUMULATIVE IMPACT ASSESSMENT

Cumulative Impact Assessment (CIA) is based on an approach of “Valued Ecosystem Components” (VECs) defined as environmental and social issues that are considered to be important in assessing risks, and they may be physical features, habitats, wildlife populations, ecosystem services, natural processes, social conditions and cultural aspects.

Considering the environmental and social impacts of the Project, the VECs are listed against the Project to check whether they are prone to cumulative impacts. By considering this list, the impacts evaluated with the terms “negligible” or “minor” as the outcome of environmental and social impact assessment are scoped out from the CIA study. Furthermore, priority is given to those VECs that are likely to be at the greatest risk from the Project’s contribution to cumulative impacts.

Table 10-1 scopes out the VECs with negligible/minor impacts and positive impacts. It should be underlined that only the VECs affected from the Project are considered in the assessment. In other words, any VEC that would be affected by other developments, but not by the Project are not taken into account in the CIA.

For the initial identification of VECs, the following key ES issues have been considered:

- Soil quality
- Groundwater quality
- Downstream water rights
- Surface water quality
- Terrestrial biodiversity
- Riparian ecosystems
- Aquatic biodiversity
- Air quality
- Environmental Noise
- Waste collection and disposal infrastructure
- Cultural heritage
- Community HS
- Livelihoods

The projects that are considered in scoping and their status as scoped in and scoped out are provided in Table 10-1 below. Other facilities can be any major activities in the basin. The impact of any activity is taken into consideration if it has joint impacts in the impact area of a subproject. For instance, subprojects may have soil contamination risks in their immediate footprint of activity, where estimated impact of any other activity in the vicinity would be negligible. The resulting cumulative impact would be negligible, despite the moderate to high risks depending on the subproject and its specific location.

Table 10-1. Scoping of VECs

VECs	Area of Influence	Impact significance of Project	Estimated impact significance of other facilities	Scoped in / Scoped out
Soil quality	Footprint of the subprojects and close environs	Negligible	Negligible	Scoped out
Groundwater quality	No direct impacts	Moderate	Negligible	Scoped out
Downstream water rights	Sub-basin 1 and 2	Moderate	Moderate	Scoped in
Surface water quality	Creeks and tributaries all through the basin	Negligible	Moderate	Scoped out
Terrestrial biodiversity	Critical habitats	Negligible	Negligible	Scoped out
Riparian ecosystems	Subproject footprint and environs	Negligible	Negligible	Scoped out
Aquatic biodiversity	Sub-basin 1	Moderate	Moderate	Scoped in
Air quality	Settlements in the vicinity of construction activities	Negligible	Negligible	Scoped out
Environmental Noise	Settlements in the vicinity of construction activities	Negligible	Negligible	Scoped out
Waste management	Municipal Waste Management Services	Minor	Minor	Scoped out
Cultural heritage	Footprint of subprojects	Negligible	Negligible	Scoped out
Community HS	All basin.	Moderate	Moderate	Scoped in
Livelihoods	All basin.	Moderate	Negligible	Scoped out

As seen in Table 10-1, VECs scoped in the cumulative assessment are downstream water rights, aquatic biodiversity, and community health and safety. Impact area for a cumulative impact on downstream water rights can be sought in Sub-basin 1 and Sub-basin 2 as existing hydropower facilities are located in proximity to the planned reservoirs and over the same tributary. Other facilities such as mines and quarries do not have common impacts on common impact zones. It should be noted that as a result of investment changes occurred within the scope of the Project (TULIP), majority of the drinking water investments, including Şahsene regulator, shown in Figure 10-1 cancelled but all of them considered as reasonably foreseeable developments in the CIA study.

For the characterization of the existing conditions of the selected VECs, the main reference is the baseline section mainly. Baseline conditions for the selected VECs are reiterated in

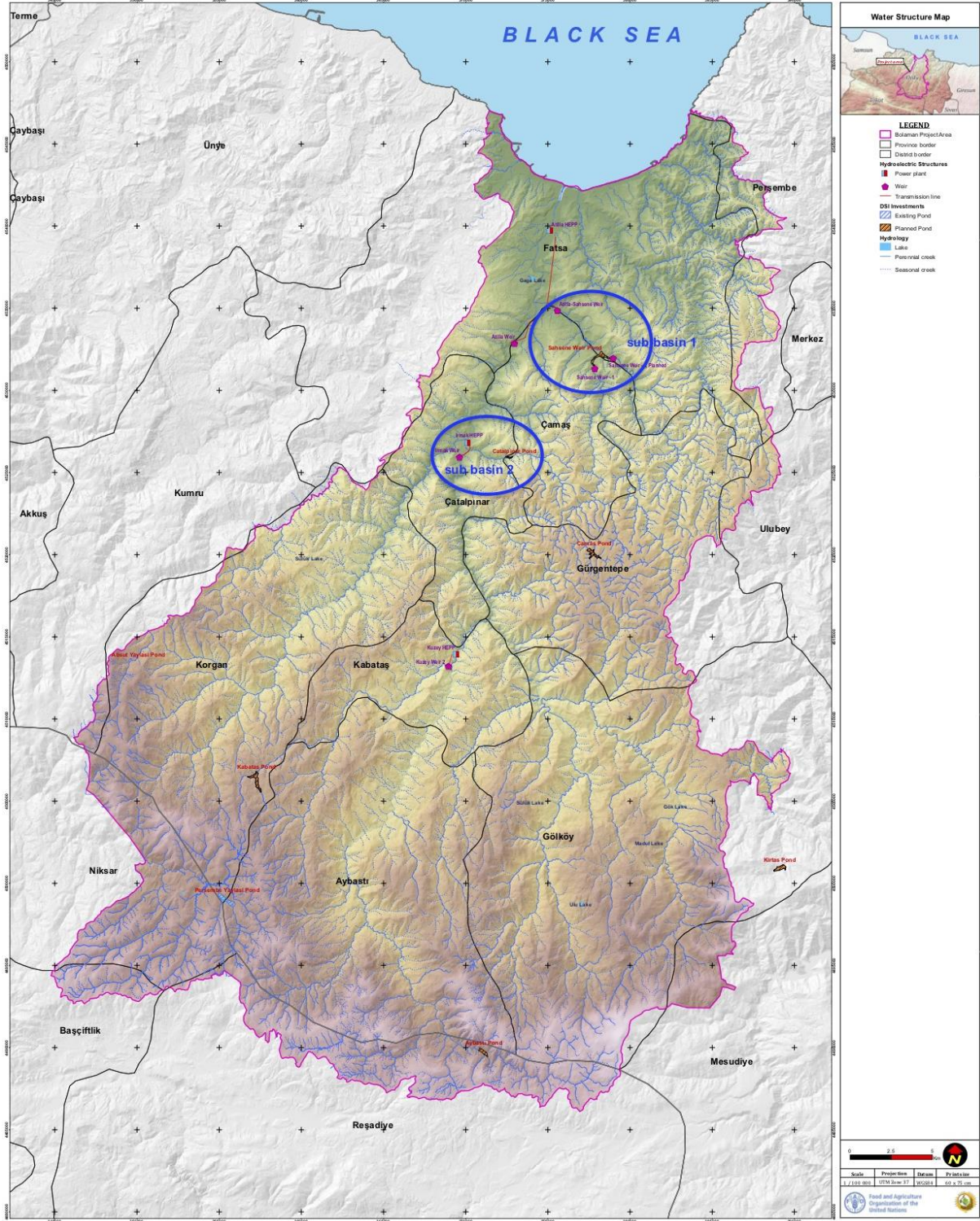


Figure 10-1. Sub-basins for Possible Cumulative Impacts

Table 10-2, with a view to cumulative impacts from other activities in the same area of influence of a subproject.

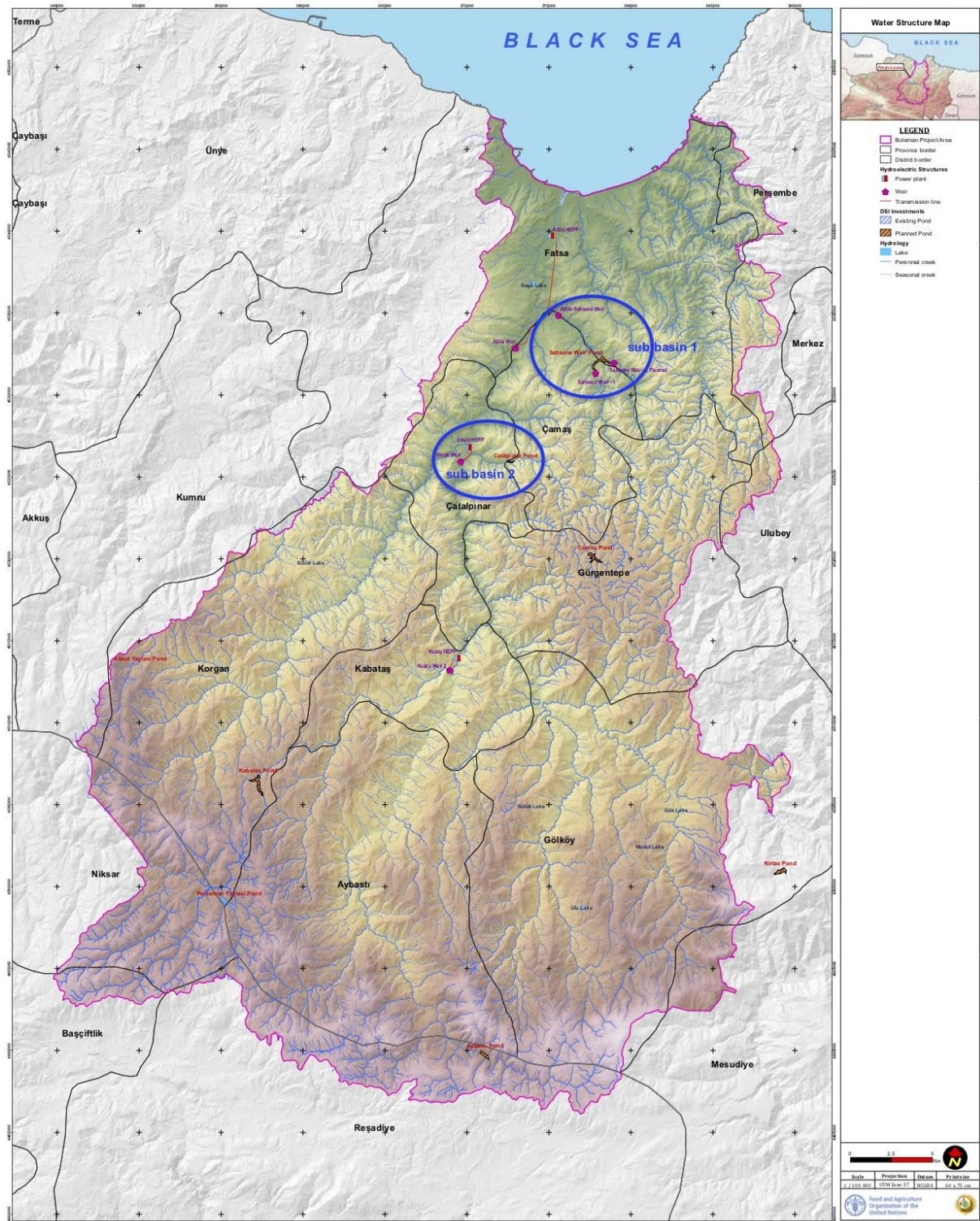


Figure 10-1. Sub-basins for Possible Cumulative Impacts

Table 10-2. Baseline Status of VECs

VECs	Baseline status
Downstream Water Rights	<p>Şahsene and Çatalpınar reservoirs will provide downstream communities water for drinking and domestic use. However, reduced river flow may still associate with reduced water for irrigation and recreational uses.</p> <p>The impacts will be limited to sub-basins where the reservoirs will be located. See Figure 10-1 for the location of the reservoirs. Atilla HPP is located downstream of Şahsene reservoir in Sub-Basin 1; while Irmak HPP and Çatalpınar reservoir are on different tributaries.</p> <p>DSI plans its water structures with due consideration on water rights of existing structures as well as community rights.</p>
Aquatic biodiversity	<p>Both Atilla and Irmak HPPs are equipped with fish ladders and have minimum environmental flows at 10% of the average of the last 10 years flow values at design stage.</p> <p>Species observed in the tributaries: <i>Rhodeus amarus</i>, <i>Barbus tauricus</i>, <i>Capoeta banarescui</i>, <i>Neogobius fluviatilis</i>, <i>Ponticola turani</i>, <i>Alburnus derjugini</i>, <i>Squalius cephalus</i>, <i>Vimba vimba</i>, <i>Alburnoides fasciatus</i>, and <i>Salmo coruhensis</i>. Among these, <i>Ponticola turani</i> (Aksu goby) is an endemic species which IUCN categorises with vulnerable status, indicating that river and flow modifications by dams and hydropower development are the major threat to this species. <i>Barbus tauricus</i> is also a vulnerable species found in Bolaman river and tributaries.</p> <p>The most important threats affecting <i>Salmo coruhensis</i> (Anatolian sea trout) are the construction of dams (especially for hydropower) and pollution in the lower parts of rivers. <i>Salmo coruhensis</i> is categorised with Near Threatened status.</p> <p><i>Salmo coruhensis</i>, <i>Squalius cephalus</i> and <i>Vimba vimba</i> are migratory fish species that move on a local scale.</p>
Community Health and Safety	<p>Neighbourhoods in the Project Area are prone to natural disaster risks of floods and landslides at varying degrees. Temporary recruitment of community workers is typical throughout the country, with no concerns on health and safety of labour force.</p>

Significance of predicted cumulative impacts are estimated in terms of the vulnerability and/or risk to the sustainability of the VECs assessed, which are directly related with the existing sensitivity/vulnerability conditions of the VECs and the applicable thresholds that are the limits beyond which changes resulting from cumulative impacts become of concern.

Management strategies are suggested for any cumulative impacts that are anticipated to be significant. Management approaches for the estimated cumulative impacts are presented in below

Table 10-3.

Table 10-3. Management Approaches for Cumulative Impacts

VECs	Impacts	Management approach
Downstream Water Rights	Impacts on downstream communities due to decreased river flow, possibly for irrigation and recreational purposes. DSI plans a minimum environmental flow of 10% of the average of last 10 years flow rates back as of the design year.	<ul style="list-style-type: none"> • Community consultations and grievance mechanism should be used in order to be aware of any insufficient environmental flow and downstream water uses. • Flow rate should be regularly monitored, downstream of the planned particularly at Şahsene regulator. • Mitigation measures provided in Table 9.10 for Rationale 8 (Improving drinking water supply) should be implemented.
Aquatic biodiversity	Insufficient and/or modified flow of the river due to the reservoirs may impede the movement of migratory fish and reduce their ability to complete their lifecycle. Migratory fish species may start to decline.	<ul style="list-style-type: none"> • <i>Hydrobiological monitoring should be performed with due concern on <i>Salmo coruhensis</i> (Anatolian sea trout), <i>Barbus tauricus</i> and <i>Ponticola turani</i> (Aksu goby).</i> • Mitigation measures provided in Table 9.10 for Rationale 8 (Improving drinking water supply) should be implemented.
Community Health and Safety	Communities will be imposed to a range of risks; mainly health and safety of community workers that will be employed for the subproject works, dam safety risks.	<ul style="list-style-type: none"> • All IA s will coordinate to make an OHS risk assessment, OHS risk management plan for community workers, and an emergency preparedness and response plan against all community risks including dam safety issues.

11 CONCLUSION

Climate resilience is a major issue all throughout the Black Sea towns of Turkey, where socio-economic status is highly affected by floods and landslides. Bolaman Basin presents an exemplary case for identifying the vulnerabilities over a landscape mainly defined by the boundaries of Bolaman River.

The SESA process provides a participatory assessment for the prioritization of environmental and social issues in the basin, which enables decision makers to assess relevance and sustainability of the proposed actions in responding to the immediate and long-term needs of basin-wide communities. Outcomes of stakeholder engagement are supported and verified by mapping and GIS applications that support planners and decision-makers with data and tools presented in the SESA Report.

Investments planned by four major government organizations (DSI, KGM, OGM, TRGM) put the effort to respond to the obvious problems and issues encountered at local level. The set of mitigation measures suggested as a result of the SESA process suggest that a series of integrated management plans (i.e. flood and landscape management, grazing management), are prepared in parallel to the implementation planning.

The mitigation measures are mainly related with ensuring coordination and cooperation between implementing partners as well as other primary stakeholders, hence adaptation to and mitigating climate change necessitates a holistic approach of the different institutions working in a harmonized manner.

Another key element of the mitigation measures is related with the labour force that will be employed among forest villagers and farmers, for whom the national legislation may have gaps that impose health and safety risks as well as labour conditions. As known, mobilization of the community workers is a convenient approach in order to support livelihoods of local communities while ensuring the sustainability of investments, and application of WB ESS 2 and ESS 4 will help compensate for such legislative gaps. In this respect, the project may constitute an example to review implementing authorities to review legislation in a way that may be improved and disseminated further as a national policy.

It is important to incorporate the recommended mitigation measures into the implementation of Environmental and Social Management Plans (ESMPs) for subprojects. Implementing authorities will adopt and commit an ESMF that encompass the elements of the SESA results.

As a whole, the SESA for Bolaman presents a pilot case for all implementing authorities working under the umbrella of an overall project in a harmonized and integrated manner for disseminating the methodology, participatory processes and lessons learned in other basins with landscapes confronting climate resilience issues.

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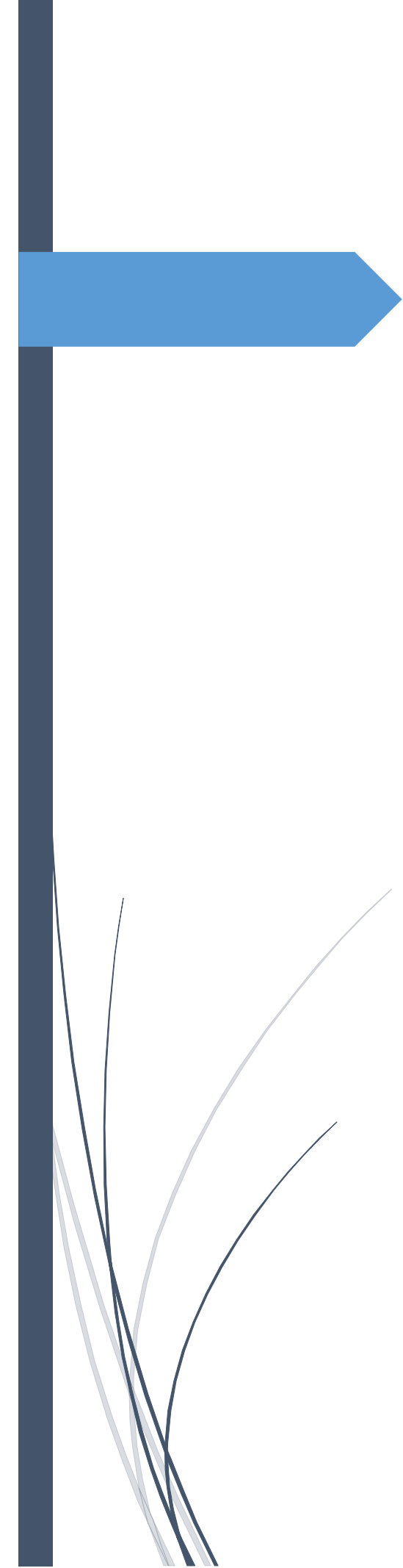
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TURKEY RESILIENT
LANDSCAPE INTEGRATION
PROJECT
(TULIP)

Bolaman River Basin

ANNEXES

ANNEXES

Annex-1: Brief Description of Subprojects

Annex-2: Data request and respond list from government organizations

Annex-3: Agenda and Participation Lists of Meetings during the Field Study

Annex-4: List of Cultural Heritage in the Project Area

Annex-5: Terms of Reference for Gender Action Plan

Annex-6: Promotional Poster for the Project Web Site

Annex 1: Description of Subprojects

Component 1: Green and Sustainable Rural Development					
Sub-component 1.1: Upper Basin Landscape and Rural Livelihoods					
1.1.1. Erosion control, landslide and flood control works					
IA	Subproject Context	Purpose of subproject	Activities	Subproject Area	EIA Status
	Landslide Risk Mitigation Projects (50 pcs)	<ul style="list-style-type: none"> ▪ to protect the base in flood streams, to support the migrant, landslide shores and slope skirts, ▪ to implement projects in the areas having high risk of landslide. ▪ to reduce the bearing load transport, or to ensure that excessive transport is stored in suitable places, ▪ to minimize the damage that may occur in settlements, access roads and agricultural lands due to this high flow, 	<ul style="list-style-type: none"> ▪ Stone and concrete pavement diversion ditch, V-shaped drainage channel, trapeze channel, retaining wall, mortared and reinforced wall 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gököy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Perşembe 	Not Subject to EIA
OGM	Flood Control Project Application on Ilca Creek	<ul style="list-style-type: none"> ▪ controlling overflows and floods contributing to preventive measures by means of gully and rehabilitation measures in streams and side streams, ▪ minimize the loss of land and property in possible flood events, 	<ul style="list-style-type: none"> ▪ excavation ▪ gully Rehabilitation works ▪ 1 piece of Mortared Improvement Bench ▪ 6 pcs of Steel Rubble Barrier ▪ 8 pcs of Retaining Walls, ▪ 13 pcs of Culverts ▪ Total Protection Area 1255 ha 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gököy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Perşembe 	Not Subject to EIA

	Flood Control Project Application on Bolaman Watershed	<ul style="list-style-type: none"> ▪ controlling overflows and floods ▪ contributing to preventive measures by means of gully and rehabilitation measures in streams and side streams, ▪ minimize the loss of land and property in possible flood events, 	<ul style="list-style-type: none"> ▪ excavations ▪ 100 pieces of Mortared Improvement Bench ▪ 31 pcs of Steel Rubble Barrier ▪ 62 pcs of Gabion Threshold 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Perşembe 	
1.1.2. Sustainable management of forest and forest connected pastures					
OGM	Rehabilitation Project of Pastures inside Forests and Connected to Forests (3476 ha)	<ul style="list-style-type: none"> ▪ to support livestock and facilitate grazing in and around the forest areas. 	<ul style="list-style-type: none"> ▪ Animal shade, saltshaker, scratching post, drinker, barn, sheep bath, wire cage thresholds, wooden thresholds 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Kabataş ▪ Gölköy ▪ Reşadiye ▪ Korgan 	Not Subject to EIA
1.1.3. Forest rehabilitation, protection and sustainable forest management					
OGM	Maintenance of Young Forests	<ul style="list-style-type: none"> ▪ to ensure that young saplings grow without damage from their first years by taking care of the trees in the existing forests 	<ul style="list-style-type: none"> ▪ Maintenance of Young Forests 5730 ha 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan 	Not Subject to EIA
	Photovoltaic (PV) Systems Orköy Project 100 House	<ul style="list-style-type: none"> ▪ to supply usable solar energy in homes ▪ to reduce the pressure on the forests 	<ul style="list-style-type: none"> ▪ Providing electricity generation by supplying panels and supporting them with necessary materials 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Ulubey 	Not Subject to EIA

OGM	Solar Energy Water Heating Systems 200 House	<ul style="list-style-type: none"> ▪ To improve the quality of life for people living in forest villages by reducing wood consumption and reducing forest degradation ▪ Grant support people living in forest villages, ▪ Establishing solar water heating systems to heat the water to be used in households in forest villages, ▪ reducing pressure on forests 	<ul style="list-style-type: none"> ▪ Warehouse, Collector, Roof Mounted Pier 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Ulubey 	
	Exterior Thermal Sheathing 452 House,	<ul style="list-style-type: none"> ▪ to prevent heat loss in forest villages ▪ to reduce the pressure on the forests 	<ul style="list-style-type: none"> ▪ insulation material, plaster-paint material and workmanship 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Ulubey ▪ Reşadiye ▪ Niksar 	
	Roof Coverings 366 House	<ul style="list-style-type: none"> ▪ to reduce the negative pressure on forests and improve social welfare. 	<ul style="list-style-type: none"> ▪ Sheet metal material amd apparatus having 5 mm thickness and covering 100 m2 area 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Ulubey 	

	Reporting and Supporting Non-Timber Forest Products and services	<ul style="list-style-type: none"> to generate income and diversify livelihoods for forest villages. 	<ul style="list-style-type: none"> income generating projects for forest villages. (Wooden toys, local products, processing of medicinal aromatic plants, local handicrafts etc.) 	<ul style="list-style-type: none"> All districts 	
1.1.4. Income generation and livelihood diversification for forest village					
OGM	Income Generating Species Afforestation 240 ha	<ul style="list-style-type: none"> diversifying the income of the local people reducing the pressure on the forests by supporting the local people contributing to the nutrition of the local fauna. creating employment 	<ul style="list-style-type: none"> application of the terraces, Pallet or Pit-Shaped Soil Processing and filling, gradoni soil cultivation with an excavator, distribution of saplings in the field, sapling planting, irrigation, sapling maintenance 	<ul style="list-style-type: none"> Aybastı Çamaş Çatalpınar Fatsa Gölköy Gürgentepe Kabataş Korgan Ulubey 	Not Subject to EIA
	Honey Forests Project 6 pcs.	<ul style="list-style-type: none"> to support honey production to contribute to the local economy to increase the quality and productivity of honey reducing migration from rural to urban 	<ul style="list-style-type: none"> Determining the locations of the facilities such as roads, bee keeping places, water transmission lines, fountains, camellias etc., making honey forest projects, making studies and investigations about the facilities to be built, making tenders according to the investigations and putting them into practice. 	<ul style="list-style-type: none"> Kabataş Gürgentepe Çatalpınar Korgan Gölköy 	Not Subject to EIA
	Establishment of a B type Recreational Spot	<ul style="list-style-type: none"> to increase the tourism potential to support income generation reducing migration from rural to urban 	<ul style="list-style-type: none"> Establishing recreation area institutions, determining the structures and facilities to be built in the area, making and approving the area usage plans, drawing infrastructure and architectural projects of structures and facilities, making investigations, construction of the buildings and facilities starting from the infrastructure projects, sports activities and flora and fauna promotion areas, and local products 	<ul style="list-style-type: none"> Aybastı Gölköy Kabataş Reşadiye Çatalpınar 	

OGM	Medicinal Aromatic Plant Cultivation	<ul style="list-style-type: none"> ▪ to provide medicinal and aromatic plant to forest village farmers ▪ increasing income generating activities ▪ to contribute rural development of forest villages ▪ reducing migration from rural to urban 	<ul style="list-style-type: none"> ▪ Supply and site preparation of medicinal and aromatic plant saplings suitable for the region 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Ulubey 	Not Subject to EIA
	Production and Maintenance of Truffle Grafted Seedlings	<ul style="list-style-type: none"> ▪ to develop the production activities of truffle nuts and chestnut seedlings ▪ to create a new source of income ▪ reducing migration from rural to urban 	<ul style="list-style-type: none"> ▪ establishing 2 greenhouses for growing truffle-grafted mushroom saplings 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Perşembe ▪ Ulubey 	
	Blueberry Cultivation 55 House	<ul style="list-style-type: none"> ▪ to encourage blueberry farming in forest village ▪ reducing migration from rural to urban ▪ increasing income generating activities ▪ to grow blue nuts in suitable areas 	<ul style="list-style-type: none"> ▪ Blueberry cultivation, drip irrigation and ground preparation 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Ulubey 	
	Strawberry Cultivation 36 House	<ul style="list-style-type: none"> ▪ to encourage strawberry farming in forest village ▪ Identifying and determining strawberry production area in suitable spaces ▪ reducing migration from rural to urban ▪ increasing income generating activities 	<ul style="list-style-type: none"> ▪ Strawberry cultivation, drip irrigation and ground preparation 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Ulubey 	

	Truffle Cultivation Greenhouse 1 pcs.	<ul style="list-style-type: none"> ▪ reducing migration from rural to urban ▪ increasing income generating activities 	<ul style="list-style-type: none"> ▪ establishing 2 greenhouses for growing truffle-grafted mushroom saplings 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Perşembe ▪ Ulubey 	Not Subject to EIA
	Mushroom Cultivation 44 House	<ul style="list-style-type: none"> ▪ reducing migration from rural to urban ▪ increasing income generating activities 	<ul style="list-style-type: none"> ▪ Production site preparation, other expenses 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Ulubey 	
	Milk Sheep Breeding 135 House, Milk Sheep Breeding Development Project 41 House	<ul style="list-style-type: none"> ▪ reducing migration from rural to urban ▪ increasing the income level of citizens living in the villages ▪ Reducing pressure on forest areas by increasing income and employment in forest villages, 	<ul style="list-style-type: none"> ▪ maintenance and renovation of the existing pen belonging to the loan holder will be covered and 30 sheep having suitable features for the region and one ram to ensure the continuity of herd will be given within the scope of the project 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Ulubey ▪ Reşadiye ▪ Niksar 	
	Buffalo Breeding 115 House	<ul style="list-style-type: none"> ▪ reducing migration from rural to urban ▪ increasing the income level of citizens living in the villages ▪ Reducing pressure on forest areas by increasing income and employment in forest villages, 	<ul style="list-style-type: none"> ▪ Supply of 2 boffola breeding, 1 year insurance cost 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe, ▪ Kabataş ▪ Korgan ▪ Ulubey 	
	Dairy Cattle Breeding Development Project 24	<ul style="list-style-type: none"> ▪ reducing migration from rural to urban 	<ul style="list-style-type: none"> ▪ Supply of 2 breeding cattle to the forest villager, 1 year insurance cost 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa 	

OGM	House, Dairy Cattle Breeding (285 house)	<ul style="list-style-type: none"> ▪ increasing the income level of citizens living in the villages ▪ Reducing pressure on forest areas by increasing income and employment in forest villages, 		<ul style="list-style-type: none"> ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Ulubey ▪ Reşadiye ▪ Niksar 	Not Subject to EIA
	Scientific Beekeeping, Queen Bee Production	<ul style="list-style-type: none"> ▪ to increase the amount of honey production ▪ to increase the income level of the producers ▪ Contributing to the increase of vegetative production 	<ul style="list-style-type: none"> ▪ Scientific Beekeeping 360 Household, Queen Bee Production 88 House 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe, ▪ Kabataş ▪ Korgan ▪ Ulubey 	
	Project of Village Bakeries Supporting Women	<ul style="list-style-type: none"> ▪ to build bakeries in village centers ▪ to cook bread in a more hygienic environment and with energy saving ▪ to improve the livelihoods of citizens 	<ul style="list-style-type: none"> ▪ Project of Village Bakeries Supporting Women 11 pcs. 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe ▪ Kabataş ▪ Korgan ▪ Ulubey ▪ Reşadiye ▪ Niksar 	
	Chainsaw 50 House	<ul style="list-style-type: none"> ▪ to gain high income by using a chainsaw ▪ to improve the livelihoods of citizens 	<ul style="list-style-type: none"> ▪ Providing the forest villagers with the necessary chainsaw to increase the production in the forest 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe, ▪ Kabataş ▪ Korgan ▪ Ulubey 	
	Personal Protection Equipment 75 House	<ul style="list-style-type: none"> ▪ Supply of necessary Personal Protection Equipment in forest production 	<ul style="list-style-type: none"> ▪ Supply of necessary Personal Protection Equipment in forest production 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Çamaş ▪ Çatalpınar ▪ Fatsa ▪ Gölköy ▪ Gürgentepe, ▪ Kabataş 	

OGM				<ul style="list-style-type: none">▪ Korgan▪ Ulubey	
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OGM					
1.2.1. Sustainable and climate-smart agricultural practices					
TRGM	Dissemination of Greenhouse Production	<ul style="list-style-type: none"> ▪ to expand production activities such as greenhouse vegetable cultivation and strawberry cultivation together with the modern sample greenhouses ▪ reducing migration from rural to urban ▪ increasing the income level of citizens living in the villages 	<ul style="list-style-type: none"> ▪ each 240m² 100 pcs, ▪ each 500m² 100 pcs ▪ total 125 pcs modern greenhouse 	<ul style="list-style-type: none"> ▪ All districts 	Not Subject to EIA
	Dissemination of Modern Kiwi Cultivation	<ul style="list-style-type: none"> ▪ Diversification of the region production pattern ▪ increasing the income level of citizens living in the villages ▪ reducing migration from rural to urban 	<ul style="list-style-type: none"> ▪ grant support, evaluation of applications, signing grant contracts, training on kiwi growing, establishment of gardens and machine equipment support, monitoring 	<ul style="list-style-type: none"> ▪ All districts 	

	Dissemination of Trabzon Persimmon Production	<ul style="list-style-type: none"> ▪ Diversification of the region production pattern ▪ increasing the income level of citizens living in the villages ▪ reducing migration from rural to urban 	<ul style="list-style-type: none"> ▪ grant support, evaluation of applications, signing grant contracts, training on Trabzon persimmon production growing, establishment of gardens and machine equipment support, monitoring 	<ul style="list-style-type: none"> ▪ Fatsa ▪ Çamaş ▪ Çatalpınar ▪ Kabataş 	
	Dissemination of Mushroom Production	<ul style="list-style-type: none"> ▪ Diversification of the region production pattern ▪ minimizing agricultural risks ▪ increasing the income level of citizens living in the villages ▪ reducing migration from rural to urban 	<ul style="list-style-type: none"> ▪ grant support, evaluation of applications, signing grant contracts, training on Mushroom production growing, establishment of gardens and machine equipment support, monitoring 	<ul style="list-style-type: none"> ▪ All districts 	
	Dissemination of Pocket Terrace Applications in Hazelnut Gardens, Dissemination of Good Agricultural Practices in Hazelnut Gardens	<ul style="list-style-type: none"> ▪ to increase hazelnut yield and quality ▪ income level of citizens living in the villages, ▪ reducing migration from rural to urban 	<ul style="list-style-type: none"> ▪ grant support, evaluation of applications, signing grant contracts, training, Dissemination of Pocket Terrace Applications in Hazelnut Gardens, monitoring 	<ul style="list-style-type: none"> ▪ All districts 	
1.2.2 Income generation and livelihood diversification for rural					
TRGM	Dairy Cattle Breeding Development Project 21 House, Development of Dairy Cattle Breeding	<ul style="list-style-type: none"> ▪ Increasing meat and milk production by providing tool and equipment support ▪ use of pasture and pasture areas more appropriately, ▪ reducing migration from rural to urban ▪ increasing the income level of citizens living in the villages 	<ul style="list-style-type: none"> ▪ 21 project, 21 enterprises 84 pcs ▪ For 100 cattle establishments; 3 simmental cattles, milking unit and milk cooling tank 	<ul style="list-style-type: none"> ▪ All districts 	Not Subject to EIA
	Dissemination of Sheep Breeding, Sheep Breeding	<ul style="list-style-type: none"> ▪ reducing migration from rural to urban 	<ul style="list-style-type: none"> ▪ to realize 35 units of activities in 7 villages ▪ Each unit, 30 sheep and 1 ram capacity 	<ul style="list-style-type: none"> ▪ All districts 	

TRGM	Development Project 35 House	<ul style="list-style-type: none"> ▪ increasing the income level of citizens living in the villages ▪ to improve dairy sheep breeding 	<ul style="list-style-type: none"> ▪ Establishments with 50 sheep and 3 breedings for 50 houses 		Not Subject to EIA
	Animal shelter and Shepherd Homes Project 39 House	<ul style="list-style-type: none"> ▪ to expand animal breeding ▪ reducing migration from rural to urban ▪ increasing the income level of citizens living in the villages 	<ul style="list-style-type: none"> ▪ needs such as electricity, shelter, rest, refrigerator, television, bathroom 	<ul style="list-style-type: none"> ▪ Başçiftlik ▪ Niksar ▪ Reşadiye 	
	Dissemination of Free System Organic Egg Poultry	<ul style="list-style-type: none"> ▪ reducing migration from rural to urban ▪ increasing the income level of citizens living in the villages 	<ul style="list-style-type: none"> ▪ 16 establishments with a capacity of 500 animals ▪ grant support, evaluation of applications, signing grant contracts, training, Dissemination of Free System Organic Egg Poultry, monitoring 	<ul style="list-style-type: none"> ▪ All districts 	
	Dissemination of Goose Breeding	<ul style="list-style-type: none"> ▪ reducing migration from rural to urban ▪ increasing the income level of citizens living in the villages ▪ 	<ul style="list-style-type: none"> ▪ 25 establishments with a capacity of 100 animals 	<ul style="list-style-type: none"> ▪ All districts 	
	Scientific Beekeeping and Diversification of Apicultural Products, Bee Disease and Pests Control Works	<ul style="list-style-type: none"> ▪ to increase honey production in villages ▪ to provide villagers with alternative sources of income ▪ reducing migration from rural to urban 	<ul style="list-style-type: none"> ▪ Scientific Beekeeping and Diversification of Apicultural Products 33 House, Bee Disease and Pests Control Works 100.000 colony 	<ul style="list-style-type: none"> ▪ All districts 	
	Buffalo Breeding Development Project	<ul style="list-style-type: none"> ▪ to improve buffalo breeding ▪ to provide villagers with alternative sources of income ▪ reducing migration from rural to urban 	<ul style="list-style-type: none"> ▪ 10 house, total 100 pcs buffalo 	<ul style="list-style-type: none"> ▪ Reşadiye 	

	Diversification of Agricultural Products	<ul style="list-style-type: none"> to increase honey production in villages to provide villagers with alternative sources of income reducing migration from rural to urban 	<ul style="list-style-type: none"> For 40 producers, 50 pcs of beehive (with bees), royal jelly production equipment, freezer and container Also, 50 pcs of pollen trap for each 800 beekeeper, grant support, evaluation of applications, signing grant contracts, training, Diversification of Agricultural Products Poultry, monitoring 	<ul style="list-style-type: none"> All districts 	
1.2.3. Rangeland rehabilitation and management					
TRGM	Rangeland/Plateau Rehabilitation and Management Work	<ul style="list-style-type: none"> use of pasture and pasture areas more appropriately, reducing migration from rural to urban increasing the income level of citizens living in the villages 	<ul style="list-style-type: none"> 50 pcs of water tank, 200 pcs of watering trough, animal baths (50 pcs of fixed, 2 pcs of mobile), 100 pcs of stratching unit and 50 pcs of shade, Disassembly of weeds at total 7.500 decare area and turning into rangeland area with germination ,18 village rangeland 6000 ha 	<ul style="list-style-type: none"> Aybastı Gölköy Korgan Kabataş Reşadiye Başçiftlik Niksar 	Not Subject to EIA
1.2.4. Sustainable agricultural value chains					
TRGM	Establishment of Portable Harvest and Hazelnut Drying Stations	<ul style="list-style-type: none"> to dry the hazelnuts properly and correctly to provide faster and higher quality drying reducing migration from rural to urban increasing the income level of citizens living in the villages 	<ul style="list-style-type: none"> 20 pcs of hazelnut drying stations (having at least 5 tons capacity) portable blends of 250 square meters will be installed for 200 producers 	<ul style="list-style-type: none"> All districts 	Not Subject to EIA
	Increase of Women Employment in Rural Areas	<ul style="list-style-type: none"> increasing the income level of citizens living in the villages reducing migration from rural to urban 	<ul style="list-style-type: none"> 50 pcs of small establishments for women employment Women will be encouraged to produce economically profitable products in the ateliers or production facilities (for handicrafts, local products, local delicacies, etc.) 	<ul style="list-style-type: none"> All districts 	
Sub-component 2.1: Resilient infrastructure for disaster risk and water security					
2.1.1 Multipurpose reservoirs					

DSI	Construction of Çatalpınar Reservoir 2, Construction of Aybastı Baydarlı Water Reservoir	<ul style="list-style-type: none"> ▪ to provide drinking water ▪ preservation of the water sources in the basin ▪ improving water quality ▪ increasing the water demand of the basin 	<ul style="list-style-type: none"> ▪ 1,82 hm³/ year drinking water (Çatalpınar) ▪ 1,61 hm³/ year drinking water (Aybastı) 	<ul style="list-style-type: none"> ▪ Çatalpınar ▪ Aybastı 	EIA not required certificate will be taken for Çatalpınar Drinking Water Reservoir
2.1.2. Resilient infrastructure for flood and sedimentation control					
DSI	<p>-Construction of Çatalpınar Reservoir 2, Aybastı Baydarlı Water Reservoir</p> <p>-Construction and project design of Bolaman River flood control 1, Bolaman River Levee 1, Şahsene Stream Flood Control 2</p> <p>-Construction of Fatsa Industrial Estate Flood and Sedimentation Control 1, Fatsa-Karadere Flood Control 3, Çatalpınar-Elmaköy Neighbourhood-Şifalısu Position Flood Control 2, Gölköy-Karahasan Neighbourhood-Karaağaç Stream Flood and Sedimentation Control 3, Korgan-Tepealan Neighbourhood Güllü Stream Flood and Sedimentation Control 3, Ordu-Çatalpınar County Town Keş Stream Flood</p>	<ul style="list-style-type: none"> ▪ Prevention of sudden flood flows ▪ reducing the damage of solid material ▪ to provide effective and harmless drainage of the flow that occurs in the flood basin, ▪ to prevent loss of life 	<ul style="list-style-type: none"> ▪ 9 flood and sedimentation control structures along the basin in Fatsa, Çatalpınar, Gölköy and Korgan will be designed and constructed by DSI 	<ul style="list-style-type: none"> ▪ Fatsa ▪ Çatalpınar ▪ Gölköy ▪ Korgan 	<ul style="list-style-type: none"> ▪ EIA not required certificate will be taken for Design and Construction of Bolaman River Flood Control and Bolaman River Levees.

	and Sedimentation Control 1				
Sub-component 2.2: Climate-resilient rural road system					
2.2.1. Climate-resilient rural road rehabilitation					
KGM	Kabataş - Aybastı Road	<ul style="list-style-type: none"> ▪ to improve the existing roads ▪ to rehabilitate the existing road 	<ul style="list-style-type: none"> ▪ Soil works (excavation, filling etc.) ▪ Structure Works (concrete, iron, stonewall, drainage etc.) ▪ Pavement works (Subbase, base, hot bituminous mixture etc.) 	<ul style="list-style-type: none"> ▪ Kabataş ▪ Aybastı 	<p>1)Kabataş-Aybastı Road</p> <p>An exemption has been obtained in accordance with Provisional Article 4 of the EIA Regulation dated 16.12.2003.</p> <p>Provisional Article 4- The provisions of this Regulation are not applied to oil and gas pipelines, energy transmission lines, highways, double roads, express roads, railways, state roads and provincial road projects whose routes are determined according to the relevant legislation or included in the investment program before the Environmental Impact Assessment Regulation published in the Official Gazette dated 23/6/1997 and numbered 23028.</p>
	Aybastı - Gököy Road	<ul style="list-style-type: none"> ▪ to improve the existing roads ▪ to rehabilitate the existing road 	<ul style="list-style-type: none"> ▪ Soil works (excavation, filling etc.) ▪ Structure Works (concrete, iron, stonewall, drainage etc.) 	<ul style="list-style-type: none"> ▪ Aybastı ▪ Gököy 	<p>2) Aybastı-Gököy Road</p> <p>An exemption has been obtained in accordance with</p>

KGM			<ul style="list-style-type: none"> ▪ Pavement works (Subbase, base, hot bituminous mixture etc.) 		<p>Provisional Article 4 of the EIA Regulation dated 16.12.2003.</p> <p>Provisional Article 4- The provisions of this Regulation are not applied to oil and gas pipelines, energy transmission lines, highways, double roads, express roads, railways, state roads and provincial road projects whose routes are determined according to the relevant legislation or included in the investment program before the Environmental Impact Assessment Regulation published in the Official Gazette dated 23/6/1997 and numbered 23028.</p>
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Annex 2: Data Request from Government Organizations

Table 4. First Round of Data Request

Institution	Region/Area	Requested Information/Document	Received (Yes / No / No Response)
General Directorate of Forestry	Basin	Distribution Map of Forestry Activities, where the facilities and centers affiliated to OGM, and forest areas by Tree Types are marked in the map with village named and borders	YES
	Basin	Basin forest areas management plans (Basin-based, micro basin-based)	YES
	Basin	Elevation Curves Marked Village name, boundaries and basin map with streams and basins (micro basin) and roads marked	YES
	Basin	Elevation curves marked Land classes map (Village names and borders and road marked)	YES
	Village/Basin	List of Forest Area and Tree types by village	YES
	Basin	List of Forest Cooperatives	YES
	Village/Basin	Forest Villages Population and Household Information	YES
	Village/Basin	List of projects and Works (Target Villager and area information) implemented by OGM on village basin in the last 5 years	YES
	Basin	How are the effects of erosion observed? What are the activities carried out in the basin to prevent erosion? Are there any studies planned? What can be done?	NO
	Basin	Number of OGM personnel in the basin, Distribution of facilities, vehicles at Village, Business and Regional Chief Level	NO
	Basin	Forest fire response point	NO
	Basin	Active population using the forest, men and women numbers, which forest products do they use in which periods?	NO
	Basin	If forest workers consist of village people, how much do they get paid? What are the terms of contract?	NO
	Basin	What are forest products for livelihood?	NO
	Basin	List of ongoing projects and short descriptions	NO
Basin	Completed projects list and short descriptions	NO	
Village/Basin	The number of Enterprises Performing Village Based Timber	NO	
General Directorate	Village/District/ Province	<ul style="list-style-type: none"> i. Village Based Crop and Animal Production Areas and Facilities Marked Agricultural Activity Areas Map ii. Agricultural Land Use Map (Land use capability) iii. Basin Soil Survey Map 	YES

Institution	Region/Area	Requested Information/Document	Received (Yes / No / No Response)
of Agricultural Reform		iv. Slope Maps of Villages within the Basin Boundaries	
	Village/District/Province	On Village Basis, Farming areas and number of parcels by product type	YES
	Village/District/Province	Data Set Document Including Agricultural Data on Village basis (reference no: T/VS/001)	YES
	Village/District/Province	Beekeeping: Registered female and male beekeepers. Number of hives. Agricultural supports they receive. Type of beekeeping	YES
	Village/District/Province	Distribution of personnel number, vehicle, village and level of provincial and district directorates of Agriculture and facilities in the basin	YES
	Village/District/Province	List of the projects and activities implemented by the provincial and district directorates of agriculture in the last five years on village basis. (Including number of beneficiary farmers, land cover other information)	YES
	Village/District/Province	List of Agricultural Products Processing and Storage Facilities including capacity, contact and address information.	YES
	Basin	Cooperative and Producer Organization List (with address, name and address of the president, contact information.) Female and male owned data. And if possible, in which sector are women and male owned cooperatives and unions?	YES
	Basin	Agriculture based water pollution data/maps	YES
	Basin	Agricultural fertilizer and pesticides usage data	YES
	Basin	Seasonal worker information (gender-based if applicable)	NO
	Basin	Syrian worker information (if applicable)	NO
	Basin	Content of extension services. Extension staff working in the basin: their gender, profession, activities, if contact number of a few	NO
	Basin	List of ongoing projects and short descriptions	YES
	Basin	List of completed projects and short descriptions	YES
Basin	Existing agricultural supports	YES	
General Directorate of Highways	Basin	Risk Level Map of the roads in the Basin	NO
	Basin	The Location of Roads and Landslides in the Basin	NO
	Basin	List of short descriptions of planned investments and projects	YES
	Basin	List of ongoing projects and short descriptions	YES
	Basin	Information on the existing HES, dams, reservoirs, irrigation structures, drinking water treatment plants and regulators on the basin (their numbers, capacities,	YES

Institution	Region/Area	Requested Information/Document	Received (Yes / No / No Response)
General Directorate of State Hydraulic Works		locations, irrigated agricultural area, energy produced, etc.) and maps showing their location in the basin.	
	Basin	Map(s) showing the locations of basin water quality measurement stations and quality measurement results	YES
	Basin	Current monitoring stations locations and current values	YES
	Basin	Groundwater quality measurement results	NO
	Basin	The project reports of the reservoir and drinking water treatment plant to be built within the scope of the project.	NO
	Basin	Agricultural land to be irrigated with the completion of reservoirs and dams	NO
	Basin	If there are projects in the basin subject to EIA, EIA reports	NO
	Basin	Ownership and expropriation status of the areas where the reservoir and water treatment plant will be built within the scope of the project	YES
	Basin	Water usage/water allocation data in the basin (drinking usage, irrigation, industry, etc.)	YES
	Basin	Information on dam, reservoir, HES structures not included and the project but planned in the basin	YES
	Basin	List and short descriptions of ongoing investments in the basin	YES
	Basin	Map showing the administrative structure of the basin in terms of DSI management	NO
General Directorate of Nature Conservation and National Parks	Basin	Information and distribution map of Nature Conservation, National Park Areas, Lakes and Recreation Areas in the basin (in kmz format if available)	YES
	Basin	Map of EUNIS Habitat Classes in the basin (in KMZ format if available)	NO
	Basin	Map of endemic tracheophyta and local endemic tracheophyta categorized in IUCN CR at the Basin (in kmz format if available)	NO
	Basin	Distribution Map of the Veined Plants and Vertebrate Wild Animals in the basin	NO
	Basin	Map of Endemic Flora and Fauna Species in the IUCN Hazard Categories in the basin (in kmz format, if available)	NO
	Basin	Map of Basin Featured Areas (in kmz format, if available)	NO
MTA	Basin	Slope Map (preferably in kmz format)	NO
	Basin	Slope State Map (preferably in kmz format)	NO
	Basin	Geology Map (preferably in kmz format)	NO
	Basin	Distribution of Geological Units	NO

Institution	Region/Area	Requested Information/Document	Received (Yes / No / No Response)
	Basin	Mining Areas map (preferably in kmz format)	NO
AFAD	Basin	Landslide Settlement Area Map (preferably in kmz format)	<i>NO RESPOND</i>
	Basin	Landslide Susceptibility Map (preferably in kmz format)	<i>NO RESPOND</i>
	Basin	Landslide Inventory	<i>NO RESPOND</i>
	Province	Emergency Action Plan	<i>NO RESPOND</i>
	Basin	Flood Risk Map (in kmz format)	<i>NO RESPOND</i>
	Basin	Earthquake Risk Map	<i>NO RESPOND</i>
	Basin	Earthquake preparation points, if any (can be container, tool, and equipment warehouse, etc.)	<i>NO RESPOND</i>
	Basin	Emergency Meeting Areas determined by AFAD	<i>NO RESPOND</i>
	Basin	Hydrographic origin structures under natural disaster risk (preferably in kmz format)	<i>NO RESPOND</i>
KOSGEB	Basin	Number of female and male entrepreneurs in Basin. The amount of enterprises and the sectors in which they are attempted.	YES
	Basin	Activity reports	YES
General Directorate of Mining Affairs	Basin	List of licensed mining enterprises and field of activity	YES
	Basin	Mining license applications	YES
Governorship of Ordu	Village	Number of women mukhtars	YES
	Province/District	Number of men and women benefiting from social assistance and solidarity fund	YES
	Province/District	Number of women head of household living in Basin	NO
	Province/District	Research reports conducted for the basin	NO
	Province/District	List of Non-Governmental Organisation's operating in the basin (active ones)	YES
	Province/District	List of stone/clay/sand quarries	YES
	Province/District	Village list and mukhtars mobile phone numbers in the basin	YES
Provincial Directorate of Security	Province/District	Violence against women data (Physical, sexual, or similar)	YES
	Province/District	Traffic accident data (especially data on accidents that occurred during the transportation of seasonal workers)	YES
	Province/District	Data belonging to Fire Department, Hospital, Gendarmerie, Police Station to which settlements in the basin are connected (can be map layout or address)	YES
	Province/District	Records of loss of life and property in dam, reservoir etc.	YES
Provincial Directorate of	Province/District	High School information available in basin. Number of students and teachers based on gender	YES

Institution	Region/Area	Requested Information/Document	Received (Yes / No / No Response)
National Education	Province/District	Primary education information available in basin. Number of students and teachers based on gender	YES
	Province/District	Pre-school information available in basin. Number of students and teachers based on gender	YES
	Province/District	Is bussed education applied in basin? If yes, where are they?	YES
	Province/District	Gender-based illiterate population in Basin	YES
	Province/District	Public education centers located in basin. Activities implemented. Number of women and men beneficiaries.	YES
	Province/District	Located in the basin. (Temporary Education Center) (number, capacity, number of male and female students, teachers)	YES
Provincial Directorate of Trade	Province	Women Cooperatives and Sectors	YES
	Basin	Number of cooperatives, women and men member numbers	YES
	Province	Activity Reports	YES
Provincial Directorate of Health	Province/District	Number of hospitals (governmental and private)	YES
	Basin	Number of Family Health Centers (ASM), number of medical doctors and nurses based on their gender	YES
	Province/District	Availability of Mobile Health Services, if any which services are provided by them	YES
	Province/District	112 locations at the basin	YES
	Province/District	Health services provided to migrants and number of men and women migrants received these services in the basin / number of Syrians	YES
	Province/District	Health services provided to the seasonal workers and number of men and women seasonal workers received these services	YES
	Province/District	Mother mortality rate	YES
Provincial Directorate of Family Labor and Social Services	Basin / Province/District	Number of kindergartens at the basin, locations and capacities (number of boys and girls)	YES
	Basin / Province/District	Number of elderly care centers /nursing homes at the basin, how many people benefit (women – men)	YES
	Basin / Province/District	Information about women's shelter at the basin (due to confidentiality the numbers will be adequate)	YES
	Basin / Province/District	Information about Child Support Centers (ÇODEM) at the basin (due to confidentiality the numbers will be adequate)	YES
	Basin / Province/District	Information available about Violence Prevention Centers (ŞÖNİM) at the basin: Services provided, number of files, number of women's applications , etc.	YES

Institution	Region/Area	Requested Information/Document	Received (Yes / No / No Response)
	Basin / Province/District	Handicapped women and men numbers and their situation	YES
	Basin / Province/District	Information about elder people based on gender	YES
	Province	Province Action Plan for Combatting Violence Against Women	YES
	Basin / Province/District	Number of people (family and women numbers in the breakdown) receiving social aid, amount and type of aid	NO
	Basin / Province/District	Thesis written about empowering women at the basin	NO
	Basin / Province/District	Information about agricultural workers at the basin: gender, age, household size, etc.	NO
	Basin / Province/District	Child labour at the basin	NO
Provincial Directorate of Environment	Province/District	Explanation about industrial facilities at the basin and map depicting the locations of them	YES
	Province/District	Explanation about mining facilities at the basin and map depicting the locations of them	YES
	Province/District	What are the important natural resources at the basin	YES
	Province/District	What are the resources for drinking and potable water?	YES
	Province/District	Wastewater management and discharge points at rivers / creeks at the basin	YES
	Province/District	Information about collection and disposal of the solid wastes (collection frequency, disposal methods) Katı	YES
	Province/District	What are the economic activities having the environmental impact at the basin?	YES
	Province/District	On which subjects' public has more complaints?	YES
	Province/District	Projects for which Project Introduction Files (PTD) presented. EIA Decisions. Projects for which EIA approved. Projects for which EIA procedure in progress.	YES
Province Cultural Heritage Council	Province/District	Explanation about cultural heritage at the basin and map depicting the locations of them	YES
Provincial Directorate of Employment Agency (İŞKUR)	Province/District	Numbers of women and men getting unemployment allowance at the basin (preferably with age breakdown)	YES
	Province/District	Women-men employment figures at the basin (preferably with sector breakdown)	YES
	Province/District	Planned Projects	YES
	Province/District	Activity Reports	YES

Institution	Region/Area	Requested Information/Document	Received (Yes / No / No Response)
Municipality(ies)	Province/District	Land Information (about land types such as agriculture land, forest land, pastures)	NO
	OSKI	The technical studies conducted by OSKI for each reservoir, treatment plant and transmission line (population forecasts, capacity, treatment process, etc.) and the maps prepared (with kmz coordinates)	YES
	Ordu Metropolitan Municipality	Information about wastewater management: Where the wastewaters of districts/neighbours/residential areas are discharged?	YES
	Ordu Metropolitan Municipality	Information about solid waste disposal facility	YES
		Location: At which district / village	YES
		When was it commenced?	YES
		Capacity	YES
		Wat are the units of facility (separation, compost, leachate collection, etc)? Is there leachate treatment unit? Final discharge point for the leachate?	YES
		Service Area: Serving all districts? If is there any district not disposing solid waste at the facility, how do they dispose their wastes?	YES
	Ordu Metropolitan Municipality	Metropolitan Municipality Environmental Plan	YES
	Province/District	Information about socio-cultural centers. Number of trainings being delivered. Number of people participated.	NO
	Province/District	Number of applications of unemployed persons based on gender	NO
	Province/District	Activity Reports	NO

Table 5. Second Round of Data Request

Institution	Region/Area	Requested Information/Document	Received (Yes / No / No Response)
General Directorate of Migration Management	Basin	Information about where Syrians lives at the districts centers or rural areas	YES
	Basin	Is there and migrants/refugee living at the residential areas given at the attachment	YES
	Basin	If there are migrants living at the rural areas, information about the villages they live	YES
General Directorate of Agricultural Reform	Tokat	Providing missing data at the agriculture maps for districts	YES
	Ordu	Breakdown of bovine, ovine and poultry for village based animal production areas and facilities marked agricultural activity areas maps, and existing number of bovine and ovine animals at the facilities	YES
	Ordu	Providing missing data at the maps (white areas) given for some neighbourhoods	YES
General Directorate of State Hydraulic Works	Basin	Flood risk map digital layers for Boloman and Ilıca Creeks	YES
	Basin	Underground and surface water resources used for drinking and potable water (hydrogeological study, basin base water allocation and map presenting the water resources)	YES
	Basin	Existing and planned water structures (excluding TULIP) – coordinates or map depicting the locations	YES
	Basin	Eastern Black Sea Master Plan	YES
General Directorate of Water Management	Basin	Solid waste disposal areas (sanitary landfill, closed and existing dump site areas) (Data from Identifying Water Quality Objectives and Sensitive Areas at Basin Base in Turkey Project) ("Türkiye’de Havza Bazında Hassas Alanların ve Su Kalitesi Hedeflerinin Belirlenmesi Projesi” Verileri)	YES
	Basin	Soil quality measurement results and sampling/measurement points (Identifying Water Quality Objectives and Sensitive Areas at Basin Base in Turkey Project) (Türkiye’de Havza Bazında Hassas Alanların ve Su Kalitesi Hedeflerinin Belirlenmesi Projesi)	YES
	Basin	Nitrate pollution at water resources and soil (NİBİS data)	YES
Directorate of Desertification and Erosion Combatting	Basin	Erosion Risk Map	YES

Institution	Region/Area	Requested Information/Document	Received (Yes / No / No Response)
MTA	Basin	Current landslide area maps for the for the sheets given below: F38c3, F39d4, F39d3, G38b2, G39a1, G39a2, G38a3, G38b4, G38b3, G39a4, G39a3, G38d2, G38c1, G38c2, G39d1, G39d2, G38d3, G38c4, G38c3, G39d4, G39d3	YES
	Basin	1/100000 scale geology sheets (F38-G38 and F-39-G39)	YES
Meteorological Service	Basin	Monthly average temperature data and annual total precipitation data for the following stations for the last 20 years	YES
	Basin	Precipitation intensity for 30 minutes for the following stations.	YES
	Basin	Station List: 17461 Yasonburnu Feneri (Light House) 17689 Fatsa 18130 Gököy 18523 Aybastı 18524 Çamaş 18528 Gürgentepe 18530 Kabataş 18531 Kumru 18533 Kırılı Beldesi 18534 Ulubey 17717 Başçiftlik	YES
General Directorate of National Estate	Basin	Is there any national estate / public property? If any, what is the amount?	YES
	Basin	The number of properties and total property amount that are matter in dispute	YES
	Basin	The amount public property used and number of beneficiaries (on the district base)	YES
General Directorate of Land and Cadastre	Basin	Is there any lawsuit ongoing regarding registration and determination issues at the basin? If any, provide the number of lawsuits and total amount of property subject to these lawsuit. (on the district base)	YES
	Basin	What is the number of immovable property registered to the women (or share)? Due to confidentiality percentage can be given. (on the district base)	YES
	Basin	What is the number of land registered to women (or share)? Due to confidentiality percentage can be given. (if possible on the district base)	YES
	Basin	Cadastral data including province/district/neighbourhood/lot/parcel/title deed area/quality information for all parcels in Boloman basin to identify pasture/forest/agriculture areas certainly and set forth the figures	YES

Institution	Region/Area	Requested Information/Document	Received (Yes / No / No Response)
TUIK	Village / Neighbourhood	Number of population over 65 (on village/neighbourhood base)	YES
		Migration statistics (on village/neighbourhood base)	YES
		Income and poverty data (on village/neighbourhood base)	YES
		Statistics about agricultural and non-agricultural income sources (on village/neighbourhood base)	YES
	Village / Neighbourhood	Income level and employment data (on village/neighbourhood base)	YES
Village / Neighbourhood	Gender Indicators: Population, Fertility, Health, Disability, Marriage, Family Life, Divorce, Education, Labour, Agriculture, Selected Professions, Job-Income Satisfaction, Political Life, Violence and Security, Time Use, Poverty, Mortality, Sustainable Development Indicators	YES	
UN	Basin	Gender Indicators Minimum Set: Economic structure, Participation to Production Activities and Access to Sources, Education, Health and Related Services, Public Life and Decision Making, Human Rights of Women and Girls	YES
General Command of Mapping	Basin	Hydrography Maps of the basin	NO
KOSGEB	District	Where was the start-up trainings delivered and how many women beneficiary participated in the last 2 years? (if possible on the district base)	YES
Provincial Directorate of Agriculture	Basin/District	Existing agricultural intensives provided at the basin (on district base)	YES
	Basin/District	Number of personnel performing extension services, their gender, and profession (on district base)	YES
	Basin/District	Content of extension services (on district base)	YES
Provincial Directorate of Tourism and Culture	Ordu	Coordinates of cultural heritage	YES
Provincial Directorate of Family Labor and Social Services	Village / Neighbourhood	Number of people receiving social aid (on the village/neighbourhood/residential area base)	YES
	Basin	Number of handicapped, elder, widow and sick persons (on the village/neighbourhood/residential area base)	YES
	Basin	Number of persons getting home care services (on the village/neighbourhood/residential area base)	YES

Institution	Region/Area	Requested Information/Document	Received (Yes / No / No Response)
	Basin	Employment and working condition data (on the village/neighbourhood/residential area base)	YES
	Basin	Household income levels (on the village/neighbourhood/residential area base)	YES
Provincial Directorate of National Education	Province/District	Number of primary school/ high school (on the village/neighbourhood/residential area base)	NO
	Province/District	Number of teachers (on the village/neighbourhood/residential area base)	NO
	Province/District	Number of active pre-schools (on the village/neighbourhood/residential area base)	NO
	Village / Neighbourhood	Number of vocational trainings, trainings (on the village/neighbourhood/residential area base)	NO
	Basin	The subjects of the trainings delivered at Public Training Centers (Halkevleri) (on the district base)	NO
Provincial Directorate of Health	Basin	Number of health units and properties (based on locations)	YES
	Basin	Number of number of medical doctors, nurses and midwives working these units (working number of days in a week)	YES
	Province/District	Child labour at the basin	YES
Municipalities	Ordu Metropolitan Municipality - OSKI	Coverage of sewerage network and discharge points	YES
	Ordu Metropolitan Municipality - OSKI	Coverage of water network (areas where water supplied and residential areas where water cannot be supplied)	YES
	Tokat (Başiftlik, Niksar and Reşadiye)	Coverage of sewerage network and discharge points	YES
		Coverage of water network (areas where water supplied and residential areas where water cannot be supplied)	YES

Annex 3: Records of Stakeholder Consultations

Annex-3: Agenda and Participation Lists of Meetings during the Field Study

Date: 13 July 2020 Monday

Venue: Governorship Meeting Room

- 14:00-17:30 **Session I- Meeting with Ministries and Local Organizations**
Moderator -İsmail BELEN, Agriculture and Forest Expert
- 14:00-14:30 **Meeting and Opening Speeches**
Mehmet ÇELİK, Forestry Deputy General Manager
Dr. Ayşegül SELİŞİK, Assistant FAO Representative in Turkey
Dr. Hilmi GÜLER, Mayor of Ordu Metropolitan Municipality
Deputies-In case of their honor
Tuncay SONEL, Governor of Ordu
- 14:30-15:00 **General Presentation of the Bolaman Basin Project** - General Directorate of Forestry
Mehmet ÇELİK, Forestry Deputy General Manager
Presentation of the UN Food and Agriculture Organization (FAO)
Dora SİRER, FAO SESA Team Leader
- 15:00-15:30 Break
- 15:30-16:30 **Presentations of Project Implementing Institutions**
General Directorate of Highways
Emine BALABAN, Samsun 7th Deputy Regional Director
General Directorate of State Hydraulic Works
Erhan DEMİR, Deputy Head of Department
General Directorate of Agricultural Reform
Kemal YILMAZ, Ordu Agriculture and Forestry City Manager
Forest Management
Celal KANBUR, Giresun Forest Regional Assistant Manager
- 16:30-17:30 **Discussion and Evaluation - Closing**

Date: 14 July 2020, Tuesday

Venue: Governorship Meeting Room

09:00-11:30 **Session-II Civil Society Organizations & Meeting with the Private Sector (Stakeholder Meeting)**

Moderator -İsmail BELEN, Agriculture and Forest Expert

09:00-09:30 **Meeting and Opening Speeches**

OGM, Ertan PİRDAL Head of Department

Dr. Ayşegül SELİŞİK, Assistant FAO Representative in Turkey

09:30-10:00 **General Presentation of the Bolaman Basin Project** - General Directorate of Forestry

OGM, Ertan PİRDAL Head of Department

Ekrem YAZICI, Presentation of the UN Food and Agriculture Organization (FAO)

Dora SİRER, FAO SESA Team Leader

09:30-10:00 **Presentations of Project Implementing Institutions**

General Directorate of Highways

Murat GÖNENLİ, Samsun 7th Regional Director or Emine BALABAN, Samsun 7th Deputy Regional Director

General Directorate of State Hydraulic Works

Erhan DEMİR, Deputy Head of Department

General Directorate of Agricultural Reform

Kemal YILMAZ, Ordu Agriculture and Forestry City Manager

Forest Management

Celal KANBUR, Giresun Forest Regional Assistant Manager

10:00-11:30 **Participant Opinions**

11:30

Closing

Break

14:00-14:30 **Meeting and Opening Speeches**

Mehmet ÇELİK, Forestry Deputy General Manager

Dr. Ayşegül SELİŞİK, Assistant FAO Representative in Turkey

Dr. Hilmi GÜLER, Mayor of Ordu Metropolitan Municipality

Deputies-In case of their honor

Tuncay SONEL, Governor of Ordu

14:30-15:00 **General Presentation of the Bolaman Basin Project** - General Directorate of Forestry

Mehmet ÇELİK, Forestry Deputy General Manager

Presentation of the UN Food and Agriculture Organization (FAO)

Dora SİRER, FAO Project Environmental and Social Assessment Expert Group Leader

15:00-15:30 **Break**

15:30-16:30 **Presentations of Project Implementing Institutions**

General Directorate of Highways

Emine BALABAN, Samsun 7th Deputy Regional Director

General Directorate of State Hydraulic Works

Erhan DEMİR, Deputy Head of Department
General Directorate of Agricultural Reform
Kemal YILMAZ, Ordu Agriculture and Forestry City Manager
Forest Management
Celal KANBUR, Giresun Forest Regional Assistant Manager

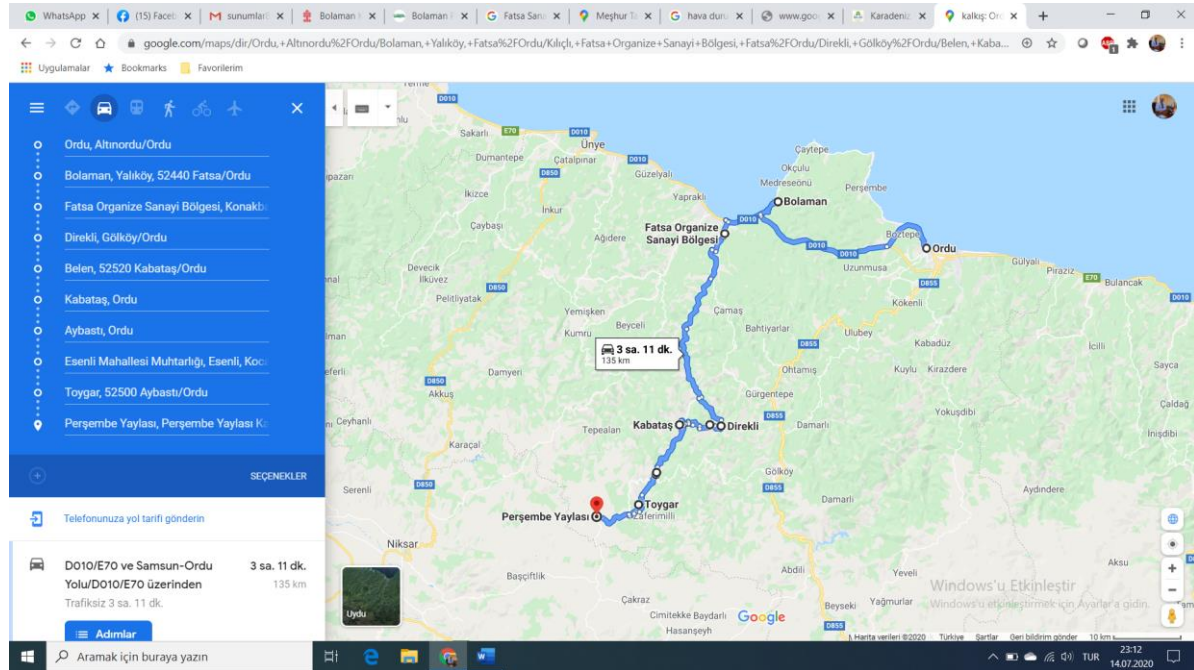
16:30-17:30 **Discussion and Evaluation - Closing**

Date: 15 July 2020, Wednesday

- 07:30-08:00 Departure from Ordu
08:00-08:30 Visit to Bolaman Castle and Hazinedaroğlu Mansion
08:30-09:00 Breakfast at Bolamanpark
09:00- 10:00 Visit to Fatsa Organized Industrial Zone (Fatsa Municipality and DSİ)
10:30-11:00 Tunnel of Çatalpınar - Emine Balaban- KGM/ +The mayor of Çatalpınar
11:30-12:30 From Kuyluş area road to Direkli, the bridge of Direkli, promenade of Belenköy
13:00-14:00 Presentations of meeting at Kabataş Muncipality building
14:00-15:00 Lunch at Kabataş
16:00-17:00 Meeting at Aybastı – Aybastı Technical High School
17:00-19:00 Field visits at Aybastı
- Landslide area visit at Sağlık Neighbourhood – The Mayor
 - Kızılot water reservoir– Municipality
- 20:00 Supper at Perşembe Plateau

Accommodation at Belenyayla and the review of the day's activities

Route Map

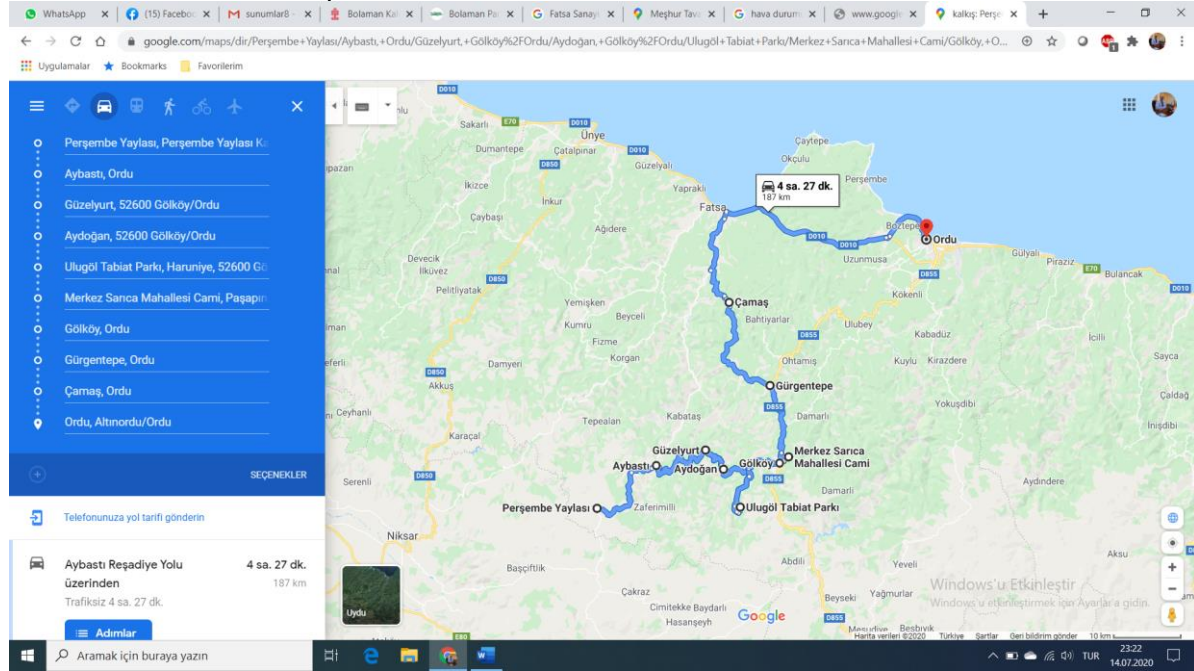


Date: 16 July 2020, Thursday

- 08:00-09:00 Breakfast at the Hotel
09:00-12:00 Road from Perşembe Plateau to Beştam Plateau – observations at Yaylasında pasture rehabilitation – Provincial Agricultural Directorate
Observation at the Perşembe Plateau about Karga Tepesi/Menderesler-Ecotourism Aybastı Director of Forestry Works
RES Power plants review -Kızılkaya Plateau (Observation about the plateau and pasture rehabilitation works)
- 12:00-14:00 Lunch
- 14:00-16:00 Observations along the Aybastı-Gölköy highway
Landslide area in Aydoğan and disaster housing
Observation in Ulugöl
Observations at the Gölköy Sarıca Neighbourhood disaster zone
- 17:00-18:00 Observations at the peak of Çamlıca and meeting with local people
19:00-20:00 Visit to the Mayor of Çamaş
20:00-21:00 Observation on the road from Çamaş to Ordu

Accommodation in Ordu and the review of the day

Route Map



Consultation Records

Stakeholder Group	Component	Date of Consultation	Information Shared/Disclosed	Purpose and Information Received	Key issues
Meeting in Ordu Governorate Building with; <ul style="list-style-type: none"> Governorship of Ordu FAO-Turkey FAO-SESA Team FAO-Feasibility Team 	Bolaman	13 July 2020	<ul style="list-style-type: none"> Introductory acquaintance meeting Brief Background Information of the Project 	<ul style="list-style-type: none"> Official visit to governor Brief opening speeches Opinions and suggestions 	<ul style="list-style-type: none"> Poor Infrastructure: The poorly developed infrastructure in terms of transportation and urban and rural services of water, sanitation and waste treatment seems to impose a prerequisite for any development initiation in the Basin and region. Elderly Population Rate: The elderly population rate is very high in the Bolaman River Basin. It has been observed during the field visits that there was not much young or middle-aged population at presence. This has also been confirmed during the discussions with the local people in various places (such as coffeehouses or in open areas) that due to lack of economic opportunities most of the people from these age categories have been migrated to other cities for better employment opportunities. The age structure of the population and the high rate of out migration had an impact almost in every aspect of social life in the Basin. Out-migration: Especially since the year of 2000 the rural population is giving out migration in an irreversible rate. This is also evident from the site visits and the information gathered from the local people during these visits. Most elderly people informed us that they were once themselves migrant workers and went to other cities to earn money. As emphasized by them most of them performed unskilled tasks such as being laborers in the construction industry. Again as emphasized by the
Meeting in Ordu Metropolitan Municipality Building with; <ul style="list-style-type: none"> Mayor of Ordu MM FAO-Turkey FAO-SESA Team FAO-Feasibility Team 	Bolaman	13 July 2020	<ul style="list-style-type: none"> Introductory acquaintance meeting Brief Background Information of the Project 	<ul style="list-style-type: none"> Official visit to governor Brief opening speeches Opinions and suggestions 	
Meeting in Ordu Governorate Building with; <ul style="list-style-type: none"> Governor of Ordu Deputy Governor of Ordu 	Bolaman	13 July 2020	<ul style="list-style-type: none"> Opening Speeches Meeting with stakeholders (Implementing Public Institutions) 	<ul style="list-style-type: none"> Acquaintance Phase of All Implementing Parties Detailed Background Information of the Project Overall Objectives of the Projects 	

<ul style="list-style-type: none"> • Mayor of Ordu MM • SESA TEAM • FAO • OGM • DSI • KGM • TRGM 				<ul style="list-style-type: none"> • Presentations of Public Institutions and FAO 	<p>most, the young people from the region still choose this path and work as laborers in another cities. Given the low educational attainment in the basin this does not come as a surprise. The elderly in the Basin had the opinion that, as themselves did, the current migrants from the region will return back at their retirement age. These young people spending their economically most productive years outside the region as working unskilled labor also highlighted as one of the major social problems of the basin.</p>
<p>Meeting in Ordu Governorate Building with;</p> <ul style="list-style-type: none"> • Mayor of Ordu MM • Mayors of Districts of Ordu • FAO-Turkey • FAO-SESA Team • FAO-Feasibility Team • TRGM • OGM • DSI • KGM • NGOs • Private Sectors Representative 	<p>Bolaman</p>	<p>14 July 2020</p>	<ul style="list-style-type: none"> • Opening Speeches • Meeting with stakeholders (Municipalities, NGOs, Private Sector Representatives and Implementing Parties) 	<ul style="list-style-type: none"> • Acquaintance Phase of All Implementing Parties • (ii)Detailed Background Information of the Project • Overall Objectives of the Projects • Presentations of Public Institutions and FAO • (v) Question and Answer Stage of the Participants 	<p>The Bolaman River Basin spreads out from the narrow shore district of Fatsa towards inlands. Most of the basin and its settlements spread out over the landscape which is severely ragged. These adverse geomorphologic conditions limits the livelihood sources. The existing livelihood sources made the accumulation of capital very low. For most people the economic activities correspond to the subsistence economy. In fact one of the outcomes of the literature review of the basin was that most local people in terms of social and economic life had the lowest SES scores. This situation was observed during the field visits as being the part of everyday life reality.</p> <ul style="list-style-type: none"> • Ranking of Local Honey Production: In the literature review we have seen that the mobile beekeeping and honey production in Ordu was ranked the first in the country. In fact, despite travelling in the Basin widely, there was no reference or visible clue to the branding of the local honey production. • Low education level: It has also been observed that continuing to the education beyond the compulsory education age was low in the basin. Therefore, young people of the basin

					<p>were out of education with low educational degrees. Apart from the employment opportunities there were no social facilities in the Basin geared up to the benefit of the young population. Therefore, the social life was very limited even for young men. For young women because of the persistence of the traditional rural culture in the BRB, they have even more limited opportunities. Some people had the opinion that vocational training opportunities could help the improvement of skills of these young people.</p> <ul style="list-style-type: none"> • Difficulties in access to schools: Location of the settlements and spreading out to a large geographical terrain was one of the main contributors to the low level of education in the province, as this made young peoples' access to the educational facilities very difficult. • Labor intensive agriculture: During the field visits it has been observed that despite being disproportionately rural region there were no mechanized agricultural activity or machinery at sight. This is due to small land ownership in the region and these make the agricultural activities in the region labor intensive. Thus reinforces the use of seasonal agricultural labor. • Water shortage in summer season: Especially in the summer months, the lack of drinking water is emphasized by most of the local people as one of the main problems. In fact, some of the local people mentioned that they did not even want to see their relatives coming to visit them in summer months as this caused a population increase in the basin and accelerated the problem of drinking water. • Missed opportunities in agriculture:
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					<p>Quite a few local people emphasized that some of the agricultural products, such as wool from livestock, were not utilized effectively and were discarded as waste.</p> <ul style="list-style-type: none"> • Lack of post-disaster management: During the field visits some rural settlements that experienced natural disasters were visited and in some of these areas due to the area being declared to be a disaster zone, people had no access to their houses. The houses were cordoned out. People expressed that this was an ongoing situation for them for months and complained about the lack of attention and the financial difficulties they faced. Women residents were particularly voiced critical views. • Lack of social facilities: Lack of social facilities were another concern for the local people as in most rural settlements the coffeehouses were the only social gathering places. Please note these are male-only spaces.
<p>Meeting in Ordu, Municipality of Kabataş with;</p> <ul style="list-style-type: none"> • FAO Turkey • FAO-SESA Team • FAO-Feasibility Team • OGM • Mayor of Kabataş • Members of Mayor Chamber • Ordu Member of Parliament 	Bolaman	15 July 2020	<ul style="list-style-type: none"> • Meeting • Presentation of Mayor 	<ul style="list-style-type: none"> • Interviews with Muhktars • Making local contacts • Opinions and suggestions 	<ul style="list-style-type: none"> • It is mentioned that the biggest problem is drinking water. They have to carry drinking water to houses. here are problems with its smell and waste water. • Demands of the Muhktars regarding the improvement of Bolaman River and demands for improved roads, were received. It is also learned that there are no tourist demands in the eyes of public. • Beekeeping and apiculture product industry recommendations were observed • Noted that seasonal population movements pushing the infrastructure • Status of livelihoods (agriculture, animal husbandry and beekeeping) were discussed. • Discussion of the environmental and social problems of Bolaman basin with citizens and Muhtars of Kabataş District

<p>Meeting in Ordu, Aybastı Technical Anadolu High School with;</p> <ul style="list-style-type: none"> • FAO Turkey • FAO-SESA Team • FAO-Feasibility Team • OGM • Mayor of Aybastı • Mayor of Kabataş • Members of Mayor Chamber • Members of Parliament • Head of Red Crescent • Muhktars • Local Community • Head of the Industrial Zone Cooperation • Head of the Aybastı Agricultural Development Forum • Head of Red Crescent 	<p>Bolaman</p>	<p>15 July 2020</p>	<ul style="list-style-type: none"> • Meeting • Presentation of Ordu Parliament • Presentation of Mayor of Kabataş • Presentation of FAO Turkey 	<ul style="list-style-type: none"> • Interviews with Muhktars • Making local contacts • Opinions and suggestions 	<ul style="list-style-type: none"> • Problems with the construction of the Industrial Zone • The need for the construction of honey houses • Decreasing livestock and measures to be taken to prevent this (feed industry, ovine breeding facility) • Expect positive discrimination in animal support because they have low competitiveness in animal husbandry (they cannot produce forage crops). • Natural gas demand • Factory requirement for processing forest products • Livestock was at a good level in Aybastı in the past, it lost power over time • There are road, water and sewerage problems • There is a high rate of immigration • The main causes of migration are decline in animal husbandry and unemployment • They cannot use the water source near us and return the water we use to nature. • They can produce red fish, seafood should also be supported • Foresters complained about cutting trees but not planting new trees • Basins can be created to collect snow and rainwater in various valleys of Aybastı in order to feed groundwater. • Water problem can be solved with ponds • Road needs • Buying 50% discounted animals with animal supports is higher than the market • Young people should be protected, sports complex needs • Support projects should be given priority to the late • If there are no breakthroughs to increase infrastructure and employment, everyone will migrate.
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					<ul style="list-style-type: none"> • Fatsa makes use of the water source in Aybastı • Sending animal waste to the stream is a huge problem • The extinction of the red trout in the rivers • The existing pond becomes cloudy when it rains • Land consolidation need
<p>Meeting and observation in Ordu, Kızılot Neighborhood</p> <p>Participants:</p> <ul style="list-style-type: none"> • FAO Turkey • FAO-SESA Team • FAO-Feasibility Team • OGM • Mayor of the District • Mukhtar of Kızılot Neighbourhood 	Bolaman	15 July 2020	<ul style="list-style-type: none"> • Presentation by Mayor • SESA and feasibility information 	<ul style="list-style-type: none"> • Interviews and observations regarding the drinking water need • Drinking Water Project Area observation 	<ul style="list-style-type: none"> • The problem that the water obtained from the water source cannot be distributed • The size of the water need • Kızılot pond was converted from OGM's old fire pond to drinking water pond. • If we increase the weir height to 1 mt in the ecosystem lakes, there will be no danger of these ponds.
<p>Community Level Questionnaire application with 78 muhtar in Bolaman Basin for SESA</p>	Bolaman	12 November – 7 October 2020 (by phone)	<ul style="list-style-type: none"> • Project and Investment area. • Purpose of SESA 	<p>Settlement based primary information including:</p> <ul style="list-style-type: none"> • demographic profile and socio-economic structure, • social services and infrastructure, • migration and population movements, • vulnerable groups, gender issues, • educational level, • economic activities, • forest use, • land ownership, 	<ul style="list-style-type: none"> • Migration and fluctuating population structure is common, • There are infrastructure and social service deficiencies, • There are sensitive groups • The education level is low, • Forest use is available, • The soils are small and rugged, • Conditions of seasonal agricultural workers are not fixed, • Livestock activity is difficult, • There are needs for shepherding, • There is cultural heritage, • Intangible cultural heritage is similar to the general characteristics of Turkey, • Has disaster experience and anxiety, • There are sources of pollution,

				<ul style="list-style-type: none"> • situation of seasonal workers, • agricultural activities, • transhumance, • husbandry activities, • cultural heritage, • environmental and neutral disaster stories of the settlement, • water resources, • pollution, • sources of possible social conflict, • sewage systems. 	<ul style="list-style-type: none"> • There is water pollution, • Social conflicts are low, • There are no Syrian workers, • Infrastructure problems are serious, • Crop production is inefficient.
Household Questionnaire application with 136 villager in Bolaman Basin for SESA	Bolaman	12 November – 7 October 2020 (face to face)	<ul style="list-style-type: none"> • Project and Investment area. • Purpose of SESA 	<ul style="list-style-type: none"> • Household based primary information including: • Characteristics of household members, • Household livelihoods, • Property features, • Housing characteristics, • Views on the project. 	<p>When the basic problems of the basin and settlements are mentioned, more common problems are expressed, and when the individual problems of the households are asked, issues such as</p> <ul style="list-style-type: none"> • insufficiency of income sources, • costs and difficulties of agricultural activity and animal husbandry are expressed more often.
All stakeholders by web site	Bolaman	From October 2020 (Scoping and identification process)	<p>Problems identified in these resources have been reported and summarized for publication on the project website. The website includes the following issues:</p> <ul style="list-style-type: none"> • Demographic characteristics and related problems of the Project Area. • Livelihood characteristics and related problems of the Project Area. 	<p>Topic-based small questionnaires have been added to the web content prepared for those who want to provide additional opinions and highlight problems about Structure of population, Changes of population in the last 10 years, Reasons for outgoing migration, Structure of livelihood sources, Problems of livelihood, Most</p>	<p>A total of 69 responses were received. There were the same feedbacks identified during the SESA process. The most important problems:</p> <ul style="list-style-type: none"> • Drought, road and infrastructure problems, landslides and disaster hazards, lack of diversity of income sources, fluctuating population structure, inefficiency in hazelnut production and low base price, the need for livestock support. <p><u>About the project:</u></p> <ul style="list-style-type: none"> • Information is requested about where, which and when will be done • There is a need to know the details of the projects. • The project is compatible with the needs of the region.

			<ul style="list-style-type: none"> Quality of life in the Project Area. Social life and vulnerable groups/communities in the Project Area. Environmental characteristics and related problems of the Project Area. Dissemination of information about the project. 	important five problems of the settlements, Vulnerable groups, Environmental polluters, Biodiversity.	<ul style="list-style-type: none"> The needs are similar. Thanks to everyone who contributed. There is little belief that road problems will be solved. Infrastructure problems are the top priority to be resolved.
NGO: Karadeniz Doğa ve Çevre Derneği (KADOÇED)	Bolaman	23 October 2020	<ul style="list-style-type: none"> Project description Technical information Aims and content of the project Social, economic and environmental information about the project area 	<ul style="list-style-type: none"> Main problems of the Bolaman Basin specific to the field of work of the NGO or civil initiative What should be considered during the implementation phase of the Bolaman Basin Rehabilitation Project, specific to the field of work of the NGO or civil initiative Sensitive areas, species, groups, people in the Bolaman Basin, specific to the work area of the NGO or civil initiative Opinions and recommendations on the Bolaman Basin Rehabilitation Project, specific to the field of work of the NGO or civil initiative 	<ul style="list-style-type: none"> The most important problems: Economic forgetfulness, Aesthetic care. Participation not in words but in essence, strong cooperation with NGOs, a rewarding and encouraging approach to STK stakeholders who produce solutions not just because I did it, but a prosecutor, the opportunity to work in-kind and ski. There are sensitive species: The flora and fauna found here contain species that need to be protected, bay trees in coastal areas should be protected. The natural structure of the coastal zone and from the coastal edge line, the Epipelagic Zone: It covers depths between 0 and 200 m. It is the region where autotroph organisms are found. Be sensitive in the operations here. We want an approach that is constructive rather than destructive, sharing rather than conservative, pluralist and participatory rather than imposing, transparent rather than confidential, and giving importance to knowledge and information source.
NGO: Fatsa Öncü Eğitim, Kültür ve Sanat, Gençlik Kulübü Derneği	Bolaman	21 October 2020	<ul style="list-style-type: none"> Project description Technical information Aims and content of the project 	<ul style="list-style-type: none"> Main problems of the Bolaman Basin specific to the field of work of the NGO or civil initiative What should be considered during the 	<ul style="list-style-type: none"> Main problems: 1. Infrastructure and sewerage 2. Interaction of culture and arts between districts within the basin 3. Farmers' training in agricultural activities 4. Efficiency of livestock activities 5. Tourism infrastructure works and the need for

			<ul style="list-style-type: none"> • Social, economic and environmental information about the project area 	<p>implementation phase of the Bolaman Basin Rehabilitation Project, specific to the field of work of the NGO or civil initiative</p> <ul style="list-style-type: none"> • Sensitive areas, species, groups, people in the Bolaman Basin, specific to the work area of the NGO or civil initiative • Opinions and recommendations on the Bolaman Basin Rehabilitation Project, specific to the field of work of the NGO or civil initiative 	<p>communication training of local people 6. Lack of rural development supports etc.</p> <ul style="list-style-type: none"> • It is especially important to provide a planned and programmed training to young generations in the fields of entrepreneurship, tourism, professional agriculture and animal husbandry, communication and innovation activities for the next 5-10 years. In order for the project to find support locally, it must be well explained to the public. • It is a welcomed project for the region.
NGO: Fatsa Musiki Derneği	Bolaman	21 October 2020	<ul style="list-style-type: none"> • Project description • Technical information • Aims and content of the project • Social, economic and environmental information about the project area 	<ul style="list-style-type: none"> • Main problems of the Bolaman Basin specific to the field of work of the NGO or civil initiative • What should be considered during the implementation phase of the Bolaman Basin Rehabilitation Project, specific to the field of work of the NGO or civil initiative • Sensitive areas, species, groups, people in the Bolaman Basin, specific to the work area of the NGO or civil initiative • Opinions and recommendations on the Bolaman Basin Rehabilitation Project, specific to the field of work of the NGO or civil initiative 	<ul style="list-style-type: none"> • Main issue Transport and geography • Agricultural areas and forests should be protected in the project implementation • Living creatures in the area should be protected • Nature and environment should not be harmed in project implementation

In Depth Interviews with Women Community Members, (25 women), Bolaman	Bolaman	25 September-3 October 2020	<ul style="list-style-type: none"> Project and Investment area. Purpose of SESA 	<ul style="list-style-type: none"> Infrastructure – (Water, Sanitation, Road) Time Poverty Women’s responsibilities Access and control over sources and land ownership Access to basic services (Education) Access to basic services (Health) Disadvantaged groups of rural women Women entrepreneurship Women’s skill development Technology usage Women’s involvement in social life 	<ul style="list-style-type: none"> Limited infrastructure services Time poverty Gender-related division of labor Access and control over sources and land ownership
Key Informant - Provincial Directorate of Agriculture and Forestry	Bolaman	1 October 2020	<ul style="list-style-type: none"> Additional information need about the Directorate. 	<ul style="list-style-type: none"> Structure of the directorate Extension agents and services Activities 	<ul style="list-style-type: none"> Extension services Agricultural supports Women – oriented projects.
Key Informant - Ordu Bar	Bolaman	1 October 2020	<ul style="list-style-type: none"> Project and Investment area. Purpose of SESA 	<ul style="list-style-type: none"> Gender based violence Limited access to land and sources 	<ul style="list-style-type: none"> Gender based violence Limited access to land and sources
Key Informant - Empowerment of Women In Ordu Association	Bolaman	2 October 2020	<ul style="list-style-type: none"> Project and Investment area. Purpose of SESA 	<ul style="list-style-type: none"> Gender based violence Limited access to land and sources 	<ul style="list-style-type: none"> Gender based violence Access and control over sources and land ownership
Key Informant - Union of Turkish Women / Ordu Branch	Bolaman	3 October 2020	<ul style="list-style-type: none"> Project and Investment area Purpose of SESA 	<ul style="list-style-type: none"> Gender based violence Women’s limited access to education services Early marriages Women’s limited access to health services 	<ul style="list-style-type: none"> Gender based violence Women’s limited access to education services

KGM Research, Project and Environment Department	Bolaman	October – November 2020	<ul style="list-style-type: none"> Scoping report 	<ul style="list-style-type: none"> Scoping report views and suggestions (Scoping Report has been revised within the framework of opinions and suggestions received online through the opinion table) 	<ul style="list-style-type: none"> Comments received on the scope of SESA Technical corrections to project descriptions have been received Additional explanations regarding the objectives of the projects Suggestions on stakeholder engagement were received Opinions were received regarding the needs and sensitivities of the region. Conceptual problems arising from translation have been solved. Contributions were made to gap filling strategy and questionnaires.
DSI					
OGM Foreign Relations, Education and Research Department					
Giresun Regional Directorate of Forestry					
Ministry of Agriculture and Forestry General Directorate of Combating Desertification and Erosion					
Ordu Provincial Directorate of Culture and Tourism					
Ordu Provincial Directorate of Agriculture and Forestry					
Ordu Provincial Disaster and Emergency Directorate					

Ordu Provincial Directorate of Environment and Urbanization					
Ordu Provincial Health Directorate					
Whastapp groups (3) with muhtars in Bolaman Basin OGM officers SESA members	Bolaman	From November 2020	<ul style="list-style-type: none"> • Providing up-to-date information, • Redirecting to the website, • Answering questions. 	<ul style="list-style-type: none"> • Exchange of information about the project and Bolaman 	<p>A total of 145 replies were included in the assessment. These are in line with the findings in the SESA process.</p> <p>The most important problems:</p> <ul style="list-style-type: none"> • Drought, road and infrastructure problems, landslides and disaster hazards, lack of diversity of income sources, fluctuating population structure, inefficiency in hazelnut production and low base price, the need for livestock support. <p><u>About the project:</u></p> <ul style="list-style-type: none"> • Information is requested about where, which and when will be done • There is a need to know the details of the projects. • The project is compatible with the needs of the region. • The needs are similar. • Thanks to everyone who contributed. • There is little belief that road problems will be solved. • Infrastructure problems are the top priority to be resolved.

Capacity developing (Zoom) meetings	Bolaman and Çekerek	2-5 November 2020	<ul style="list-style-type: none"> • The requirements of a project management in WB standards • How to manage environmental and social impacts • How to ensure stakeholder engagement • Labor management procedures • Resettlement procedures • Purchasing procedures 	<ul style="list-style-type: none"> • Managerial and technical needs, • Discussion of those who are curious about the application, • Application of procurement procedures. 	<ul style="list-style-type: none"> • Needs training, • Overseas observation needs, • Needs personnel, • Needs social and environmental experts or training, • Needs tools.
<p>Online forum with external direct stakeholders:</p> <ul style="list-style-type: none"> • STK yetkilileri • Girişimci • Kadın girişimci • Hazelnut producers • Akademisyenler • OGM • TRGM • KGM • DSi • SESA members • Muhtars 	Bolaman and Çekerek	5 November 2020	<ul style="list-style-type: none"> • The importance and tools of stakeholder engagement • Promotion of the website • The requirements of a project management in WB standards • How to manage environmental and social impacts • How to ensure stakeholder engagement • Labor management procedures • Resettlement procedures • Purchasing procedures 	<ul style="list-style-type: none"> • Thoughts about the project, • The needs of different sectors, 	<ul style="list-style-type: none"> • Measures are necessary for the young population to stay in the countryside. Education opportunities should be good. • They are worried that the mine site will expand. It is a contradiction to do this when trying to improve your bola. • There are places suitable for tourism in Fatsa-Aybastı. • It is required to open Thursday Plateau to development. (However, the drawbacks of this were also mentioned) • Throwing sewage wastes into the stream is a big problem, needs treatment (also important for tourism) • With the support of Aybastı Municipality, they organized a canoe activity with participants from 27 countries from Perşembe Plateau. • Satisfaction with female participation • The market stage of the products should also be taken into account. • They conveyed their knowledge and experience on chestnuts. • Our hazelnut production method is primitive. One-branch-three-branch system is more efficient.

					<ul style="list-style-type: none">• Average yield and income from hazelnuts is very low.• A family cannot get 10-15 thousand a year. That way, we can't keep people here.• Good agriculture should be encouraged.• Medicine, soil analysis, pruning issues should be supported.• Area-based support.• Good planning is required as the flood risk is high.• It is necessary to move away from traditional production.• All projects should be shown on the map and planned.
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Annex 4: List of Cultural Heritage in the BRB

Province	District	Settlement	Name	Plot	Parcel	Category	Characteristic	No
ORDU	AYBASTI	Esenli Mah.	House	219	16	Immovable Cultural Property to be Protected	House	
ORDU	AYBASTI	Alacalar Beldesi, Karanlık Dere Mev.	Dere Site Former Settlement Second Degree Archaeological Site Area			Archaeological Site Area	Archaeological Site	2
ORDU	AYBASTI	Esenli Mah.	House	219	18	Immovable Cultural Property to be Protected	House	
ORDU	AYBASTI	Esenli Mah.	House ve müştemilatı (serender)	220	1	Immovable Cultural Property to be Protected	House	
ORDU	AYBASTI	Esenli Mah.	Serender	225	12	Immovable Cultural Property to be Protected	Serender	
ORDU	AYBASTI	Esenli Mah.	House	115	5	Immovable Cultural Property to be Protected	House	
ORDU	AYBASTI	Esenli Mah.	House	115	6	Immovable Cultural Property to be Protected	House	
ORDU	AYBASTI	Karamanlı Mah.	Mill	207	1	Endüstriyel ve Ticari Yapılar	Mill	
ORDU	AYBASTI	Esenli Mah.Mağara Yanı Mev.Mağara tepesi üzerinde	Rock tombs	367	2	Archaeological Site Area	Rock tombs	
ORDU	AYBASTI	Perşembe Yaylası,Esenli Mah.	Perşembe Yayla Mosque		13	Dinsel Yapılar	Cami	

ORDU	ÇAMAŞ	Sarıyakup Mah.Damsu Mev.	Rock tombs	1131	6	Archaeological Site Area	Rock tombs	
ORDU	ÇAMAŞ	Sucuali Mah.	Rock tombs	282	18	Archaeological Site Area	Rock tombs	
ORDU	ÇAMAŞ	Sucuali Mah.	Rock tombs	282	19	Archaeological Site Area	Rock tombs	
ORDU	ÇAMAŞ	Sucuali Mah.	Rock tombs	285	13	Archaeological Site Area	Rock tombs	
ORDU	ÇAMAŞ	Edirli Köyü	Çamaş Mansion ve müştemilatı		516	Immovable Cultural Property to be Protected	House	
ORDU	ÇAMAŞ	Danışman Mah.	Grave	397	3	Graveyards	Graveyard	
ORDU	ÇAMAŞ	Budak Mah.	Ottoman Tombstones	293	22	Graveyards	Tombstone	
ORDU	ÇAMAŞ	Sucuali Mah. İnüstü Mev.	Rock tombs	282	61	Graveyards	Graveyard	
ORDU	ÇAMAŞ	Örmeli Mah. Mağarayanı Mev.	Rock tombs	146	1,2	Graveyards	Graveyard	
ORDU	ÇAMAŞ	Hisarbey köyü, Çevlik Gölü Mev.	Rock tombs		434	Graveyards	Graveyard	
ORDU	ÇAMAŞ	Hisarbey köyü, Çevlik Gölü Mev.	Rock tombs		435	Graveyards	Graveyard	
ORDU	ÇATALPINAR	Merkez Mah.	Ahşap Mevlana Mosque	110 ile 121	5 ile 1	Dinsel Yapılar	Cami	
ORDU	FATSA	Bolaman Beldesi kentsel-Archaeological Site Areanda	Kademoğlu Mansion (Haznedaroğlu Mansion)		3	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Bolaman Beldesi, Cami Cad.	Mansion		5- 6 4784- 4785	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Bolaman Bucağı, Cami Cad.	Mansion		7	Immovable Cultural Property to be Protected	House	

ORDU	FATSA	Bolaman Bucağı, Yarımada'nın tamamı	grade 2 Sit Area (Arkeolojik ve Doğal Sit)			Arkeolojik ve Doğal Sit Area	Arkeolojik ve Doğal Sit	2
ORDU	FATSA	Göller Köyü	Castle			Archaeological Site Area	Castle	1
ORDU	FATSA	Yapraklı Köyü sınırları içinde	Çingirt (Cingirt) Kaya eski yerleşim yeri (grade 1 Archaeological Site Area)			Archaeological Site Area	Archaeological Site	1
ORDU	FATSA	Kabakdağı köyü İnanoğlu Mah.	House	102	34	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü Tepe Mah.	House	112	24	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü Beyazıt Mah.	House	103	22	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü Beyazıt Mah.	House	119	3	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü Beyazıt Mah.	House	119	1	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü Orta Mah.	House	159	5	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Yalıköy Beldesi Sahil Mev.	Yalıköy Mosque	-	1892	Dinsel Yapılar	Cami	
ORDU	FATSA	Kabakdağı köyü,Orta Mah.	House	159	20	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü,Orta Mah.	House	162	18	Immovable Cultural Property to be Protected	House	

ORDU	FATSA	Kabakdağı köyü,Orta Mah.	House	159	21	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü,Orta Mah.	House	160	19	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü,Orta Mah.	House	160	23	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü,Sönmez Mah.	House	149	1	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü Taşdıbek Mah.	House	114	7	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü Taşdıbek Mah.	House	114	4	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü,Sönmez Mah.	House	132	29	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü,Orta Mah.	House	147	1	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü,Eroğlu Mah.	House	151	39	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü Orta Mah.	House	162	10	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü Orta Mah.	House	159	18	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Kabakdağı köyü Orta Mah.	House	163	2	Immovable Cultural Property to be Protected	House	

ORDU	FATSA	Kabakdağı köyü Orta Mah.	House	162	26	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Bolaman Beldesi	Immovable		39	Immovable Cultural Property to be Protected	House	2
ORDU	FATSA	Bolaman Beldesi	Kilise			Dinsel Yapılar	kilise	
ORDU	FATSA	Bolaman Beldesi	Sur Duvarları			Kalıntılar	Kalıntı	
ORDU	FATSA	Bolaman Beldesi	Kentsel Archaeological Site Area (Bolaman Yarımadası)			Kentsel Archaeological Site Area	kentsel Archaeological Site	
ORDU	FATSA	Meşebükü Köyü Cinoymağı Mah.	Mescid		1069 parsel koruma area	Dinsel Yapılar	Mescit	
ORDU	FATSA	Mustafa Kemal Paşa Mah.	Hacı Hulusi (Tekke) Mosque	32	1	Dinsel Yapılar	Cami	
ORDU	FATSA	Castleönü Köyü	Castle		233	Archaeological Site Area	Castle	1
ORDU	FATSA	Bolaman Beldesi, Gölbaşı Mahallesi	Yenipazar Mosque		1280	Dinsel Yapılar	Cami	
ORDU	FATSA	Meşebükü Mah.Çayır Mev.	Graveyard Area		1108	Graveyards	Graveyard	
ORDU	FATSA	Meşebükü Mah. Dİpköy Mevkii	Rock tombs		234	Archaeological Site Area	Rock tombs	
ORDU	FATSA	Bolaman Beldesi	Immovable		4557	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Bolaman Beldesi	Immovable		36	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Bolaman Beldesi	Immovable		144	Immovable Cultural	House	

						Property to be Protected		
ORDU	FATSA	Tayalı Mah.	Graveyard area	187	17	Graveyards	Graveyard	
ORDU	FATSA	Aşağıyavaş Mah.(Köyü)	Aşağıyavaş Köyü Central Mosque	235	2	Dinsel Yapılar	Cami	
ORDU	FATSA	Kösebucağı Beldesi, Müezzinoğlu Mah.	Kösebucağı Mosque	108	27	Dinsel Yapılar	Cami	
ORDU	FATSA	Kurtuluş Mah.	Kilise Binası ve çevresi 1.ve 3.derece Archaeological Site Area	906(1. der.ar k.sit) 209(3. der.)	3 ve 4(grade 1 ark.sitte) 3.derece de:23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-41-42-45-54-55)	Archaeological Site Area	kilise	
ORDU	FATSA	Yapraklı Köyü	Gözetleme kulesi		997	Askeri Yapılar	kule	
ORDU	FATSA	Oluklu Mah.	Ahşap Sarnıç Mosque	110	13	Dinsel Yapılar	Cami	
ORDU	FATSA	Meşebükü Mah.	1 Nolu Tombstone (Ottoman)		753	Graveyards	Tombstone	
ORDU	FATSA	Meşebükü Mah.	2 Nolu Tombstone (Ottoman)		753	Graveyards	Tombstone	
ORDU	FATSA	Meşebükü Mah.	3 Nolu Tombstone (Ottoman)		753	Graveyards	Tombstone	
ORDU	FATSA	Meşebükü Mah.	4 Nolu Tombstone (Ottoman)		753	Graveyards	Tombstone	
ORDU	FATSA	Kabakdağı köyü	Immovable	162	18	Immovable Cultural Property to be Protected	House	

ORDU	FATSA	Kabakdağı Köyü	Immovable	162	26	Immovable Cultural Property to be Protected	House	
ORDU	FATSA	Aslancami Köyü, Merkez mah.	Rock tombs (4 adet)	174	2-3 ve 4	Archaeological Site Area	Rock tombs	
ORDU	FATSA	Bolaman Mah. Güvercinlik Mev.	Arcosoliumlu Grave (3 adet)		810	Graveyards	Graveyard	
ORDU	GÖLKÖY		Hamam			Kültürel Yapılar	Hamam	
ORDU	GÖLKÖY		Mansions			Immovable Cultural Property to be Protected	House	
ORDU	GÖLKÖY	Emirler köyü Dereçayır Mah.	Mosque	142	1	Dinsel Yapılar	Cami	
ORDU	GÖLKÖY	Kuşdoğan Mah. Darahda Mev.	Kilise	434	12	Dinsel Yapılar	kilise	
ORDU	GÖLKÖY	Gölköy Mah. Yemişgen Küme Evleri Mev.	Kilise	795	16	Dinsel Yapılar	kilise	
ORDU	GÖLKÖY	Direkli Beldesi, Yeni Mah.	Asar Castle (I. derece Archaeological Site Area)	270	1	Archaeological Site Area	Castle	1
ORDU	GÖLKÖY	Castleköy sınırları içinde	Gölköy Castle (I. Derece Archaeological Site Area)			Archaeological Site Area	Castle	1
ORDU	GÖLKÖY		Castle			Askeri Yapılar	Castle	
ORDU	GÖLKÖY	Güzelyayla Mah.	Güzelyayla Mahallesi grade 1 Archaeological Site Area			Archaeological Site Area	Archaeological Site	1
ORDU	GÖLKÖY	Güzelyayla Mah.	1 Nolu Lahit Kaya Grave	102	1	Archaeological Site Area	Rock tombs	1
ORDU	GÖLKÖY	Güzelyayla Mah.	2 Nolu Lahit Kaya Grave	102	1	Archaeological Site Area	Rock tombs	1
ORDU	GÖLKÖY	Güzelyayla Mah.	1 Nolu Kaya Grave	102	1	Archaeological Site Area	Rock tombs	1

ORDU	GÖLKÖY	Güzelyayla Mah.	2 Nolu Kaya Grave	102	1	Archaeological Site Area	Rock tombs	1
ORDU	GÖLKÖY	Güzelyayla Mah.	3 Nolu Kaya Grave	102	1	Archaeological Site Area	Rock tombs	1
ORDU	GÖLKÖY	Gölköy Çayı Derebükü Mah.	4 adet Kaya Grave grade 1 Archaeological Site Area			Archaeological Site Area	Rock tombs	1
ORDU	GÜRGENT EPE	Dikenlice köyü Kuzgunkayası mah. ile Mağarayanı Mah.	Rock tombs 13 Adet)			Graveyards	Rock tombs	
ORDU	GÜRGENT EPE	Dikenlice köyü Kuzgunkayası mah. ile Mağarayanı Mah. Şimşir Tepede	Rock tombs (8 Adet grade 1 Archaeological Site Area)			Archaeological Site Area	Rock tombs	1
ORDU	GÜRGENT EPE	Dikenlice Köyü Kuzgunkayası Mah. ve Mağarayanı Mah.	Rock tombs (13 Adet)			Graveyards	Graveyard	
ORDU	KABATAŞ	Beylerbeyi Mah.	Beylerbeyi Ahşap Mosque	201	7	Dinsel Yapılar	Cami	
ORDU	KABATAŞ	Alankent Beldesi,Ağlalı Mev.	Hacı Salih Ağa Mansion	229	41	Immovable Cultural Property to be Protected	House	
ORDU	KABATAŞ	Alankent Beldesi,Alanb aşı Mah.Kırançık Mev.	Rock tombs	126	97	Archaeological Site Area	Rock tombs	
ORDU	KORGAN		Castle			Archaeological Site Area	Castle	
ORDU	KORGAN	Çiftlik Beldesi, Merkez Mah.	Ahşap Mosque			Dinsel Yapılar	Cami	
ORDU	KORGAN	Aşağı Yaylacık Mah.	Grave	573	1	Graveyards	Graveyard	
ORDU	KORGAN	Aşağı Yaylacık Mah.	Mosque	573	1	Dinsel Yapılar	Cami	

ORDU	KORGAN	Yeşilalan köyü,Orta Mah.Mev.	Central Mosque	160	6	Dinsel Yapılar	Cami	
ORDU	KUMRU	Samur Mah.	Central Mosque	248	15	Dinsel Yapılar	Cami	
ORDU	KUMRU	Samur Mah.	Hazire	248	15	Graveyards	Hazire	
ORDU	KUMRU	Samur Mah.	Samur Tümülüsü grade 1 Archaeological Site Area	255	2-60-61-62	Archaeological Site Area	Tümülüs	1
ORDU	KUMRU	Fizme Mah.Ecelli Mah.grade 2 Archaeologica 1 Site Area içinde	Rock tombs	187	41	Archaeological Site Area	Rock tombs	
ORDU	KUMRU	Fizme Beldesi,Ecelli Mah.Ecelli Graveliği doğusunda	Yerleşim Area grade 2 Archaeological Site Area			Archaeological Site Area	Archaeological Site	2
ORDU	KUMRU	Yeniakçalan Mah.	House	111	23	Immovable Cultural Property to be Protected	House	
ORDU	KUMRU	Yeniakçaalan Mah.	Çeşme	118	2	Kültürel Yapılar	çeşme	
ORDU	KUMRU	Şenyurt köyü	Orta Mahalle Ahşap Mosque	123	29	Dinsel Yapılar	Cami	
ORDU	MESUDİYE	Rüştiye Mah.	Karayakaların Büyük Mansion			Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Rüştiye Mah.	House (Cevat Karakaya' ya ait)			Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Rüştiye Mah.	House (Selamlık) (Üzeyir Karakaya' ya ait)	181	1	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Rüştiye Mah.	House (Nüsret Karakaya' ya ait)			Immovable Cultural Property to be Protected	House	

ORDU	MESUDİYE	Cedid Mah.	House (Kamil Artaç'a ait)			Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Kışla Mah.	Kilise	107	2	Dinsel Yapılar	Kilise	
ORDU	MESUDİYE	Kasaba Mah.	Hükümet Mansion	141	1	İdari Yapılar	İdari Bina	
ORDU	MESUDİYE	Ordu-Mesudiye karayolu üzerinde Kökenli ve dedeli Köyeri arasında	Dedeli Köprüsü			Kültürel Yapılar	Köprü	
ORDU	MESUDİYE	Müslüm Sarıca Mah. Aralık Çayırı mev.	Höyük grade 1 Archaeological Site Area			Archaeological Site Area	Höyük	1
ORDU	MESUDİYE		Çavdar Köyü Mosque			Dinsel Yapılar	Cami	
ORDU	MESUDİYE	Çaltepe Köyü Yukarı Mah.	Mescid			Dinsel Yapılar	Mescit	
ORDU	MESUDİYE	Sultantepe Mah.	House	131	18	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Rüştiye Mah.	House	154	4	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Merkez Mah. Merkez Caminin yanında	Gravelar	168	3,4	Graveyards	Graveyard	
ORDU	MESUDİYE	Yeşilce Beldesi Merkez Mah.	House (Nermin-İsmet Eraslan evi)	353	4	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Yeşilce Beldesi Merkez Mah.	House (Ali-Mehmet Eraslan evi)	353	3	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Yeşilce Beldesi Merkez Mah.	House (Ayşe Önal evi)	373	75	Immovable Cultural Property to be Protected	House	

ORDU	MESUDİYE	Yeşilce Beldesi, Merkez Mah.	House (Özgür Uğur Evi)	358	10	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Yeşilce Beldesi, Merkez Mah.	House (İrfan Yılmaz Evi)	359	4	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Yeşilce Beldesi, Merkez Mah.	House (Nuran Aksoy Evi)	361	1	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Yeşilce Beldesi, Merkez Mah.	House (Cenan Yıldırım Evi)	363	72	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Topçam Beldesi Şaphane Deresi kenarında	Şaphane Kilisesi			Dinsel Yapılar	kilise	
ORDU	MESUDİYE	Topçam Beldesi Muzadere yaylasında	Muzadere (Müzadere) Kilisesi	474	4	Dinsel Yapılar	kilise	
ORDU	MESUDİYE	Merkez Mah. Kasaba Mev.	House	169	19	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Kışla Mah.	Immovable	104	1	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Çaltepe Köyü, Yukarı Mah.	Çeşme			Kültürel Yapılar	Çeşme	
ORDU	MESUDİYE	Esatlı Köyü'nün güneyinde	Kaya üstü resim ve yazıtlar grade 1 Archaeological Site Area			Archaeological Site Area	Archaeological Site	1
ORDU	MESUDİYE	Doğançam köyü	Kilise	106	1	Dinsel Yapılar	kilise	
ORDU	MESUDİYE	İlişar Mah.	Osmanlı Çeşmesi	189	30	Kültürel Yapılar	çeşme	
ORDU	MESUDİYE	Yavşan Mah.	Kilise		1024	Dinsel Yapılar	kilise	

ORDU	MESUDİYE	Sultantepe Mah.	Immovable	139	21	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Türk Köyü,çukur Mah.	Ziraat Tepe Höyüğü grade 1 Archaeological Site Area	132	61-62	Archaeological Site Area	höyük	1
ORDU	MESUDİYE	Karacaören Mah.	Mosque	135	6	Dinsel Yapılar	Cami	
ORDU	MESUDİYE	Yeşilce Beldesi,Merkez Mah.	House (Bediha-Muammer Erdoğan Evi)	363	71	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Yeşilce Beldesi,Merkez Mah.	House (Nigar Arıcan Evi)	362	118	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Yeşilce Beldesi,Merkez Mah.	House (Önder Çelik Evi)	366	6	Immovable Cultural Property to be Protected	House	
ORDU	MESUDİYE	Yavşan Köyü	Mosque	178	11	Dinsel Yapılar	Cami	
ORDU	PERŞEMBE	Düz Mah.	Avuşlu Mosque (ağuşlu Mosque)	25	47	Dinsel Yapılar	Cami	
ORDU	PERŞEMBE	Düz Mah. Avuşlu Mosque Yanında	Tarihi Graveyard (Archaeological Site Area)			Archaeological Site Area	Graveyard	
ORDU	PERŞEMBE		Yason Kilisesi			Dinsel Yapılar	Kilise	
ORDU	PERŞEMBE	Castleyaka Köyü	Kışlaönü Mosque			Dinsel Yapılar	Cami	
ORDU	PERŞEMBE	Çaytepe Köyü	Kilise			Dinsel Yapılar	Kilise	
ORDU	PERŞEMBE	Çaytepe Köyü	grade 2 Doğal ve Archaeological Site Area (Kilisenin Bulunduğu Yarımada)			Arkeolojik ve Doğal Sit Area	Arkeolojik ve Doğal sit	2
ORDU	PERŞEMBE	Efirli Köyü Yalı Mah.	Mosque			Dinsel Yapılar	Cami	

ORDU	PERŞEMBE	Efirli Köyü Yalı Mah.	Hazire			Graveyards	Hazire	
ORDU	PERŞEMBE	Çaytepe köyü Yason mev.	Pitos grade 1 arkeolojik ve grade 2 doğal sit area (Yason burnu)			Arkeolojik ve Doğal Sit Area	Arkeolojik ve Doğal sit	
ORDU	PERŞEMBE		Beyli Köyündeki Graveyard			Graveyards	Graveyard	
ORDU	PERŞEMBE	Kovanlı köyü	Kilise	267	7	Dinsel Yapılar	Kilise	
ORDU	PERŞEMBE	Medreseöntü Beldesi Kazancılı köyü Belicesu Kayadibi Mev.	Antik Yerleşim Area grade 1 Archaeological Site Area		13- 14- 15- 16	Archaeological Site Area	Archaeolo gical Site	1
ORDU	PERŞEMBE	Soğukpınar köyü	Graveyard	144	7	Graveyards	Graveyard	
ORDU	PERŞEMBE	Soğukpınar köyü	Graveyard	141	10	Graveyards	Graveyard	
ORDU	PERŞEMBE	Boğazcık Köyü Behçeköy mah.	Mağara (grade 2 Arkeolojik ve Doğal Sit Area)			Arkeolojik ve Doğal Sit Area	Mağara	2
ORDU	PERŞEMBE	Çaytepe Köyü	Çaytepe köyü Arkeolojik kalıntı area(I. derece Archaeological Site)	119	8-9-10- 11-13- 14-15	Archaeological Site Area	Archaeolo gical Site	1
ORDU	PERŞEMBE	Gündoğdu Köyü,Haneha vlisi Mah.	Aslanoğlu Mansion	119	1	Immovable Cultural Property to be Protected	House	
ORDU	PERŞEMBE	Gündoğdu Köyü,	Graveyard Area	102	3 ve 4	Graveyards	Graveyard	
ORDU	PERŞEMBE	Perşembe- Fatsa sahil yolunda,Kurtu luş deresinin denize döküldüğü nuktada	Su Milli	144	2	Endüstriyel ve Ticari Yapılar	Mill	

ORDU	PERŞEMBE	Sırakovancı Mah.	1 nolu Tombstone	144	17	Graveyards	Graveyard	
ORDU	PERŞEMBE	Sırakovancı Mah.	2 nolu Tombstone	166	1	Graveyards	Graveyard	
ORDU	PERŞEMBE	Sırakovancı Mah.	3 nolu Tombstone	166	1	Graveyards	Graveyard	
ORDU	PERŞEMBE	Çaytepe Köyü, grade 1 arkeolojik ve grade 2 doğal sit area olan Yason Burnundaki Yason kilisesinin hemen yanında	Yapı Kalıntısı	113	27	Kalıntılar	Kalıntı	
ORDU	PERŞEMBE	Kovanlı Köyü, Biber Mah.	Rock tombs	207	2	Archaeological Site Area	Rock tombs	
ORDU	PERŞEMBE	Aşağıyumruş Mah.	Mosque		140	Dinsel Yapılar	Cami	
ORDU	PERŞEMBE	Castleyaka Mah.	Ottoman Tombstones		933	Graveyards	Graveyard	
ORDU	PERŞEMBE	Tarlacık Mah.	Ottoman kitabeli Grave taşlarının bulunduğu Graveyard area		281	Graveyards	Graveyard	
ORDU	PERŞEMBE	Kazancılı Mah.	Graveyard (Ottoman Tombstones)	137	1	Graveyards	Graveyard	
ORDU	PERŞEMBE	Kazancılı Köyü	Immovable	140	20	Immovable Cultural Property to be Protected	House	
ORDU	PERŞEMBE	Kutluca köyü Mosque Yanı Mev.	Ahşap Mosque	117	21	Dinsel Yapılar	Cami	
ORDU	ULUBEY	Kıranyağmur Köyü Kıran Mah.	Çeşme			Kültürel Yapılar	Çeşme	
ORDU	ULUBEY	Kıranyağmur Köyü Kıran Mah.	Mescid			Dinsel Yapılar	Mescit	

ORDU	ULUBEY	Şihlar Köyü sınırlarındaki Sarp Deresi üzerinde	Kemerli Köprü				Kültürel Yapılar	Köprü	
ORDU	ULUBEY	Kardeşler Köyü küçükçukur mah. Evlişya Harmanı karşısında İnönü mev. kaya kütleli üzerinde	Rock tombs				Archaeological Site Area	Rock tombs	
ORDU	ULUBEY	Akoluk köyü sınırları içinde Sarp Dere (Kızılın Deresi) üzerinde	Akoluk Köprüsü				Kültürel Yapılar	köprü	
ORDU	ULUBEY	Akpınar Köyü Beşoluk Mev.	Çeşme		793		Kültürel Yapılar	Çeşme	
ORDU	ULUBEY	Karakoca Mah.	Çeşme				Kültürel Yapılar	Çeşme	
ORDU	ULUBEY	Uzunmahmut Mah.	Çeşme	166	8		Kültürel Yapılar	çeşme	
ORDU	ULUBEY	Yenisayaca Mah.	Sunu area	186	140		Kalıntılar	Kalıntı	
ORDU	ULUBEY	Yenisayaca Mah.	Basamaklar	186	140		Kalıntılar	Kalıntı	
ORDU	ULUBEY	Yenisayaca Mah.	Su kuyusu	186	140		Kültürel Yapılar	Su kuyusu	
ORDU	ULUBEY	Çağlayan köyü,Hoşgelli Mah.	Rock tombs	102	1		Archaeological Site Area	Rock tombs	
ORDU	ULUBEY	Şihlar Köyü,Sarp Dere üzerinde	Sarpdere Köprüsü				Kültürel Yapılar	Köprü	
ORDU	ULUBEY	Kıranyağmur ve Karaağaç Köyleri arasında,melet Irmağı üzerinde	Köprü				Kültürel Yapılar	köprü	
ORDU	ULUBEY	Akoluk Mah.	House		766		Immovable Cultural Property to be Protected	House	

ORDU	ULUBEY	Güzelyurt Mah. Eymür Mah.	Rock tombs		T.H. 571	Archaeological Site Area	Rock tombs	
ORDU	PERŞEMBE	Salavat Mah.	Halılağa Mansion	139	1	Immovable Cultural Property to be Protected	House	
ORDU	ULUBEY	Güzelyurt Mah.	Çeşme		151	Kültürel Yapılar	Çeşme	
ORDU	GÜRGENTEPE	Eskiköy Mah.	Mosque	497	25	Dinsel Yapılar	Cami	
ORDU	GÜRGENTEPE	Eskiköy Mah.	Graveyard	497	25	Graveyards	Graveyard	
ORDU	ULUBEY	Karakoca Mah.	Çeşme	170	2	Immovable Cultural Property to be Protected	Çeşme	
ORDU	GÖLKÖY	Yeşilyurt/Damarlı Mah.	Graveyard	283	2	Graveyards	Tombstone	
ORDU	MESUDİYE	Üçyol Mahallesi İsmihan Pınarı Mevkii	Höyük grade 1 Archaeological Site Area			Archaeological Site Area	höyük	
ORDU	GÖLKÖY	Yeşilyurt/Damarlı Mah.	Çeşme	286	40	Kültürel Yapılar	Çeşme	
ORDU	FATSA	Kurtuluş Mah.	Kalıntı	919	3-4	Kalıntılar	Kalıntı	
ORDU	GÜRGENTEPE	Tepeköy Mahallesi Elikgüneyi Mevkii	Rock tombs	119	21	Archaeological Site Area	Rock tombs	
ORDU	FATSA	İslamdağ Mahallesi	Mosque	159	15	Dinsel Yapılar	Cami	
ORDU	PERŞEMBE	Doğanköy Mahallesi	Köprü	257	1	Kültürel Yapılar	Köprü	1. Grup
ORDU	KUMRU	Karacalı Mahallesi	Mill	198	4	Immovable Cultural Property to be Protected	Mill	1. Grup
ORDU	Fatsa	Duayeri Mahallesi	Cami ve Şadırvan	135	2	Dinsel Yapılar		1. Grup
ORDU	Kabataş	Hoşkadem Mahallesi	House	585	9	Immovable Cultural Property to be Protected	House	

ORDU	Fatsa	Bolaman Mahallesi	Tombstone		914-4478	Kültürel Yapılar		
ORDU	Fatsa	Ilıca Mahallesi Ilıca Irmağı üzeri				Kültürel Yapılar	Köprü	1
ORDU	Fatsa	Korucuk	Tombstone		470	Kültürel Yapılar		
ORDU	Mesudiye		Musalı Eski Mosque	113	6	Dinsel Yapılar		
ORDU	GÜRĞENT EPE	Döşek Mahallesi	Mosque		2619	Dinsel Yapılar		I.grup
ORDU	PERŞEMBE	Boğazcık Mahallesi	Mosque	126	2	Dinsel Yapılar		I.grup
ORDU	PERŞEMBE	Medreseözü Mahallesi	Mosque		2785	Dinsel Yapılar		I.grup
ORDU	Gölköy	Düzyayla-Cibiyazlık Mahallesi	Mosque	127	48	Dinsel Yapılar		I.grup
ORDU	Fatsa	Kabakdağı Mahallesi	Okul	146	1	İdari Yapılar		II.grup
ORDU	Kumru	Akçadere Mahallesi	Kuşnafak Kayası	115	6,15,21,22	Archaeological Site Area		III.grup
ORDU	Kumru	Akçadere Mahallesi	Kuşnafak Kayası	119	1,2,3,4,5,10,11,12,13,14	Archaeological Site Area		III.grup
ORDU	PERŞEMBE	Bekirli Mahallesi	Tombstone	313	12	Immovable Cultural Property to be Protected		
ORDU	Gürgentepe	Akmescit Mahallesi	Yerleşim Area 3.derece Archaeological Site Area	302	10	Archaeological Site Area		III.grup
ORDU	Gürgentepe	Akmescit Mahallesi	Yerleşim Area 3.derece Archaeological Site Area	211	1	Archaeological Site Area		III.grup
ORDU	Mesudiye	Erik Mahallesi	Köprü			Immovable Cultural Property to be Protected		I.grup

Annex 5: Terms of Reference for the Gender Action Plan

Background

Turkey Resilient Landscape Integration Project (TULIP) development objective is to strengthen integrated management of natural resources at the landscape level and increase access to climate-resilient infrastructure for flood and landslide control, water and sanitation services, and mobility for communities in the targeted areas of Ordu Province, Turkey.

The project will support the GoT in addressing the multitude of environmental challenges facing the Bolaman Basin in the Ordu province, while enhancing the livelihood security and resilience of local communities against the risks and impacts of climate-induced landslides, flooding, and drought. The project will adopt an integrated landscape management approach at the sub-basin scale (Boloman) to achieve these objectives. This integrated approach can help address the interlinked problems in Bolaman and rebuild the resilience of the social-ecological system within the sub-basin. Building on GoT and the Bank's previous experience in watershed management, this project will design a participatory planning process to take into account inputs from different stakeholder groups, allowing for the coordination and integration of solutions among different government agencies as well as between government and local stakeholders. Such participatory planning approach will contribute to bridging various stakeholders within the NRM sphere and improving institutional coordination. The project will also deploy integrated green and gray infrastructure solutions as both short-term and long-term responses to mitigate the risks of landslides, floods, and drought, and enhance climate resilience of the local populations and ecosystems.

The project will address these issues through six groups of interventions: i) restoration of ecosystem functions and services; ii) promotion of sustainable land use practices and diversification of rural livelihoods; iii) construction of resilient flood and sedimentation control structures; iv) construction of resilient water and sanitation facilities; v) climate and disaster-proofing of rural road network; and vi) strengthening of institutional capacity for INRM. The three project components have been pre-identified at concept stage. The detailed project activities will be refined through the development of a feasibility study and technical assistance to identify the right mix of green and gray infrastructure in consultation with local stakeholders.

Project Components

TULIP will be composed of two main components to be able to implement integrated green and grey infrastructure solutions to mitigate the risks of landslides, floods, and drought, and enhance the resilience of the local population and natural resources. As TULIP will include Bolaman and Çekerek Basins, the components and sub-components are designed accordingly.

Component 1: Investments in Resilient Landscape Integration in targeted areas. This component comprise investments in the forestry, agriculture, water, and transport sectors under an integrated landscape approach aimed at building the resilience of landscapes and livelihoods in the Bolaman and Cekerek Basins. These investments aim to address the challenges in these basins, including rural poverty and outward migration, natural resources degradation, water insecurity, and vulnerabilities to climate and disaster risks. The investments under this

component will include a variety of green infrastructure measures, sustainable land use, and livelihoods diversification by the General Directorate of Forestry (OGM) and the General Directorate of Agricultural Reform (TRGM); resilient infrastructure systems for drinking water supply, irrigation, and protection against climate and disaster risks by the State Hydraulic Works (DSI); and resilient road rehabilitation and construction by the General Directorate of Highways (KGM).

This component will have four sub-components to be implemented by OGM, TRGM, DSI, and KGM, respectively.

Sub-Component 1.1. Green infrastructure and sustainable livelihoods upstream. This sub-component will be implemented by OGM. It aims to enhance the long-term livelihood security for forest communities in the both basins by supporting the rehabilitation, protection, and sustainable management of forestry land and soil protection to enable reducing the risk, likelihood, and magnitude of downstream flooding, soil erosion, landslides, and drought, as well as for supporting the livelihoods of communities in these basins.

Sub-Component 1.2. Climate-smart and sustainable agricultural practices and value chains. This sub-component will be implemented by TRGM. It aims to improve livelihood opportunities for rural communities through climate-smart and sustainable agricultural practices and strengthening value chains in targeted basins. This sub-component will have following investments categorized under four topics:

Sub-component 1.3. Resilient infrastructure for water security. This subcomponent will be implemented by DSI. It aims to provide local communities with resilient infrastructure systems for supplying drinking and irrigation water and protecting against climate-related and natural disasters, such as floods and landslides. The investments under this sub-component are classified as following:

Sub-component 1.4. Resilient mobility. This sub-component will be implemented by KGM. It aims at enhancing the resilience of the rural road systems in Bolaman basin against climate and disaster risks and to improve local communities' mobility and access to markets. This sub-component will include the following investments:

Component 2: Implementation Framework, Project Management, and Sustainability. The objective of this component is to strengthen the capacities and coordination among participating institutions, to ensure not only effective and efficient project implementation, but also to support the institutional structures and processes that need to be established in a sustainable way to support integrated landscape planning and management in both the project area and elsewhere. Implementation of this component will be the responsibility of OGM and will include the following two sub-components:

Sub-component 2.1: Institutional Framework for Integrated Landscape Management. This sub-component will be implemented by OGM and will finance technical assistance activities to support the development of a national strategy, plan, or program for landscape resilience and sustainable recovery post-COVID-19 for vulnerable rural areas, and the necessary institutional framework and capacity building to support the implementation of such strategy/plan/program.

Sub-component 2.2: Project management and sustainability. Activities under this sub-component will include: (i) project management support, including capacity building to strengthen the technical, fiduciary, environment, and social capacities of participating institutions and their Project Implementation Units (PIUs); (ii) support for environmental and social management aspects, including preparation of site-specific Environmental and Social instruments, grievance redress, citizen engagement, and communications; and (iii) monitoring and evaluation.

Scope of Work

Major challenges—from climate change, natural disasters, and pandemics to decelerating investment growth and rising poverty rates in many developing countries—affect boys, girls, men and women differentially due to discriminatory implementations, along with gender and social norms that influence their economic roles, and responsibilities. Gender issues are clearly defined in the Environmental and Social Standards (ESSs) of the World Bank. The relevant requirements under each standard, with the focus on ESS1, 2, 4, 5, and 10, where gender equality and inclusion play a key role.

With the aim of achieving gender responsiveness at the very beginning of the TULIP project, a gender analysis was conducted and generic actions identified during Strategic Environmental Social Assessment (SESA) process. The aim of the gender analysis was to collect existing and baseline gender-disaggregated information relevant to the scope of the SESA, to identify the types of gender-related environmental and social impacts, risks, and mitigation measures and to map key women stakeholders and ensure women’s involvement in stakeholder analysis in the Bolaman River Basin (BRB) and to analyze women community members, including the most vulnerable ones and female-led institutions’ interests, concerns, and incentives, and ensure that their opinions are taken into account in the SESA.

As a result of gender analysis, baseline issues, key issues and prioritized issues were identified and subprojects of the TULIP Project were assessed in terms of promoting gender equality. Mitigation measures were identified where needed. Because of the fact that majority of subprojects are in generic structure, detailed studies on gender assessment should be done during project design and implementation processes. In the meantime, gender-related trainings and documents should be prepared for – to be a newly established unit – Project Implementation Unit (PIU) members and project teams.

In this context a gender specialist and/or a gender team should closely work with the PIU members to comprehensively identify and mainstream gender issues into the TULIP impementation process and ensure the implementation of gender-responsive activities.

Work Setting

The consultant(s) will be located in the PIU Office in Ankara but will frequently pay visit to the regional offices and the field. Reporting will be to the Social Manager of the PIU.

Duties and Responsibilities

Duties and responsibilities are structured as follows:

- Design gender baseline surveys and give training to PIU staff on how to conduct survey.
- Supervise gender baseline survey implementation.

- Analyse, interpretate and make recommendations in collaboration with the PIU staff.
- Identify safeguard measure and prepare a gender action plan.
- Identify sex-disaggregated indicators for each sub-sectors.
- Provide capacity building trainings on gender awareness and gender budgeting (but not limited to) to the PIU staff.
- Develop sector specific gender brief notes such as Gender and Water, Gender and Sanitation, Gender and Agriculture, Gender and Forestry.
- Conduct screening and stock taking exercise for each subprojects.
- Develop operational guidelines and training manuals.

Work Plan

Monthly workplan to be developed by the consultant(s) in consultation with the Social Manager of PIU Unit to ensure the delivery of outputs as specified in the Description of Action.

Duration

The assingment will be completed within 120 working days between the period of March 2021 to March 2022.

Profile of Consultant(s)

- Have demonstrated skills for facilitating gender mainstreaming with broad range of stakeholders
- Educational background: At least a Master's degree in Gender Studies or in the field of social sciences
- Work experience: Have at least 10 years of experience working in the field of gender, and/or prior working experience of mainstreaming gender in policies and projects
- Excellent writing and communication skills in English Language
- Excellent negotiation, facilitation and inter-personal skills
- Computer skills including use of internet and other office applications

Annex 6: Promotional Poster for the Project Website

BOLAMAN HAVZASI REHABİLİTASYON PROJESİ



PROJE AMAÇLARI

- Erozyonla mücadele ve toprak kaybının önlenmesi
- Meraların korunması ve ıslahı
- Havza genelinde taşkın ve heyelan kontrolünün sağlanması
- Ormanların korunması ve ormana dayalı alternatif geçim kaynaklarının geliştirilmesi
- Temiz su kaynaklarına erişiminin sağlanması
- Sürdürülebilir su kaynaklarının temini
- Havza genelinde hassas ekosistemlerin ve biyo-çeşitliliğin korunması
- Fındık yetiştiriciliğinin veriminin artırılması
- Afet risklerine karşı toplum güvenliğinin sağlanması
- Ulaşım altyapısının iyileştirilmesi
- Geçim kaynaklarının çeşitlendirilmesi ve geliştirilmesi
- Kültürel miras değerlerinin korunması

Proje takvimi 2021-2027



KARADENİZ

Perşembe

ORDU

Ulubey

Kabadı

Gürgentepe

Gölköy

Kabataş

Aybastı

Korgan

Catalınar

Camas

Fatsa

Çaybaşı

Kumru

Bağcıtlık



PAYDAŞ KATILIMI

Uygulama Yeri:
Bolaman Çayı Havzasında, Ordu ilinin 12 ilçesi
ile Tokat ilinin 3 ilçesi

İnternet sayfamızdan (<https://bolaman.ogm.gov.tr/>) yayınlanacak olan rapor özetlerini ve küçük anketleri Ekim ayı boyunca (2020) inceleyip ilinizin, ilçenizin, havzanın, köyünüzün ya da mahallenizin sorunları ve ihtiyaçları ile ilgili bilgilere katkı sağlayabilirsiniz.



Logo of the Ministry of Environment, Urbanization and Climate Change (Çevre, Şehircilik ve İklim Bakanlığı)

Logo of the Ministry of Agriculture, Forestry and Fisheries (Tarım, Orman ve Su İşleri Bakanlığı)

Logo of the Ministry of National Education (Millî Eğitim Bakanlığı)

Logo of the Ministry of Health (Sağlık Bakanlığı)

Logo of the Ministry of Culture, Heritage and Tourism (Kültür, Varlıklar ve Turizm Bakanlığı)

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Logo of TCK

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Logo of the Ministry of Culture, Heritage and Tourism (Kültür, Varlıklar ve Turizm Bakanlığı)

Logo of THE WORLD BANK (IBRD - IDA)



Some example applications for the promotional poster in Bolaman villages