10th of Ramadan Integrated Waste Management Facility's Shared Internal Basic Infrastructure

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)

Ministry of Local Development

Prepared by:

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EXECUTIVE SUMMARY

Introduction

This document is the Environmental and Social Impact Assessment (ESIA) of the implementation of shared internal basic infrastructure (thereafter referred to as 'internal infrastructure') of the Integrated Waste Management Facility (IWMF) in 10th of Ramadan (10R) City. This ESIA is part of the environmental and social requirements of the Environmental and Social Management Framework (ESMF) (available here) conducted for the World Bank-financed Greater Cairo (GC) Air Pollution Management and Climate Change Project – GCAPM&CCP (hereafter referred to as the Project). The internal infrastructure that will serve the operation of the IWMF is a subproject under component 2 of the GCAPM&CCP and will be referred to as the project since it's the main scope of this ESIA.

The internal infrastructure will be for IWMF, which extends over land area of 5,157,980 m^2 divided into 9 plots for waste management (Figure 0-2) that constitutes the following:

1. municipal waste treatment facilities for Qalyoubia governorate.
2. municipal waste treatment facilities for Cairo governorate.
3. sanitary landfill for Qalyoubia governorate.
4. sanitary landfill for Cairo governorate.
5. medical waste treatment and disposal facility for Qalyoubia governorate.
6. medical waste treatment and disposal facility for Cairo governorate.
7. construction and demolition waste treatment shared facility between Cairo and Qalyoubia governorates.
8. industrial and hazardous waste treatment shared facility between Cairo and Qalyoubia governorates.
9. dedicated area for New Urban Communities Authority (NUCA) to be used as sanitary landfill and waste treatment.

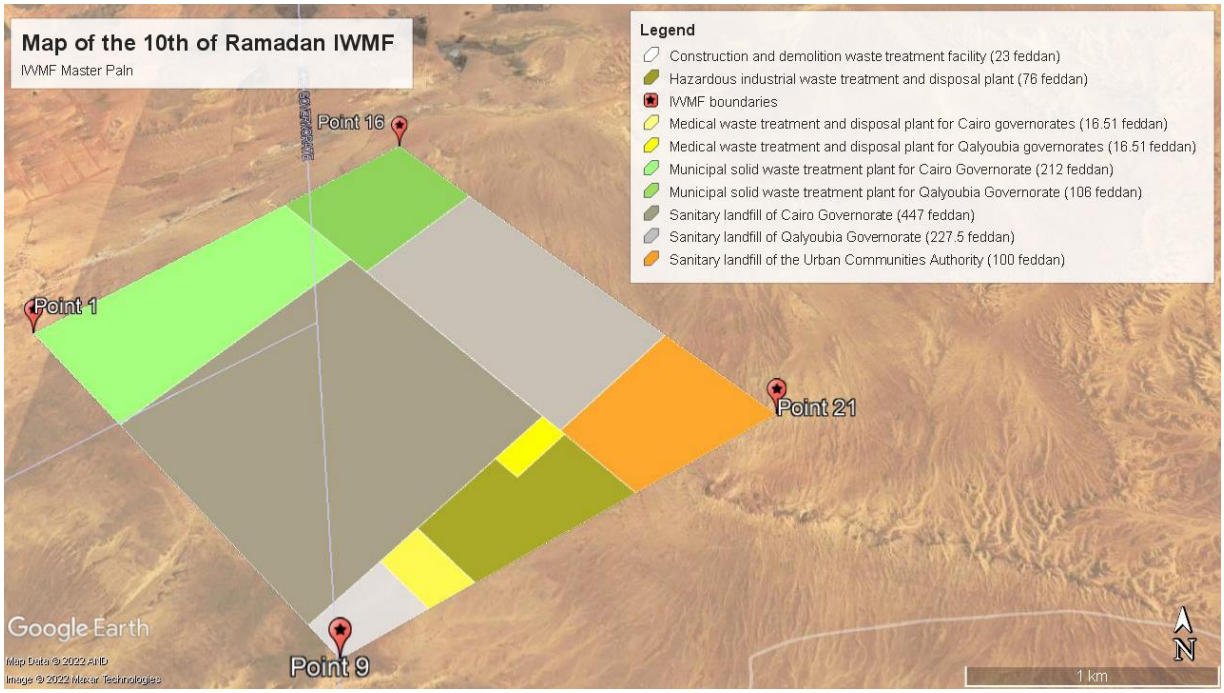

Figure 0-1: Plots in the IWMF

The scope of the ESIA is to conduct environmental and social assessment of the internal infrastructure of the IWMF. The internal infrastructure refers to fencing, internal main roads, wet (water, sewage, storm water, irrigation and firefighting water) and dry utilities to which the plots of the facility will connect to. It is worth mentioning that external infrastructure, which includes the main access roads and connections of the IWMF to the city electricity grid, potable water and public sewage network (if needed) will be financed, designed, and executed by the relevant Government entities to serve the IWMF in addition to other nearby industrial development parks. The timing for planning and implementation of the external infrastructure is not yet determined. In addition, the PCU capacity to exercise control or influence over the agencies which will be involved in planning is very limited However, the Ministry of Environment (who is the main implementing agency for the project and is also responsible for the implementation of environmental regulations in Egypt), will ensure management of environmental and social impacts of external infrastructure in line with the Egyptian environmental regulations. Therefore, impacts of external infrastructure are out of this ESIA scope.

The ESIA does not cover the activity of the different plots in the Facility. The plots will be developed on design, build and operate (DBO) scheme and the developers[1] will conduct their own environmental and social studies. Each developer will prepare a separate Environmental and Social Impacts study that will be in full compliance with the national and international standards and requirements; EEAA and WB, respectively.

[1] Developers are the ones who will be responsible for the operation of the different plots in the IWMF, which will connect to the infrastructure; they will be hired by Ministry of Local Development, Cairo and Qalyoubia Governorats in coordination with Ministry of Environment.

This ESIA has been developed to identify and assess potential environmental and social impacts due to pre-construction, construction, demobilization and operation activities of the internal infrastructure of the IWMF (All internal water, sewage, electricity networks, internal roads as well as the access roads connecting the IWMF to the nearest main road). The ESIA set out measures to avoid, minimize, mitigate and manage potential significant impacts to acceptable levels (as defined by the Egyptian law and the applicable WB Environmental and Social Standards (ESS)).

The ESIA has been developed based on the following methodology:

- The ESIA team conducted field visits to develop full site understanding and to identify relevant environmental and social issues.
- Review the detailed design document of the internal infrastructure. Consultations with the infrastructure design consultant (Sets) was carried out to update the study with any design changes and also to clarify elements in the design. The ESIA reflects the design updates based on latest meeting with the design consultant on the 27th of July 2022.
- Assess the design alternatives from the environmental and social perspectives and identify other feasible alternatives (other than the one proposed by the design consultant). There are two design assessment methodologies followed:
    - For selection of locations or technologies, the different design options are assessed based on a set of environmental and social indicators. The indicators are a guide for impact assessment of the different options based on impact severity (S) and frequency (F) ratings.
    - For selection of materials quantitative assessment is based on a set of criteria and giving score out of 5 corresponding to the extent of fulfilling the criteria (5 being the max score). The material with the highest score is the recommended one.
- The selected design option from the alternatives chapter was described in the project description. The project description was built to cover description of the design elements such as length and diameter then provide description of the preconstruction, construction, demobilization and operation activities of internal infrastructure.
- Along the development of chapters, a desk top review of available best practices in infrastructure design and available Egyptian codes was conducted.
- Baseline chapter was based on ambient air and noise measurements and biodiversity report and from available information and reports as well as other available information shared through the stakeholder consultation. Baseline components such as receptors identification and ambient air and noise measurements were reflected in the impact assessment chapter.
- Study of the relevant documents on national policy, World Bank Environmental and Social Framework (ESF) and Environmental and Social Standards (ESSs), legal and administrative framework and their review, particularly on environmental aspects, health and safety requirements, and social aspects.
- Identification and prediction of all related environmental and social impacts of the identified project activities on the surrounding environment, including cumulative impacts of the proposed project and the existing ongoing projects in the area of influence and their relevancy to the World Bank ESSs

- Scoping of the most significant impacts and suggesting mitigation measures in order to reduce/eliminate the negative impacts and enhance the positive impacts
- Development of Environmental and Social Management Plan (ESMP) for all project phases
- Stakeholder engagement activities included:
    - Distributing a summary about the project among the participants in different meetings
    - Field visits and observation
    - Semi structures interviews with officials and stakeholders
    - Focus Group Discussions (FGDs) with representatives of the residents of 10th of Ramadan city, and other target groups
    - Using secondary resources (Census- statistics- previous reports)
    - Organizing Public Consultation Meeting on 1st September 2022 with different stakeholders and parties involved to present the results of the ESIA.
    -

Project overview

10th of Ramadan (10R) is a city located 30.306503°N 31.741455°E of Sharqiyah Governorate on the Cairo-Ismailia desert highway, 46 km from Cairo and 20 km from the city of Belbeis. The IWMF-10R, which hosts the proposed project, is located 9 km south of 10th of Ramadan City as shown in Figure 0-2. It has to be noted that the New Administrative Capital is located about 26 km south west of the IWMF as shown in Figure 0-2. The IWMF is located in a desert area. There is 10R industrial zone located north of the facility at about 4 km away. Badr City is located 9 km south of the facility.

Figure 0-2: Project location and layout

Components of the Proposed Project

The project internal infrastructure components are presented in Figure 0-3.

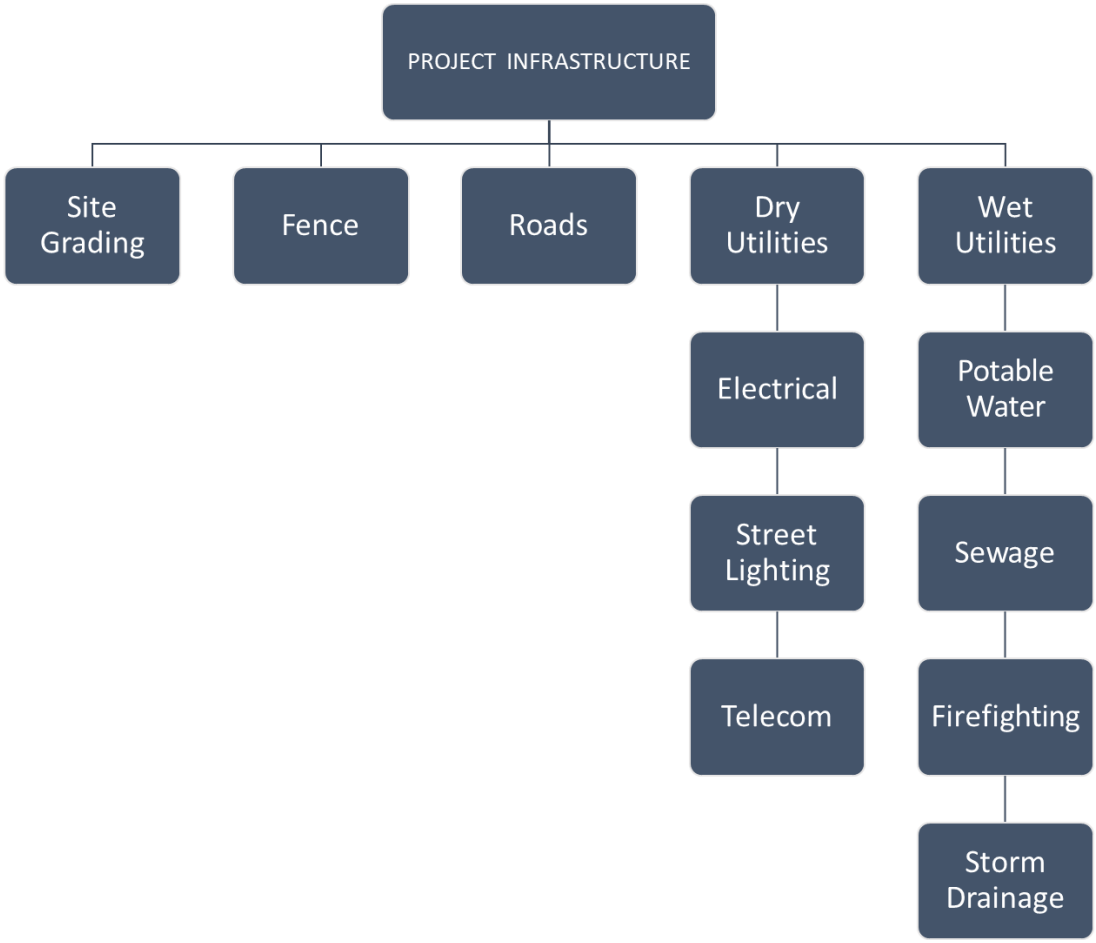

Figure 0-3: Internal infrastructure components

The expected life of the IWMF is 50 years. The internal infrastructure components mentioned above will serve the operation of the IWMF.

Legal and Regulatory Framework

The national framework includes the Egyptian Environmental Law and all its relevant subsequent amendments and executive regulations. The national framework also includes the new waste management law 202 for the year 2020, which regulates the organization of waste management in Egypt. The national environmental and social framework is included in details in the Policy, Legal and Administrative Framework (Chapter 3).

The international framework adopted in this study is the World Bank's Environmental and Social Framework (ESF), which covers key areas for environmental and social aspects to be adhered by any of the projects funded by the WB group such as the proposed project.

Egyptian law provides for environmental compliance procedures and emission limits, which are close to the WBG limits, if not more conservative. The proposed project components must

comply with ESF policies, which stipulate compliance with local laws. If there is a difference between local and WBG standards, the more stringent standards will be adopted.

The legal and regulatory framework chapter includes the national legal provisions applicable to the proposed project. The chapter also includes any relevant standards or specifications, implementing bodies concerned and penalties for infringement and irregularities.

The World Bank (WB) has 10 Environmental and Social Standards (ESSs) that should be considered in its financed projects. The following standards are applicable to the proposed projects:

- **Environmental and Social Standard 1:** Assessment and Management of Environmental and Social Risks and Impacts
- **Environmental and Social Standard 2:** Labor and Working Conditions
- **Environmental and Social Standard 3:** Resource Efficiency and Pollution Prevention and Management
- **Environmental and Social Standard 4:** Community Health and Safety
- **Environmental and Social Standard 5:** Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- **Environmental and Social Standard 6:** Biodiversity Conservation and Sustainable Management of Living Natural Resources
- **Environmental and Social Standard 8:** Cultural Heritage
- **Environmental and Social Standard 10:** Stakeholder Engagement and Information Disclosure

A gap analysis was conducted between the key requirements of both the Egyptian legislations and the WB Standards and the gaps between the two entities' requirements and environmental limits were identified in the Policy, Legal and Administrative Framework (Chapter 3).

Environmental and Social Baseline

In order to assess the environmental and social baseline in the project area, nine baseline elements were considered:

1. Site location
2. Ecological characteristics
3. Climate and meteorology
4. Natural characteristics (geology and soil, underground water, topography and seismic activity)
5. Ambient air quality
6. Ambient noise levels
7. Natural hazards
8. Built environment and infrastructure
9. Socio-economic baseline

Site-specific geotechnical studies were used in assessing the baseline conditions.

Project Alternatives

No Action Alternative

The internal infrastructure will serve the effective operation of the IWMF. The main objective of the solid waste management facility is to enhance the quality of air through preventing the uncontrolled burning of waste and also to improve the environmental and public health conditions, accordingly it is expected, by definition, that the environmental and social benefits will overweigh the impacts. No action alternative means that the infrastructure will not be implemented to operate the IWMF. Therefore, it can be concluded that the "no action alternative" is not a viable alternative from the environmental and social perspective.

Design Alternatives for Internal Infrastructure Components

This section presents different options that were proposed for the infrastructure components of the IWMF, including alternative materials and/or technologies. There are two design assessment methodologies followed:

1. For selection of locations or technologies, the different design options are assessed based on a set of environmental and social indicators. The indicators are a guide for impact assessment of the different options based on impact severity (S) and frequency (F) ratings. The severity and frequency are based on a scale from 1 to 5, 1 being low and 5 being high. The total score (TS) is calculated by multiplying the severity times the frequency. The alternative with the lowest score has the lowest impacts and is the recommended option.
2. For selection of materials such as fencing material, road material, pipe material, etc., quantitative assessment of the suitable material is based on giving score out of 5 in each criterion. The alternative with the highest average score is the suitable option.

The outcome from alternative analysis will be one successful option from environmental and social point of view. The option is further described in details in the project description chapter and the impact assessment chapter.

Potential Environmental and Social Impacts and Mitigation

Main Environmental and Social Risks and Impacts of Pre-construction and Construction Phase

The main environmental and social risks and impacts expected during the project pre-construction and construction phases were identified as follows:

1. Air quality impacts
2. Noise and vibrations impacts
3. Soil, geology, and topography impacts
4. Resource efficiency and pollution prevention impacts
5. Cultural heritage risk
6. Natural disaster risk
7. Child labor risk

8. Risks associated with temporary labor influx
9. Risk associated with sexual exploitation and abuse and sexual harassment (SEA/SH) and gender-based violence (GBV)
10. Occupational health and safety including risk of spread of COVID-19
11. Community health and safety risks

Main Environmental and Social Risks and Impacts of Demobilization Phase

The main environmental and social risks and impacts expected during the project demobilization phase were identified as follows:

1. Resource efficiency and pollution prevention impacts
2. Occupational health and safety impacts and risks

Main Environmental and Social Risks and Impacts of Operation Phase

The main environmental and social risks and impacts expected during the project operation phase were identified as follows:

1. Soil, geology, and topography impacts
2. Resource efficiency and pollution prevention impacts
3. Natural hazard risks
4. Occupational health and safety risks
5. Community health and safety risks

Environmental and Social Management Plan (ESMP)

The environmental and social management plan describes the process for implementation of measures to avoid, mitigate, reduce or offset significant impacts identified during pre-construction and construction, operation, and decommissioning phases of the project.

For each identified significant impact and set of mitigation measures, the description of the implementation process includes defined responsibilities for implementing the measures, and monitoring plan specifying methods for monitoring, indicators to assess compliance and implementation of ESMP (including provisions outlined in instruments developed for the Project for safeguarding ESS, i.e., SEP, LMP, ESMF, and ESCP), frequency of monitoring, location, applicable project phase, estimated costs for implementation of ESMP.

Applicable phases of the project are denoted by the following: PC/C for pre-construction and construction, O/M for operation and maintenance, D for demobilization.

Public Consultation and Engagement

The consultation with stakeholders is divided into two stages; the consultation activities during the scoping phase, and public hearing meeting after the completion of the first draft report of the ESIA.

- Scoping Consultation Activities took place from April to July 2022 consisting of meetings, interviews, and FGDs and were conducted with the implementing authorities, primary and secondary stakeholders, targeted and affected communities.
- A Public consultation session was organized on the 1st of September 2022 with concerned authorities and project stakeholders. Its details and findings are included in the stakeholder consultation chapter and attached as an annex to this report.
- Public disclosure will be initiated to disclose Final ESIA report via the different websites of the WB and the Ministry of Environment (MoE).

Most of these consultation activities were built up on the main findings of consultation activities that was initiated in 2019, and 2020, and based on the activities that was incorporated in the Project's SEP document.

Defining Relevant Stakeholders

The Project's context is about maximizing the quality of the SWM infrastructure and maximizing its positive impact in enhancing solid waste management. The revision and analysis of relevant different administrative, legal, and environmental frameworks as well as the revision of the SEP has helped in identifying the potential stakeholders (SH) of the project. The identification of SHs groups is built on the SHs identification that are included in the Project's SEP document. For this ESIA other groups were identified such as the owners and management of factories in the 3rd industrial zone of 10th of Ramadan City, in addition to informal settlers who are living near the location of IWMF in the 10th of Ramadan City.

According to the World Bank's Standard ESS10, a stakeholder refers to "individuals or groups who: (a) are affected or likely to be affected by the project (project-affected parties); and (b) may have an interest in the project (other interested parties)".[2]

Consultation Activities

The main objectives of these interviews varied from one stakeholder to the other, some of the obtained information will be beneficial for the future studies, and future consultation with the stakeholders as well as the implementation of the SEP. For the purpose of this ESIA the main focus will be on the infrastructure of the IWMF. The consultation activities mainly aimed at covering the following points:

- Define the main characteristics of the project's site and the surrounding area.
- Obtain information needed to develop the socio-economic baseline of the targeted 10th of Ramadan City and other communities.
- Examine the expected positive and negative impacts of the project.
- Identify the specific requirements and local concerns to be considered in the ESIA.
- The impact of the project on the near communities

[2] World Bank ESS 10. Available at: http://documents.worldbank.org/curated/en/476161530217390609/ESF-Guidance-Note-10-Stakeholder-Engagement-and-Information-Disclosure-English.pdf

Proposed Grievance Mechanism

Responsible Actors of Handling GRM

Ministry of Environment-EEAA- WMRA: Responsible for handling concerns or complaints raised by community members at national level during the different phases of the Project. The process encompasses all Project activities and components, including activities performed by contractors or subcontractors on behalf of the Project.

Project Coordination Unit (PCU): The responsible body for monitoring the GRM procedures.

Contractor/s: Is responsible for resolving any workplace concerns or complaints for contracted workers during the construction phase.

Technical Implementation Unit (TIU): the responsible body for resolving any complaints related to the operation of the different plots of the IWMF and internal infrastructure.

10th of Ramadan Authority and its affiliated administrations: Will act as a coordinating body between the citizens of 10th of Ramadan and the implementers of the project in case of having any issues raised during the implementation of the project.

In addition to other main partners and actors, including, but not limited to:

- The governorates of Cairo, Giza and Qalyubia.
- The Environmental Affairs Agency.
- The Ministry of Local Development.
- The National Council for Women.
- The Air Pollution and Climate Change Management Project in Greater Cairo (under construction).
- Community leaders and NGOs.
- Announcement in the places of implementation of the project - implementation contractors (in the construction phase).

Grievance Procedures

To clarify the various grievance-handling mechanisms, a detailed guide was prepared by the PCU, which explains the basic steps of the mechanism for managing and handling grievances and complaints for the Project. More details about the GRM are presented in chapter 10

Summary and Conclusions

After studying the various essential environmental and social baseline elements, the most significant receptors were identified to include the following:

Environmental

- Ambient air quality due to internal infrastructure construction activities as a result of emissions from machinery and equipment used during construction.

- Ambient noise levels due to internal infrastructure construction activities from using of machinery and equipment.
- Resources use efficiency, project surrounding might be further contaminated with construction waste of internal infrastructure (i.e., waste of soil generated due to excavation, grading, etc., refuse bricks from fencing, etc.).
- Infrastructure operability during operation might be obstructed by extreme heat events.

Social

- There are social sensitive receptors identified near the location of the facility, a group of informal settlers who are living in a place called El Ezba ("Ezbet" resembles a small population gathering). They are informally settled there and living in slum dwellings (huts and tents) to be able to work on sorting and selling recyclables from the piles of solid wastes that became accumulated on both sides on the road leading to the facility. Although, they are out of scope of infrastructure; however, their health and safety will be influenced by the construction and operation of the facility, if they decided to continue to stay in their shelters in case of the continuation of dumping solid wastes near the site. Mitigation measures were listed in the community health and safety standard in different project phases to protect them.
- Moreover, the nearest factories to the project site, which are located on the fringes of the third industrial zone (about 4 kilometers away, such as the electric cables factory and the ceramics factory). There is a possibility that the workers of these factories will be affected in the construction and operation phases during the passage of equipment, construction machinery and waste vehicles.
- In the event that the contractor chooses construction workers from outside the 10th of Ramadan City, there is a possibility that tensions will occur between construction workers and factory workers. Therefore, it is important that the project consider the appointment of workers from the 10th of Ramadan' residents to be more familiar with the area and its cultural sensitivity.
- General OHS as a result of extreme weather events (e.g., heat waves, extreme rainfall events, earthquakes, etc.).
- Community health and safety from traffic impacts resulting from transportation of material to and from the site.

During the consultation with different stakeholders, they were concerned about the roads that will be accessed by the Solid Waste (SW) trucks, Stakeholders (SHs) had reservations about using the main roads of the city for the passage of SW trucks inside the city in the middle of residential areas or industrial areas. Their reservations were communicated to the environmental consultants who started looking for alternative roads for the vehicles. A comparative analysis was already done between the best alternatives of roads. In addition, this reservation was discussed to the PCU, who contacted the NUCA that issued a decree banning the passage of any SW trucks on the Cairo-Ismailia desert road (the main and vital road to the city of 10th of Ramadan).

The implementation of the proposed project will generate potential negative impacts. These impacts appear at different stages namely, preconstruction, construction, demobilization and operation activities. The impacts have been identified and observed to be moderate to high in significance. For these, appropriate mitigation measures have been identified and can be greatly

minimized in the design phase and through good operational practice. All of the impacts identified can be reduced to acceptable levels as proposed in the Environmental and Social Management Plan.

Considering the thorough analysis of collected data during the study, the following main points are concluded:

- The positive environmental impacts outweigh the negative ones; the latter can be contained by the proposed ESMP
- The proposed project is located in a desert area complying with the initial plan of 10th of Ramadan city. However, there are social sensitive receptors identified near the location of the facility (informal settlers, and factories). Although, they are out of scope of infrastructure; however, their health and safety may be influenced by the construction and operation of the facility, if all the proposed mitigation measures are implemented, it will not compromise the well-being of the neighboring community, ecology or any other conditions.
- This component of the project does not have any impacts related to land and assets expropriation nor it will have any negative impact on the livelihoods of any group.