

## Environmental and Social Review Summary

### Trans-Anatolian Natural Gas Pipeline Project

*This Environmental and Social Review Summary (ESRS) is prepared by MIGA staff and disclosed prior to the date on which MIGA's Board of Directors considers the proposed issuance of a Contract of Guarantee. Its purpose is to enhance the transparency of MIGA's activities. This document should not be construed as presuming the outcome of the decision by MIGA's Board of Directors. Board dates are estimates only.*

*Any documentation that is attached to this ESRS has been prepared by the project sponsor, and authorization has been given for public release. MIGA has reviewed the attached documentation as provided by the applicant, and considers it of adequate quality to be released to the public, but does not endorse the content.*

Country:	Turkey
Sector:	OGMCE
Project Enterprise:	Trans-Anatolian Natural Gas Pipeline Project
Environmental Category:	A
Date ESRS Disclosed:	
Status:	Due Diligence

#### A. Project Description

The project entails the construction and operation of the Trans-Anatolian Natural Gas Pipeline Project ("TANAP" or "the Project") in Turkey. TANAP is part of the Southern Gas Corridor development, linking Azerbaijan's Shah Deniz gas fields to Turkey and Europe. The Southern Gas Corridor comprises the following components: i) the Shah Deniz gas field, ii) the South Caucasus Pipeline and its expansion through Azerbaijan and Georgia to Turkey, iii) the construction of TANAP through Turkey to Greece and iv) the construction of the Trans-Adriatic Pipeline (TAP) through Greece, Albania and the Adriatic Sea to Southern Italy.

The TANAP section comprises a 1,820km long pipeline currently under construction accounting for over half of the 3,500km pipeline system from Azerbaijan to Italy. It will start from the Turkish border with Georgia, beginning in the Turkish village of Türkgözü in the Posof district of Ardahan, and will run through 20 provinces - Ardahan, Kars, Erzurum, Erzincan, Bayburt, Gümüşhane, Giresun, Sivas, Yozgat, Kırşehir, Kırıkkale, Ankara, Eskişehir, Bilecik, Kütahya, Bursa, Balıkesir, Çanakkale, Tekirdağ and Edirne - and will end at the Greek border in the İpsala district of Edirne. At this point, TANAP will connect to TAP which will convey the gas to European gas markets. TANAP will connect to the Turkish natural gas network in two locations, at Eskişehir and Thrace, for the delivery of 6 bcm for the Turkish gas market. The pipeline up to Eskişehir will have a diameter of 56 inches; from Eskişehir to the Greek border the diameter will be 48 inches except for two parallel 36 inch pipeline for the 18 km section crossing the Marmara Sea. Apart from the pipeline infrastructure, the project includes two compressor stations, metering stations, pigging launching and receiver facilities (for cleaning purposes), and communication and control equipment.

Southern Gas Corridor CJSC (SGC), a state-owned company based in Azerbaijan has requested a MIGA guarantee against non-honoring of sovereign financial obligations for a loan of up to USD 750M for a tenor of up to 15 years in respect of SGC's investment in TANAP.

The Project is developed by TANAP Doğalgaz İletim A.Ş., a special purpose company to implement, own and operate the pipeline. The 58 percent majority share is held by SGC, other shareholders include Turkey's national gas company Boru Hatlari İle Petrol Taşıma A.Ş. (BOTAS) and British Petroleum (BP). Project construction started in 2014 and is divided into four lots.

Construction is underway in all four lots, and the offshore section crossing the Marmara Sea is currently in engineering and procurement studies stage. Separate construction contractors are in place for each of the lots, and an Integrated Project Management Team has been engaged to provide oversight and control of the construction contractors. The construction contractors are Fernas for Lot 1 (based in Turkey), a joint venture between Sicim (Italy), Yuksel (Turkey) and Akkord (Azerbaijan) for Lot 2, Tekfen (Turkey) for Lot 3, and a joint venture between Punj Lloyd (India) Limak (Turkey) and Kalyon (Turkey) for Lot 4. The construction period is expected to last for 4-5 years. As of end of September 2016, the overall project progress is at approximately 50% completion.

IBRD is considering a potential loan to the TANAP project and has been engaged by both the Government of Turkey, represented by Boru Hatlari İle Petrol Taşıma A.Ş., and by the Government of Azerbaijan, represented by SGC, to provide up to USD 500m to each in financing to TANAP. Disclosed information regarding the IBRD's involvement in the Project is available [here](#). The European Commission has provided grants to specific components of the project, including "Environmental Monitoring", "Engineering Studies for TANAP Scada System and Crossings under Dardanelle Strait and Evros River", "Detailed Engineering for Pipeline Security System" and "Design of Commercial Operations and Asset Integrity Management Systems". Further information is available [here](#).

The Shah Deniz gas field and the expansion of the South Caucasus Pipeline (through Azerbaijan and Georgia) are considered associated facilities to the TANAP project. MIGA is currently reviewing the associated facilities and this ESRS will be updated if necessary.

## **B. Environmental and Social Categorization**

The Project is Category A under MIGA's Policy on Environmental and Social Sustainability (2013). The Project is expected to have potentially significant adverse social and environmental impacts that are diverse, irreversible, or unprecedented. The construction of the pipeline and associated infrastructure could potentially result in diverse negative environmental and social impacts related to: landscape, water quality, air quality, noise levels, waste water, solid waste, hazardous waste, biodiversity, worker health and safety and communities' health and safety during construction and operation and physical and economic resettlement.

## **C. Applicable Standards**

The Project will have impacts which must be managed in a manner consistent with all Performance Standards as follows:

- PS1: Assessment and Management of Environmental and Social Risks and Impacts
- PS2: Labor and Working Conditions
- PS3: Resource Efficiency and Pollution Prevention
- PS4: Community Health, Safety and Security
- PS5: Land Acquisition and Involuntary Resettlement
- PS6: Biodiversity Conservation and Sustainable Natural Resource Management
- PS8: Cultural Heritage

The following World Bank Group (WBG) Environmental, Health, and Safety (EHS) guidelines are applicable to the project:

- General EHS Guidelines
- Onshore Oil and Gas Development

Performance Standard 7 has not been triggered since there are no impacts on indigenous peoples within the project area.

An Environmental and Social Action Plan (ESAP) will be agreed between TANAP, IBRD and MIGA, including any outstanding measures identified to ensure compliance with the requirements of the Performance Standards and EHS Guidelines. Once finalized, this ESRS will be updated with the ESAP disclosed as an annex.

#### **D. Key Documents and Scope of MIGA Review**

In addition to reviewing environmental and social documentation, a visit to the Project site was conducted as part of a MIGA due diligence mission. Throughout due diligence MIGA has coordinated closely with the World Bank's Environmental and Social team. The Bank has conducted multiple site visits and monitored project progress through its team of experts in Turkey.

The following documents were reviewed by MIGA:

- *Trans Anatolian Natural Gas Pipeline (TANAP) Project ESIA Report*. Prepared by Golder Associates on behalf of TANAP.
- *Stakeholder Engagement Plan*, August 2013. Prepared by Golder Associates on behalf of TANAP.
- *Biodiversity Action Plan*, June 2016. Prepared by ÇINAR Engineering Consultancy Co. on behalf of TANAP.
- *TANAP Resettlement Action Plan*, October 2015. Prepared by Golder Associates on behalf of TANAP.
- *TANAP Environmental and Social Management Plan*, July 2016.
- *TANAP Action Status Report – Environmental Monitoring Report*, January 2016.

## **E. Key Issues and Mitigation**

### PS1: Assessment and Management of Environmental and Social Risks and Impacts

*Environmental and Social Assessment:* An assessment of environmental and social impacts (ESIA) have been carried out based on the requirements of Turkish regulation and the Performance Standards. ESIA studies were conducted during 2012 – 2014 by CINAR (a Turkish environmental consultancy company) and additional quality control was provided by Golder Associates and ERM. The scope of the impact assessment includes pipeline route defined as a 2 km wide corridor, all related infrastructure, and an alternative route analysis. The ESIA was prepared both in Turkish and in English and approved by the Ministry of Environment and Urbanization on July 24, 2014. In addition to the ESIA, TANAP has prepared a set of mitigation plans to be implemented and updated through successive stages of the project, including:

- a. Environmental and social management system;
- b. Construction impacts management plan;
- c. Community safety management plan;
- d. Community relations plan;
- e. Procurement and supply plan;
- f. Land acquisition plan;
- g. Resettlement action plan (prepared before construction);
- h. Aggregate management plan;
- i. Traffic management plan;
- j. Transportation management plan (prepared before construction);
- k. Erosion control, reinstatement and landscaping plan;
- l. Biodiversity action plan
- m. Culture heritage assessment
- n. Pollution prevention plan;
- o. Waste management plan; and
- p. Emergency response plan.

The ESIA includes an assessment of cumulative impacts, arising from the construction and operation of TANAP and other projects, either crossing or adjacent to the pipeline route and which area of impact intersects with TANAP's. 14 projects have been identified as high potential for cumulative impacts, including roads, railways, dams, irrigation channels and other pipelines. Mitigation measures have been identified for each project, and will be implemented as part of the ESMP.

*Management Programs and Monitoring:* TANAP has an ESMS in place which describes the process of implementation of environmental and social safeguards documents of TANAP itself, its EPCM contractor, construction contractors and also the ESIA monitoring company. TANAP also has an Integrated Management System which is a process based system, compliant with and covering all aspects of ISO 9001, ISO 14001 and OHSAS 18001 standards. For each of the construction lots, at least one of the contractors (in the case of joint venture) is certified according to ISO 9001, ISO 14001 and OHSAS 18001. During the construction stage, OHSAS management is mainly based on construction contractors' plans and procedures in addition to TANAP's internal system. TANAP, together with the EPCM contractor, have a control system over the construction contractors and the TANAP conducts compliance monitoring on the contractors. TANAP has also retained CINAR, the local environmental and social consultancy firm which was involved in the

ESIA process, as independent E&S monitoring consultant and to provide quarterly monitoring reports to TANAP and the Ministry of Environment and Urbanization.

*Consultation and Participation:* As part of the ESIA process, 63 public meetings were held between February and March 2013. Additionally, 17 focus group meetings with women and 135 village head meetings were held as part of the RAP preparation. To date, three consultation meetings with local and international NGOs have been held as part of Turkish legislation requirements, where approximately 1,250 people participated. Going forward, TANAP will hold annual stakeholder meetings to engage the stakeholders in a meaningful process on an ongoing basis. The grievance redress mechanism adopted for the process includes complaints being brought to the notice of the staff of TANAP and those complaints being discussed with management after which responses will be provided. Online registration and tracking is also available.

TANAP has a comprehensive Stakeholder Engagement Plan for engaging with citizens in a well-informed, participatory way. The project explicitly supports Public Participation Meetings, annual reports summarizing the feedback received during consultations processes and explaining how the feedback was reviewed and considered by TANAP, as well as a process for capturing men's and women's feedback separately when appropriate. These feedback mechanisms have been incorporated in the project design to ensure transparency and a continuous dialogue with stakeholders and beneficiaries, as well as to comply with relevant Turkish law.

TANAP has also planned for a substantial environmental and social community investment program for the entire impacted route. In order to determine the main thematic areas of investment, TANAP carried out a needs assessment through consultations with affected communities. The project aims to gather and monitor citizen engagement indicators in order to ascertain the views of beneficiaries and ensure they actively participate in the environmental and social investment program.

*Emergency Preparedness Procedures:* An emergency response preparedness system is in place, including a project overall Emergency Response Plan, and separate plans for each construction contractor and construction lot. The procedures cover capacity, training, risk assessment, incident prevention, reporting and instructions for potential emergencies. The procedures are an integrated part of the ESMS and OHSAS, and also include specific plans for medical emergencies, and environmental emergencies.

*Organizational Capacity and Training:* Environmental and social management is carried out by TANAP, construction contractors, and the third party monitoring consultant. The Environmental and Social Units of TANAP report to the Project Director and have staff both at headquarters and in the field for each construction lot. TANAP has the overall responsibility for ensuring that all environmental and social requirements are fulfilled, and monitors construction through its own E&S personnel both in Ankara and in the field. TANAP coordinates with each construction contractor's E&S team and in addition, the third party monitoring consultant reports quarterly to both TANAP and authorities.

## PS2: Labor and Working Conditions

The majority of the construction work force will be engaged by contractors, the Project will ensure that relevant requirements of PS2 and Turkish legislation will be applied to all workers. TANAP has a workforce of around 220 employees, most of them in management, engineering/technical and administrative roles. The EPCM contractor employs 155 people, and as of June 2016, there are around 6,100 construction workers engaged through contractors and sub-contractors. At peak, the Project will employ approximately 7,000 people during construction. Two construction camp sites have been established for each construction lot, each with an approximate capacity of 850 staff. The camps provide accommodation, sanitary facilities, food canteens, and medical and recreational facilities for workers. The construction contractors are responsible for the design and operation of the camps.

*Working conditions:* TANAP has a system of policies and procedures that deal with issues such as work hours, hiring, training, compensation, benefits and grievance mechanism. EPCM and the construction contractors' HR policies and procedures are reviewed and approved by TANAP.

Construction contractors have prepared Employment and Training Plans that, among other issues, describe local hiring procedures and include a Code of Conduct – construction camp site rules that are applicable to its employees. Workers are informed about the Code of Conduct during the hiring procedure and induction trainings. Social induction and health, safety and environment (HSE) training also include components on cultural awareness, interacting with local communities and communicable diseases.

The majority of the workforce (except for temporary locally hired people) are on indefinite work contracts. The working conditions are communicated to employees during the hiring process and are included in the labor contracts. There is an established grievance mechanism for TANAP employees and contractors. For monitoring of working conditions, a separate third party consultant has been contracted by TANAP to carry out labor audits.

*Worker Health and Safety:* TANAP's Occupational Health and Safety (OHS) management procedures addresses the continuous identification of dangerous conditions, evaluation of associated risks, training of workers, and implementation of control measures including obligatory use of PPEs. The main responsible parties for OHS compliance are the construction contractors and the EPCM Contractor.

TANAP has established an integrated Group Management Unit for Environment, Social and Health and Safety (H&S). The H&S team consists of five H&S Engineers, three experts in Ankara and 11 H&S advisors for each construction lot. TANAP also has a Road Safety Consultant team working under the H&S Management and a site organization made up of three Road Safety Experts in each lot and one expert in each station construction site working on behalf of TANAP. In addition to TANAP's personnel, the H&S management is supported by H&S staff of the EPCM contractor and construction contractor's staff. Before the construction phase started, TANAP hired consultants to conduct medical risk assessment. The report was shared with all project construction contractors. TANAP then created their own H&S management system which describes all the procedures for managing issues, training, preparation of manuals, etc. According to the H&S Management system, TANAP is responsible for frequent monitoring of key performance indicators, reporting

incidents/occupational diseases, conducting drills, trainings, audits and behavioral safety programs. For mitigating the H&S related programs an Action Tracking Register is used by construction contractors. They are responsible for finding the source of the H&S issue, identifying the responsible person, and indicating when the corrective action is taken. This is being monitored by the EPCM contractor and then reported to TANAP.

### PS3: Resource Efficiency and Pollution Prevention

The key impacts from construction and operation of the Project are related to air and water quality, waste and sanitation, noise, erosion and sedimentation. These impacts will be avoided, reduced or mitigated through measures identified in the ESIA and related management plans, consistent with national legislation, as well as WBG EHS Guidelines.

*Air quality:* Ambient air quality is expected to be affected by dust emissions from construction activities. The major sources of dust emissions during construction are: excavation, blasting and earthworks; loading/unloading, handling, storage and transport of materials or wastes; and vehicle movements. Emissions from vehicle exhausts used for transport of workers, construction material, vehicles and equipment will be minimized through good practices e.g. proper maintenance, restriction on idling and running of vehicle engines only when required. Dust suppression measures will be implemented, as identified in the ESIA, including: mist spraying on dusty areas, suspending earthworks in high winds, covering payloads, appropriate storage of loose/friable materials, covering excavated piles and watering using collected rainwater and construction wastewater.

*Water quality and usage:* Surface water quality may be affected by sedimentation due to river crossing activities and the release of sewage and wastewater. Construction activities at the river crossings will be limited to periods of low flow and mitigation measures set forth in the ESIA will be implemented, including pumping operations to avoid destruction of the river bed. Sewage and wastewater will be treated in wastewater treatment plants established in the Construction Camp Sites.

A sediment transport modelling study has been conducted on the pipeline river crossings for the Posof and Karasu Rivers, evaluating the sediment impact as well as the other physical impacts. The results of this study demonstrated that under low flow conditions fine sediments will impact the river up to 110 m downstream. Hazardous and oily discharges will be separately collected and disposed of at licensed facilities and wastewater treatment plants licensed by the national environmental authorities. Potable water quality is periodically monitored by the independent monitoring consultant, and the construction contractors.

Drinking water is supplied at demijohns at the construction sites. Potable water is received from either Municipality water distribution lines in Camp Sites or groundwater wells, which has been opened receiving the required permits from the relevant Authority (State Hydraulic Works).

Hydrostatic testing of the pipeline to ensure there are no leaks or fatal breaks, will be planned so that the opportunities for water re-use are maximized. First priority is to use surface water for the testing and if this is not possible, groundwater resources can be used. Hydrostatic testing, water abstraction, discharge to nearby rivers and any intervention to the riverbed diverting during crossing are subject to written permits from State Hydraulic Works (SHW).

*Waste management:* Debris, excess materials including soil and rocks, spillage and domestic refuse generated by construction personnel are the main solid waste streams during construction. Management of construction-based solid wastes will be conducted according to waste management procedures identified in the ESIA and ESMS and consistent with national legislation, and the EHS Guidelines. Each contractor has prepared a waste management plan, including prevention, reduction, reuse, recovery, recycling, removal and disposal of construction and operations wastes, and a plan for collecting, categorizing, handling, storing and disposing of wastes consistent with national legislation and WBG EHS Guidelines. The plan also includes procedures for classification, handling, recycling and specific measures for hazardous waste as well as an emergency response program to respond to hazardous materials/waste leaks, accidental releases and spills.

Temporary hazardous waste storage areas are available at each camp site and will be used during construction activities. The storage areas have been approved by the Provincial Directorate of Environment and Urbanization. Subcontractors manage the storage areas and transport and dispose of waste at licensed facilities.

*Vehicle maintenance:* Vehicle maintenance is conducted in separate workshops at the construction camps. Spill kits are available in designated areas as well as in vehicles working at construction sites in order to handle minor leakages. Used spare parts are disposed of in compliance with applicable requirements. Vehicle mechanics are trained in appropriate mitigation measures required during vehicle maintenance. A vehicle maintenance unit will be developed for operations and any hazardous waste will be disposed of at licensed facilities.

*Noise:* During construction, noise will be generated by construction vehicles on site, excavation, pipeline laying, etc. Noise impact modelling was carried out as part of the ESIA studies, impacts are expected to be experienced in a radius of up to 0.5 km from the construction corridor. Noise mitigation measures to be implemented include control and timing of construction activities to avoid noise emitting activities at night time, information campaigns to affected communities in case of activities occurring after daylight hours, and maintenance and inspection of vehicles and equipment. Noise level monitoring will be conducted daily at selected sites.

*Greenhouse gas emissions:* Emissions caused by the TANAP pipeline system were assessed in the ESIA and determined to be minor during the construction period of the project. During operations, GHG emissions will be generated from the natural gas-fired compressor stations (the “pumps” which move the gas through the pipeline system). At the 16 bcm/annum throughput, TANAP estimates gas consumption at about 0.2 bcm/annum, resulting in 0.4 mTCO<sub>2</sub>-eq/per year. Total emissions in the Southern Gas Corridor are estimated at about 0.7 mtCO<sub>2</sub>-eq/annum which is significantly less than using alternative energy sources or transporting the gas via modern tankers.



#### PS4: Community Health, Safety and Security

Potential risks to community health and safety include traffic accidents, construction and operations accidents such as blowouts, and communicable diseases and other health and safety issues related to immigrant workers during construction phase.

For the construction phase, Community Safety Plans are in place for each construction contractor, with the purpose of reducing risks and impacts on local communities from land preparation and construction activities. The plans identify roles and responsibilities, relevant regulatory requirements, training and procedures to comply with the commitments related to community health and safety in the ESIA.

The design of the pipeline includes various measures to reduce potential risks, including minimizing hazardous inventories, minimizing the likelihood of leakage through design integrity, automated process monitoring, a control system, employing a Safety Instrumented System combining the functions for process shutdown, emergency shutdown and fire and gas detection and comprehensive escape, evacuation and rescue systems for personnel.

Protection zones will be enforced along the 16 m RoW, where no other construction will be permitted to minimize the risk of accidents. Further management practices and requirements relevant to community health and safety are described in the Traffic Management Plans, Waste Management Plans, and Community Health Plans.

Security Arrangements: During the construction period, trenches and project areas will be fenced and with appropriate warning signs and security personnel. In sections with residential areas less than 500 m from the pipeline route, additional fencing will be used in combination with information campaigns to the local population. In the operations phase, the pipeline route will be highlighted and signed in order to make communities aware of the pipeline route. The above ground installations will be fenced to prevent unauthorized entry of people. Additional security arrangements for the operations phase will be developed as part of the ESMP for operations.

#### PS5: Land Acquisition and Involuntary Resettlement

The total project footprint includes the 1,800 Km long, 36 meter wide construction corridor and additional areas for above ground installations, access roads, and temporary facilities such as camps and stock yards. In total, the project requires land acquisition of approximately 6,300 hectares out of which 96% is acquired for a temporary period of three years. These lands are returned to the land owners after construction (without restrictions for about 50 percent of the land and with some restrictions on height of trees and construction of buildings in the case of the remaining 46 percent of the land). The remaining 4%, 260 hectares (in the first phase) will be acquired on permanent ownership basis. Out of the project affected lands, approximately 70% is privately owned with the remainder being public lands.

The total number of parcels for the ROW and related infrastructure is approximately 25,000. Since many parcels have multiple owners, the total number of affected land owners is estimated to be about 95,000, which also includes some informal settlers (ca. 200 families) who are cultivating

public lands. The number of land owners to be affected by permanent land acquisition is less than 1,000 (about 1 percent). Land acquisition is expected to be limited to economic displacement, and no physical resettlement will be necessary.

The public authority responsible for carrying out land acquisition is BOTAŞ which has set up a TANAP Land Acquisition Directorate based in Ankara, with nine regional field offices. The total number of BOTAŞ staff working on land acquisition for the project is approximately 130. At TANAP, there is also a Land Acquisition Department which is responsible for the right-of-way budget and valuation, and coordinating with BOTAŞ. Since TANAP is the main implementing private company, monitoring and supervision measures for land acquisition will be under taken by TANAP.

*Land acquisition process:* The land valuation process includes consideration of net income, capitalization and sales information from the Title Registration office as well as market prices, etc. The compensation for the 16 meter ROW corridor with exclusive rights basis (i.e. permanent easement and right of use by TANAP, however farmer can use the land with some restrictions) is in the range of 70-90 percent of the compensation as available under permanent land acquisition. The farmer can sell the land and transfer the 'exclusive rights' agreement. In the case of the 20 meter additional ROW corridor with temporary easement rights during construction, the compensation is around 20 percent.

If the land owner(s) accepts the valuation, the land use registration is transferred as an amicable settlement and compensation is paid immediately. If the land owner(s) do not agree or land ownership status is unclear, land use is secured through 'immediate expropriation' under the Turkish expropriation law. This includes opening a court case and making the compensation available to the registered owner, a process normally completed within one to four weeks.

*Land acquisition status:* Land use rights have been acquired for the entire ROW, with approximately 35% concluded as amicable settlements and the remainder through immediate expropriation as described above mostly because of absentee land owners, or poorly updated land ownership records. Both parties, the landowners and the administration, have the right to challenge compensation rates and to date, less than 5% of landowners has appealed to court for enhancement of compensation rates.

A Resettlement Action Plan (RAP) has been prepared for the land acquisition necessary for the pipeline RoW, and a separate RAP has been prepared for the above ground installations (permanent land acquisition). The RAP for the pipeline was originally prepared and disclosed on TANAP's website in October 2014, following an independent audit by an environmental consulting company, an addendum to the RAP was prepared in September 2016. The addendum addresses both shortcomings identified in the audit, as well as updates to the project design and route.

*Livelihood restoration:* The negative livelihood impacts of the Project's land acquisition activities will be short term and derive primarily from disturbance caused by construction. Impacts include temporary loss of and reduced access to agricultural land, loss of standing crops, and impacts on community assets and infrastructure, including irrigation systems. Positive impacts include local employment opportunities which will boost the local economy and improvement in livelihoods through investment programs.

TANAP has committed to developing a Livelihood Restoration Plan (LRP) to address impacts linked to livelihoods. Apart from the cash compensation made for loss of lands, the LRP will ensure that the loss of collective resources for the households to sustain their livelihood are substituted through additional supports that may be employment opportunities, skills training, agricultural input support packages, support to alternative enterprises to diversify livelihood income sources, access to services such as health and education, support to women's groups and fisheries etc. A separate LRP will also be implemented specifically focused on the Marmara Sea fishery communities which are the communities affected by the off-shore pipe line route across the Marmara sea in Western Turkey.

In addition, TANAP will implement a Social and Environmental Investment Program with a 30 MUSD budget set aside for projects and support related to social development. A needs assessment and strategy for the fund has been developed based on the survey and stakeholder engagement activities carried out as part of the ESIA. A consultant is currently being hired to assist in the implementation of the program.

*Vulnerable groups:* An assessment of vulnerable groups has been carried out, with the main groups identified being the poor, women, landowners with unviable lands, and landowners with lands crossed by multiple pipelines. Specific measures to address the needs of the poor and women have been put in place through both stakeholder consultation and communication, livelihood restoration and land acquisition.

Landowners temporarily left with unviable lands (such as too small parcels, or inability to access lands during the construction period), have had their compensation reviewed on a case-by-case basis, and guidance criteria have been developed to identify cases where additional compensation should be paid out.

*Monitoring:* Impacts related to land acquisition will be included in the monitoring framework described under PS1. TANAP has also committed to implement an external monitoring arrangement for the RAP implementation and compensation payments. Once the land acquisition process and activities related to livelihood restoration are completed, a completion audit will be conducted by an external party to confirm the outcome of the programs.

*Grievance management:* A comprehensive grievance management system is in place, open to complaints related to land acquisition, livelihood restoration, and other matters. The grievance mechanism was introduced to the project affected persons during the ESIA consultations (see PS1), grievance filing methods include a toll free phone number, local project office contacts, e-mail, website complaint form, etc. Grievances can also be reported during various consultations and periodic visits by community liaison officers to affected communities. An online stakeholder interaction database have been established to maintain lists of stakeholders, record communication with stakeholders, and register, track and report on grievances. Both TANAP and construction contractor staff have been trained on public consultation and using the grievance system.

In addition to the open court cases described under land acquisition above, 679 complaints have been received (as of September 2016), out of which 563 have been resolved and 116 are open. The most common types of grievances have been related to damage to land/property, incidents in the

land acquisition process, and damage to infrastructure. A comprehensive list is available in the RAP Addendum, available in documentation section below.

#### PS6: Biodiversity Conservation and Sustainable Natural Resource Management

A biodiversity impact assessment, which included the development of a detailed baseline was carried out as part of the ESIA and a Biodiversity Action Plan (BAP) was developed based on the assessment. Field studies were carried out at 246 stations selected to cover all different habitat types along the pipeline route in a 500 m. wide corridor and a wider project area in sensitive areas. The findings include:

*Habitat types:* As the TANAP Project traverses Anatolia from the east to the west, many habitat types in Turkey are present within the pipeline route. The most important habitat types from a biodiversity conservation perspective through the TANAP route are the natural woodlands and steppe (gypsum, marl and serpentine) habitats, where most of the endemic and restricted range flora species are observed.

*Flora:* A total of 1,365 taxa belonging to 91 families were identified. According to the Red Data Book of Turkish Plants revised in accordance with IUCN 2001, of the taxa identified 9 are considered critically endangered (CR), 14 endangered (EN) 35 are vulnerable (VU) and 14 are near threatened (NT). The remaining are listed as least concern (LC) or have not been evaluated. Moreover, 221 identified taxa found are endemic and 62 of these are considered as restricted range.

Of the 86 species of conservation concern (SCC) identified during the studies, 62 were found within the footprint of the project during the field studies. In addition, one species new to science was identified.

*Mammals and birds:* During the habitat-based field studies carried out in 133 terrestrial stations along the TANAP route, a total of 33 mammalian species and two genera were identified. A total of five SCC species were identified including one which is endemic to Anatolia, one whose subpopulations have less than 1000 adult individuals and three which are restricted range species in Turkey.

A total of 133 bird species belonging to 16 orders and 41 families were observed. Among the species identified 4 are classified as endangered, 2 as critical and 2 as vulnerable.

*Reptiles and amphibians:* The field studies identified a total of 30 reptile species belonging to two orders and nine families. One snake species is critically endangered, and one lizard is endangered.

#### Amphibians

As a result of the habitat-based field studies carried out in 133 stations along the TANAP route, a total of seven amphibian species belonging to two orders and four families were identified. Among the species found none of them are considered SCC. However, one species is vulnerable.

*Fish:* Along the TANAP Project route a total of 189 river/stream crossings were examined, during two field study campaigns conducted in different seasons. As a result, 40 fish species belonging to four orders and six families were identified. Within the fish species identified during

the field study, 27 are endemic of Turkey. Five of them are restricted to the Kura-Araxensis basin and four to the Tigris-Euphraticus basin. In addition, one is under protection in Turkey inland waters. A total of 13 SCC species were identified as a result of the field studies and literature analysis. 11 of them are endemic and high sensitivity species, one of them is under protection in Turkey and two of them are in the CR category according to IUCN.

A conservative approach to critical habitat identification was adopted, materially in line with PS6. The pipeline routing exercise was conducted to avoid critical natural habitats as much as possible, although, given the linear nature of the project, some areas were unavoidable. Terrestrial habitats identified as critical cover approximately 0.39 percent of the pipeline corridor (500 m. wide) and 5.6 percent (36 m.) of the ROW. In all cases where critical natural habitats are affected, the project corridor represents only a small percentage of total habitat of this type available in Turkey. According to the impact assessment, potential impacts on these habitats and the identified SCC are primarily limited to temporary impacts during construction (i.e. land and vegetation clearance, noise and vibration, presence of workforce, etc.). The project is not expected to result in permanent adverse impacts on the critical habitat, on the biodiversity values or SCC.

The impacts of the Dardanelles crossing (offshore section) were also evaluated in the ESIA report and due to the method of pipe laying no major impacts are foreseen related to the environment. Temporary impacts related to construction of the offshore pipeline will be on aquatic habitats, and necessary mitigation measures were put in place in the ESIA and BAP.

*Biodiversity management and monitoring:* The Biodiversity Action Plan used a baseline methodology beyond Turkey's national requirements. The study evaluated designated protected/sensitive sites and also studied the potential sites for European Nature Information System (EUNIS), Natura 2000 and internationally recognized important areas. The BAP provides specific information and guidance for the necessary actions for conservation of biodiversity along the proposed route including conservation of top soil, vegetation and species of special concern (SCC).

The Project has committed to implement the Biodiversity Action Plan, including education and training on biodiversity and natural protection to local communities and construction workers, support to national protected areas, as well as fisheries management measures. The Biodiversity Action Plan will also include management and mitigation of loss of ecosystem services.

The Project does not directly affect any protected areas or national parks. Long term or permanent significant impacts (decreased populations, fragmentation, reduced habitat area, etc.) on the critical habitats or endangered species are not expected, and mitigation measures have been defined for the recovery of short-term impacts. Although no long term or permanent impacts are expected, it is possible that alien invasive species may be introduced to the areas where construction activities are performed and may cause the loss of biological diversity. Therefore, an "Alien Invasive Species Guidance Document" has been prepared, defining measures and procedures to minimize the risk of invasive species.

Mitigation measures as defined in ESIA and BAP are deemed sufficient and TANAP's construction contractors have prepared extensive reinstatement and biodiversity monitoring plans which identify

detailed actions for the restoration of habitats. This includes specific reinstatement and restoration goals and monitoring parameters have been defined for each critical habitat.

In addition, TANAP has committed 50 MUSD to an environmental investment fund. Projects implemented under the fund will include support to national parks and protected areas, habitat restoration in addition to those already identified in the BAP, education and capacity building on environmental protection, and other measures identified as part of the biodiversity monitoring program.

#### PS8: Cultural Heritage

A culture heritage assessment was conducted as part of the ESIA, and culturally sensitive areas were avoided to the extent possible for the route selection. The selected route passes through 11 areas classified as sensitive, including a few small settlement, ancient cemeteries, etc. A Cultural Heritage Plan is being implemented to minimize impacts and there is also a detailed chance finds procedure which is applied by TANAP and all contractors. TANAP has a contract with a company named REGIO which is responsible for conducting the salvage excavations under the supervision of the Ministry of Culture and Tourism of Turkey.

### **F. Environmental Permitting Process and Community Engagement**

In addition to general environmental permits to construct and operate the pipeline, the Project has indicated that it is required to maintain a variety of permits related to pipeline operation regulations, waste management and storage, occupational health and safety, etc. Based on the findings in the due diligence, the Project is expected to be operated in compliance with host country requirements.

Community engagement during the ESIA process has involved several rounds of community consultations, and community engagement in ongoing with a project team of social specialists at a number of field office locations. A stakeholder engagement plan is being implemented, as well as a Social Investment Program for villages along the route.

### **G. Availability of Documentation**

- [TANAP Project's Executive Summary of ESIA and Supporting Environmental and Social Safeguard Documents](#)
- [Resettlement Action Plan for TANAP Project](#)

The above listed documentation is available electronically as PDF attachments to this ESRS at [www.miga.org](http://www.miga.org). The complete package of environmental and social studies and management plans is available in English and Turkish on the TANAP Project website, [www.tanap.com](http://www.tanap.com), as well as in 10 BOTAŞ and TANAP branch offices in locations along the pipeline route.

*MIGA supports its clients (as defined in MIGA Policy on Environmental and Social Sustainability) in addressing environmental and social issues arising from their business activities by requiring them to set up and administer appropriate grievance mechanisms and/or procedures to address complaints from Affected Communities.*

*In addition, Affected Communities have unrestricted access to the Compliance Advisor/Ombudsman (CAO), the independent accountability mechanism for MIGA. The CAO is mandated to address complaints from people affected by MIGA-guaranteed business activities in a manner that is fair, objective, and constructive, with the goal of improving environmental and social project outcomes and fostering greater public accountability of MIGA.*

*Independent of MIGA management and reporting directly to the World Bank Group President, the CAO works to resolve complaints using a flexible, problem-solving approach through its dispute resolution arm and oversees project-level audits of MIGA's environmental and social performance through its compliance arm.*

*Complaints may relate to any aspect of MIGA-guaranteed business activities that is within the mandate of the CAO. They can be made by any individual, group, community, entity, or other party affected or likely to be affected by the environmental or social impacts of a MIGA-guaranteed business activity. Complaints can be submitted to the CAO in writing to the address below:*

*Compliance Advisor/Ombudsman  
International Finance Corporation  
2121 Pennsylvania Avenue NW  
Room F11K-232  
Washington, DC 20433 USA  
Tel: 1 202 458 1973  
Fax: 1 202 522 7400  
E-mail: [cao-compliance@ifc.org](mailto:cao-compliance@ifc.org)*