# NON-TECHNICAL SUMMARY

# OF

# ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) REPORT

# FOR THE

# ISTANBUL NEW AIRPORT (INA) PROJECT

**August 2015**

## TABLE OF CONTENTS

## Background

This Non-technical Summary (NTS) aims to provide a summary of the results of the Environmental and Social Impact Assessment (ESIA) Study of the Istanbul New Airport (INA) Project that has been carried out by RAMBOLL ENVIRON in line with the standards and guidelines for financing including IFC Performance Standards, Equator Principles III and the OECD Recommendation of the Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence (the Common Approaches) by assessing and evaluating the environmental and socio-economic impacts of Project-related activities during the earthworks, construction and operation stages.

The INA Project has previously been subject to the Turkish Environmental Impact Assessment (EIA) process and received an EIA positive decision from the Turkish Ministry of Environment and Urbanisation (MoEU) in May 2013.

The INA Project has been categorised as Category A which is defined by IFC as “Projects expected to have significant adverse social and/or environmental impacts that are diverse, irreversible, or unprecedented” (i.e. is subject to a comprehensive ESIA process). As such a comprehensive ESIA is required to:

- Identify and assess the potential future environmental and social impacts associated with the proposed Project;
- Identify potential improvement opportunities; and
- Recommend any measures to avoid or where avoidance is not possible, minimise and mitigate adverse impacts.

The ESIA Report has been developed as a comprehensive integrated assessment of the Project, combining compliance within Turkish regulatory requirements with Good International Industry Practice (GIIP) and the requirements of potential lending institutions, including the IFC. An extensive body of supplemental and detailed studies and reports were designed and have been prepared during the course of the ESIA process based on a gap analysis of the Turkish EIA Report. The gap analysis of the Turkish EIA provided a baseline for the development of methodologies for the collection of baseline data that has been used to conduct an assessment of the potential significant environmental and social impacts associated with the Project. The impact assessment process has included the identification of mitigation and control measures and has adopted the principles of ‘avoid, mitigate and restore’ in line with the mitigation hierarchy. Residual impacts have also been assessed and control methods, including monitoring and measurement plans, have been identified for each particular topic area.

The ESIA Report incorporated the following:

- Initial scoping of the assessment process;
- Project description, including identification of the Project Area of Influence;
- Analysis of alternatives;
- Stakeholder identification and gathering of environmental and social data;
- Impact identification, prediction and analysis;
- Development of proposed mitigation and management measures and actions;
- Assessment of the significance of impacts prior to mitigation and the evaluation of residual impacts post-mitigation;

- Assessment of Cumulative Impacts; and
- Framework for environment and social management plans.

As part of the ESIA process, consultation with potential stakeholders has been undertaken, as detailed within a Stakeholder Engagement Plan (SEP), to provide detailed information regarding the Project programme and activities and to receive feedback.

## 1. Description of the Project

The Turkish aviation sector has experienced significant growth with a compound annual growth rate of 16% over the last 10 years. Due to the increasing congestion at the existing Istanbul airports and the need to expand the airport capacity of the region, the General Directorate of State Airports Authority (DHMİ) conceptualised the INA Project in 2012 and issued a tender in January 2013 to appoint a concessionaire for 25 years to build, operate and transfer (BOT) a new green field airport. The tender was conducted on an open auction basis on 3 May 2013. The Consortium, formed by five Turkish companies – CENGİZ, MAPA, LİMAK, KOLİN and KALYON (each with a 20% stake), won the tender for 25 years to operate the new airport from completion of the first phase. After the tender, İGA Havalimanları İşletmesi A.Ş. (IGA) was established by the Consortium for the construction and operation of INA.

The INA Project is located on the Black Sea coast, 40 km north-west from the centre of the City of Istanbul and 35 km north-west of the existing Ataturk International Airport. The location of the Project Area is given in Figure 1.

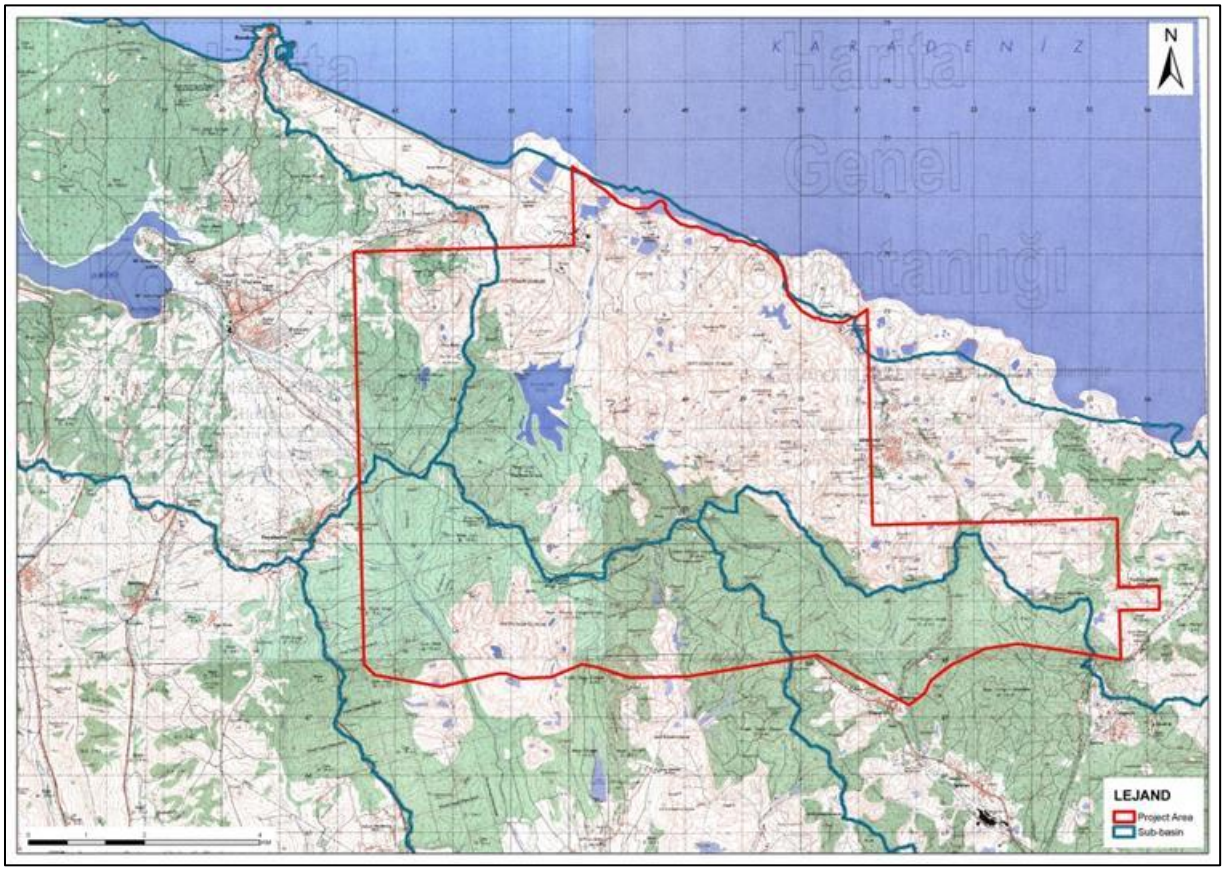


**Figure 1.** INA Project Area

## 1.1. Characteristics of the Project Area

The INA Project area falls within the municipalities of Eyup and Arnavutkoy and is located on ca. 7,650 ha area that borders the Black Sea of which:

- 5,230 ha include forest assets, with an estimated total number of 2,280,300 trees/saplings, providing an asset of 171,125 $m^3$ of timber.
- 610 ha is comprised of different sized water bodies (70 in total ranging in size from 0.17 to 100 ha) resulting from previous quarry excavation (open pit mining) which were then filled by precipitation,
- 298 ha is listed as being used for agricultural and stockbreeding purposes (236 ha of pasture land, 60 ha of dry farming and 2 ha of shrub),
- 1,180 ha includes six operational licensed mine sites (in total 16 companies are licensed, land is being mined for sand, gravel and lignite), and
- 332 ha is comprised of interconnecting roads and three landfill sites within the boundary of the Project Area (of which two are operational and licensed by the government to receive construction waste materials).

The topography of the area is uneven with a terrain elevation difference of approximately 120 m between north and south of the Project Area. The Site is accessed by the Ihsaniye to Tayakadin Highway running along the southern portion of the Site. The highway links to the Northern Marmara Motorway construction project. The Project Area is located 2.5 km to the east of Terkos Lake which is one of the major drinking water sources supplying the City of Istanbul and is proposed as a potential drinking water source for INA.

To the east of the Project Area, land is characterised by quarry and mining activity, forestry and agricultural land; to the south land use is characterised by forestry and areas of agricultural land; to the west by forestry and agricultural land; and to the north by a recreational seaside area approximately 5-8 km along the coast.

According to the Address Based Population Registration System (ABPRS) 2013 results, the total population in the vicinity of the Project is 5,760.

## 1.2. Project Phasing

The Project will be completed in four phases and will have an opening day capacity of at least 90 million passengers per annum (mppa), with phased expansion over 25 years to accommodate at least 150 mppa by Phase 4. At Phase 1 which is planned to start in 2018, one of the conditions for the concession agreement requires the existing Ataturk International Airport to be closed to commercial passenger traffic, and limited to cargo, maintenance and general aviation activities.

In its ultimate phase, the airport will include six runways, passenger terminals and satellites (international and domestic); Air Traffic Control (ATC) Towers; Air Passenger Movement (APM) Station; a cargo terminal; maintenance; cargo apron; hangars; and ancillary buildings; general aviation; a VIP terminal; a fuel farm; fuel delivery jetty; fire services; a metro link; airport service roads and airport connector roads.

## 1.3. Site Expropriation

The land within the Project Area boundary is primarily government owned with only approximately 2% being in private ownership. A portion of the land is operated by six mining companies. A large proportion of the remainder of the land is operated by the Ministry of Forestry and Water Affairs. A single settlement, Yukari Agacli, is located within the current Project Area, though the decision regarding whether Yukari Agacli will be within the Project Area has not been confirmed by the government.

The Turkish government has been responsible for the land expropriation and the negotiations over the mineral rights licences. The land expropriation process has been conducted by the Housing Development Administration of Turkey (TOKI). The expropriation process has been undertaken in accordance with Turkish legal requirements, during which the Turkish rapid land expropriation process was invoked. This allowed TOKI to expedite the expropriation and appeals process. IGA has not had any involvement with the land expropriation process and no Resettlement Action Plan (RAP) has been prepared to date. Once land handover takes place, IGA will implement its Stakeholder Engagement Plan (SEP).

## 1.4. Project Workforce

The earthworks and construction workforce is estimated to be ca. 15,000 people at the peak times which will primarily consist of locally-based Turkish nationals, although it is possible that non-Turkish nationals will be employed if the necessary technical skills are not available in the local/national market. It is expected that a total of 5,400 people will be accommodated within the construction camps.

The workforce during the operation phase of the Project is estimated to be ca. 90,000 – 120,000 people. Preference will be given to suitably qualified personnel from the Istanbul region to deliver long term local community benefits through promoting local employment (including job training) to the extent possible.

# 2. Analysis of Project Alternatives

The analysis of alternatives for the INA Project considered the following topics:

- Potential for the renovation and upgrading of existing airports;
- Increased capacities of other airports servicing the region;
- The closure of the existing airport;
- Possible alternative locations for a new airport; and
- No action alternative.

Based on the trend of rising passenger and air traffic movements to and through Istanbul and the desire to be recognised as a major hub for international air transport, the Turkish government has determined that action needs to be taken to increase airport capacity in the Istanbul region.

The two main alternatives which were identified as having the potential for further study were the expansion of Ataturk International Airport and the construction of a new airport on the European side of Istanbul. To increase the capacity of the existing Ataturk International Airport to around 90 mppa, there would be a requirement for an additional runway and another

terminal building to be constructed and it is believed that expansion is constrained by urban and highway development neighbouring the airport. Therefore, the construction of a new airport on the European side of Istanbul has been the most feasible option.

The site selection process for the INA Project has been wholly the responsibility of the Turkish government. During the site selection process, an area of approximately 1,200 $km^2$ (40 km x 30 km) was studied by the government. This involved the area between the Black Sea and the Marmara Sea. It is understood that the main site selection criteria used during the studies were:

- Meteorological data (particularly wind speed and prevailing wind direction);
- Possible runway orientation and potential obstacles;
- Costs associated with land expropriation and construction;
- Environmental and social considerations, including potential noise and air quality impacts and the number of residential properties impacted;
- Existing infrastructure; and
- ICAO Annex 14 aerodrome safety requirements.

The following considerations were also taken into account by the government during the site selection process:

- Avoidance of settlement areas in order to reduce disruption and resettlement requirements;
- Ongoing and planned development projects within the study area; and
- Opportunities to provide integration with planned development projects within the study area, including consideration of the development plans for the Turkish State Railway, Istanbul Metropolitan Municipality, other municipalities within the study area (including Arnavutkoy and Eyup), and the development plans of the General Directorate of State Highways.

The selected Project Site covers an area of approximately 7,650 ha which represents an area that is almost eight times larger than the Ataturk International Airport.

## 3. Impact Assessment Methodology

An ESIA scoping process was undertaken in line with international lender requirements aiming to:

- define the Project Area and its Area of Influence (AoI);
- identify the types of environmental and social impacts to be assessed and reported in the ESIA; and
- identify those aspects that are of potentially greatest significance.

As part of the scoping process, a gap analysis with the EIA was undertaken to establish what relevant information could be applied to the ESIA and to identify gaps in the data and/or assessment to comply with international standards.

Following the scoping process, Project activities and potential environmental, socio-economic and cultural heritage impacts upon receptors (physical, ecological and/or human) were identified through:

- An understanding of baseline conditions and potential receptors;
- The spatial and temporal extent of the Project AoI;
- Information from stakeholders, including authorities, experts, and the public; and
- Professional knowledge and experience of comparable projects or developments.

The identification and understanding of Project activities and impacts was an iterative process conducted throughout the ESIA as more Project and environmental and social baseline information became available.

Impact categorisation and significance have been evaluated with reference to definitive standards, accepted/published criteria and legislation, where available. Where it has not been possible to quantify impacts and effects, qualitative assessments have been carried out, based on expert knowledge, GIIP and professional judgement. Where uncertainty exists, to the extent possible, it has been noted in the relevant assessment.

A standard approach has been adopted across the entire ESIA wherever possible to consistently define the impact significance. This approach is applied to the assessment of impacts in all phases of the Project, i.e. construction and operation.

The key focus of the impact assessment has been to define the significance of residual impacts and effects following the application and/or consideration of mitigation measures. A residual impact is one which continues to be present following the application of avoidance and/or mitigation measures. Residual impacts also serve as the focus of management and monitoring activities to verify that actual impacts are the same as those predicted in this ESIA.

# 4. Environmental and Social Baseline and Impact Assessment

Environmental and social baseline data have been collected in order to comprehensively assess the potential significant environmental and social impacts associated with the Project in line with the requirements of the potential lending institutions, including the IFC as well as the requirements of Good International Industry Practice (GIIP).

The impact assessment process has included the identification of mitigation and control measures and has adopted the principles of ‘avoid, mitigate and restore’ in line with the mitigation hierarchy. Residual impacts have also been assessed and control methods, including monitoring and measurement plans have been identified for each particular topic area as summarised below.

## 4.1. Meteorological Conditions and Climate Change

The INA Project will comparatively result in a significant increase in GHG emissions at all stages of the Project given the current status and existing uses of the Project Area. Mitigation measures will be adopted to minimise natural resources and material use as far as practicable during all phases. Through the implementation of mitigation measures, the construction and operational phases of the Project is expected to have **Negligible (Adverse)** residual impact significance within a national, regional or local context.

## 4.2. Air Quality

The implementation of the mitigation measures and compliance with the Pollution Prevention Plan and ESMP, including mitigation actions for mobile sources, should significantly reduce

the emissions (especially for dust) during the earthworks and construction phases and ensure that the residual effects can be classified as **Negligible (Adverse)** for the receptors (residential areas located close to the boundary of the Project Area).

For the 2022 Scenario (Phase 1 of the operational phase), the residual impact significance is considered to be **Negligible (Adverse)** for $PM_{10}$ and CO, and **Low (Adverse)** for $NO_2$ and $SO_2$.

For the 2042 Scenario, the residual impact significance is assessed as **Low (Adverse)** and **Moderate (Adverse)** for $NO_2$ and $SO_2$, respectively, at the receptors located downwind or close to the project boundary (neighbourhoods of Ihsaniye, Tayakadin, Odayeri and Akpinar) through the implementation of a Pollution Prevention Plan, focusing primarily on Ground Support Equipment, Aircraft Auxiliary Power Units and aircraft taxiing. It should be noted that the residual Moderate (Adverse) impact significance for $SO_2$ is due to a very restrictive daily guideline proposed by the WHO. The same impact significance would be considered as Negligible (Adverse**)** under Turkish air quality standards.

## 4.3. Noise

The implementation of mitigation measures during the earthworks and construction phases will ensure that the levels as set by the national legislation will not be exceeded at noise sensitive receptors and therefore the residual impact significance on receptors within and in close proximity to the Project Area will be **Negligible (Adverse)**.

Through the implementation of an appropriate combination of mitigation measures as recommended by ICAO and the IFC, noise levels can be mitigated such that the residual impact significance on local populations will be reduced to **Low (Adverse)**.

## 4.4. Geology

Impacts to geology and soils are assessed in relation to the potential to encounter existing soil contamination associated with past and current land use or for new contamination to occur through accidental leaks or spills, which could result in impact on soils and mobilisation of soil contamination which may impact a number of environmental receptors. In addition, the major cut to fill exercise to be undertaken along with subsequent re-profiling will result in change to the soil structure within the Project Area.

Through the implementation of appropriate mitigation measures, the residual impact significance of land contamination during earthworks and construction phase development and contamination of soil resources will be **Negligible (Adverse)**.

The residual impact significance of soil disturbance and loss of topsoil resource across the Project Area during the construction phase will be **Low (Adverse)**.

The residual impact significance of contamination of soil resources during the operation phase will be **Low (Adverse)**.

## 4.5. Water Resources

The quality and management of water resources (including the dewatering of water bodies) and management of wastewaters during earthworks, construction and operational phases of the INA Project have been thoroughly assessed.

The Project Area is located in a region that has been used for mining activities since the first quarter of the 20th century. Pits generated as a result of excavations have filled with rain water, which has resulted in a total of 70 water bodies in the Project Area.

The Project Area is not a designated water protection area. It is located 2.5 km east of Terkos Lake, which supplies approximately 20% of Istanbul's total water demand and 12 km north of Alibey Dam which supplies approximately 7% of Istanbul's total water demand. Approximately 7.3 $km^2$ of the Terkos Basin (ca. 740 $km^2$ in total) is within the north-western side of the Project Area and approximately 17.7 $km^2$ of Alibey Basin (ca. 159 $km^2$ in total) is within the south-western side of the Project Area.

Approximately 0.5 $km^2$ or 50 ha of the north-western corner of the Project Area falls within the mid-range protection zone of the Terkos Lake. The Turkish Water Pollution Control Regulation (WPCR) limits the activities that can take place in the protection zones. In this regard, in mid-range protection zones, industrial activities are not allowed to take place. As also committed to in the Turkish EIA Report, no construction activities will take place in this zone. Therefore, there will be no activity and structures within this protection zone. Parts of the Project Area falls within the long-range protection zone (i.e. the basin boundary) of the Terkos Lake and Alibey Dam and there are no legal constraints on the construction of an airport in this zone. However, protection measures defined for long-range protection zone in Article 20 (Long-range Protection Zone) of WPCR is legally binding.

The location of the fuel farm, to be used within the scope of airport activities, falls within the Terkos Lake and Alibey Dam basin boundaries. ISKI's Regulation on the Drinking Water Basins has some specific restrictions regarding such activities taking place within the drinking water basin boundary taking into account the potential contamination risks. Therefore, permits will be required from ISKI and the relevant authorities prior to the construction of the fuel farm.

A water quality assessment was undertaken to establish a robust description of the baseline conditions in the Project Area, its Area of Influence (1 km from the airport border) and the vicinity of the Project Area (extending up to far western point of the Terkos Lake).

Surface water and groundwater resources in the study area have been identified and water quality has been determined through on-site measurements, sampling and laboratory analyses. Sea water quality was also determined in order to define baseline conditions in the marine environment in the vicinity of the Project Area. Sampling locations were selected to represent the whole study area (including the Project Area, its Area of Influence and its vicinity).

The sampling procedures, sample preservation and storing techniques are carried out in compliance with the Water Pollution Control Regulation Sampling and Analysis Methods published in Official Gazette No. 27372 dated 10.10.2009 and the Turkish Standards (TS EN ISO 5667-3).

Terkos Lake, located 2.5 km to the west of the Project Area, was included in the water quality assessment study as it is an important key biodiversity area and also a small part in the north-western side of the Project Area falls within the mid-range protection zone of Terkos Lake. The main stream feeding into Terkos Lake was also included in the baseline assessment study in order to capture the incoming water quality to the Lake.

Alibey Dam, located 12 km to the south of the Project Area, does not fall within the Area of Influence of the Project and therefore was not included in the water quality assessment study. Also, the riverbeds passing from the Project Area flowing to the south towards Alibey Dam are

seasonal riverbeds, i.e. there is intermittent flow in these riverbeds. Therefore, an impact due to the Project activities on water quality in Alibey Dam is not anticipated.

For the **earthworks/construction phase** of the INA Project, through the implementation of appropriate mitigation measures:

- The residual impact significance of increased water demand associated with construction activities (vehicles, equipment and facilities) will be **Low (Adverse)** within a regional and local context and will be managed through the implementation of the Pollution Prevention Plan and the ESMP.
- The residual impact significance of stormwater and wastewater discharge to the Black Sea will be **Low (Adverse)** and will be managed through the implementation of the Pollution Prevention Plan and the ESMP.
- The residual impact significance of deterioration/change of water quality in the Black Sea and in stream/creeks within Alibey Basin as a result of dewatering of WBs will be **Low (Adverse)** and will be managed through the implementation of the Pollution Prevention Plan and the ESMP.
- The residual impact significance of increased flood risks due to change of hydrological settings at the Project Area on local communities and airport workers will be **Negligible/Low (Adverse)** and will be managed through the implementation of the ESMP and Health and Safety Management Plan.
- The residual impact significance of accidental discharges/spillages and surface runoff to Terkos Lake and Alibey Reservoir will be **Negligible** and will be managed through the implementation of the ESMP and Emergency Response Plan.

For the **operation phase** of the INA Project, through the implementation of appropriate mitigation measures:

- The residual impact significance of increased water demand associated with the operation of the airport will be **Low to Moderate (Adverse)** within a regional and local context and will be managed through the implementation of the Pollution Prevention Plan and the ESMP.
- The residual impact significance of stormwater and wastewater discharge to the Black Sea and/or ISKI municipal sewage system will be **Low (Adverse)** within a regional and local context and will be managed through the implementation of the Pollution Prevention Plan and the ESMP.
- The residual impact significance of accidental discharges/spillages and surface runoff to Terkos Lake and Alibey Reservoir will be **Negligible** and will be managed through the implementation of the ESMP and Emergency Response Plan.
- The residual impact significance of treated wastewater use for irrigation of greenlands at the terminal areas will be **Moderate (Beneficial)** within a local context and will be managed through the implementation of the ESMP.

## 4.6. Forestry

The ESIA Study considered forestry as the management of forest for timber production and carbon storage. The INA Project will have two main forestry impacts: the loss of trees/forest assets; and the loss of carbon capture capacity which will occur due to the removal of forests

during the preparation of the land for construction and will require the implementation of mitigation measures during all phases of the Project.

The local population and timber production capacity are the main receptors that will be affected by the loss of forest land and assets. The impact significance on these receptors has been assessed as High (Adverse) prior to mitigation. To mitigate these impacts, a programme of afforestation will be implemented which will lead to a residual impact significance of **Moderate (Adverse)**.

The impact significance of loss of carbon capture capacity due to removal of trees/forest has been assessed as Moderate (Adverse) prior to mitigation. This is mainly due to the fact that the total carbon capture capacity of the forests in the Project Area constitutes only 0.68% of the total regional capacity. Low sensitivity of the receptors was also a contributing factor in this regard. Through the implementation of appropriate mitigation measures, the residual impact significance will be **Negligible (Adverse)**.

## 4.7. Waste Management

Through the implementation of appropriate mitigation measures, the residual impact significance of large volumes of waste creation and their disposal to regional waste management facilities throughout all phases of the INA Project will be **Low (Adverse)**.

The capacities of the existing waste management facilities in the region will be impacted by the additional waste volumes created by all phases of the INA Project. However, the facilities in the region, and within a maximum of 40 km distance from the Project Area, theoretically have the capacity to accommodate these volumes of waste.

## 4.8. Ecology

The assessment of the ecological characteristics of the INA Project Area and identification of the potential impacts on the biological environment arising from the Project activities have been conducted in line with the recommendations and requirements of the IFC Performance Standard 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources. According to IFC PS6, mitigation measures should be designed to follow the 'mitigation hierarchy', where impacts are progressively avoided, minimised, restored or offset. Due to the nature of the Project, its large land-take and minimal location alternatives, the Project is heavily reliant on offsetting to achieve no net loss of biodiversity (or a net gain in respect of critical habitat).

The biological environment includes designated sites (both protected by Turkish Law and unprotected sites that are Internationally Recognised Areas), habitats (including terrestrial, freshwater and marine), and their component species. The ecological baseline has been characterised through a combination of secondary data and field surveys. The field surveys conducted in 2014 have included:

- Marine surveys to provide a general description of the marine habitats adjacent to the Project Area including sampling of plankton, benthic organisms and marine fish;
- Habitats were initially mapped using satellite imagery and classified according to European Nature Information System (EUNIS) level 3 habitat classification system and then checked through field surveys and refined by experts;

- Flora baseline studies to confirm the broad habitat type at each sample location, assess habitat quality, provide a comprehensive plant species list for each habitat type and locate any endemic, restricted-range, or threatened flora species in the Project Area;
- Terrestrial invertebrates were surveyed within the Project Area using a combination of direct search and sweep netting;
- Freshwater fish surveys within a range of inland aquatic ecosystems including lakes, ponds, ephemeral pools and streams.
- Amphibian and reptiles were sampled using a combination of sweep netting of water bodies, direct search and survey of refuges;
- Wintering, breeding and migrating (spring and autumn) birds were surveyed by three separate methodologies.
- A combination of survey techniques were used to target different species of mammals, including live traps for small mammals, night time ultrasonic detector surveys for bats and camera traps for large and medium sized mammals.

The construction and operation of the Project will involve a wide range of activities that have the potential to affect ecology. The relevant activities of the Project likely to give rise to impacts on receptors are:

- Construction: Vegetation clearance and topsoil strip, de-watering of lakes and ponds, creation of construction access roads and upgrades to junctions of existing roads, earthworks, including changes to topography, construction of airport facilities,
- Operation: Movement of aircraft (planes and helicopters), movement of people and ground vehicles, physical effects of infrastructure, increase in lighting.

The key findings which form the baseline information regarding the ecological characteristics of the INA Project Area have been summarised in Table 1.

**Table 1.** Baseline Ecological Characteristics of the INA Project

| Topic | Findings |
|---|---|
| **Internationally Recognised Areas** | - The Project Area overlaps with two small portions of the Terkos Basin Key Biodiversity Area (KBA), Important Plant Area (IPA) and Important Bird Area (IBA), as well as the Agacli Sand Dunes KBA and IPA.<br>- The Project Area lies on the route of various migrating bird species that utilize a number of the surrounding IBAs. The closest point of the Bosphorus Region IBA is 2.3 km to the Project Area.<br>- All of the KBA within and in the vicinity of the Project Area are considered to be of High Sensitivity |
| **Nationally Protected Designated Sites** | - No nationally protected designated sites located within the Project Area.<br>- A Natural Protection Area, Natural Park, and Wildlife Development Area within the Bosphorus Region KBA located 2.3 km to the Project Area.<br>- Protection zone defined for Lake Terkos is located 1.3 km to the north-west of the Project Area.<br>- "Durusu Hunting Banned Area" is located 2.3 km to the north-west of the Project Area. |
| **Habitats** | - 3 natural and 10 modified terrestrial and freshwater habitat types identified within the Project Area based on the EUNIS habitat classification system.<br>- Dominant vegetation types within the Project Area are thermophilous deciduous forests (36% of the Project Area) and highly artificial coniferous woodland (22% of the Project Area).<br>- Aquatic vegetation occurs near the lakes and ponds, wet meadow vegetation in glades and coastal dune vegetation adjacent to the sea coast.<br>- Closest Marine Protected Area (MPA) bordering the Black Sea coast is the Acarlar Golu Game Reserve at ca. 140 km distance to the Project Area.<br>- Almost a quarter of the marine habitat types listed in the EU Habitats Directive is found in the Black Sea. A total of 28 different seabed biotopes have been identified in the Black Sea and potentially exist in the vicinity of the Project Area. |

| Topic | Findings |
|---|---|
| | - 2 habitats qualify as critical habitat under IFC PS6 Criterion 4 Highly threatened and/or unique ecosystems: shifting coastal dunes and thermophilous deciduous woodland. These habitats are assessed as High Sensitivity, along with four other habitats that are known to support species with high sensitivity. |
| **Endemic and Threatened Plant Species** | - 301 flora species and subspecies, belonging to 67 families were determined in the Project Area and adjacent reference points during the flora surveys.<br>- 9 endemic species recorded. Of these, 5 were found in the Project Area. In addition to this, 4 threatened plant species were found in the Project Area.<br>- 5 species are assessed as High Sensitivity due to them meeting either IFC PS6 Criterion 1: Critically Endangered (CR) and/or Endangered (EN) species, and/or Criterion 2: Endemic and/or restricted-range species for critical habitat. |
| **Terrestrial Invertebrates** | - 165 insect species identified during the field surveys carried out within the Project Area.<br>- No threatened or endemic species of insect were recorded during the surveys.<br>- All terrestrial invertebrates are considered to be either of low or negligible sensitivity. |
| **Marine Invertebrates** | - 23 species identified in the benthic and zooplankton surveys carried out in the Project Area and its surroundings.<br>- None of the species recorded are listed on Annex II of the Black Sea Biodiversity and Landscape Conservation Protocol.<br>- Only one is assessed as being threatened (endangered at the sub-regional level, Black Sea RDB). |
| **Freshwater Fish** | - The streams, both within and surrounding the Project Area, support a fish fauna that is likely to be of natural origin, except one non-native species, comprising several small species that are not targeted by fishermen.<br>- Of the native fish species present within the Project Area, the only threatened species according to IUCN is wild common carp which is known to be artificially bred within the Project Area.<br>- The only other notable species recorded during the surveys was monkey goby (Bern Convention App. III), which was observed in Balikli Stream outside of the Project Area.<br>- All species considered to be either of low or negligible sensitivity. Although wild common carp is IUCN VU, the population in the Project Area derives from introduced stock for recreational fishing purposes. |
| **Marine Fish** | - 28 marine fish species recorded through a combination of field surveys and fishing records.<br>- None are assessed as threatened by the IUCN, only short-snouted seahorse is classified as IUCN Data Deficient.<br>- Red mullet assessed as Endangered at the Black Sea regional level (including Turkey).<br>- 3 species listed on Annex II of the Black Sea Biodiversity and Landscape Conservation Protocol.<br>- 2 additional fish species identified as potentially present from published literature, which are listed on the Black Sea RDB: European conger (Vulnerable) and long-snouted seahorse (Endangered).<br>- Red mullet and long-snouted seahorse assessed as High Sensitivity due to them meeting IFC PS6 Criterion 2: Endemic and/or restricted-range species<br>- European conger assessed as low sensitivity due to its being a locally important population of Vulnerable (VU) species.<br>- All other marine fish species are considered to be of negligible sensitivity. |
| **Herptiles** | - 6 amphibian and 13 reptile species recorded during the surveys.<br>- No threatened amphibian species recorded in the surveys, although green toad is IUCN Data Deficient.<br>- All 6 species of recorded amphibian are listed on either App. II or App. III of the Bern Convention. However, all the amphibian species identified within the Project Area are widespread and can be found within all regions of Turkey.<br>- All 13 species of reptile recorded in the Project Area are listed on either App. II or App. III of the Bern Convention.<br>- One threatened reptile species (spur-thighed tortoise) was recorded during the surveys which is categorised as VU by the IUCN Red List.<br>- European pond turtle is assessed as Near-threatened by the European RL.<br>- Both spur-thighed tortoise and European pond turtle are listed under the designation criteria of three adjacent KBAs: Terkos Basin, Bosphorus Region and West Istanbul Pasture.<br>- All amphibian and reptile species are low sensitivity, except spur-thighed tortoise and European pond turtle, both of which are qualifying features of the Terkos Basin KBA and therefore are assessed as high sensitivity. |
| **Migrating Birds** | - The Project Area is situated on the Mediterranean/Black Sea Flyway which is one of three Palaearctic-African flyways connecting Europe with Africa. |

| Topic | Findings |
|---|---|
| | - For many larger bird species, the Bosphorus presents a major migratory "bottleneck" where they are funnelled through the Istanbul isthmus by the Black Sea to the north and the Mediterranean Sea (including the Sea of Marmara) to the south.<br>- At least 8 species of large-soaring migratory bird (white stork, steppe buzzard, honey buzzard, lesser spotted eagle, black stork, short-toed snake eagle, greater spotted eagle and eastern imperial eagle) occur in numbers exceeding 1 % of their global populations (a further 2 species may also qualify, but there is uncertainty over the size of the global population). These species qualify as Tier 2 critical habitat under criterion 3: migratory and congregatory species and assessed as High Sensitivity. |
| **Migrating Birds – Spring Migration (2014)** | - Spring bird migration in the Project Area occurred densely throughout the months of March, April and May. The dominant flight directions were east to west and south-east to north-west as will be expected for birds on migration from Africa to Europe. It was observed that there is a marked diurnal pattern to the migration, peaking between 9 am and 4 pm and that the birds are migrating at relatively low altitudes, mostly below 400 m.<br>- During the surveys, it was observed that large numbers of some large soaring migratory birds, especially white stork, stopover at open spaces or trees in the Project Area.<br>- A total of 7 bird species are in IUCN Threatened (EN-VU) or Near Threatened (NT) categories: Egyptian vulture (EN), greater spotted eagle (VU), eastern imperial eagle (VU), lesser kestrel (VU), red footed falcon (NT), pallid harrier (NT), and cinereous vulture (NT).<br>- 7 species were recorded in numbers that represent greater or equal to 1% of the global population: white stork, steppe buzzard, honey buzzard, lesser spotted eagle, black stork, short-toed snake eagle and greater spotted eagle.<br>- There is uncertainty in the global population level for 2 species, for which the numbers recorded may represent greater or equal to 1% of the global population: Levant sparrowhawk and booted eagle.<br>- Less than 1% of the global population of eastern imperial eagle were recorded in 2014.<br>- In addition to the large soaring species, a total of 97 bird species were recorded during the spring migration survey.<br>- A further 3 species assessed as IUCN Near-threatened (ferruginous duck, corncrake and European roller) with a record of very small numbers representing non-significant proportions of their respective global populations. |
| **Migrating Birds – Autumn Migration (2014)** | Fewer birds migrate over the Project Area during autumn as compared to the spring migration period.<br>- A total of 4 bird species are in IUCN threatened (EN-VU) or Near Threatened (NT) categories: greater spotted eagle (VU), eastern imperial eagle (VU), red footed falcon (NT) and pallid harrier (NT).<br>- 3 species were recorded in numbers that represent greater or equal to 1% of the global population: lesser spotted eagle, black stork and short-toed snake eagle.<br>- There is uncertainty in the global population level for booted eagle, for which the numbers recorded may represent greater or equal to 1% of the global population.<br>- A bimodal diurnal pattern to migration was observed, with a large peak between 10:00 and 11:00, and a second peak between 14:00 and 18:00. As in spring, the birds are mostly migrating at relatively low altitudes, below 400 m. |
| **Wintering Birds** | - Two wintering bird surveys completed within the Project Area (January and February 2014) recorded a total of 26 species of waterbirds.<br>- The most numerous waterbird recorded was yellow-legged gull.<br>- No large concentrations of swans, ducks, geese or waders were recorded. Only Eurasian coot and great crested grebe were recorded using water bodies within the Project Area in reasonably large numbers. Neither represents significant proportions of their global or Turkish populations.<br>- Pygmy cormorant is classified as IUCN LC.<br>- Wintering bird assemblage has been assessed as High Sensitivity according to IFC PS 6.<br>- Yellow-legged gull and Yelkouan shearwater have been assessed as High Sensitivity according to IFC PS 6. |
| **Breeding Birds** | - 78 bird species recorded within the Project Area and its close vicinity habitats during the breeding bird surveys completed in May and June 2014.<br>- 28 species confirmed to be breeding and 36 species assessed as either possibly or probably breeding.<br>- No threatened species of bird was confirmed or assessed as either possibly or probably breeding within the Project Area (all species IUCN LC).<br>- Deciduous woodland supported the greatest number of species, followed by coniferous woodland and reedbeds.<br>- Breeding bird assemblage assessed as Low Sensitivity due to them being locally important populations of species listed on Appendices to the Bern Convention. |

| Topic | Findings |
|---|---|
| **Terrestrial Mammals** | - 17 mammal species have been identified during the field studies carried out in the Project Area.<br>- No mammal species currently assessed as threatened were recorded.<br>- Lesser mole rat is currently assessed by the IUCN as Data Deficient due to uncertainty over taxonomic status of this species.<br>- Lesser mole rat is listed as a designated criterion for the Terkos Basin KBA.<br>- All other mammal species recorded within the Project Area have been assessed by the IUCN as Least Concern.<br>- 3 mammal species recorded in the Project Area are listed in Appendix II (Strictly protected fauna species) of the Bern Convention: wild cat, gray wolf and whiskered bat. These species are widespread in Turkey.<br>- A total of 6 mammal species are listed in Appendix III (Protected fauna species) of the Bern Convention: Eurasian red squirrel, European roe deer, wild boar, golden jackal, beech marten and European badger. Among these, Eurasian red squirrel, wild boar, golden jackal, beech marten and European badger are quite widespread in Turkey. Although European roe deer are found in suitable habitats in Turkey, they usually have low population density.<br>- Specific survey techniques (nest tubes, live traps) were employed to survey arboreal small mammal species (forest dormouse, fat dormouse and hazel dormouse) and none were recorded within the Project Area.<br>- With the exception of lesser mole rat, terrestrial mammals are assessed as either negligible or low sensitivity. The Project Area supports a very small population of lesser mole rat that forms part of the qualifying features of the Terkos Basin KBA and is assessed as Moderate Sensitivity. |
| **Marine Mammals** | - 3 species of cetacean inhabit the Black Sea: short beaked common dolphin, the harbour porpoise and the common bottlenose dolphin.<br>- Short-beaked common dolphin is assessed as Vulnerable (and Data Deficient by the Black Sea RDB) and the population size in the Black Sea is unknown. Distributed predominantly offshore, but also visits coastal waters following on the seasonal aggregations and mass migrations of small pelagic fishes.<br>- Common bottlenose dolphin is assessed as Endangered (and Data Deficient by the Black Sea RDB) and the total population size in the Black Sea is unknown. Predominantly occurs in coastal waters, including in the vicinity of the Project Area.<br>- Harbour porpoise is assessed as Endangered (and Data Deficient by the Black Sea RDB) and there are no accurate population records. Predominately found in coastal areas, including in the vicinity of the Project Area.<br>- All three cetacean species occurring in the Black Sea qualify as critical habitat and are assessed as High Sensitivity. |

A number of mitigation measures have been devised to avoid and reduce Project effects on biodiversity. However, due to the nature of the Project, its large land-take, combined with minimal avoidance and mitigation options, the Project is heavily reliant on developing multiple offsetting strategies as part of a Biodiversity Action Plan (BAP). Until the offset strategies have been more fully developed and committed to, the residual impacts on many of the biodiversity features of high sensitivity remain **Moderate to High Adverse**.

For the **construction phase** of the INA Project, through the implementation of appropriate mitigation measures:

- The residual impact significance on Agacli Sand Dunes KBA and IPA will be **Low (Adverse)** and will be managed through the implementation of the BAP and the ESMP.
- The residual impact significance on Kucukcekmece Basin KBA, IBA and IPA will be **Negligible**.
- The residual impact significance on natural habitats (shifting coastal dunes, Mediterranean riparian woodland and thermophilous deciduous woodland) will be **High (Adverse)** and will be managed through the implementation of the BAP and the ESMP.
- The residual impact significance on modified habitats (permanent eutrophic lakes, pond and pools; temporary running waters; water-fringing reedbeds and tall heleohytes other than canes; moist or wet eutrophic and mesotrophic grassland; *Spartium junceum*

fields and highly artificial coniferous woodland) will be **Low-High (Adverse)** and will be managed through the implementation of the BAP and the ESMP.

- The residual impact significance on marine habitats will be **Low (Adverse)** and will be managed through the implementation of the BAP and the ESMP.
- The residual impact significance on threatened and endemic plant species will be **High (Adverse)** and will be managed through the implementation of the BAP and the ESMP.
- The residual impact significance on invertebrates will be **Low (Adverse)** and will be managed through the implementation of the BAP.
- The residual impact significance on freshwater fish will be **Low (Adverse)** and will be managed through the implementation of the ESMP.
- The residual impact significance on marine fish will be **Low (Adverse)** and will be managed through the implementation of the BAP and the ESMP.
- The residual impact significance on spur-thighed tortoise and European pond turtle will be **Moderate (Adverse)** and will be managed through the implementation of the BAP.
- The residual impact significance on other amphibians and reptiles will be **Low (Adverse)** and will be managed through the implementation of the BAP and the ESMP.
- The residual impact significance on large soaring migratory birds will be **Moderate (Adverse)** and will be managed through the implementation of the BAP.
- The residual impact significance on Yellow-legged gull will be **Low-Moderate (Adverse)** and will be managed through the implementation of the BAP.
- The residual impact significance on wintering bird assemblage will be **High (Adverse)** and will be managed through the implementation of the BAP.
- The residual impact significance on breeding bird assemblage will be **Low (Adverse)** and will be managed through the implementation of the BAP and the ESMP.
- The residual impact significance on other terrestrial mammal species will be **Moderate (Adverse)** and will be managed through the implementation of the ESMP.
- The residual impact significance on Cetaceans will be **Low (Adverse)** and will be managed through the implementation of the BAP.

For the **operation phase** of the INA Project, through the implementation of appropriate mitigation measures:

- The residual impact significance on Terkos Basin KBA, IBA and IPA will be **Low (Adverse)** and will be managed through the implementation of the BAP and the ESMP.
- The residual impact significance on Bosphorus Region KBA, IBA and IPA, Agacli Sand Dunes KBA and IPA, West Istanbul Pasture IPA and Kucukcekmece Basin IBA and IPA will be **Negligible** and will be managed through the implementation of the BAP.
- The residual impact significance on habitats will be **High (Adverse)** and will be managed through the implementation of the BAP.
- The residual impact significance on marine fish, amphibians and reptiles will be **Negligible** and will be managed through the implementation of the BAP.

- The residual impact significance on large soaring migratory birds will be **High (Adverse)** and will be managed through the implementation of the Airport Operation Plan and the BAP.
- The residual impact significance on wintering bird assemblage will be **Negligible** and will be managed through the implementation of the BAP.
- The residual impact significance on breeding bird assemblage will be **Low (Adverse)**.
- The residual impact significance on terrestrial mammal species will be **Low (Adverse)**.
- The residual impact significance on Cetaceans will be **Low(Adverse)** and will be managed through the implementation of the BAP.

## 4.9. Natural Hazards

Earthquakes are determined as the main natural hazard that poses a threat in the Project Area. In addition to earthquakes; floods, landslides, meteorological natural hazards (heavy rain/snow/hail, strong winds, severe storms, fog, heat waves) and forest fires/wild fires are determined to also be of importance. Several natural hazards that are of importance to airports, including volcanic activity and mass movements such as avalanches and rock falls, have little to no possibility of occurring in the INA Project Area and its vicinity.

For the earthworks and construction phases of the INA Project, through the implementation of appropriate mitigation measures:

- The residual impact significance of floods on local communities, airport workers and the airport will be **Negligible/Low (Adverse)**.
- The residual impact significance of landslides on local communities, airport workers and the airport will be **Negligible/Low (Adverse)**.

For the earthworks, construction and operation phases of the INA Project, through the implementation of appropriate mitigation measures:

- The residual impact significance of earthquakes on local communities, airport workers and the airport will be **Negligible (Adverse)**.
- The residual impact significance of soil stability (settlement/liquefaction) on the airport will be **Negligible (Adverse)**.
- The residual impact significance of heavy rain/snow/hail/severe storms on the airport will be **Low (Adverse)**.
- The residual impact significance of fog on the airport will be **Low (Adverse)**.
- The residual impact significance of forest fires/wild fires on wildlife in the area, local and regional communities will be **Low (Adverse)**.
- The residual impact significance of forest fires/wild fires on the airport and the airport workers will be **Negligible (Adverse)**.

For the operation phase of the INA Project, through the implementation of appropriate mitigation measures:

- The residual impact significance of local and regional scale natural hazards preparedness/response will be **High (Beneficial)** considering regional/global/local communities.

- The residual impact significance of floods, landslides and strong winds on the airport will be **Negligible (Adverse)**.

## 4.10. Resource Efficiency

The residual impact significance of increased fuel and material demand associated with earthworks and construction phase of the Project will be **Negligible (Adverse)** within a national context through the implementation of appropriate mitigation measures.

The residual impact significance of increased water demand associated with construction vehicles, equipment and welfare facilities will be **Negligible (Adverse)** within a national context and **Low (Adverse)** within a regional and local context through the implementation of appropriate mitigation measures.

For the operation phase of the INA Project, through the implementation of appropriate mitigation measures:

- The residual impact significance of increased fuel (aviation fuel and within buildings) and material demand will be **Negligible (Adverse)** within a national context.
- The residual impact significance of increased water demand will be **Negligible (Adverse)** within a national context and **Low to Moderate (Adverse)** within a regional and local context.

## 4.11. Traffic and Transport

For all phases of construction of the INA Project, through the implementation of appropriate mitigation measures:

- The residual impact significance of safety of transport users will be **Low to Moderate (Adverse)**.
- The residual impact significance of amenity for transport users will be **Negligible to Low (Adverse)**.

For all phases of operation of the INA Project, through the implementation of appropriate mitigation measures:

- The residual impact significance of safety of transport users will be **Negligible to Low (Adverse)**.
- The residual impact significance of amenity for transport users will be **Moderate (Beneficial)**.

For all phases of construction and operation of the INA Project, through the implementation of appropriate mitigation measures:

- The residual impact significance of severance will be **Negligible to Low (Adverse)**.
- The residual impact significance of driver delay will be **Negligible to Moderate (Adverse)**.

## 4.12. Landscape and Visual Features

The potential landscape and visual impacts arising from the INA Project have been evaluated by generating a Zone of Theoretical Visibility (ZTVs) to identify the potential extent of the Project's visibility within the study area.

As indicated by the ZTV, potential visibility of the INA Project from the wider landscape would be minimal. Significant impacts will be limited to 10 of the 58 receptors (Landscape Fabric, 14 landscape character types (LCTs), 4 National Parks, 23 neighbourhoods, 5 routes and 12 viewpoints) identified within the 10 km study area.

For the construction phase of the INA Project, through the implementation of appropriate mitigation measures:

- The residual landscape impact significance on landscape fabric will be **High (Adverse)** but will be **Moderate (Beneficial)** for those areas that are currently degraded.
- The residual landscape impact significance on landscape character (14 LCTs) will be **None to High (Adverse)**. Three of the 14 LCTs would experience significant impacts.
- The residual landscape impact significance on natural parks will be **None**.
- The residual visual impact significance on neighbourhoods/settlements (23 in total) will be **None** to **Moderate to High (Adverse)**. One of the 23 neighbourhoods would experience significant impacts.
- The residual visual impact significance on road users (5 routes) will be **Negligible** to **Moderate (Adverse)**.
- The residual visual impact significance on representative viewpoints (12 viewpoints) will be **None** to **Moderate to High (Adverse)**. Two of the 12 viewpoints would experience significant impacts.

For the operation phase of the INA Project, through the implementation of appropriate mitigation measures:

- The residual landscape impact significance on landscape fabric will be **None**.
- The residual landscape impact significance on landscape character (14 LCTs) will be **None to High (Adverse)**. Three of the 14 LCTs would experience significant impacts.
- The residual landscape impact significance on natural parks will be **None**.
- The residual visual impact significance on neighbourhoods/settlements (23 in total) will be **None** to **Moderate to High (Adverse with 1 Neutral)**. Five of the 23 neighbourhoods would experience significant impacts.
- The residual visual impact significance on road users (5 routes) will be **Negligible** to **Moderate (Adverse)**.
- The residual visual impact significance on representative viewpoints (12 viewpoints) will be **None** to **High (Adverse with 1 Beneficial and 1 Neutral)**. Three of the 12 viewpoints would experience significant impacts.

## 4.13. Social and Cultural Assessment

Large scale development projects have the potential to cause various social impacts by their nature. It is important to anticipate the potential impacts and develop and implement the required mitigation measures in order to prevent undesired consequences.

Socio-economic data collection was carried out through the review of secondary sources of information, obtained from the relevant government authorities, and the analysis of official statistics as a basic source of information. As part of the socio-economic baseline study,

various key interviews were carried out with the headmen (muhtars). These meetings were held in Akpinar, Tayakadin, Yenikoy and Imrahor neighbourhoods. The aim of the meetings was to understand the baseline conditions of the neighbourhoods and inform the local representatives about the anticipated developments of the Project.

For the construction phase of the INA Project, through the implementation of appropriate mitigation measures:

- The residual land use (loss of agricultural and pasture land) impact significance on land owners/users who lost their lands as a result of expropriation will be **Low (Adverse)** and will be managed through the implementation of a Resettlement Action Plan.
- The residual land acquisition impact significance on existing settlements within the Project Area of Influence will be **Low (Adverse)** and will be managed through the implementation of a Resettlement Action Plan.
- The residual cultural heritage impact significance within the existing Project Area of Influence will be **Negligible (Neutral)** and will be managed through the implementation of a Cultural Heritage Management Plan.
- The residual public health impact significance on residents who are living in Project Area of Influence will be **Low (Adverse)** and will be managed through the implementation of Traffic and Noise Management Plans.

For the construction and operation phases of the INA Project, through the implementation of appropriate mitigation measures:

- The residual population and settlement patterns – population influx impact significance on communities located adjacent to the Project Area will be **Low (Adverse)** and will be managed through the implementation of a Stakeholder Engagement Plan.
- The residual income and poverty level (economic growth and job creation) impact significance on existing residents within the Project Area of Influence and Istanbul residents and local business will be **High (Beneficial)** and will be managed through the implementation of a Social Management Plan.

# 5. Cumulative Impact Assessment

As part of the ESIA Study, a cumulative impact assessment (CIA) resulting from existing, planned and reasonably defined developments, which include future expansions and neighbouring developments, referred to as ‘cumulative developments’ with the INA Project have been carried out.

The assessment of cumulative impacts is a long established requirement for any comprehensive ESIA Study. For the INA Project, the IFC Performance Standards have been used as a primary reference source.

The impacts of the Project need to be considered in conjunction with the potential impacts from other future developments or activities that are existing, planned or reasonably defined, and are located within a geographical scope where potential environmental and social interactions could act together with the Project to create a more or less significant overall impact.

The CIA Study has identified a number of planned and future developments in the near vicinity of the INA Project, which have the potential to result in adverse environmental or social cumulative impacts that are considered to be significant.

The area immediately surrounding the Project Area is relatively undeveloped, with a number of small to mid-sized settlements, some mineral extraction activities, forested land and open spaces. The area has been identified by the Turkish government and the local municipality as a location for other major development projects which should complement the INA Project. These include:

- The Canal Istanbul project, a proposed new shipping link between the Black Sea and the Sea of Marmara;
- The Istanbul New City development, along a North-South corridor coordinated with the Canal Istanbul project. This is understood to be a mixed-use development, including commercial, industrial and leisure facilities with a population of some 2-3 million;
- The Milten Tourism Facility and Marina (including dry dock area) Project; and
- Transport Infrastructure including (D-010 İhsaniye to Tayakadın Highway diversion, Rail system services of the Istanbul City Area; and 3rd Bosphorus Bridge and connected motorways.

Within the CIA, various mitigation measures and engagement proposals have been presented with regard to the alignment of local developers' mitigation strategies with those of INA.

Many of the impact types identified with the potential development considered in the CIA are similar in nature to those identified and assessed for the INA Project. Therefore the mitigation measures being development by the INA Project would, to a large extent, be applicable to other project developments. Many of the key mitigation controls being implemented by the INA Project are either required under national standards or else in line with industry standard practices, and therefore may be reasonably assumed to be adopted by other project developers. In addition to the control of impacts at the individual project level, INA Project will, to the extent that is practicable and reasonable, take a proactive role in contributing the management of cumulative impacts at the wider district /regional level.

# 6. Afforestation Plan

An Afforestation Plan has been prepared in line with the national requirements to compensate the loss of forests due to the INA Project as well as summarising the process for compensation (replanting of trees at alternative sites). The Afforestation Plan also provides an insight into international requirements in terms of mitigating loss of forests and identifies the strategy for actions. Overall, it is prepared in order to determine the type and characteristics of the forest areas in the Project Area, potential loss of forests and the options (including estimates for the number of trees to be replanted and size of land needed for afforestation) for mitigation of the adverse impacts. The mitigation and compensation options will be in accordance with relevant Turkish legislation and international practices.

# 7. Stakeholder Engagement

Stakeholder engagement is the basis for building strong, constructive, and responsive relationships that are essential for the successful management of a project's environmental

and social impacts. The purpose of stakeholder engagement is to establish and maintain a constructive relationship with a variety of external stakeholders over the entire life of the project. Initiating the engagement process in the early phases of the project helps ensure timely public access to all relevant information and provides the stakeholders with an opportunity to input into the project design and the assessment of impacts.

A Stakeholder Engagement Plan (SEP) is designed in line with the requirements of the IFC, Equator Principles as well as relevant Turkish legislation to guide stakeholder consultations leading up to and during the period of the ESIA studies, as well as during the further stages of project implementation, i.e. excavation, construction and operation.

The SEP is designed to ensure that IGA identifies all stakeholders and establishes an effective engagement strategy during the development and life of the Project. The ultimate goal of the SEP is to build meaningful and trusting relationships with the local community and other interested stakeholders based on a transparent and timely supply of information and open dialogue. Additionally, the SEP also covers the following aspects:

- Applicable national and international regulations and requirements on stakeholder engagement;
- IGA's previous consultation activities and future plans to engage with stakeholders during excavation, and the construction and operation phases of the Project;
- Key Project stakeholders that have been identified and will be interacted with;
- Strategy for consultation and information disclosure;
- Timetable for various stakeholder engagement activities;
- Resources and responsibilities for the implementation of the SEP;
- Means of monitoring and reporting on consultation and disclosure activities; and
- A grievance mechanism for stakeholders and the public to raise concerns, provide feedback and comments about the IGA's operations and how complaints/comments will be handled.

# 8. Framework Environmental and Social Management Plan (ESMP)

The framework Environmental and Social Management Plan (ESMP) explains how environmental and social commitments have been captured from the ESIA to ensure that the Project is constructed and operated in accordance with relevant regulatory and legislative requirements, international guidance and Good International Industry Practice (GIIP), which are collectively referred to as the Project Standards.

The potential environmental and social impacts will be markedly different between Project phases, with many construction-related impacts ceasing during the operational phase. The framework ESMP therefore contains phase-specific sections for the construction and operational phases of the Project and consists of three main components covering the following:

- Management and Mitigation Plans or Programmes;
- Monitoring Plans; and
- Emergency Response Plan.

Commitments in the form of design controls, safeguards, mitigation measures and monitoring requirements that aim to avoid, prevent, minimise or, where this is not possible, offset potential negative impacts and enhance positive impacts in relation to environmental and social topics, were identified and/or developed during the planning, design and ESIA stages of the Project. The framework ESMP and the subsequent more detailed sub-plans and programmes, will form an important part of the Project's overarching Environment Health and Safety Management System (EHSMS).