TURKEY

IRRIGATION MODERNIZATION PROJECT

(P158418)

EREĞLİ – IVRIZ LEFT BANK IRRIGATION REHABILITATION PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

AUGUST 2018

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Abbreviations

KELIRP	Konya Ereğli-İvriz Left Bank Irrigation Rehabilitation Project
ESMP	Environmental and Social Management Plan
WB	World Bank
DSİ	State Hydraulic Works Directorate General
EIA	Environmental Impact Assessment

1 INTRODUCTION

This Environmental and Social Management Plan (ESMP) has been prepared to set out the measures required to be taken to eliminate and/or mitigate to acceptable levels the environmental and social impacts that may be caused during the pre-construction, construction and operation stages of Konya Ereğli-İvriz Left Bank Irrigation Rehabilitation Project (KELIRP) planned to be carried out under the Turkey Irrigation Modernization Project. This ESMP aims at clearly defining by whom, when, how often and how the measures will be taken during the pre-construction, construction and operation stages. This ESMP has been prepared in compliance with primarily the laws and regulations of Turkey, in addition to the World Bank's policies and safeguards measures.

2 Project Description

The infrastructure investments to be financed primarily under Component 1 of Turkey Irrigation Modernization Project (TIMP) include the replacement of existing open channel systems (channel and distribution structures) with closed and pressurized systems. This component will be implemented by DSI, and will also include improved operations and maintenance, and capacity-strengthening support for Water User Associations (WUAs). The sub-project covered by this ESMP and to be implemented under TIMP consists of the construction works to be carried out under the rehabilitation of existing Atabey Irrigation Scheme and the operation of the irrigation scheme.

Konya Ereğli İvriz Left Bank Irrigation Scheme is currently in operation and it consists of a combination of canalettes and classical systems. Due to the drought in recent years, İvriz Dam + Groundwater combination partially suffices irrigation for the whole plain. At present, the classical + canalette system irrigates an area of 15.013 ha in the plain. Through this project, the irrigation network will be converted to a high-pressure pipe system, resulting in a gross irrigation area of 15.280 ha under current circumstances. If the high-pressure pipe system is installed, the whole area can be irrigated through sprinkler/drip irrigation systems with water from İvriz Dam + Groundwater resources.

The modernization project aims at addressing the operational problems, problems in the network, operation and maintenance difficulties in the channels, water leakages caused by the worn-out and deformed channels, and the failure to supply water to the desired points. As part of the construction activities, the existing open channels will be closed systems (piped and pressurized system) equipped with drip and sprinkle irrigation systems.

2.1 Project Location and Current State

The project area is located in Central Anatolia region, in the southeast of Konya Closed Basin, surrounded by Ereğli İvriz irrigation area, Tuzgölü, Konya Çumra, Ayrancı, Berdan, Seyhan-Çakıt and Bor-Emen projects, with a total drainage area of 3,837 km^2. The project area covers İvriz Creek and Çayhan Creek drainage areas in addition to Ereğli Plain. Ereğli district center and 20 villages are also covered by the project area. (see Figure 1).

Ereğli-İvriz Left Bank Irrigation Rehabilitation project covers 15.013 ha of land irrigated from İvriz Dam, which is the most important water supply source of the project and which was commissioned in 1985. The irrigation systems have become old and worn out. Since the existing irrigation system consists of a combination of classical and canalette system, it is too difficult to operate the system and it is not possible to control the water. The upstream water users use the water first and no water is left for the downstream water users. Even water distribution technicians and other operational staff cannot ensure a controlled and fair distribution of water among users. Since this system applies traditional flooding irrigation method, the diversion needs double the water need of plants. Furthermore, because the canalette networks pose only a small need for expropriation, it forms a barrier among various parts of scheme and blocks passages.

Furthermore, there has been a significant expansion in the population and settlement areas of settlement units within the project area of Ereğli İvriz Left Bank İrrigation Project, and a significant portion of left bank irrigation scheme has been left within settlement areas and/or adjacent areas as

the houses with gardens have become more and more widespread. The irrigation scheme and the urban settlement areas have to be separated to the extent possible.

There are 60 groundwater wells drilled at various times for Ereğli İvriz Left Bank Irrigation Project. Some of these wells were drilled by DSI and some other beyond the knowledge of DSİ. Furthermore, due to the changing climatic conditions and the increase in dry climatic conditions, the water potential is also expected to decrease. From this perspective, water conservation is of great importance. As a result of the studies conducted for revision in Ereğli Project Planning Revision Report, the water potential of İvriz Dam was found to have decreased by almost 100 percent.

Finally, in recent years, DSİ has turned its focus towards pressurized pipe systems in irrigation systems due to ease of operation, water conservation, moderns methods of application and the diversification in pipe types, and even it has requires the use of these pipes as a compulsory condition. Given that pressurized pipe systems allow water to be conveyed to consumers in a very short period of time and enable ease of operation besides water conservation, it has been decided to revise Konya Ereğli – İvriz Left Bank Irrigation Scheme using this system.

At present, the system consists of Left-Bank Ereğli Irrigation, Adabağ Irrigation and Yıldızlı Irrigation facilities. Ereğli-İvriz Left Bank irrigation is supplied directly from İvriz Dam left-hand-side sluice outlet. Adabağ irrigation scheme is provided with water from the left bank main transmission line while Yıldızlı irrigation scheme is provided with water from hydropower plant transmission line. Adabağ Irrigation is operated as classical network; Left Bank Irrigation as classical network in main transmission line and large standby lines and the rest as canalette network; Yıldız Irrigation main transmission line as classical network and the rest as canalette network. The map showing Ereğli-İvriz Irrigation Scheme project area and its units is presented in Annex-1.

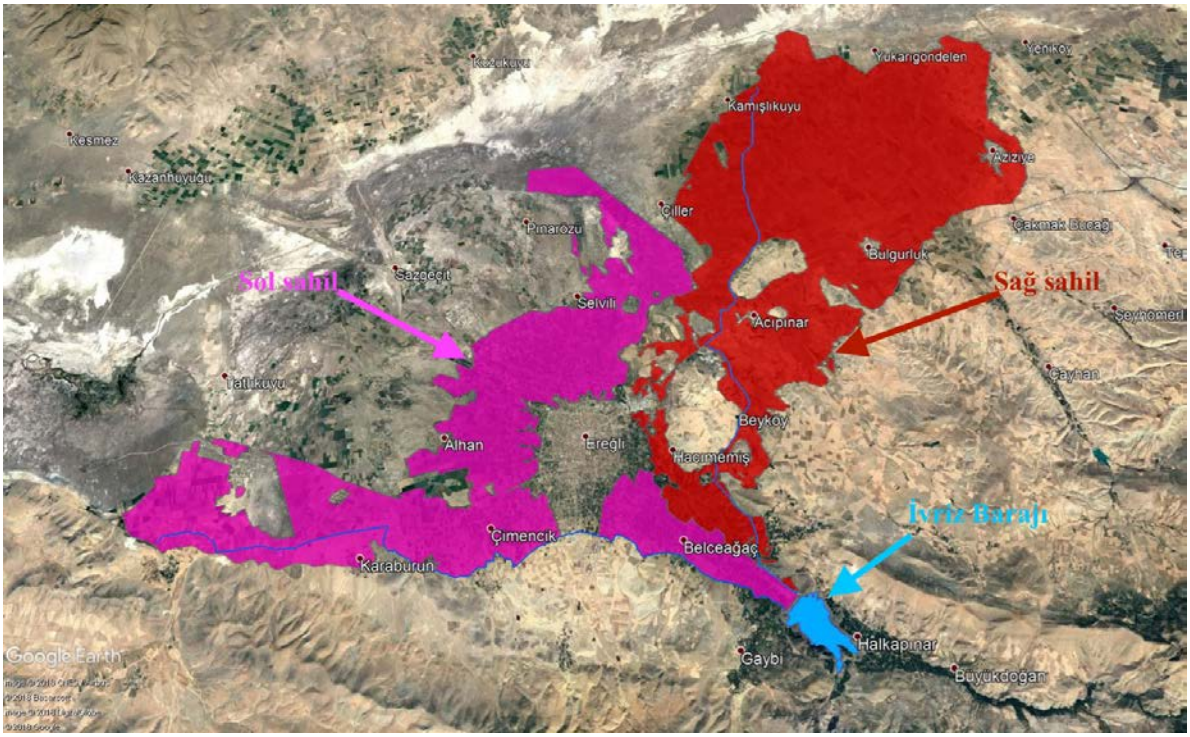


Figure 1. Ereğli-İvriz Irrigation Rehabilitation Project Area

2.2 Project Components

An irrigation area of 15280 ha will be irrigated under Ereğli-İvriz Left Bank Rehabilitation Project based on new data, through the combination of İvriz Dam + Ground water resources. The facilities are described below in general terms:

1. Left-bank main pipeline: It begins from the left-hand side offtake of İvriz Dam sluice outlet. Its initial capacity is 9,475 m^3/sec, and follows the route of existing left-bank channel. It will serve the irrigation of a gross area of 15,280 ha. It feeds the left-bank regulation tank through the Y6 secondary line that diverts at km 8+570 of the main transmission line. The left-bank regulation tank also feeds this Y6 secondary line.

2. Left-bank irrigation network and engineering structures: A piped irrigation network is projected on a gross area of 15,280 ha, and the whole network is designed such that it will be supplied water from İvriz Dam. Water supply will be supplemented from the ground water wells.

3. Left-bank groundwater wells and collection network: On the left bank, the water to be taken from 60 ground water wells considered around the Y6 secondary line diverted from the main pipeline will be pumped to the joint collection lines and will be transmitted to the left bank pumping station collection pool through these lines. At the groundwater wells, Hm will be around 180-210 m and capacity will be 40 l/s. Groundwater wells have been designed in groups. Groundwater wells will be drilled with interspaces of minimum 400 meters in order to prevent interference. The areas suitable for operation with groundwater have been taken into consideration on the left bank. Necessary valve systems will be installed on the groundwater well lines and main collection lines, and pump sets will be activated and deactivated in line with water levels in the regulation tank and the irrigation water need, using SCADA system.

4. Left-bank pumping station: The left-bank pumping station is located around the Y6 secondary line diverted from the left bank main pipeline and the regulation tank. The pumping station consists of three units where pump flow rate is 0.80 m3/sec, net head is 32.0 m and installed power is 315 kW for each. Steel delivery pipe diameter is ϕ1118 and delivery pipe length is 335 m.

5. Left bank regulation tank: The left bank regulation tank has been selected with a volume that will ensure the regulation of left bank monthly maximum groundwater need for 6 hours. Its volume is approximately 20,500 m^3. Maximum water elevation has been defined as 1,075.5 m. It is designed as a cut cone with a base area of ~3.830 m^2, top area as ~6.230 m2 and the bank height is 4.8 m. Active water level is identified as 4.2 m and a freeboard of 0.6 m has been allocated. Connection pipes from the Y6 secondary line diverted from the left-bank main pipeline and pump delivery line are connected to the regulation tank. It has been assumed that all of these lines will enter and exit at the maneuver chamber. The maneuver chamber size and elevations will be determined accordingly. Considering that the pipes entering and exiting the maneuver chamber are very large, the maneuver chamber must be minimum 3 meters lower than the regulation tank.

6. Operation and maintenance roads: Since Ereğli-İvriz Left Bank Scheme already exists, operation and maintenance roads are present along the main and secondary channels and major canalettes and they properly operate. At the stage of converting Ereğli-İvriz Left Bank Irrigation Scheme to high-pressure irrigation system, main pipeline will be laid parallel to the existing main channels

or existing roads. Similarly, secondary pipelines will also be laid along the existing roads or in place of existing canalette lines. Thus, it will be possible to use the existing road network and expropriation will be minimized. On the other hand, Konya-Ereğli, Karaman-Ereğli and Ereğli-Aksaray highways pass from the irrigation area and they further facilitate transportation. In addition, Konya-Ereğli-Adana railway also passes from the project area and the rehabilitation of the railway is ongoing.

7. Operation and maintenance buildings: Since Ereğli-İvriz Left Bank Irrigation Scheme is in operation, DSİ has an irrigation operation unit in Ereğli district. The existing operation buildings and other units will be preserved and used as is. At present, Ereğli-İvriz Left Bank irrigation scheme is operated under the supervision of DSİ, by Left-bank WUA. It has been assumed that the system will be operated again by WUAs after the implementation of this project.

The project duration has been envisaged as six years, and the project timetable is presented in Annex-2. Since the project area is large and dispersed, construction activities will be carried out in groups so that the existing irrigation operations are not disrupted, to the extent possible.

Construction Site Facilities

Ereğli-İvriz Left Bank irrigation rehabilitation project construction facilities will be established at a suitable place in the vicinity of Ereğli district.

Construction energy and Machines

The energy to be needed for the construction of Ereğli-İvriz Left Bank irrigation rehabilitation network and related facilities will be supplied mostly from the district of Ereğli. The contractor will provide reserve generator and generator set.

The machinery and equipment to be needed during construction activities include excavator, truck, grader, dozer, scraper, ditcher, canal covering machines, pipe laying machines and aggregate preparation and concrete mixing facilities.

Borrow Pits

When determining the borrow pits, the pits closest to the project area have been explored. The materials needed for the project include some 280,000 m3 of sand for the cushion layer, approximately 420,000 m3 of sand-cobblestone for the coating layer, approximately 120,000 m3 of sand – cobblestone for concrete, stabilization materials of approximately 450,000 m3 and 200,000 m3 of rock material for the access roads to be built along the pipe route. The amount of permeable/semi-permeable material needed for the project is approximately 1,160,000 m^3 and 200,000 m^3 de of rock material. The results of natural construction material studies and laboratory tests are presented in "Konya-Ereğli İvriz Irrigation Project Natural Construction Materials Report" (November, 2008). Accordingly, the permeable material pits are located on İvriz Creek bed in the southeast of Ereğli district. Pit locations are included in Karaman N-32-a2 map section scaled 1/25.000 and have ben shown as A, B, C. The characteristics of borrow pits and the physical features of materials from these borrow pits as analyzed by laboratory tests are given below in detail.

Permeable Material Pit A: It is located in the southeast of the Ereğli district, and on the left bank of İvriz Creek, 11+500 km from the district center and 0+500 km from İvriz Dam. After scraping a 0.20

m layer, 1,110,000 m3 of material can be taken from this area through a 4 meter deep excavation. Based on an analysis of these results, it will be possible to supply some of the concrete materials, the materials for coating layer to be used in channels and the stabilization materials can be taken from this borrow pit.

Permeable Material Pit B: It is located in the southeast of the Ereğli district and on the right bank of İvriz Creek, 11+500 km from the district center and 0+500 km to İvriz Dam. After scraping a 0.20 m layer, 550,000 m3 of material can be taken from this area through a 4 meter deep excavation. Based on an analysis off these results, it will be possible to supply some of the cushion layer materials to be used in channels and the stabilization materials from this permeable material pit.

Permeable Material Pit C: It is located in the southeast of the Ereğli district and on the right bank of İvriz Creek, 11+500 km from the district center and 0+500 km from İvriz Dam. After scraping a 0.20 m layer, 200,000 m3 of material can be taken from this area through a 4 meter deep excavation. Based on an analysis off these results, it will be possible to supply some of the concrete materials, cushion layer materials to be used in channels and the stabilization materials from this permeable material pit.

Rock Pit T: It is 2+500 km in the northeast of the dam axis. Some of the road between the dam axis and the pit is asphalt coated and some of it is stabilized road. The pit has cracked, recrystallized limestone rocks with rather developed creme-beige joints. Based on an average thickness of 10 meters, approximately 1,000,000 m3 of rock material can be extracted from this rock pit.

Environmental impact assessment studies gave been conducted for the sand-cobblestone and limestone material pits. The Project Introduction File has been submitted to the Provincial Environment and Urbanization Directorate of Konya Governorate, and as a result of the EIA process, “Environmental Impact Assessment Not Necessary” decision was issued for both borrow pits on 09 October 2009. For the limestone material pit, an application will be filed with the Mining Affairs Directorate General as a result of the EIA process, in order to get Group II raw material production permit pursuant to the, Mining Law.

For the borrow pits mentioned above, DSİ and the contractor will check the EIA and other legal requirements in the framework of the legislation and will ensure that they are revised as relevant. If any other borrow pit will be used, apart from those mentioned above, they will ensure that legal requirements are satisfied.

Other Facilities and Structures

Excavation materials storage areas may be needed to store the excess materials to come out from the channel excavation works during the project construction activities. If such an area is needed, DSİ will apply to the related municipality and/or Konya Provincial Environment and Urbanization Directorate for determination of the appropriate storage area.

3 Legal Framework and Applicable World Bank Safeguard Measures

This section sets out the requirements of laws and regulations as well as the World Bank safeguard measures taken into consideration when preparing the ESMP.

3.1 Legal Framework

ESMP has been prepared in compliance with the laws and regulations of Turkey primarily, as mentioned in Section 1.

Environment Law No. 2872, published in the Official Gazette of Republic of Turkey no. 18132 dated 11 August 1983, and amended through Law No. 6486 published in the Official Gazette dated 29 May 2013, is Turkey's primary framework for environmental legislation and is supported with many regulations. Article 10 of . Environment Law draws the overall framework of the Regulation on Environmental Impact Assessment (EIA Regulation), published in the Official Gazette no. 29186 dated 25 November 2014. However, irrigation projects are not covered by the Turkish EIA Regulation. For this reason, irrigation projects are exempted from the EIA process. On the other hand, as part pf the European Union membership process, Turkey has made many institutional and legal reforms. Thanks to these reforms, environmental legislation and environmental safeguards have been aligned with the international standards. The regulations concerning construction activities are listed below, but the applicable regulations are not limited to these.

- Waste Management Regulation, published in Official Gazette no. 29314 dated 2 April 2015;
- Regulation on the Incineration of Wastes, published in Official Gazette no. 27721 dated 6 October 2010,
- Regulation on the Control of Hazardous Wastes, published in the Official Gazette no. 25755 dated 14 March 2005, and most recently revised in the Official Gazette no. 28812 dated 5 November 2013;
- Regulation on the Control of Waste Oils, published in the Official Gazette no. 26952 dated 30 July 2008 and most recently revised in the Official Gazette no. 28812 dated 5 November 2013;
- Regulation on the Control of Vegetable Oils, published in the Official Gazette no. 29378 dated 6 June 2015;
- Regulation on the Control of Package Wastes, published in the Official Gazette no. 28035 dated 24 August 2011;
- Regulation on the Control of Used Batteries and Accumulators, published in the Official Gazette no. 25569 dated 31 August 2004 and most recently revised in the Official Gazette no. 28812 dated 5 November 2013;
- Regulation on the Control of Medical Wastes, published in the Official Gazette no. 25883 dated 22 July 2005 and most recently revised in the Official Gazette no. 28948 dated 21 March 2014;

- Regulation on the Control of Excavation Material, Construction and Demolition Wastes, published in the Official Gazette no. 25406 dated 18 March 2004 and most recently revised in the Official Gazette no. 27533 dated 26 March 2010;
- Regulation on the Control of Worn-out Tires, published in the Official Gazette no. 26357 dated 25 November 2006 and most recently revised in the Official Gazette no. 29292 dated 11 March 2015;
- Regulation on Sanitary Landfilling of Wastes, published in the Official Gazette no. 26357 dated 27533 dated 26 March 2010 and most recently revised in the Official Gazette no. 29292 dated 11 March 2015;
- Communiqué on the Recovery of Certain Non-Hazardous Wastes, published in the Official Gazette no. 27967 dated 17 June 2011 and most recently revised in the Official Gazette no. 29292 dated 11 March 2015;
- Regulation on the Control of Waste Electrical and Electronic Devices, published in the Official Gazette no. 28300 dated 22 May 2012;
- Regulation on Control of Soil Pollution and Areas Contaminated by Point Sources, published in the Official Gazette no. 27605 dated 8 June 2010 and most recently revised in the Official Gazette no. 28704 dated 7 June 2013;
- Regulation on the Control of Water Pollution published in the Official Gazette no. 25687 dated 31 December 2014;
- Regulation on the Monitoring of Surface Waters and Ground Waters, published in the Official Gazette no. 28910 dated 11 February 2014;
- Regulation on the Protection of Ground Waters from Pollution and Degradation, published in the Official Gazette no. 28257 dated 07 April 2012;
- Regulation Amending the Regulation on the Control of Pollution Caused by Hazardous Substances on in Water and Environment, published in the Official Gazette no. 26005 dated 26 November 2005;
- Regulation on Waters for Human Consumption, published in the Official Gazette no. 25730 dated 17 February 2005
- Urban Wastewater Treatment Regulation, published in the Official Gazette no. 26047 dated 01 January 2006;
- Regulation on Evaluation and Management of Air Quality, published in the Official Gazette no. 26898 dated 06 June 2008;
- Regulation on the Reduction of Ozone-Depleting Substances, published in the Official Gazette no. 27052 dated 12 November 2008;
- Regulation on Evaluation and Management of Ambient Noise, published in the Official Gazette no. 27601 dated 04 June 2010;
- Regulation on Equipment and Protection Systems used in Potentially Explosive Environments, published in the Official Gazette no. 26392 dated 30 December 2006.

In addition to the environmental laws and regulations, there are many other laws involving environmental assessments directly or indirectly and thus are applicable to the project. Therefore, these laws and regulations also apply to the Project. These legal arrangements include the following:

- Law on Ground Waters (Law no. 167), published in the Official Gazette no. 10688 dated 23 December 1960;
- Law on the Protection of Cultural and Natural Assets (Law No. 2863), published in the Official Gazette no. 18113 dated 23 July 1983;
- Highways Traffic Law (Law No. 2918), published in the Official Gazette no. 18195 dated 18 October 1983;
- Highways Traffic Regulation, published in the Official Gazette no. 23053 dated 18 July 1997;
- Regulation on Opening and Operation of Workplaces, published in the Official Gazette no. 25902 dated 10 August 2005;
- Regulation on Buildings to be Constructed in Disaster Prone Areas, published in the Official Gazette no. 26582 dated 14 July 2007;
- Regulation on Buildings to be Constructed in Seismic Zones, published in the Official Gazette no. 26454 dated 06 March 2007;
- Regulation on the Transportation of Hazardous Substances via Highways, published in the Official Gazette no. 28801 dated 24 October 2013;
- Regulation on Principles and Procedures Governing the Production, Import, Transportation, Storage, Sale, Use, Disposal and Control of Non-Monopoly Explosives, Hunting Materials and the Similar, published in the Official Gazette no. 19589 dated 29 September 1987;
- Regulation on Septic Tanks Constructed in Districts without Sewerage System, published in the Official Gazette no. 13783 dated 19 March 1971.

The EIA Regulation in force requires limited and project-specific assessment of social impacts. In this context, it does not satisfy international standards. Still, through the reforms implemented in recent years, some legal arrangements that will help manage social impacts have been added to the legislation. Some of these are listed below:

- Law on Occupational Health and Safety (No. 6331), published in the Official Gazette no. 28339 dated 30 June 2012, and other relevant regulations
- Regulation on Sub-Employers, published in the Official Gazette no. 27010 dated 27 September 2008

In terms of involuntary resettlement, some of the relevant legal arrangements of Turkey are listed below:

- Expropriation Law no 2942, published in the Official Gazette no. 18215 dated 8 November 1983, and other relevant regulations
- Law No. 4650 on the Amendment on Expropriation Law, published in the Official Gazette no. 24393 dated 5 May 2011

Nature Conservation and National Parks Directorate General of Ministry of Forestry and Water Affairs governs protected areas in Turkey. On the other hand, for protection of physical cultural assets, the relevant legal arrangement is defined under Law No. 2863 dated 21.07.1983 on the Protection of Cultural and Natural Assets (revised through the amendment issued on 27.07.2004 dated Official Gazette). This legal arrangement is aligned with international standards. Furthermore, Regulation on Researches, Drillings and Excavations in Relation to the Cultural and Natural Assets, which was published in the Official Gazette No. 18485 dated 10.08.1994 define the procedures and obligations concerning the cultural and natural assets found out during construction. In addition, Regulation on Planning for Protected Areas dated 23.03.2012, Regulation on Identification, Registration and Approval of the Protected Areas dated 19.02.2013 and Regulation on Implementation of Environmental Protection Projects by Environmental Protection Agency for Specially Protected Areas (dated 24.0.21992) are the other arrangements within the scope of the legal framework on protected areas. DSI is responsible for the project to be implemented in compliance with the laws and regulations.

3.2 World Bank's Safeguard Policies

The World Bank's environmental and social safeguard policies require the borrower country to conduct an Environmental Assessment in compliance with the EIA Regulation and the World Bank's operational policy on environmental impacts (OP 4.01). In this direction, this Environmental and Social Management Plan (ESMP) has been prepared to fulfill their requirements of the World Bank's policies on Environmental Assessment (OP 4.01) and Physical and Cultural Resources (OP 4.11). The objective of this plan is to assess the project according to its potential social and environmental impacts and define environmental and social management conditions.

OP 4.01 Environmental Assessment:

Activities carried out in the scope of simple construction works, by their nature, create environmental and social impacts which are not very critical, within the existing project boundaries. WB's Operational Policy on Environmental Assessment has to be applied even if the impacts are not very critical. Together with the implementation of OP 4.01, environmental and social management instruments have to be prepared.

The ESMF includes a consideration of the broader impacts of the transformation of the open-channel irrigation systems to "closed" water systems, as well as mitigation measures to address any negative impacts. Moreover, the ESMF aims to address water utilization and potential impacts on resource sustainability, communities and other water users.

The key social and environmental impacts that may be caused by the project are expected to affect the sensitive recipients near the project area (e.g. schools, hospitals, health centers, houses). In this context, the whole project area and surrounding areas have been evaluated in terms of vulnerable recipients. It is expected that the negative environmental and social impacts are limited to basic construction work impacts. In general, major impacts are related to excavation, waste disposal, disposal of demolished material, loss of topsoil and vegetation, dust formation, noise, occupational and community health and safety. Since it is anticipated that these negative impacts are temporary and reversible, are mostly limited to the work site and that the irrigation modernization work is exempt

from EIA Regulation pursuant to the Turkish environmental legislation, the Konya-Ereğli-İvriz Irrigation Modernization Project is considered to be a Category B project.

Natural Habitats OP/BP 4.04:

The areas covered with agricultural lands within the project area of influence fall within Akgöl-Ereğli Reeds Nature Conservation Zone. According to the Provincial Environment Report, this area was declared a natural protection site in 1992, and nature conservation zone in 1995. Akgöl Wetland Protection Areas were discussed and adopted by the National Wetland Commission. The Wetland Management Plan has reached its final stage but the wetland has dried up. While the area was a critical place for waterfowls, the droughts in recent years and the construction of dams on creeks flowing into the area have led to the drying of the lake (see Photos 1 and 2). Only the sewerage wastes of Ereğli district are flowing into the lake. Therefore it is not expected to be affected negatively from the project.

Photo - 1. Akgöl Nature Conservation Zone (Ministry of Forestry and Water Affairs, 8th Regional Directorate, 2016)

Photo - 2. Akgöl Nature Conservation Zone (Ministry of Forestry and Water Affairs, 8th Regional Directorate, 2016)

Physical Cultural Resources OP/BP 4.11:

Triggering of this policy will depend on the outputs of the project preparation stage. The laws and practices in Turkey satisfy the requirements of WB. DSI is responsible for avoiding or mitigating impacts on physical or cultural resources of the financed projects. Therefore, DSI will not proceed with sub-project funding until all requirements of the Turkish legislation are met. Since the national legislation on the protection of cultural assets is strictly implemented, an additional condition beyond the WB safeguard policies is not expected. However, a chance find procedure including responsibilities for managing accidently discovered or chance find cultural artifacts, which will warn the supervision consultants and contractors about the steps to be followed, will be implemented. Additionally, all relevant official letters to be exchanged before or during construction activities will be recorded and annexed to periodic monitoring reports.

Involuntary Resettlement OP/BP 4.12:

The project involves the conversion of open channel systems (channels and distribution structures) with closed pressurized systems. The project team will assess whether the construction activities to be undertaken for the replacement or expansion of these channel systems would result in an involuntary land acquisition, land rental, temporary land use or crop loss, during the project preparation phase. OP 4.12 will be triggered if any such situation is identified.

Safety of Dams OP/BP 4.37:

The project uses İvriz Dam as the source of water supply. Although the project does not finance any activity related to the dam, the amounts of water to be taken from the dam will change as a result of the project. With regard to the subject matter, a World Bank Dam Safety Exert visited the site of İvriz Dam on 27 March 2018 and reported his conclusions. According to these results, there is no structural problem with the dam, and there is no crack that require urgent intervention either. However, procedures concerning dam safety need to be revised and the key areas of intervention include the improvement and rehabilitation of instrumentation and monitoring systems. The measures recommended specifically for İvriz Dam were shared with DSİ and DSİ will be responsible for the implementation of these measures. these measures can be summarized as follows:

(i) While the reservoir was at its maximum operation level in 2016, some wet areas were seen on the left-hand brace. A piezometer will be placed at the depth of 25 m in this area.

(ii) The slope washing sediments accumulated on the right-hand side of the spillway canal will be cleaned.

(iii) Operation and maintenance instructions will be revised.

(iv) A dam record book will be prepared.

(v) An emergency response plan will be prepared.

(vi) An access road will be constructed to remove the accumulated sediments and check the sedimentation levels.

Projects on International Waterways OP/BP 7.50:

İvriz Dam basin is a closed basin and is not an international waterway.

In addition to applicable OP's presented above, the World Bank Group General Environmental Health and Safety Guidelines are also applicable for this project and shall be followed when relevant.

4 Environmental and Social Background

This section discusses the current environmental and socioeconomic characteristics of project area and its environs. The information provided in this section has been compiled from the studies conducted and results reports prepared so far in the region.

4.1 Geographical Formations and Geology

The project area is surrounded by Taurus Mountains in the south and southeast, and hills of Karacadağ Range of Mounts in the north. the highest hill is Aydost Mount on the Taurus (3488 m). Ereğli, Plain, which provides the land source for the project area, extends in south-west and north-east directions and its surface area is 250,000. the most important rivers are Delimahmutlar, İvriz and Çayhan creeks. Ereğli – Akgöl Marsh (200 km^2) in the project area constitutes the discharge leg of Niğde – Bor basin, Ereğli, Ayrancı and Karaman projects. Another noteworthy marsh is Gölbaşı Reeds close to Adabağ Village.

The first sedimentary unit of project area is Halkapınar formation. This unit comes over Permian aged limestones with unconformity. Halkapınar formation consists of flysch type turbiditic sediments which are Sub-Paleocene / Sub-Eocene aged, interfingered with volcanic rocks. In the south and southeast of Ereğli, there are Upper Eocene-Oligocene aged white soil formation. White soil formation consists of anhydrite and the intercalation of limestone-sandstone-anhydrite. On upper layers, Miyocene - Pliocene aged Cihanbeyli formation, which consists of terrestrial clasts and which is commonly seen in the area, covers the lower units with angular unconformity. Alluvial cover spreads over the top of all these units. Of these sediments, those which are up to the Upper Eocene time range are marine, those which are between Upper Eocene and Pliocene time ranges are terrestrial.

The project area and its close vicinity are located on the north side of the Central Taurus section of ‘Taurids” main tectonic unit which faces towards Anatolids. The units surfacing in the region are included in the ‘Bolkardağı Unit” of the tectono-stratigraphic units of the Taurus Mountains. The area has gained its tectonic position largely through the Alpine orogenesis movements, similar to the Taurus Mounts. the region has gained a folded structure through these movements. Permian aged Bolkar Group forms a large anticlinal structure in the study area.

A vast majority of the project area falls in the 5^{th} degree seismic zone, while the southeast parts of the project area including İvriz Dam falls in the 4^{th} degree seismic zone, according to the Map of Seismic Zones published by Ministry of Public Works and Settlement.

4.2 Water Resources and Hydrogeology

According to the hydrogeological studies conducted earlier in the project area, groundwater reserves were found in the area amidst Bulgurluk, Kamışlıkuyu, Göndelen and Aziziyevillages in the north of the irrigation area. However, since a long time has passed since these studies and given the severe drought experienced by the region in recent years, it is estimated that the static level and yield have decreased significantly. It has been reported that there are approximately 3,000 licensed and unlicensed ground water wells in the project area. There are 156 wells operated by DSİ.

İvriz Dam, constructed on İvriz Creek inn 1985, is the main source of water supply under the project. Its drainage area is 336 km^2, and the dam type is earth-fill, with a reservoir capacity of 80 million m3. Delimahmutlar creek and İvriz stream unite to form İvriz Creek. İvriz Dam serves irrigation and flood protection purposes. The drinking water need of Ereğli district is supplied from the catchment near İvriz springs. Water will be supplied from İvriz Damn to the sugar factory for a period of six months between October and March. Furthermore, the forebay pool of hydroelectric power plant on the upstream of İvriz Dam meets the water needs of Yıldızlı irrigation scheme using the existing Yıldızlı Main Channel.

As mentioned earlier, the most important rivers in the project area are Delimahmutlar, İvriz and Çayhan Creeks. İvriz stream and Delimahmutlar creek are categorized as second class irrigation water (C_2S_1).

4.3 Soil Composition

The soil composition in the project area consists mainly of alluvial and colluvial soil in terms of formation. The alluvial soils in base lands are comprised of marl and lime and have accumulated on the ground. Colluvial soils have been formed through the crushing and separation of main material on the slope lands in time.

A significant part of the project area consists of heavy-textured soil. At places where soil cultivation continues, granular structures are present in upper layers, and block structures in lower layers. In pastures, since the soil is heavy-textured, block structures can be seen at the depth of 150 cm.

Since the soil of Ereğli Plain settle on a ground comprising of lime and marl, and since more than half of the soil slowing den the slopes contains lime, laboratory analyses revealed high amounts of lime even on irrigated lands. Due to this soft and arable lime, the predominant mineral in the plain's soils is calcium.

4.4 Climatic Features

Continental climate prevails in the project area which is located in the central-south part of Central Anatolia Region. Winters are hard, cold and snowy, and summers are hot and dry. Winter and spring precipitations are characteristic and the area has one of the lowest precipitation levels in Turkey (295 mm/year). Since the region is surrounded by high mountains, the mild and humid air waives from the seas cannot reach the area. Al altitude rises towards the east, the degree of continentality increases. Annual average temperature is 11.5 ^oC in Ereğli. Maximum wind speed has been recorded as 34 m/sec and its direction as south-southwest; average relative humidity rate is 62%.

4.5 Flora and Fauna

The dominant vegetative cover in the broad lands within the provincial boundaries of Konya is steppe. The climate prevalent in the plan's base parts, and the effects of soil and geomorphological characteristics have reflected onto the flora. Furthermore; Anthropogenic steppes have formed in the forest areas destroyed by human being for various reasons since the earliest ages. There are also bush formations scattered in steppes. Cultivated plants cover a large area in the agricultural lands in plains.

Most important pones of these crops are grains, legumes and sugar beet. Cultivated plants cover an area of 64 %. With this rate, Konya is among the provinces with largest agricultural land in Turkey. Konya province is poor in terms of forest area. Only 12 percent of its surface area is covered by forests.

A significant part of the project area seems to be consisting of areas not qualifying as wetland any more. The dominantly prevalent plant species in the project area are Arthrocnemum glaucum (Del.) Und-Stern., Halimione portulacoides (L.) Aellen, Halocnemum strobilaceum (Pall.) Bieb., Petrosimonia brachiata (Pallas) Bunge, Salicornia prostrata Pall. Limonium gmelini (Willd.) O. Kuntze, Limonium sieberi (Boiss.) O.Kuntze, Limonium virgatum (Wild.) Fourr. and Junsuc acutus L. None of these species is listed in IUCN and they are not under protection pursuant to Bern or CITES.

The most noteworthy fauna species include rabbit, fox, wolf, waterfowls, partridge, quail, stark, avian predators such as eagle, falcon, kestrel, hawk, squirrel, turtle and crab species.

AS a result of the field studies conducted to identify biodiversity of reptile species in the province of Konya, as part of Provincial Environment Report studies, 31 (1 terrapin, 1 tortoise, 15 lizards and 14 snakes). Furthermore, 8 amphibian species were identified as a result of field studies. With regard to mammals, 50 species were identified from the ordos of Euplipotyphla, Chiroptera (bat), Logomorpha (rabbitish), Rodentia (rodents), Carnivora (carnivores) and Artiodactyla.

4.6 Sensitive Areas

Within the project's area of influence, the regions where agricultural lands are located remain within Akgöl-Ereğli Reeds Nature Conservation Zone. According to the Provincial Environment Report, this area was declared a natural protection site in 1992, and nature conservation zone in 1995. Akgöl Wetland Protection Areas were discussed and adopted by the National Wetland Commission. The Wetland Management Plan has reached its final stage but the wetland has dried up. While the area was a critical place for waterfowls, the droughts in recent years and the construction of dams on creeks flowing into the area have led to the drying of the lake. Only the sewerage wastes of Ereğli district are flowing into the lake. therefore it is not expected to be affected negatively from the project.

4.7 Socioeconomic Status

4.7.1 Population

The biggest settlement unit within the project area is Ereğli District. The settlement units on the left bank, and their populations are shown in Table 1. The populations of Cinler, Barbaros, Çömlekçi, Fatih, O.Gazi, Y.Bağlar and Yunuslu neighborhoods, which are not shown in these tables and are attached to Ereğli district center are also included in the population of Ereğli(center).

Table 1. Settlement units in the project area and their populations

	Population Censuses			
	Settlement Units	**1990**	**1997**	**2000**
Left bank	Adabağ	348	308	284
	Akhüyük	232	262	207
	Alhan	1524	1296	1316
	Belceağaç	638	688	676
	Böğecik	325	325	325
	Burhaniye	241	222	256
	Çimencik	967	775	897
	Göktöme	175	157	147
	Karaburun	461	487	461
	Kargacı	426	489	508
	Sarıca	233	235	250
	Sarıtopallı	330	358	352
	Selvili	698	557	636
	Taşağıl	573	528	550
	Ulumeşe	225	225	214
	Yazlık	540	509	483
	Yıldızlı	449	386	332
	Melicek	646	590	596
	Orhaniye	2821	3062	3137
	Türkmen	565	609	588
	Ereğli (center)	74283	77779	77779
	TOTAL	**862700**	**89847**	**89994**

Studies have been conducted to calculate population growth rates and population projections for 2020 and 2030 and the results are presented in Table 2. Accordingly, the left-bank population will be 96,728 and 100,480 for 2020, and 2030, respectively.

Table 2. Population growth rates and projections for settlement units in the project area

	Population growth rate (%)	**Population forecasts**	
		2020	**2030**
Left bank	0.38	96,728	100,480

Average farmer household size has been found to be 4,72 people on the left bank. Gender distribution of average population in the left bank has been determined as 46.40 % female and 53.60 % male. Of the total population, 26.91 percent is in the age range 0-14 years, and 66.53 percent in the age range 15-49 years.

4.7.2 Education

There is a primary school in all of the settlement units other than Gökteme, Burhaniye, Karaburun, Yıldızlı, Adabağ, Sarıca villages. There are 168 teachers and 4,178 students in these schools.

There are 5 vocational secondary schools, 8 general secondary schools and 67 primary schools in Ereğli district center. Furthermore there is Ereğli Vocational Higher School attached to Konya Selçuk University.

There is a high public interest in education, and university students usually prefer Konya Selçuk University and other universities in big cities.

4.7.3 Healthcare Services

In the project area, villages and neighborhoods receive healthcare services from the health institutions in Ereğli district center and Konya. There are a total of 8 local health centers in the project area. IN Ereğli district center, there is 1 state hospital, 2 private hospitals and 3 local health centers.

4.7.4 Infrastructure Services

As a result of field studies, it has been found that all settlement units in the project area have sufficient drinking water network. Transportation facilities are rather good in the project area. Ereğli-Konya section of D330 Highway is 143 km long. Ereğli district center is 33 km away from the Ankara-Adana E90 Highway. Furthermore, Haydarpaşa-Konya-Adana Railway also passes from Ereğli district. Most of the rural roads within the project area are asphalt coated, and there is no access problem in winter or summer.

Since the project area is Ereğli district and its close vicinity, communication facilities are rather good. In addition to PTT organization, people have a broad access to mobile communication as well.

4.7.5 Sources of Livelihood

Agriculture: The primary economic activities in the project area are plant production and animal husbandry. However, the water scarcity experienced in recent years and the organization al and administrative problems of water user associations, have resulted in a low irrigation efficiency in the region. As a result, there are lands were grain products are cultivated in addition to fallowed lands.

Sugar beet cultivation has lost its long-lasting driver in the region and has become less preferable by farmers as input price parity has been impaired. The privatization-focused sugar policy pursued in recent years has resulted in the limitation of sugar beet cultivation areas. The only buyer of sugar beet grown in the area is Ereğli Sugar Factory.

All of the cultivated plants are irrigated through canalette irrigation, DSİ wells or personal well, albeit at an insufficient level. The unirrigated lands are fallowed. Fodders plants cultivated in the region include silage corn, oat and alfalfa. Flooding irrigation method is applied for all plants.

Animal husbandry: Animal husbandry has developed considerably in the project area, including both cattle and sheep -goat. The region has a significant share in Turkey’s dairy products market.

There are four agricultural development cooperatives, one agricultural credit cooperative and three water user associations with a total of 150 members in the region. T.C. Ziraat Bankası is one of the key institutions supporting farmers with loans in the project area.

Industry and Trade: Agricultural industry has not developed much in the project area. There are 2 cold air stores, 5 milk collection centers, 2 dairy farms, 1 ice plant in the irrigation area, in addition to bulgur and fodder factories in Ereğli district center. Ereğli Sugar Factory is the biggest industrial facility of the district. In Ereğli Organized Industrial Zone, there are 19 companies operating in the food sector, 1 company in organic fertilizer and 3 companies in feed industry.

Similar to industry, trade is also based on plant and animal products. Currently, sugar beet, grains, chickpea, potato, vegetables, sunflower and fruit are produced for the market, while fodder plants are consumed within farms themselves. Trade hubs in the region are Ereğli, Karaman districts and Konya province. It is also possible to sell products to other cities.

Mining: There is no mineral reserve operated within the project area. However, there are diasporite, magnesite, celestite, barite, talk, cement raw material and sand-cobblestone beds in Ereğli district.

Tourism: There is no tourism activity within the irrigation area. However, İvriz Rock Monument, one of the first agricultural monuments on earth, dating back to the Pre-Hittites, is close to dam axis.

4.7.6 Land Use and Crop Pattern

The cultivation and planting areas used for dry and irrigated agriculture have been identified. Then the total area found has been compared with the values obtained through map measurements to find the crops cultivated at present and their cultivation rates. At present, on the right bank, 44 percent of lands is used for grain cultivation using classical piped system, and fallow rate is 16 percent. Chickpea has a rate of 2 percent, silage corn 5 percent, sugar beet 7 percent, sweetcorn 6 percent, dry bean 4 percent, vegetable 3 percent, sunflower 2 percent, black carrot 2 percent, alfalfa 12 percent, and fruit 3 percent. Furthermore, pastures have e rate of 4 percent and drylands 20 percent.

In the left bank, 24 percent of the lands is used for grains and fallow rate is 13 percent. Chickpea has a rate of 2 percent, oat 4 percent, silage corn 7 percent, sugar beet 9 percent, sweetcorn 2 percent, dry beans 2 percent, vegetable 8 percent, potato 1 percent, black carrot 2 percent, alfalfa 5 percent, and fruit 16 percent. Furthermore, pastures have e rate of 5 percent and drylands 18 percent. As a result of survey studies, it has been found that these areas include lands categorized as ST (fruit) and ST (irrigated farm). In particular, the ST -Fruit land category primarily involves cherry and sour cherry production. ST (irrigated farm) lands category involves wheat, sugar beet, vegetable and sweetcorn production.

4.7.7 Land Acquisition

Land consolidation practices have been initiated by the General Directorate of Agricultural Reform in the facility where classical and canalette networks are in operation. Land consolidation practices must be completed for the whole project area. Since land consolidation services have been transferred to DSİ with the Law no 7139 published on the Official Gazette dated April 28, 2018 and numbered 30405, the land consolidation works must be completed by DSİ. Where consolidation works will not be sufficient, some of the lands might be acquired via expropriation. In case of expropriation, DSI will prepare a Land Acquisition Plan.

5 Environmental and Social Impacts

Air Quality: Dust formation is expected during the construction and site preparation stages of the project due to the stripping of top soil layer and other excavation works. In addition, during the production of sand-cobblestone and limestone materials, dust formation will occur when extracting, loading and transporting the materials. The provisions of Regulation on Control of Air Pollution from Industrial Sources and Regulation on the Evaluation and Management of Air Quality will be complied with when operating the borrow pits. These impacts are envisaged to be temporary and reversible. Furthermore, exhaust emissions are expected to originate from construction machines and equipment. necessary measures will be taken against dust and exhaust gas emissions. In this scope, construction machines and equipment will be periodically maintained and controlled. Thus, these impacts are expected to be at a low level. However, in case the emission levels are negatively affecting the nearby communities or other sensitive receptors, further corrective measures will be taken.

Noise: The noise to be generated by construction equipment and vehicles is expected to negatively affect the sensitive receptors in the close vicinity of the project. In order to minimize the impact, construction activities will be carried out during daytime hours (07:00 – 19:00). In addition, noise levels will be monitored at the sensitive receptors regularly and necessary mitigation measures will be taken if required.

Water and wastewater: Water need will arise mostly from daily domestic water needs of employees in the camp site, construction site and material pits. In addition, water will be used for concrete mixing and curing operations, washing the machines, and watering the materials and roads against dust formation. DSI and the contractor are responsible for supplying water without stressing the groundwater and surface water sources for domestic use and concrete preparation works. The quality of the water (for domestic use and concrete preparation works) will be monitored regularly.

Wastewaters will generally be originated from the borrow pits and campsites in domestic wastewater form. These wastewaters shall be either stored in impermeable septic tanks in compliance with local regulations and the Bank requirements, will be regularly stored by licensed companies and will finally be discharged to receiving bodies after being treated. The water to be used for spraying process to prevent dust formation in the project site cannot be recycled as wastewater. During the operation stage, domestic wastewaters will be disposed in compliance with the Regulation on the Control of Water Pollution.

There are 156 wells operated by DSİ and approximately 3,000 other private wells in the irrigation area. Irrigation modernization will reduce irrigation demand to 154 million m3; while 80 million m3 s supplied from İvriz Dam, groundwater use will be reduced by 33 percent. The project is expected to increase total irrigation area to 39,750 ha, and groundwater support will be limited to 140 wells operated by DSİ only.

Community health and safety: The campsites will introduce workforce to the nearby communities, who will inevitably interact with each other. Thus, the location of campsites must be positioned as far possible as from the local communities. Furthermore, workforce will be informed about the behavioral and ethics code through their contractual obligations.

Furthermore, construction activities will result in increase in the local traffic sue to the vehicles going in and coming out from the construction site. The construction sites could potentially cause risk of

accidents for local people, compromising community health and safety, if not fenced appropriately and marked with appropriate warning signs.

Occupational Health and Safety: The construction activities may pose risk to workers' health and safety if necessary precautions are not taken. In this context, DSI and contractors will be responsible for supplying a safe and healthy working environment for the workers. The workers should be aware of their job descriptions, responsibilities and relevant occupational health and safety risks . Necessary personal protective equipment and job-specific and occupational safety trainings will be given to the workers, regularly. The campsites should also be equipped with necessary facilities for the workers to meet all their needs.

Hazardous materials: For the time being, fuel filling and vehicle maintenance activities are not planned to be carried out on the construction site within the scope of the project. However, such need may arise if heavy vehicles are used on the construction site. DSI and contractors will be informed about the storage and sue of hazardous materials to be used in this scope and will take necessary measures. Furthermore, chemicals spills and other potential hazardous substance accidents will be added to the possible scenarios under emergency management plans, and the required equipment will always be kept ready and relevant drills will be carried out regularly.

Waste management: The modernization of open channel irrigation system includes removal of the existing materials and pipes from the construction sites, eventually making them idle. The pipes and other materials that become idle need to be appropriately stored and finally disposed of in accordance with local regulations and the Bank requirements. As the topsoil will be stored and reused for rehabilitation works after construction, no excavation waste is expected to be generated. However, in case the excavated material will be excessive, coordination with relevant authorities for appropriate disposal of excavation material shall be established.

In addition to excavation wastes, domestic and hazardous wastes are also expected to be generated during construction. These wastes will be stored separately at the construction and camp sites, as required by local regulations, and will be transferred to / disposed of by licensed facilities. DSI and its contractor will be responsible for coordinating with these licensed companies and ensuring that wastes are disposed/recycled in compliance with relevant local regulations and the Bank requirements.

Natural Habitats: Project's area of influence remains within Akgöl-Ereğli Reeds. However, as mentioned above, this area has dried and only the sewerage wastes of Ereğli districts are discharged. For this reason, no negative impact is expected on natural habitats.

Infrastructure: Modernization works will require the use of existing access roads. The project design will also benefit from the ongoing land consolidation activities since it will allow for new common roads to be established to access each parcel that will also undergo the modernization activity. Damages to road surfaces during transport of heavy machinery will be rehabilitated by the construction contractor. Should any damages on infrastructure occur on private land due to construction, mitigation measures specified in the LAPF will be put into practice by the construction contractor. Any campsite that will be established during construction will secure its own infrastructure without placing an additional demand on community infrastructure during construction. Thus, impacts on local infrastructure are considered to be negligible.

Land acquisition: No physical resettlement activity is envisaged for the implementation of the project. However, depending on the construction activities, temporary or economic losses could occur, even if they will be minor. In line with the project principles, state-owned lands will be used to the extent possible by avoiding private properties and agricultural lands. However, where this is not possible, land acquisition action plans will be prepared and implemented for the project area, in compliance with the LAPF.

Assets and land based livelihoods: As there will be no physical displacement under the project; loss of structures and buildings are not expected. However, though kept to a minimum, the project may result in loss of agricultural land. The design of the subprojects considers following the existing irrigation network in addition to utilizing existing roads with minimum need for additional access roads. Depending on the status and current use of the land required for the project; loss of standing crops and trees with economic value is anticipated. To reduce the amount of land required, the land consolidation practices carried out earlier by MoFAL will be utilized. Furthermore, project activities are expected to also impact land based livelihoods since majority of the land subject to modernization is used for agricultural purposes. Measures to mitigate both loss of assets and livelihoods are discussed in detail under the LAPF and will be managed via LAPs for each scheme that necessitates land acquisition.

Farmers, local community and other stakeholders including vulnerable groups: Considering that the project could improve the efficiency of the existing irrigation system, it is expected to have a positive impact on local communities in general.

Agricultural workers (i.e. seasonal and daily workers, Syrian workers) and women engaged in agricultural practices who are also categorized as vulnerable groups may also be affected from the project since the project may result in limiting the labor demand for irrigation as well as cultivation and harvesting of products. Seasonal workers travel with their families and engage in farming as a family. In the area of the Project, where seasonal agricultural workers are used children do not work as paid labor however can assist their families while working together. This type of child labor is not a form of forced labor as the national labor law forbids worst forms of child labor. Hence, as per the Stakeholder Engagement Plan (SEP), continuous consultation both by DSI and WUAs will be carried out to inform all PAPs including vulnerable groups on project impacts and construction schedule as well as their rights for compensation should they suffer from loss of land or livelihood due to the project activities. Mitigation measures for such groups have been dealt within LAPF and site specific measures will be applied through LAPs.

Gender Impact: Irrigation modernization, with its expected change to higher value crops and modern technologies, thus provides an economic opportunity for women who play an active role in agriculture. There are no legal restrictions on female tenancy arrangements or land ownership. However, customary traditions limit women's cultivation of shared ancestral land. Land consolidation practices, on the other hand, may positively impact this situation as an opportunity is created for women to own consolidated parcels, which likely may lead to their increased participation in agricultural production. Female water users in the WUAs could be both tenants and land owners. Women's role in WUA management and decision making is thus extremely limited and is perceived to be a domain for men. Cultural factors and social norms also hinder women's participation in meetings and training events related to irrigated agriculture. In order to decrease women's hesitance to take part in WUA

management and decision making periodic stakeholder consultations will be arranged by WUAs and DSI field staff as part of irrigation modernization or regular WUA operations. With the collaboration and support of the Bank, DSI's field staff will design and deliver sensitization training on gender aspects of irrigation in the subject project. This training will support DSI field offices and the WUAs under their supervision to implement measures to narrow the above gender-gaps in line with the Stakeholder Engagement Plan (SEP), such as ensuring that WUA consultation meetings specifically for women will be held (before, during the land consolidation and after irrigation modernization). The training will also lay the foundation for WUAs to develop their own measures to encourage women involvement in WUA governance and measures to allow female farmers to benefit from services, like agricultural advice/training, delivered through the WUA, in collaboration with DSI (on-farm water management), and MoFAL. DSI will monitor gender disaggregated data in terms of the female water users benefiting from the Project, and gender-disaggregated feedback from the monitoring reports and surveys carried out in the subprojects. Where feasible, DSI's MIS (SUTEM) will ensure that some gender-disaggregated data will be collected.

Labor conditions, influx and child labor: A campsite will be established for the project area. Each campsite will include infrastructure such as water, electricity, sewage and communication network. The campsite will be accessible by road network and will use existing roads to the extent possible. In cases where accommodation is provided on-site, DSI will ensure that contractors have a code of conduct as well as providing training on communication with local communities for workers prior to employment. On site facilities (i.e. sanitary facilities and canteen) will ensure compliance with Bank standards. The Project will fully comply with requirements of the Turkish Labor law, which is in compliance with principles of international labor standards, most of which is ensured through compliance with ILO Conventions Turkey is party to. Therefore; child labor, forced labor and discrimination (of race and gender) will not be tolerated.

Cultural assets: At this stage of the project, no impact is envisaged in connection with cultural assets. A chance find procedure will be developed in accordance with the Turkish legislation, and the relevant authorities will be contacted in case of a chance-find to enforce the applicable legislation.

6 Mitigation Measures and Monitoring Plan

The potential environmental and social impacts that may arise during the project construction stage, measures to be taken to manage these impacts and the monitoring plan are presented in Table 3 and Table 4, respectively. The tables contain all details including the type of potential impact, at what stage of the project they may arise, and what measures must be taken to control the impact.

Grievance Redress Mechanism

DSI has a four level grievance system in place in addition to the national GRM system (Prime Ministry and Presidency Communication Centers) that is also used to submit grievances. DSI, through its additional efforts will make arrangements to collect scheme specific grievances to be addressed and resolved during project implementation. Concerns, requests and complaints of project-affected stakeholders on both environmental and social impacts of the project will be dealt with through GRM.

Information on pre-construction works (land consolidation, land acquisition etc.), construction schedule and availability of project GRM will be disclosed to affected communities through

consultations and other engagement activities, DSI official website as well as through regional directorates, relevant provincial branches and through WUAs.

Due to the nature of the sub-projects, project affected communities may have concerns regarding the planning, design and implementation of TIMP. DSI will engage Public Relations Expert(s) for disseminating information regarding the grievance mechanism. Grievances to be communicated under the Project will be addressed at four levels:

- WUA level (settlements);
- Provincial directorate level
- Regional level
- National Level (through Headquarters and national GRM system)

Although there is no obligation, a Public Grievance Form has been prepared for convenience, and is presented in Annex-3. All the complaints and concerns received through the grievance system will be archived and the related issues will be attempted to be solved or mitigated within a predefined timeframe. The statistics of grievances will be regularly reported to the WB.

This ESMF will also be disclosed in both Turkish and English for public information in DSI and its regional directorates as well as WB external website to allow interested stakeholder groups to review and comment on it before the public consultation meetings. Subsequently, the comments of the communities will be reflected into the ESMF and the agreed version will also be disclosed on the abovementioned media. Similar to ESMF, site-specific ESMPs will also be prepared and disclosed for public information in both English and Turkish in a timely manner to allow the interested stakeholders to review and comment before the public consultation meetings. After revision of the site-specific ESMPs in accordance with the comments from the communities, the final versions will also be available for public review.

Table 3. Measures to be taken during construction stage and Monitoring Plan

Impact/Issue	Mitigation Measure	Cost (TL)	Institutional Responsibility	Comments
Pre-Construction:				
Workforce and Camps	• Siting and operation of work camps should be undertaken in consultation with local authorities and communities. • To the extent possible, work camps should not be located in close proximity to local communities. • When preparing the campsites, the vegetated soil layer (approximately 30 cm) will be scraped and stored in a suitable area. After the completion of construction work, this vegetated soil layer will be used for restoring the campsite. • In order to prevent potential conflicts between the local people and project employees, consultation must be maintained with the local people and complaints from people must be taken into consideration. • The workforce to be employed under the project must be trained about the sensitivities of local people and a policy of "work ethics and moral values" must be prepared and attached to the contracts of employees. • Recruit unskilled or semi-skilled workers from local communities to the extent possible. • Provide adequate lavatory facilities (e.g. toilets and washing areas) should be provided for the number of people to work in the work site. • The wastewaters to originate from the camp sites must be appropriately discharged to receiving bodies pursuant to the local legislation and the WB Safeguards Policies. • Campsite must have necessary infrastructural arrangements such as electricity, water, sewerage, communication network as well as proper accommodation facilities (dormitory, canteen) for the workers that will accommodate on site. • Campsites must have the areas and equipment (waste bins, containers, etc.) required for recovery, temporary storage and disposal of solid wastes in accordance with the related local legislation. • Waste disposal through incineration shall be avoided in the campsites. • When selecting the areas to store fuel, hazardous chemicals, hazardous wastes, etc., sensitive receiving bodies such as surface waters will be taken into account and sufficient distance shall be maintained from these areas (e.g. 50 meters to surface waters). • If fuel filling and vehicle maintenance works will be carried out in the campsites, these areas shall be prepared in compliance with regulations, and their grounds shall be made impermeable to prevent soil pollution (through concrete coating, etc.). • Fuel filling areas will be equipped with oil and chemical absorbing equipment, etc. to percent contamination through accidental spills. • Fuel tanks will be placed in fully-impermeable pools in compliance with the regulation. • The workers staying in the campsite will be provided with domestic water compliant with the related regulations and standards. • The drinking and domestic waters supplied to the camp sites will be regularly analyzed (weekly or monthly).	Included in design, no additional cost.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents
Temporary storage areas, excavation material disposal areas, and other areas.	• The existing open channel materials to be removed from the site under irrigation modernization and their demolition materials, will be removed from site, stored and disposed of in accordance with the Regulation on the Control of Excavation Material, Construction and Demolition Wastes (OG no. 25406 dated 18 March 2004). • Since the earth to be excavated from the areas where underground irrigation pipes will be laid will mostly be used for backfill, a large amount of excavation waste is not expected to be generated. In case temporary excavation waste are generated, they will be stored in areas permitted by the related local authority, in compliance with the Regulation on the Control of Excavation Material, Construction and Demolition Wastes (OG no. 25406 dated 18 March 2004). • The topsoil layer of temporary storage areas and excavation material disposal areas will be stripped and conserved for use in restoring these areas. The soil remaining in areas that cannot be restored (e.g. excavation and demolition materials storage areas) may be sent to areas needing it in coordination with the related Agriculture Directorates.	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents

Impact/Issue	Mitigation Measure	Cost (TL)	Institutional Responsibility	Comments
	• Where the project requires a crushing, sifting and/or concrete plant, required permits will be obtained for these units within the framework of the EIA Regulation.			
Fuel filling and vehicle maintenance	• As a general principle of the project, fuel filling or vehicle maintenance processes will not be carried out in the construction site. Fuel filling or vehicle maintenance processes will be carried out at special areas or facilities designated for these purposes outside the site. However, in case heavy work machinery is used (e.g. crawler excavators and loaders) it may not be possible to carry out the fuel filling and maintenance processors for these vehicles outside the site. In such cases, the area where such processes will be carried out shall be equipped with all equipment and instruments required for response to a potential spill. (oil pans, oil and chemical absorbents, etc.). The Contractor shall be obliged to prepare all procedures, and provide and document trainings required to carry out these processes in compliance with environmental, labor, health and safety standards and regulations. • Emergency response procedures shall be applied in case of any spillage, and such incidents shall be reported to the site supervisor.	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents
Land consolidation and land take.	• Private properties and agricultural lands will be avoided to the extent possible. Public lands will be utilized where additional land is required. Land consolidation will be made use of in places where applicable. • Where expropriation is inevitable, site specific Land Acquisition Plans will be prepared and implemented in accordance with the LAPF. • Land consolidation carried out by DSI will be implemented according to OP 4.12 and any cases requiring mitigation measures will refer to Entitlement Matrix in LAPF or to the site specific LAP (in any) • Site-specific LAP will be appropriately implemented.	Included in the planning cost. No additional cost.	DSI	
Public Participation and Access to Information	• ESMP and LAP will be disclosed to the public so that people can easily access and comment on it. • The information on the Grievance Redress Mechanism will be introduced to the people. • Consultation meetings will be organized with local people including vulnerable groups and other relevant stakeholders about project components and project activities. Special arrangements will be made for the inclusion of women farmers/ water users. • People will be informed about traffic arrangements, construction activities etc. • Announcements, disclosure of documents will be made in public places accessible to women and other possible vulnerable groups.	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents
Construction Stage				
Waste Management and Hazardous Wastes	• Measures will be taken to ensure minimum waste generation. • Wastes will be classified in accordance with the applicable regulations (recyclable, hazardous, inert, non-hazardous, etc.) and it will be ensured that wastes are collected, temporarily stored, transferred and disposed of within the framework of this system. • As necessary, a temporary waste storage area will be designed and constructed in a specifically designated area in order to ensure that hazardous wastes are appropriately stored in the construction site. • Records will be kept about the waste generation, storage and disposal. • It will be ensured that wastes are disposed of in licensed facilities. • Employees will be trained about waste management practices.	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents
Construction and excavation wastes	• Irrigation Modernization Project involves the replacement of existing open channels with pressurized closed channel system. In this scope, the wastes from existing system will be disposed of in accordance with Regulation on the Control of Excavation Material, Construction and Demolition Wastes OG no. 25406 dated 18 March 2004).	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents

Impact/Issue	Mitigation Measure	Cost (TL)	Institutional Responsibility	Comments
	• In cases where permanent storage of excavation wastes is necessary, these wastes will be stored in areas that will not harm the local people, flora and fauna species, in line with the opinion of the related authority in line with the Regulation on the Control of Excavation Material, Construction and Demolition Wastes OG no. 25406 dated 18 March 2004). Erosion control measures will be taken for areas where excavation materials and construction wastes are stored. • Necessary measures will be taken to prevent silt flow and similar impacts on from the storage areas to surface waters.			
Excavation works	• Excavation works will be carried out only within the related area, and any damage on neighboring areas by excavation works will be avoided. • Excavated earth and topsoil will be stored separately and their mixture with each other will be prevented. • Excavated earth may need to be temporarily stored along the canal route for use in refill process later on. In this case, the contractor shall ensure that sufficient area is left along the construction route and make an arrangement for storage of excavated earth and topsoil. • The area will be restored later, and the topsoil will be used for this purpose. • Excess excavation material (including rocks and stones extracted during the excavation) will not be left on site after completion of construction works. • All excavation works will be carried out in a controlled manner during rainy seasons. • The channels involving underground pipes will be closed soon after the completion of works and approval of the related supervision engineer, and they will not be left open to environmental impacts for a long time. • The channels excavated for placement of pipes will be protected from surface water that may come from the vicinity.	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents
Noise	• Construction activities will be carried out between 07:00 and 19:00 hours to the extent possible. The necessary permissions will be obtained and the local authorities and people will be informed beforehand if any work is necessary beyond these hours. • Residents in close settlements will be informed throughout the construction process. • Threshold values will be observed for continuous construction site noise (daytime - 70 dBA) (Regulation on the Evaluation and Management of Ambient Noise). In order to ensure this, work machinery will be periodically maintained and lubricated, and parts that may cause excessive noise will be replaced. • Fixed construction machinery will be placed away from sensitive recipients such as schools, hospitals and residences.	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents Weekly and monthly reports within the framework of monitoring schedule
Air Quality	• The emission threshold for dust and particulate matters, which is 3 mg/Nm^3 (Regulation on the Control of Air Pollution from Industrial Sources), will not be exceeded. For this purpose; o Watering will be done during dry seasons. o Filling and emptying processes will be done without scattering. Water sprinkling will be applied in order to prevent dust formation during the process. Furthermore, workers will be warned to be careful during the filling and emptying processes. The direction and speed of wind will be taken into account when loading and unloading materials. o The top of trucks will be covered and a speed limit will be applied in order not to disturb the security of the local people and to prevent scattering. o All the vehicles to be used must have exhaust emission permits	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents Weekly and monthly reports within the framework of monitoring schedule
Surface waters	• All surface water resources within the project area will be protected from project-sourced wastes and activities and pollutants such as excavation materials to be temporarily or permanently stored. • Surface water resources will not be used for washing and cleaning of vehicles to be used for construction works. • In case the channels excavated for pressurized pipes are filled with surface water, ground water or rainwater, the potential muddy water to be discharged from these channels will not be discharged directly to receiving bodies.	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents Weekly and monthly reports within the framework of monitoring schedule

Impact/Issue	Mitigation Measure	Cost (TL)	Institutional Responsibility	Comments
	• The wastewaters to be generated from the toilets and bathrooms in the construction site will be discharged after being treated in accordance with the applicable regulations.			
Traffic	• Warning plates will be placed along the excavation route to ensure safety of people, and entrance to the construction site will be blocked using plastic stripes, barriers and luminous warning lights. • Necessary measures will be taken through the related authorities in order to ensure a safe flow of traffic. • Local people will be informed about the construction program. • In case of any interruption or cessation of work during the construction stage, the trenches must not be left open and necessary measures must be taken. • In order to prevent any interruption in the flow of traffic on roads used by local people, during the construction activities, an alternative road route will be determined. • The roads to be used will avoid passing nearby sensitive recipients such as schools and residences, to the extent possible. • The project area and environs will be equipped with safety and traffic warning signs. • Speed limit rules will be complied with. • The vehicle drivers and work machine operators to be employed during the construction will be informed about safe drive. • Existing roads will not be damaged during the transportation activities. • In case existing roads are damaged during the traffic of heavy vehicles, the cost of damage will be compensated and covered by the contractor.	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents
Labor health and safety	• The employees will be provided with all types of protective equipment (helmet, safety belt, labor health costume, eyeglasses, gloves, safety boot, etc.). • The employees will be trained about labor health and safety. All the employees will be informed about the safety rules, risks and applicable regulations required to be complied with during the construction activities. • If channels deeper than 1.5 m. have to be excavated when laying the pressurized pipes, indoor area working procedures shall be applied. • The Contractor will take required measures pursuant to the applicable regulations to protect and enhance labor health and regulate working standards in particular. • The Contractor will comply with the principles of fair treatment and non-discrimination and create equal standards for all employees.	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents
Cultural Heritage	• Chance-find procedure will be created. • In case of a chance-find, all activities that may damage the archaeological find will be stopped and the related Museum Directorate will be contacted immediately. • If deemed necessary by museum officials, assistance will be provided to the formation of a research team under the Museum Archaeologist and mitigation measures required by the research team will be implemented.	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents
Land consolidation and land take.	• Any loss of assets, or livelihood will be compensated through site specific LAPs • Consultations with all stakeholders including vulnerable groups will be realized in line with SEP to inform about the land consolidation/acquisition process	Included in the planning cost. No additional cost.	DSI Contractor	

Impact/Issue	Mitigation Measure	Cost (TL)	Institutional Responsibility	Comments
Infrastructure	• Damages to existing infrastructure and superstructure (telecommunication lines, bridges, high-voltage lines, etc.) will be avoided to the extent possible. Any damages will be compensated in line with LAPs.	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents
Labor	• Civil work contracts will oblige the contractor to follow the national legal framework and ban the worst forms of child labor.	No additional cost.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents
Post-Construction				
Temporary storage areas and camp sites	Temporary storage areas and campsites will be restored before operation, and no excess excavation materials, construction materials and debris must be left in the site.	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents
Borrow pits	Make sure all necessary permits have been obtained for the borrow pits to be used for construction activities..	No additional cost. Cost included in contract price.	Contractor Supervision responsibility with DSI site staff.	Tender and contract documents

Table 4. Monitoring Plan for Construction Stage

Subject	What are the parameters to be monitored?	Where will the parameters be monitored?	How will the parameters be monitored / what are the monitoring instruments?	When will the parameters be monitored? Measurement frequency / continuous measurement?	Why will the parameters be monitored?	Cost	Responsible institution*	Start date	End date
Construction Stage									
Dust-particulate matter (dust to originate from the movement and exhaust gas of construction machinery)	Dust to originate from the movement and exhaust gas of earth-moving and construction machinery (mg/Nm^3) Complaints from public	Construction Area, campsite, settlements closest to the permanent and temporary storage areas	Visual observations Interviews in nearby settlements Instantaneous measurements	Weekly / instantaneous measurements during excavation / intensive construction times Upon complaint / in accordance with the Regulation	Regulation on the Control of Air Pollution from Industrial Sources, Regulation on the Evaluation and Management of Air Quality WBG's General Environment, Health and Safety Manual	No additional cost (within project budget)	Contractor / DSI	Beginning of construction work	Completion of construction work
Noise	Complaints from public Noise level (dBA)	Construction Area, campsite, settlements closest to the permanent and temporary storage areas	Interviews in nearby settlements **Level of noise to be measured by Noise meter (noise level meter)**	Weekly / instantaneous measurements during excavation / intensive construction times Upon complaint / in accordance with the Regulation	Regulation on the Evaluation and Management of Ambient Noise WBG's General Environment, Health and Safety Manual	No additional cost (within project budget)	Contractor / DSI	Beginning of construction work	Completion of construction work
Wastewaters originating from campsites	Connection to sewerage system		Connection Permit	N/A	Water Pollution Control Regulation	No additional cost	Contractor /	Beginning of construction work	Completion of construction work

Subject	What are the parameters to be monitored?	Where will the parameters be monitored?	How will the parameters be monitored / what are the monitoring instruments?	When will the parameters be monitored? Measurement frequency / continuous measurement?	Why will the parameters be monitored?	Cost	Responsible institution*	Start date	End date
	In case use of a WWTP, COD, BOD, pH, SSM, E-coli, Total Coliform at the outlet In case use of septic tank, collection schedule and the WWTP utilized for final disposal	Sewerage connection Septic areas	Transfer and discharge documents	As mentioned in the discharge permit	WBG's General Environment, Health and Safety Manual	(within project budget)	DSI		
Surface waters	COD, BOD, pH, SSM, E-coli, Total Coliform, depending on the discharge to the receiving bodies, if wastewater treatment plant is established Turbidity due to the discharge of water accumulated in trenches due to rainfall and ground waters, to the receiving body	Receiving body, before and after discharge Receiving body, before and after discharge	Discharge permit, 24-hour composite sampling, laboratory analysis Visually, or using measurement device upon site upon complaint	At times mentioned in the discharge permit Instantaneous Upon complaint	Water Pollution Control Regulation WBG's General Environment, Health and Safety Manual	No additional cost (within project budget)	Contractor / DSI	Beginning of construction work	Completion of construction work
Excavation, solid and hazardous wastes originating from the construction sites	Permit certificate for excavation waste storage areas and temporary storage areas Excavation material and waste storage areas Certificates of transportation to acceptance to disposal facilities	Construction Area, Campsite, permanent and temporary storage areas	Visually	Weekly and monthly	Waste Management Regulation, Regulation on Control of Soil Pollution and Areas Contaminated by Point Sources, Regulation on the Control of Excavation Material, Construction and Demolition Wastes and Regulation on Control of Waste Oils WBG's General Environment, Health and Safety Manual	Not high, although subject to the availability of a municipal and / or licensed recovery plant. Not high, although subject to the availability of a licensed recovery plant.	Contractor / DSI	Beginning of construction work	Completion of construction work
Wastes to originate from the vehicle park	Wastes oils, batteries, used tires and scrap vehicle materials	Vehicle park	Review and control of vehicle examination certificates	In case of breakdown / during periodic maintenance	Regulations on Control of Waste Oils, Control of Waste Batteries and Accumulators, and Control of Used Tires WBG's General Environment, Health and Safety Manual	Not high, although subject to the availability of a licensed recovery plant	Contractor	Beginning of construction work	Completion of construction work
Health and safety	Documentation about the health and safety training Certificates of participation in training Safety equipment used by the workers in the construction site (helmet, gloves, shoes, safety belt,	Construction Site, Campsite, permanent and temporary storage areas	Visually	At the beginning of each work stage Daily	Labor Health and Safety Regulation WBG's General Environment, Health and Safety Manual	No additional cost (within project budget)	Contractor / DSI	Beginning of construction work	Completion of construction work

Subject	What are the parameters to be monitored?	Where will the parameters be monitored?	How will the parameters be monitored / what are the monitoring instruments?	When will the parameters be monitored? Measurement frequency / continuous measurement?	Why will the parameters be monitored?	Cost	Responsible institution*	Start date	End date
	etc.)								
Public and Traffic Safety	Plastic stripes, barriers, warning plates Traffic flow / intensity Information of individuals and business owners living along the road route about the construction program	Construction Site, Campsite, permanent and temporary storage areas	Visually	Throughout construction stage	WBG's General Environment, Health and Safety Manual	No additional cost (within project budget)	Contractor / DSI	Beginning of construction work	Completion of construction work
Cultural and historical assets	New cultural assets that may be found in the project area	Construction site, campsite, permanent and temporary storage areas	Visually	When a cultural asset is encountered, it will be monitored by Cultural and Natural Wealth Conservation officials	Compliance with Cultural and Natural Wealth Conservation Law	Not high unless a cultural asset is damaged	Museum Directorate / Regional Protection Board DSI	Beginning of construction work	Completion of construction work
Land consolidation and land take	Information on individuals subject to land consolidation or land acquisition	Construction site Lands used permanently or temporarily within construction site	Site specific LAPs Site visits Interviews with project affected people Regular reports from site on LC and land acquisition	Land acquisition and land consolidation will be monitored on a daily basis by local DSI officials throughout their process Quarterly reporting will be realized for WB	Compliance with Bank's OP 4.12	Costs will be included in project budget	DSI	Prior to construction	Before construction begins
Post-Construction									
Restoration and rehabilitation of degraded areas	Restoration, construction wastes left on site, excavation materials, solid wastes and other unused materials and wastes	Construction site, campsite, permanent and temporary storage areas	Visually	After completion of construction works	Waste Management Regulation, Regulation on Control of Soil Pollution and Areas Contaminated by Point Sources	No additional cost (within project budget)	Contractor / DSI	Completion of construction work	Provisional acceptance

7 Roles and Responsibilities

The roles to be performed under ESMP and the parties responsible for these activities are shown in Table 5.

Table 5. Roles and Responsibilities

Responsible Party	Responsibilities
World Bank	• to review, approve and disclose ESMPs on WB's official website. • to review the scheme specific ESMPs and LAPs and provide no objections to DSI. • to provide assistance in the preparation of gender sensitization trainings to be given to DSI local staff and WUA representatives. • to conduct implementation support missions in order to ensure that the Project is in compliance with WB Safeguards Policies.
DSI	• to implement the ESMF • to prepare ESMPs • to submit ESMPs the WB for prior review. (after the prior review of a defined number of ESMPs, the procedure may shift to post review subject to the mutual agreement of the WB and DSI). • to perform the quality control and review of ESMPs. • to disclose ESMPs on the official website of DSI and incorporate ESMPs into bidding documents. • to appoint specialist for the environmental and social monitoring. • to perform inspections of the implementation of ESMP by the construction contractor, make recommendations and decide whether additional measures are needed or not. • in case of non-compliance, ensure that the contractor eliminates the noncompliance and inform the WB about the noncompliance. • to prepare, update and implement a Stakeholder Engagement Plan (SEP) that considers vulnerable groups in addition to paying attention to the gender aspect of the Project, • to hold consultation meetings, and prepare and distribute leaflets or other informative documents to inform communities, recruit a community liaison officer on project, and its impacts and construction schedule as well as rights and entitlements of PAPs • to create a local level grievance mechanism • to provide guidance to the construction contractor and engineering supervision firm. • to summarize the environmental and social issues related to project implementation to WB in regular progress reports. • to be open to comments from affected groups and local environmental authorities regarding environmental aspects of project implementation. Meet with these groups during site visits, as necessary.

Responsible Party	Responsibilities
	• to coordinate and liaise with WB supervision missions regarding environmental and social safeguard aspects of project implementation. • to conduct regular monitoring activities for the implementation of site specific ESMPs and LAPs also including updates on land consolidation activities previously conducted by MoFAL • to prepare/design sensitization training and tools for DSI's local (regional and/or branch level) staff and WUA representatives
Contractor	• to implement ESMPs on site, if required can revise the ESMP together with DSI. • to manage the grievance mechanism at the contractor, communicate grievances to DSI regularly through ESMP monitoring reports. • to monitor site activities on a regular basis (daily, weekly monthly etc.) • to prepare the ESMP progress reports for the review of DSI. • to compensate or fix damages occurred during construction (i.e. damages to crops, infrastructure) as set out by the ESMP or LAP/LAPF.
Environmental and Social Specialist (to be appointed by DSI)	• to ensure that ESMP is implemented correctly and in a timely manner by the contractor. • to perform environmental and social monitoring as defined in ESMF and sub-project specific ESMPs. • to collect information on environmental and social issues for progress reports submitted to the WB and make sure that these are all compliant with the Bank's requirements.
Communication Specialist (to be appointed by DSI)	• to prepare, implement and monitor the Communication Strategy of the Project. • to prepare all communication and visibility tools (i.e. brochures, leaflets, banners, posters, meeting announcements etc.) that will be used to inform host communities. • oversee the process for printing and dissemination of the communication/visibility tools as well as planning and organization of public events and consultation meetings with Project beneficiaries. • to prepare periodic reports on all communication and visibility activities realized under the Project to the DSI to be submitted to the Bank as a part of the monitoring process.

8 Public Consultation Meetings

A public consultation meeting was held in Ereğli - Konya on July 17, 2018 in order to introduce ESMF, LARPF and Ereğli - İvriz ESMP and receive the comments of people (Photos 3, 4 and 5). The meeting was held with the participation of DSI representatives, Governorate representatives, farmers, workers and local people where at a total of 305 participants with 96 women were present. The minutes of the meeting and the participant list is given in Annex 4 and 5. The attendees from the Governorate included Ereğli District Governor and the Mayor, District Agricultural Director and Deputy Regional Manager whereas DSİ's side included Head of Survey and Evaluation Branch, Irrigation and Drainage Branch Manager, Agricultural Engineer, Project Design and Construction Branch Manager, Operation and Maintenance Branch Acting Manager, Real Estate and Expropriation Branch Acting Manager and Ereğli Branch Manager, while İvriz WUA President and Ivriz Left Bank and Yıldızlı WUA Manager have attended from WUAs side. After opening speeches of DSİ representatives, agricultural works and the Mayor, DSİ presented information on the project in general as well as its advantages for the farmers, technical details of the project, financial sources and land acquisition and consolidation studies. The attendees asked technical details on the land consolidation practices.

Photo - 3. İvriz Meeting (1)

Photo - 4. İvriz meeting (2)

Photo - 5. DSİ Presentation

9 Reporting

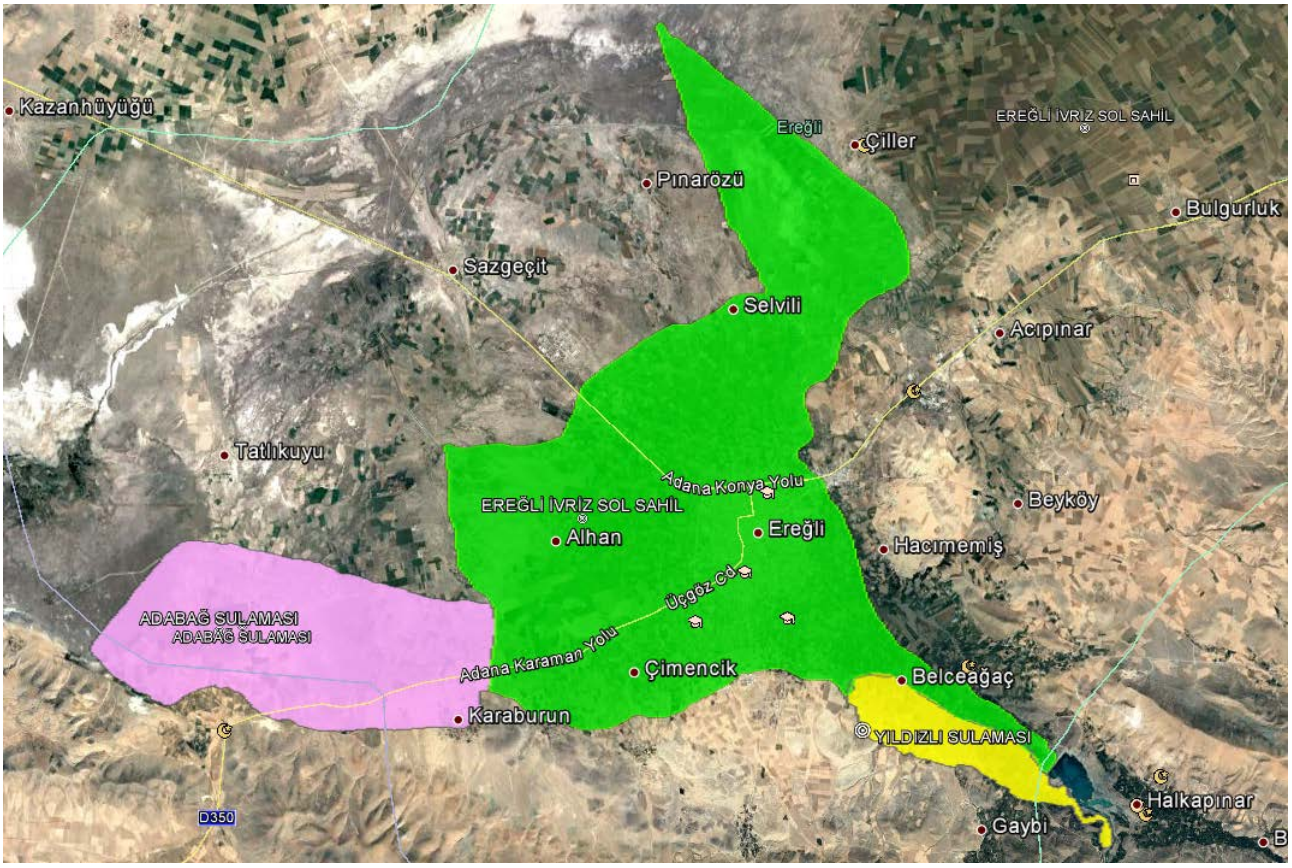
The reporting processes required to be carried out during the project implementation stage and the requirements for these processes are presented in Table 6.

Table 6. Requirements of Reporting Process and Distribution of Roles

Responsible Party	Requirement of Reporting Process
DSİ	▪ **Preparation and submission of the quarterly Project Information Notes (PIN) in a regular manner to the Bank in line with the Bank's time schedule** ▪ **Preparation and submission of the Project Progress Reports (PPR) semiannually to the WB** ▪ **Summarizing the environmental and social issues related to project implementation to WB in regular progress reports.** ▪ **Preparation of Monitoring Reports to the WB every six months before WB task team site visits.**
DSİ / DSİ Regional Directorates	▪ **Preparation of semi-annual monitoring reports for prior review of the World Bank.**
Contractor / Construction Supervision Consultants	▪ **Preparation of ESMP progress reports and their submission to the DSİ for approval**

ANNEXES

Annex- 1: Map Showing Konya Ereğli-İvriz Irrigation Area and Units



Annex- 2: Project Timetable

1st Year : Tendering by DSİ and Start of works

2nd Year : Approximately 5000 ha of area completion and operation in the 1st phase

3rd Year : Approximately 5000 ha of area completion and operation in the 2nd phase

4th Year : Approximately 5280 ha of area completion and operation in the 3rd phase

5th Year : Operation of the facility by the contractor

6th Year : Operation of the facility by the contractor

Annex- 3: Grievance Form/ Grievance Closeout Form

<table>
<tr><td colspan="5">GRIEVANCE FORM</td></tr>
<tr><td colspan="2">Name of Person receiving grievance:</td><td colspan="2"></td><td rowspan="2">Date:</td></tr>
<tr><td colspan="2">Title:</td><td colspan="2"></td></tr>
<tr><td colspan="3">INFORMATION ABOUT COMPLAINANT</td><td colspan="2">Ways of Receiving Grievance</td></tr>
<tr><td>Name – Surname</td><td colspan="2"></td><td>Phone</td><td>☐</td></tr>
<tr><td>Phone number</td><td colspan="2"></td><td>Meetings</td><td>☐</td></tr>
<tr><td>Address</td><td colspan="2"></td><td>Application to Office</td><td>☐</td></tr>
<tr><td>Village</td><td colspan="2"></td><td>Mail/email</td><td>☐</td></tr>
<tr><td rowspan="2">Signature of Complainant (if possible)</td><td colspan="2" rowspan="2"></td><td>Field visit</td><td>☐</td></tr>
<tr><td>Other: ……..</td><td>☐</td></tr>
<tr><td colspan="4">DETAILS OF GRIEVANCE</td><td></td></tr>
<tr><td colspan="5"></td></tr>
</table>

GRIEVANCE CLOSEOUT FORM		
ASSESSMENT OF THE GRIEVANCE	Expropriation	□
	Damages to households or livelihoods	□
	Environmental and social	□
	Employment	□
	Other	□
Compensation Required:	☐ **YES**	☐ **NO**
RESULT		
CLOSEOUT *This part will be filled in and signed by the complainant and the complaint evaluation committee when the compensation or file is closed-out. (Instead of taking the signature of the complainant, bank receipt or other documents can be attached with the form)*		

Responsible Person	**Complainant**
Name-Surname	Name-Surname
Date and Signature	Date and Signature (If possible)

Annex- 4: Minutes of İvriz Public Consultation Meeting

17 July 2018

11:10

KONYA EREĞLİ İVRİZ LEFT BANK REHABILITATION PROJECT

PUBLIC CONSULTATION MEETING

MINUTES OF MEETING

The meeting started at 11:00 hours on 17 July 2018, at the meeting hall of Ereğli Municipality in the district center of Ereğli, Konya. The meeting was attended by representatives from DSI Directorate General and DSI 4th Regional Directorate, District Governor and mayor of Ereğli, and many other officials and farmers from the district.

The opening speech of the meeting was delivered by Mehmet Muhittin ÖZYALVAÇ, Deputy Regional Director. It is not possible to control the water since the existing irrigation system within İvriz Left Bank Irrigation Scheme is a classical system with a network of canalettes, and is old and worn-out. Today, this public consultation meeting has been organized to discuss the environmental and social impacts of converting the İvriz Left Bank Irrigation Scheme into a pressurized closed system through the rehabilitation project under the World Bank's Irrigation Modernization Project.

Orhan SOYLU, District Agriculture Director, started his speech with welcome remarks and went on to say the following: "Of the 120,000 ha agricultural land in Ereğli, 65,000 ha is used for irrigated agriculture (40,000 ha through İvriz dam and the rest through cooperatives). It has become necessary to implement this project since the crop pattern in our region demonstrates a broad variety and is critical for livestock as well. For this reason, the modern closed system needs to be expanded in our district."

Özkan ÖZGÜVEN, Mayor of Ereğli, started his speech by tanking the workers, especially the female workers, and went on to say the following: "As a person who has spent 10 years of his career at the Agricultural Directorate, a person born and grown up in Ereğli and involved in farming activities, I would like to speak on behalf of farmers. Ereğli is a district growing rapidly in agricultural and livestock production and agricultural industry. Agriculture is the most important source of income in our district. For this reason, the people living here spent all their time, night and day, for agriculture. Farmers can supply their gasoil, fertilizer and similar needs for agricultural production, but cannot get irrigation water. It is not possible to meet this need through flooding irrigation with water from ivriz Dam. The most critical problem in agricultural sector is water. The construction works for converting the right bank into closed system started at the first phase. Field work is underway. However the population in the left bank irrigation area is three times greater than the population in the right bank

irrigation area. The farmers in the left bank irrigation area currently expect that the project be implemented in their area. We are happy with the organization of this meeting and the level of participation.

Deniz ŞAHİN, Deputy Head of Operation and Maintenance Branch at DSI 4th Regional Directorate, and Sedat ULULAR, Project Construction Branch Manager at DSI 4th Regional Directorate, provided general technical information about the existing Ereğli İvriz Left Bank irrigation scheme and made a presentation on the left main channel, Adabağ and Yıldızlı irrigation schemes within the left bank system. They informed that the operation and maintenance of these facilities were transferred to İvriz Left Bank and Yıldızlı water user association in 1995.

Hüseyin ERCAN, Survey and Evaluation Branch Manager at the Real Estate and Expropriation Department of DSI Directorate General provided information on Land Acquisition and Environmental and Social Impacts of the project, as well as the way how they will be managed, as summarized below:

Dear Governor, Dear Mayor, and distinguished participants.. I would like to greet you with my warmest regards on behalf of my institution.

Today, we have convened here for the public consultation meeting of Konya Ereğli İvriz Left Bank Irrigation Scheme Rehabilitation Project. In this scope, I will provide you with information on land consolidation and expropriation process in the context of Land Acquisition as well as environmental and social impacts of the project and their management.

As you know, State Hydraulic Works performs functions in 4 sectors: irrigation, energy, drinking water and flood protection. The immovable properties needed for these functions are obtained usually through expropriation. In recent years, DSİ has been preferring land consolidation for irrigation facilities if the area is suitable. Land consolidation will be preferred in the first place for the rehabilitation project and expropriation method will be used where inevitable. For İvriz project, we will primarily apply land consolidation. The expropriation method will be used where consolidation will not be possible. The damages to occur on the land during the construction stage will be compensated by DSI. We will be in touch with you throughout this process through informative meetings. State Hydraulic Works will always be with you.

State Hydraulic Works carries out expropriation activities in accordance with Expropriation Law No. 2942 based on Article 46 of the Constitution. The law was amended in 2001 and continues to be updated from time to time. The general practice is to seek reconciliation first for expropriation.

Expropriation process begins with a decision of public good and ends with registration. After a decision of public good is taken, expropriation plans are prepared and land registry records are obtained. Then an address inquiry is conducted, the value of immovable properties is appraised and the right owners are called on to reconcile. If agreement can be reached with the right holders, then the expropriation fees are paid to their accounts. If an agreement cannot be reached, we apply to the court. The administration covers the court expenses. The values appraised as a result of lawsuit are paid to owners and registration takes place thereafter.

For land consolidation, land surveys need to be conducted first. If the area is suitable for consolidation, then a Council of Ministers decision need to be taken. Council of Ministers decision has the effect of a decision for public good. All property related actions we take are based on a decision for public good, and a rating is done according to the parcel characteristics and soil surveys. At every transaction step, information is provided through public disclosure, and any objection or request is received. State Hydraulic Works officials talk to farmers to solicit their requests. Information such as where they want their land from and which neighbors they prefer is collected in writing and then evaluated. The subdivision plans prepared as a result of these studies are finalized and publicly posted. We continue with each step by sharing information with the public. The plans to be disclosed are posted at the Municipality buildings, Village headman's offices, Water User Associations so that they can be seen by citizens. After this process is completed, registration and land handover procedures are concluded.

In this project and others included in the same scope (5 projects), the basic principles adopted by the World Bank must be complied with in addition to the local regulations. With regard to land acquisition, a land acquisition framework document will be prepared and published. Based on this framework document, a land acquisition plan will be prepared for each individual project and actions will be taken in accordance with that plan. During the project, our administration will collect complaints, and requests through a mechanism to be created in cooperation with the supervision organization, water user association, branches, Regional Directorate and Directorate General, and the process will be managed collectively.

During the implementation stage of the rehabilitation project, utmost attention will be paid to avoid any environmental pollution. As is the case for all other projects implemented by our Directorate General, the project's environmental impacts will be identified and measures will be taken for potential impacts. Necessary measures will be taken to prevent noise, air pollution, and similar impacts during the implementation stage. The measures required to be taken for workers to be employed by contractors at the construction stage are stipulated in laws and contractors will take these measures without any delay. IN order to prevent any negative social impact of the project, work programs will be prepared in compliance with production timing and will be applied after sharing them with stakeholders.

QUESTIONS & ANSWERS

The public consultation meeting received an intensive participation. In addition to such an intensive participation, the level of female participants was also pleasing.

The female farmers from Akhüyük and Kargacı settlements have asked questions about whether their settlements were covered by the consolidation area and whether all immovable properties would be collected at a single center as part of the land consolidation process. The officials from the administration answered these question as follows:

In order to decide whether settlement units would be included in the scope of land consolidation, land surveys are conducted first and all pieces of land which remain outside settlement development plans or where fixed facilities are not extensively present, are included in the scope of consolidation to the extent technically feasible. The immovables of citizens in the same settlement are subjected to

consolidation taking into consideration the requests of citizens, to the extent it is technically feasible. However, transfers between settlement units is not possible in case immovable properties are located in different settlement units.

During the meeting, it was observed that citizens view the project as a great necessity and the complaints and requests mainly concentrate on water constraints due to water losses in irrigation. This demonstrates that there is high public engagement and support for the project.

PARTICIPANTS

Governor of Ereğli : Ömer Lütfi YARAN

Mayor of Ereğli : Özkan ÖZGÜVEN

Ereğli District Agriculture Director : Orhan SOYLU

Deputy Regional Director : Mehmet Muhittin ÖZYALVAÇ

DSİ Directorate General

Real Estate and Expropriation Department

Head of Survey and Evaluation Branch : Hüseyin ERCAN Project Construction Department

Irrigation and Drainage Branch Manager : Mesut KELEŞ Operation and Maintenance Department

Agricultural Engineer : Ahmet ARSLAN

Project Design and Construction Branch Manager : Sedat ULULAR

Project Design Branch Manager : Erol ZAMANOĞLU

Operation and Maintenance Branch, Acting Manager : Deniz ŞAHİN Real estate and

Expropriation Branch, Acting Manager : Ekrem ÜNLÜ

Ereğli Branch Manager : Kürşat CİVELEKOĞLU

President of İvriz WUA : Recep YALÇIN

İvriz Left Bank and Yıldızlı WUA Manager : Mitat TAŞTAN

Annex- 5: İvriz Public Consultation Meeting Participant List

DSİ	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00--
		Sayfa No	1

YIL/NO : 2018 / ....
KONUSU : Sol Sahil Kapalı Sistem Projesi Tanıtımı
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 17.07.2018 – 11.00
YERİ : Balkar Doğan Salonu

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Ahmet Aslan	DSİ Gen. Md.	Zr. Müh.		ahmeta@dsi.gov.tr
	Mesut KELEŞ	" "	Şb. Md.		mesutkeles@dsi.gov.tr
	İlhan Ünlü	DSİ 4. Bölge Md.	Har. Müh.		unlue@dsi.gov.tr
	Hüseyin ERCAN	DSİ Gn. Md.	Şb. Md.		huseyinercan@dsi.gov.tr
	Sedat ULULAR	DSİ 4. Bölge Md.	Şb. Md.		sululars@dsi.gov.tr
	Erol Zamanoğlu	DSİ 4. Bölge Md.	Şb. Md.		ezamanoglu@dsi.gov.tr
	A. Buğrahan GÖKSOY	DSİ 43. Şube Md.	İnşaat Müh.		abgoksoy@dsi.gov.tr
	Emre Börekçi	DSİ 43. Şube	Mak. Müh.		emreborekci@[illegible]
	Sefa YURTER	DSİ 43. Şube	Kimya Teknikeri		sefayurter@dsi.gov.tr
	İbrahim Halil ORHAN	Makina İnş. Müteahhit	Makine Müh.		ibrahimorhan@[illegible]
	Recep YALÇIN	İvriz Sol Sahil Sulama Birliği Bşk.	Başkan		
	Birsen Alicioğlu	DSİ 43. Şube Müd.	Makine Müh.		birsena@dsi.gov.tr
	Çiğdem AKCA	DSİ 43. Şb. Md.	Çevre Müh.		karaakcac@dsi.gov.tr
	Ayşegül YETİŞ	DSİ 43. Şube	İdari İşler Şef		aysegulye@dsi.gov.tr
	Sakine KARABUDAK	DSİ 43. Şube	Ziraat Müh.		skarabudak@dsi.gov.tr
	Hamdiye ÇAVDAR				
	Abdullah Çelik				[illegible]
	O. Lütfi YALAN	Kaymakamlık	Kaymakam		
	Zübeyir Dursun	AK Parti İlçe BLV.			
	Necdet ERCAN	İlçe Emniyet Müdürü			
	Cumaali ÖZINAR	Gençlik Spor	Müdür		ereglisgenclikspor@gmail

DSİ	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0-65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00-
		Sayfa No	2

YIL/NO : 2018 / ....
KONUSU : Sol sahil [illegible] sistem [illegible] [illegible]
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 19.07.2018 – 11.00
YERİ : Burhan Doğan salonu

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Sait EKER	İşkur Müd.	Müdür		ekersait@hotmail
	İradet GENÇ	İlçe Milli Eğt.	Müdür		genc.42@hotmail
	Talha ÖZER	Şeker Pancar	Başkan		talhaozer@gmail
	İsrafil YURTSEVER	Acar Koop.	Acar Kom.		
	Orhan Soylu	Tarım Orman Müdürlüğü	İlçe Müdür		
	Özkan Uğurlu	Şeyh Belediyesi	Başkan		ozkan58@hotmail
	Ahmet Bayram	Şube	Ziraat Tek.		ahmetbayram@[illegible].com.gov

DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
	Yayım Tarihi	20/05/2009
Toplantı Katılım Formu	Rev.No-Tarihi	00–
	Sayfa No	3

YIL/NO : 2018 / .....
KONUSU : Sol Sahil Kapalı Sistem Projesi Tanıt
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 19.09.2018 – 11.00
YERİ : Bolka Doğan Salon

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Baykal Baykal				
	Şebahat Baykal				
	Adnan BAKIR				
	Fahri Bayır				
	Zeki Sarıca				
	Fadime Çömlekçi				
	Medine Kaba				
	Ferhan Korkmaz				
	İslay Kaynak				
	Öznur Kaynak				
	Elmas Kaşıcak				
	Özdil Çömlekçi				
	İsmail Keçeli				
	Meyase Eşgi				
	Fadime Eşgi				
	Atiye Girgin				
	Büşra Keçeli				
	Hatice Selçuk				
	NESRİN SELÇUK				
	Kezibon Battır				
	Ayşe ALTAN				

DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
	Yayım Tarihi	20/05/2009
Toplantı Katılım Formu	Rev.No-Tarihi	00--
	Sayfa No	4

YIL/NO : 2018 / .....
KONUSU : Sal Sahil Kapalı Sistem Projesi Revizyon
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 17.07.2018 – 11.00
YERİ : Bafra Değirmen Sahası

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Naciye Tüfekçi				
	Ömür DUMAN				
	Bilal ÇINAR	DSİ KOS Şube	Şube Müd.		
	Halilibrahim KIL	4. Bölge İşletme Bodrum	Ziraat Müh		
	Ali ARSLAN	Aşi KOS Şube	İnşaat Müh		
	Fulya FİŞEKÇİOĞLU	DSİ KOS Şube	Yük. Ziraat Müh.		
	Kemal ERTÜRK	DSİ KOS Şube	Ziraat Müh.		
	Süleyman KARAASLAN		Bölge Müdür		
	Hasan BAYIR				
	İsmail BALIK				
	Taner Gedik				
	Adem Sarıgül				
	Mehmet Şen				
	Özgür Öğüt		Coğbi mah.		
	Hüseyin Akgül		Coğbi mah.		
	Ali Mandal		Coğbi mah.		
	Osmali Çetin		Elk-Tek.		
	Musa Sarıca		Sarıca Mah.		
	Sebahattin Akgün				
	Aykut SANCIOĞLU		Bayır		
	M-Hamisi				

DSİ	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00--
		Sayfa No	5

YIL/NO : 2018 / ....
KONUSU : Sol Sahil Kapalı Sistem Projesi [illegible]
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 17.07.2018 — 11.00
YERİ : Balkan Doğan Salonu

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Hikmet Bayır				
	Hasan Sarıtoprak				
	Mehmet Çınar				
	Adem Özateş	DSİ 43 Şb.			
	Ali Rıza Birli				
	Üzeyir Koç				
	Ardem Akın				
	Ali Yel				
	Mehmet Koç				
	Mustafa Çiller				
	Muhsin Koçak				
	Mehmet Alikaya				
	Veysel Akbulut				
	Ünal Sadi				
	Hasan Ez				
	Ahmet Algan				
	Ömer Ekan				
	Halil Akbaş				
	Gamze Karakaş				
	Seyfettin Oruç				
	Aslan Koca				

	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00--
		Sayfa No	6

YIL/NO : 2018 / ....
KONUSU : Sol Sahil Kapalı Sistem Projesi Bi
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 19.07.2018 11.00
YERİ : Balkan Doğan Salonu

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Mehmet ZORLU				Belceağaç
	Ünal Zorlu				Belceağaç
	İsmet Akgün				Belceağa
	Hilmi Zorlu				
	Durhasan Saçıkara				
	Mehmet Küçükbalkır				
	Mustafa Gezer				
	MEHMET DUMLU				
	Yusuf Koç				
	Nurullah Kaykan				Böktöme
	Abdullah Kardeş				Sarıtepelli
	İlhan Özgüven				Akhavuk
	Yaşar Konakçı				Ziyapaşalı
	Mustafa Dorvan				Aydınlar
	Ömer BAL				Merkez
	Asır Güneş				merkez
	Kemal Ceylan				
	Sadet Yiğit				
	Hasan BALCI				
	Fehmi Demirbaş				Böğecik
	Murat KARAMAN				Yeniboğaz

DSİ	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00--
		Sayfa No	7

YIL/NO : 2018 / ....
KONUSU : Sol Sahil Kapalı Sistem Projesi Tan.
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 19.09.2018 11.00
YERİ : Belko Düğün Salonu

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	MESUT KARAMAN			[signature]	YENİ BAĞLAR
	İbrahim Karakaya			[signature]	TAŞABİL
	MEHMET KARAMAN			[signature]	YENİBAĞLAR
	Mehmet PERZİ			[signature]	Tarlalık mah.
	Kadir Gözeller			[signature]	Barbaros Seddeler mahalle
	Yusuf Kılınç			[signature]	yusufkilinc057@gmail.com
	Hakan Han			[signature]	Sarıtopallı
	Osman Han			[signature]	Sarıtopallı
	Bayram KARDEŞ			[signature]	Sarıtopallı
	Eyüp Yılmaz			[signature]	Sarıtopallı
	Selim Polat			[signature]	Sarıtopallı
	Veysel YILAN			[signature]	Orhaniye
	Veli Yıldız			[signature]	Orhaniye
	Orhan Fındıkçı			[signature]	[illegible]
	Mustafa Aydın			[signature]	[signature]
	Osman AYTAN			[signature]	
	Zeki Çiftçi			[signature]	
	Ramazan İnal			[signature]	Çimencik
	Mustafa Kalan			[signature]	Çiftlik
	Sebattin Başar			[signature]	Göktöme
	Serdar BAŞER			[signature]	Göktöme

DSİ	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00--
		Sayfa No	8

YIL/NO : 2018 / ....
KONUSU : Sol Sahil Kapalı Sistem Proğesi Bitiş
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 17.07.2018 – 11.00
YERİ : Balkan Doğan Salonu

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Rasit polat			[signature]	Türkmen
	Serap Dağdaş			[signature]	
	Merdun Karakoyun			[signature]	
	Aytan Bulmaz			[signature]	
	İlknur Topbaş			[signature]	
	Gülsüm Erdoğan			[signature]	
	Fadime Gönülal			[signature]	
	Sevilay Parlak			[signature]	
	Habibe Kapukırık			[signature]	
	Ayşegül Parlak			[signature]	
	Sultan Göktaş			[signature]	
	Cavide Karakoç			[signature]	
	Okan KARAKOÇ			[signature]	
	Hamza uzun			[signature]	
	Serkan Gezer			[signature]	
	Niyazi gezer			[signature]	
	İrfan Filikçi			[signature]	
	Nesrin Dengin			[signature]	
	Yüksel Turgay			[signature]	
	Sevdagül Zeytun			[signature]	
	Kamile Aksoylu Chilyo			[signature]	

DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
	Yayım Tarihi	20/05/2009
Toplantı Katılım Formu	Rev.No-Tarihi	00–
	Sayfa No	9

YIL/NO : 2018 / .....
KONUSU : Sel Sahil Kpalı Sistem Bag. Tanıtım
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 17.04.2018 11.00
YERİ : Balkan Dağın Salonu

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Ayşe Kılıç				
	Cemakye Yoktaş				
	Arzu Can				
	Serpil Özçelik				
	Hediye Erel				
	leyla Atan				
	Seyhan Uçarer				
	Aynur yalman				
	Ayhan Uzkut				
	Ayhan Tunçi				
	Fadimana Eroğlu				
	Şengül öztürk				
	Ayşe Topbaş				
	Nermin Gülü				
	Güldan Kabadaş				
	Fadimana ECEP				
	Hatice İpek				
	Zekiye Çapar				
	Nurhan Kaya				
	Dmmingülsüm Yıldız				

	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00--
		Sayfa No	10

YIL/NO : 2018 / .....
KONUSU : Sol Sahil Kapalı Sistem Proje Paftası
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 17.09.2018 – 11.00
YERİ : Bolkar Düğün Salonu

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Emine Akkış				
	Düriye Yüksel				

	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00--
		Sayfa No	11

YIL/NO : 2018 / ....
KONUSU : Sol Sahil Kapalı Sistem Proj Tanıtım
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 17.04.2018 – 11.00
YERİ : Bölge Doğan Salonu

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Mustafa Ekici	Etüd Plan	Harita Teknikeri	[signature]	mustafaekici@gmail.com
	[illegible]	Etüd Plan	Elk. Tekn.	[signature]	
	Muhammet Burak EKİNCİ	Proje İnşaat	İnşaat Tek.	[signature]	mburakekinci@dsi.gov.tr
	Nail BAŞKOCAGİL	İdari İşler	Bekçi	[signature]	
	A. Yaşar Altın	M. İkmal	Memur	[signature]	
	Halil Akgül	Çiftçi	İçi	[signature]	Giller mah. Ereğli
	mehmet uzun	çiftçi	içi	[signature]	Karaburun mh
	muhmet uzun	çiftçi	içi	[signature]	Karaburun mh
	Mehmet Saygaç	Çiftçi	içi	[signature]	Bulgurluk Mah.
	osman gök	çiftçi	içi	[signature]	mehlicek mh
	Yücel San	Muhtar	çiftçi	[signature]	Giller mah. Ereğli
	Memduh [illegible]	çiftçi	–	[signature]	–
	Hasan [illegible]	–	Çiftçi	[signature]	–
	Ahmet Polat	Çiftçi	Çiftçi	[signature]	Çimler
	Erdoğan Uçak	Çiftçi	Üretici	[signature]	Çimler
	Ömer Biter	Çiftçi	Üretici	[signature]	Çimler
	Ali Çakmak	Çiftçi	Üretici	[signature]	Çimler
	Alican Ata	Çiftçi	Üretici	[signature]	Çimler
	Murat Biter	.	Muhtar	[signature]	Çimler
	Ali Katırcı	Çiftçi	Üretici	[signature]	Çimler
	Arif Aşkın	Çiftçi	İşçi	[signature]	Çimler

	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00--
		Sayfa No	12

YIL/NO : 2018 / ....
KONUSU : Sol Sahil Kapalı Sistem Drenaj Birimi
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 19.04.2018 – 11.00
YERİ : Belken Düğün Salonu

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Servet Polat	Çiftçi	Üretici	[signature]	Çimler
	Ramazan Savran	Çiftçi	Üretici	[signature]	Taşağıl
	Musa Savran	Çiftçi	Üretici	[signature]	Taşağıl
	Mehmet Savran	Çiftçi	Üretici	[signature]	Taşağıl
	Özcan Karabulut	Çiftçi	Üretici	[signature]	Taşağıl
	Gürbüz Bayram	Çiftçi	İşçi	[signature]	Çimler
	Hasan Polat	Çiftçi	Üretici	[signature]	Çimler
	İrfan Filiz	Çiftçi	Üretici	[signature]	Taşağıl
	Bülent Karabulut	Çiftçi	Üretici	[signature]	Taşağıl
	Ahmet Kocaman	Çiftçi	Üretici	[signature]	Çimler
	Ali Uslu	Çiftçi	Üretici	[signature]	Çimler
	Yaşar Akdeniz	Çiftçi	Üretici	[signature]	Çimler
	Turgut Akdeniz	Çiftçi	Üretici	[signature]	Çimler
	Hüseyin Çakmak	Çiftçi	Üretici	[signature]	Çimler
	Mahmut Çakmak	Çiftçi	Üretici	[signature]	Çimler
	Ali Gezer	Çiftçi	Üretici	[signature]	Karaburun MH
	Hamza Uzun	Çiftçi	Üretici	[signature]	Karaburun MH
	Hayri Gökçe	" "	" "	[signature]	Adalar
	Ali Alagöz	" "	" "	[signature]	Belceağaç
	Necmettin Yıldız	"		[signature]	Karaburun
	Osman Yeşil	"	"	[signature]	Meliçek

	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00--
		Sayfa No	13

YIL/NO : 2018 / ....
KONUSU : Sol Sahil Kapalı Sistem Proj. Tanıt
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 17.07.2018 – 11.00
YERİ : Bolkar Dağları Salonu

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Veli Kılınç	--	--	[signature]	Mehmetçik
	M. Ali Akgün			[signature]	Belceğaz
	Osman Akgün			[signature]	Belceğaz
	Yusuf Akgün			[signature]	Belceğaz
	Mustafa Can	"	"	[signature]	Karaburun
	Nasih Gezer			[signature]	Karaburun
	Ziya Gezer			[signature]	Karaburun
	Bayram Gezer			[signature]	Karaburun
	Ali Can			[signature]	Karaburun
	Ali Rıza Girgin	"	"	[signature]	[signature]
	Musa	uzunkuyu		[signature]	
	Ahmet Aka			[signature]	Aziziye
	A. İbrahim Erk			[signature]	Adabağ mah
	Mustafa Eker			[signature]	Yazlık köyü
	M. Emin akyüz			[signature]	Kurtuluş mah.
	Şeref Özgür			[signature]	Orhaniye
	Fadimana Kantaş			[signature]	ereğli
	Canan Çetinkaya			[signature]	ereğli
	Ayşe Şenal			[signature]	ereğli
	Çağlar Çelik			[signature]	ereğli

	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00--
		Sayfa No	14

YIL/NO : 2018 / ....
KONUSU : Sol Sahil Kapalı Sistem Proj. Tan.
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 17.09.2018 – 11.00
YERİ : Balkan Doğan Salon

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Songül Çetinkaya				
	Fahriye Yalama				
	Kiraz Kalkan				
	Nazire Çetinkaya				
	Güleç Taş				
	Sarıyegüt Taşer				
	Sevdiye Yalçın				
	Fadimana Bülbül		Çiftçi		
	Ebru Ertekin Mavi				
	Fadime Akbudak				
	Halil İbrahim Türkeli				
	Mehmet Polat				
	Fahrettin Çabuk				
	Hatice Çabuk				
	Mustafa Dibuven				
	Ahmet Danıştaş				
	Zehra Taştan				
	Necla Erbaş				
	Özlem Kiğeci				
	Hülya Gökdoğan				
	Özlem Tuna				

	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00--
		Sayfa No	15

YIL/NO	: 2018 / ....
KONUSU	: Sol Sahil Kapalı Sistem Proj. Tanıtı
TALEP EDEN BİRİM/ÜNİTE	:
TARİHİ VE SAATİ	: 17.09.2018 – 11.00
YERİ	: Balkan Düğün Salon

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Deniz Özbilgiç				
	Kadriye Uğurlu				
	Durdane Kocagil				
	Seval Işık				
	Aydın Çiftçi				
	Güven Sağlam				
	Gül Duru				
	Hüseyin Ceylan				
	Aysun Özçelik				
	Serap Yüksel				
	MERYEM TORAMAN				
	HACER SEZER				
	Fadimana Güngör				
	Recep Keçeci				
	İsmet Kılıç				
	Mikail Dergin				
	Dursun Taşdaş				
	Harun Taşdan				
	Abdurrahman Çelik				
	Nejdet Konak				
	Mustafa Dönmez				

DSİ	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00--
		Sayfa No	16

YIL/NO : 2018 / ....
KONUSU : Sol Sahil Kapalı Sistem Proj. Tanıtım
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 17.07.2018 – 11.00
YERİ : Bolker Doğan Salon

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	Mus. Ali Kocayiğit			[signature]	
	Muhammed Selbaş			[signature]	
	İsmail Z. Akkoç			[signature]	
	mustafa uysal			[signature]	
	Şaban Can			[signature]	
	Sami Can			[signature]	
	Bahtisen Can			[signature]	
	muhammet	Sulak		[signature]	
	Okan SOYGÜR			[signature]	
	M. Murat ERDİŞ			[signature]	
	Aydın ÇIRIK			[signature]	
	Güven SAĞLAM			[signature]	
	Seda ÖCALAN İZOL			[signature]	
	Sibel KARAKOÇ			[signature]	
	Kiraz ACAR			[signature]	
	Ayşe Akgül			[signature]	
	Songül Soylu			[signature]	
	Yafes Çetintaş			[signature]	
	Züleyha Dural			[signature]	
	Pembegül Soysal			[signature]	
	Rabime Polat			[signature]	

	DSİ 4. Bölge Müdürlüğü	Doküman No	F 0 65 62 03
		Yayım Tarihi	20/05/2009
	Toplantı Katılım Formu	Rev.No-Tarihi	00--
		Sayfa No	17

YIL/NO : 2018 / ....
KONUSU : Sol Sahil Kapalı Sulama Sistemi Pro. Brf
TALEP EDEN BİRİM/ÜNİTE :
TARİHİ VE SAATİ : 19.09.2018 – 11.00
YERİ : Balkon Düğün Salonu

Sıra No:	Adı Soyadı	Birimi / Ünitesi	Görevi	İmza	e-Posta Adresi
	İhsan [illegible]		Çiftçi	[signature]	
	Ramazan Ceren		Çiftçi	[signature]	
	Çelebi Ceran		Çiftçi	[signature]	