



## National Solid Waste Management Program

PROGRAMME IMPLEMENTATION (LOT A) QENA &  
ASSIUT GOVERNORATES

### Environmental and Social Impact Assessment (ESIA) Abu Tisht Transfer Station Qena Governorate

June 2020





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**Qena Governorate**  
**Environmental and Social Impact Assessment (ESIA) Abu Tisht Transfer Station**

**Table of Contents**

<b>1. EXECUTIVE SUMMARY .....</b>	<b>1</b>
1.1 INTRODUCTION .....	1
1.2 PROJECT OBJECTIVES.....	1
1.3 THE ESIA METHODOLOGY .....	2
1.4 BRIEF PROJECT DESCRIPTION .....	2
1.4.1 <i>Project General Information</i> .....	2
1.4.2 <i>Project Site Description</i> .....	3
1.4.3 <i>Project Area and Components</i> .....	3
1.4.4 <i>Construction Phase</i> .....	3
1.4.5 <i>Operational Phase</i> .....	3
1.4.6 <i>Summary of Mitigation Measures and Residual Impacts</i> .....	4
1.5 CONCLUSIONS.....	20
<b>2. INTRODUCTION .....</b>	<b>22</b>
2.1 ESIA OBJECTIVES .....	22
2.2 IMPORTANCE OF SOLID WASTE TRANSFER STATIONS .....	23
2.3 THE PROJECT OBJECTIVES.....	23
2.4 THE ESIA METHODOLOGY .....	23
2.5 ESIA REPORT STRUCTURE .....	24
<b>3. LEGAL AND INSTITUTIONAL FRAMEWORK.....</b>	<b>26</b>
3.1 THE ADMINISTRATIVE FRAMEWORK AND NATIONAL AUTHORITIES .....	26
3.2 NATIONAL LAWS AND REGULATIONS .....	28
3.2.1 <i>ESIA Procedure Articles in Accordance with Egyptian Environmental Law No. 4 of 1994 and its Subsequent Amendments (Law No. 9 of 2009 and 105/2015)</i> .....	29
3.2.2 <i>The Egyptian EIA Guidelines</i> .....	30
3.2.3 <i>Regulatory Framework for Municipal Waste Management</i> .....	31
3.2.4 <i>Regulatory Framework for Emissions to Air</i> .....	31
3.2.5 <i>Regulatory Framework for Noise Nuisance</i> .....	33
3.2.6 <i>Regulatory Framework for Wastewater Disposal to Sewers</i> .....	33
3.2.7 <i>Regulatory Framework for Potable Water Quality</i> .....	34
3.3 REGULATORY FRAMEWORK FOR SOCIAL AND LABOUR ASPECTS .....	35
3.4 LEGISLATION APPLICABLE TO CULTURAL HERITAGE .....	36
3.5 INTERNATIONAL REQUIREMENTS .....	36
3.6 INTERNATIONAL CONVENTIONS AND AGREEMENTS .....	38
<b>4. PROJECT DESCRIPTION.....</b>	<b>40</b>
4.1 INTRODUCTION .....	40
4.2 MAIN PROJECT CHARACTERISTICS.....	40
4.3 PROJECT LOCATION.....	41
4.3.1 <i>Project Area and Location</i> .....	41
4.3.2 <i>Site Boundaries</i> .....	42
4.3.3 <i>Available Infrastructure</i> .....	42
4.4 PROJECT COMPONENTS .....	45
4.5 CONSTRUCTION PHASE .....	47

4.6	THE OPERATIONAL PHASE: .....	48
4.7	ROUTINE MONITORING PROCESS.....	50
4.8	EMERGENCY PROCEDURE.....	50
<b>5.</b>	<b>BASELINE ENVIRONMENTAL AND SOCIAL CONDITIONS .....</b>	<b>52</b>
5.1	METHODOLOGY .....	53
5.2	GEOLOGY.....	53
5.2.1	<i>Terrains.....</i>	<i>54</i>
5.3	TOPOGRAPHY .....	58
5.4	LAND USE .....	61
5.5	SURFACE AND GROUND WATER .....	61
5.6	CLIMATE.....	64
5.7	POPULATION .....	70
5.8	ECONOMY.....	72
5.9	PROTECTED AREAS.....	74
5.10	BIOLOGICAL DIVERSITY .....	74
5.11	ARCHAEOLOGICAL SITES.....	75
5.12	ENVIRONMENTAL SENSITIVITY OF THE SITE .....	75
<b>6.</b>	<b>PROJECT ALTERNATIVES.....</b>	<b>77</b>
6.1	NO DEVELOPMENT ALTERNATIVE .....	77
6.2	PROJECT LOCATION.....	77
6.3	TECHNOLOGY ALTERNATIVES .....	77
<b>7.</b>	<b>ASSESSMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS .....</b>	<b>81</b>
7.1	IMPACT ASSESSMENT METHODOLOGY.....	81
7.1.1	<i>Identification of Potential Environmental and Social Impacts .....</i>	<i>81</i>
7.1.2	<i>Mitigation Hierarchy .....</i>	<i>81</i>
7.1.3	<i>Environmental and Social Impact Assessment Criteria .....</i>	<i>81</i>
7.1.4	<i>Mitigation Measures .....</i>	<i>84</i>
7.1.5	<i>Residual Impacts .....</i>	<i>84</i>
7.2	POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES .....	84
7.2.1	<i>Pre-Construction and Construction Phase .....</i>	<i>85</i>
7.2.2	<i>Operational Phase .....</i>	<i>93</i>
7.3	IMPACT OF THE ENVIRONMENT ON THE PROJECT .....	101
7.4	CUMULATIVE IMPACTS .....	102
<b>8.</b>	<b>ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN.....</b>	<b>105</b>
8.1	SUMMARY OF IMPACTS.....	105
8.2	SUMMARY OF MITIGATION MEASURES AND RESIDUAL IMPACTS.....	106
8.3	OCCUPATIONAL HEALTH AND SAFETY .....	119
8.4	EMERGENCY PLAN .....	121
8.5	ENVIRONMENTAL MONITORING PLAN .....	122
8.5.1	<i>Environmental Monitoring During the Construction Phase.....</i>	<i>122</i>
8.5.2	<i>Environmental Monitoring During the Operational Phase.....</i>	<i>125</i>
<b>9.</b>	<b>CONSULTATION AND STAKEHOLDERS ENGAGEMENT MECHANISM .....</b>	<b>130</b>
9.1	OBJECTIVES OF STAKEHOLDERS ENGAGEMENT.....	130
9.2	METHODOLOGY .....	130
9.3	STAKEHOLDER IDENTIFICATION .....	130

9.4	STAKEHOLDER ANALYSIS .....	130
9.5	PREVIOUS STAKEHOLDER ENGAGEMENT ACTIVITIES.....	137
9.6	FUTURE ENGAGEMENT ACTIVITIES .....	139
9.7	GRIEVANCES MECHANISM.....	139
9.7.1	<i>Proposed Grievance Mechanism</i> .....	139
9.7.2	<i>Responsible Institutional Structure</i> .....	140
9.7.3	<i>Grievance Channels</i> .....	140
9.7.4	<i>Response to Grievances</i> .....	140
9.7.5	<i>Monitoring of Grievances</i> .....	140
9.7.6	<i>Disclosure of Grievances</i> .....	141
<b>10.</b>	<b>REFERENCES .....</b>	<b>142</b>

### List of Tables

Table 1-1:	Impact Assessment and Mitigation Measures Summary During Pre-Construction and Construction Phases.....	5
Table 1-2:	Impact Assessment and Mitigation Measures Summary During Operation Phase .....	12
Table 3-1:	Maximum Limits of Ambient Air Pollutants .....	32
Table 3-2:	Maximum Emission Limits in Vehicles Using Gasoline Fuel .....	32
Table 3-3:	Maximum Emission Limits in Vehicles Using Diesel Fuel .....	32
Table 3-4:	Maximum Limit Permissible for Noise Level in the Different Zones According to Annex 7 of the Modified ERs of Law 4/1994.....	33
Table 3-5:	Standards and Specifications of Wastewater to be Discharged to Sewer Systems .....	33
Table 3-6:	Parameters Relevant for Potable Water Quality.....	34
Table 4-1:	Coordinates of the TS site .....	42
Table 4-2:	MSW Generation in Abu Tisht, 2019 ( <i>Preliminary Design, 2019</i> ) .....	48
Table 4-3:	TS Equipment and Machinery ( <i>Preliminary Design, 2019</i> ).....	49
Table 5-1:	Population in Qena Governorate and the Amount of Waste Generated Annually (2019 and 2020) 71	
Table 7-1:	Impact Consequence Criteria .....	82
Table 7-2:	Impact Magnitude Criteria .....	83
Table 7-3:	Value and Sensitivity of Receptors .....	83
Table 7-4:	Significance Matrix .....	84
Table 7-5:	Evaluation of the impacts on air quality during construction phase.....	85
Table 7-6:	Evaluation of the Impacts of GHG Emissions During Construction Phase.....	86
Table 7-7:	Evaluation of the Impacts on Noise Levels During Construction Phase .....	87
Table 7-8:	Evaluation of the Impacts on Soil and Groundwater During Pre-Construction Phase.....	87
Table 7-9:	Evaluation of the impacts on Soil and groundwater during construction phase .....	88
Table 7-10:	Evaluation of the Impacts on Biological Environment During Construction Phase.....	89
Table 7-11:	Evaluation of the impacts on public health and amenity during construction phase.....	89

Table 7-12: Evaluation of the Impacts on Traffic and Road Safety During Construction Phase .....	90
Table 7-13: Evaluation of the Impacts on Workplace Health and Safety During Construction Phase .....	91
Table 7-14: Evaluation of the Impacts on Archaeology During Construction Phase .....	92
Table 7-15: Evaluation of the Social and Economic Impacts During Construction Phase .....	92
Table 7-16: Evaluation of the Impacts on Air Quality During Operational Phase .....	93
Table 7-17: Evaluation of the Impacts of GHG Emissions During Operational Phase .....	94
Table 7-18: Evaluation of the Impacts of Odours During Operational Phase .....	94
Table 7-19: Evaluation of the Impacts on Noise Levels During Operational Phase .....	95
Table 7-20: Evaluation of the Impacts on Soil and Groundwater During Operational Phase .....	96
Table 7-21: Evaluation of the Impacts on Biological Environment During Operational Phase .....	97
Table 7-22: Evaluation of the Impacts of Attraction of Pests During Operational Phase .....	98
Table 7-23: Evaluation of the Impacts on Public health and Amenity During Operational Phase .....	98
Table 7-24: Evaluation of the Impacts on Traffic and Road Safety During Operational Phase .....	99
Table 7-25: Evaluation of the Impacts on Workplace Health and Safety During Operational Phase .....	100
Table 7-26: Evaluation of the Socio-Economic Impacts During Operational Phase .....	101
Table 8-1: Impacts Classification .....	105
Table 8-2: Significance Rating Summary of the impacts of the TS Activities During Construction and Operation Phases .....	107
Table 8-3: Mitigation Measures Summary During Pre-Construction and Construction Phases .....	109
Table 8-4: Mitigation Measures Summary During Operation Phase .....	113
Table 8-5: Monitoring Activities During the Construction Phase .....	124
Table 8-6: Monitoring Activities During the Operational Phase .....	127
Table 9-1: Stakeholders, Levels of Participation and their Impact Level .....	132
Table 9-2: Summary of the Initial Meetings with Some Stakeholders .....	138

## List of Figures

Figure 3-1: Flowchart for NSWMP Program .....	27
Figure 3-2: Flowchart for NSWMP Outside the Program .....	28
Figure 4-1: Agriculture Lands Surrounding Proposed Site .....	41
Figure 4-2: Current Use of the Proposed Site .....	41
Figure 4-3: Solid Waste Transportation Truck Near the Site .....	41
Figure 4-4: Close View Of Wastes Dumped Near the Site (Including Slaughterhouse Wastes) .....	41
Figure 4-5: The Proposed TS Location .....	43
Figure 4-6: Distances Between TS and the Neighbouring Villages .....	44
Figure 4-7: Neighbouring Activities (Mainly Agriculture Activities) .....	44

Figure 4-8: Abu Tisht TS Layout.....	46
Figure 5-1: Map of Qena Governorate and its Districts .....	53
Figure 5-2: Geological Map of Qena Governorate .....	56
Figure 5-3: Rocks Distribution Map of Qena Governorate.....	57
Figure 5-4: The Topographical Map of Qena Governorate and TS Location .....	58
Figure 5-5: Topographic Section, from North to South, Passing Through the TS Site.....	59
Figure 5-6: Topographic section, from North to South, Passing Through the TS Site.....	59
Figure 5-7: Topographic Section, from East to West, Passing Through the Boundaries of the TS Site.....	60
Figure 5-8: Topographic Section, from East to West, Passing Through the Boundaries of the TS Site.....	60
Figure 5-9: Land Utilization Map of Qena Governorate.....	61
Figure 5-10: Distribution of Surface Water in Qena.....	62
Figure 5-11: Main Aquifers in Qena Governorate and its Characteristics.....	63
Figure 5-12: Drinking Groundwater Wells in Qena .....	64
Figure 5-13: Summary of the Climatic Conditions in the Study Area .....	65
Figure 5-14: The Average of High and Low Temperatures During the Year.....	65
Figure 5-15: The Average Hourly Temperature.....	66
Figure 5-16: The Categories of the Cloud Cover in the Study Area.....	66
Figure 5-17: Monthly Average Precipitation in Abu Tisht .....	67
Figure 5-18: The Hours of Daylight and Twilight .....	67
Figure 5-19: Humidity Levels Throughout the Year.....	68
Figure 5-20: Average Wind Speed .....	68
Figure 5-21: The Wind Rose in Abu Tisht .....	69
Figure 5-22: Floods Spillways in Qena Governorate .....	70
Figure 5-23: Population Density Map of Qena Governorate .....	71
Figure 5-24: Small Crafts in Qena Governorate .....	72
Figure 5-25: Cultural and Heritage Sites in Qena Governorate.....	73
Figure 5-26: The Natural Protectorates in Egypt.....	74
Figure 6-1: Solid Waste Transfer Station Types.....	79
Figure 9-1: Engagement with Local Communities.....	137

## List of Abbreviations

CAA	Competent Administrative Authority
C&D	Construction & Demolition
EEAA	Egyptian Environmental Affairs Agency
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment (similar process as for an EIA, but with added emphasis on the Social aspects of the project)
ESMP	Environmental and Social Management Plan
ESMMP	an Environmental and Social Management and Monitoring Plan
EU	European Union
GHG	Green House Gases
HSE	Health and Safety Executive
IFC	International Finance Corporation
ISWM	Integrated Solid Waste Management
MSA	The Ministry of State for Antiquities
MSW	Municipal Solid Waste
NSWMP	National Solid Waste Management Program
OECD	Organisation of Economic Co-operation and Development
PPE	Personal Protective Equipment
SWM	Solid Waste Management
SWMU	Solid Waste Management Unit in each Governorate
ToR	Terms of Reference
WMRA	Waste Management Regulatory Authority



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## **1. EXECUTIVE SUMMARY**

### **1.1 INTRODUCTION**

As part of the National Solid Waste Management Program (NSWMP) in Egypt, it is planned to construct and operate a municipal solid waste Transfer Station (TS) in Abu Tisht District, Qena Governorate. The location of the Abu Tisht TS was selected and made available by the regional District Solid Waste Management Unit (SWMU) in Qena. The waste collected in the District by smaller collection vehicles will be transferred to larger volume trucks to be ultimately sent to the Naga Hammadi final disposal facility.

According to Law 4/1994 modified by Laws 9/2009 and 105/2015, new projects or project modification require an environmental approval from the Egyptian Environment Affairs Agency (EEAA) and NSWMP. The proposed project needs to be compliant with Egyptian Laws, and residual environmental and social impacts should not be significant.

This Environmental and Social Impact Assessment (ESIA) report was prepared to identify, assess, and mitigate environmental and social impacts related to the construction and operation of the Abu Tisht municipal solid waste transfer station in Qena Governorate.

A site visit was conducted by the project's international ESIA expert on February 3, 2020. Potential environmental and social impacts were identified, assessed, and mitigation measures were proposed to ensure that project's impacts remain in line with requirements of the Egyptian environmental legislation as well as international standards, where applicable. The NSWMP ESIA Guidelines for Municipal Solid Waste (MSW) Management Projects were used as a basis for the development of this ESIA. It is to be noted that the project is classified under list B projects according to the Egyptian legislation, meaning the project is expected to have limited environmental impacts. Accordingly, EEAA requires an Environmental Impact Assessment (EIA) Form (B) to be filled and submitted for environmental approval as part of the project's local environmental permitting process.

As a loan from the KfW is considered by NSWMP in order to finance the project, the ESIA should comply with KfW requirements. In general, KfW bases the project assessment on the regulations of the country in which the project is to be implemented. However, these regulations must be consistent with the international standards set by the European Union (EU), the leading OECD (Organization for Economic Co-operation and Development) countries, as well as the International Finance Corporation (IFC) Performance Standards and Environment, Health & Safety (EHS) Guidelines, and the environmental and social standards of the World Bank (WB). In this respect, EEAA's Category (B) projects correspond to the WB Category "B" projects.

### **1.2 PROJECT OBJECTIVES**

The main objectives of the project are to:

1. Contribute to the implementation of the NSWMP outputs of Qena Governorate, which aims to enhancing the infrastructure required for sustainable solid waste management.
2. Construct and operate a TS in Abu Tisht to facilitate transfer of MSW to the final disposal site.

### 1.3 THE ESIA METHODOLOGY

The ESIA is based on the review of the project components and activities, assessment of site-specific conditions and presence of sensitive receptors, followed by the identification of possible environmental and social impacts, assessment of their significance, and development of mitigation and monitoring measures to ensure impacts significance remain as low as reasonably practicable. The assessment was conducted for both the construction and operation phases. The mitigation measures were developed and included in an Environmental and Social Management Plan (ESMP). Additionally, the monitoring plan was developed to monitor implementation of the ESMP. EIA study form (B) for the TS will be submitted to EEAA with details about the project, included baseline identification and assessment for the TS (in line with the outcomes of this ESIA). Last but not least, a Grievance Mechanism was also developed and included in the ESIA in line with international standards.

Establishment of baseline conditions was largely based on the review of secondary data, site visits, and inputs from stakeholders.

### 1.4 BRIEF PROJECT DESCRIPTION

#### 1.4.1 PROJECT GENERAL INFORMATION

Project	Abu Tisht transfer station , Qena Governorate
Project relationship with higher-level tiers	Within the infrastructure development projects for the transport, recycling, treatment, and disposal of solid waste, as part of the NSWMP
Project type	Construction of TS to receive MSW from Abu Tisht district and its villages.
Project location	The project is located on state property land in Abu Tisht district.
Project owner	Initially the NSWMP/Ministry of Environment, and then it will be transferred to Qena Governorate for operation.
TS area	3600 m <sup>2</sup> (effective area for the TS 90m x 40m according to the design)
Area inside TS for buildings	160 m <sup>2</sup>
The licensing authority	Qena Governorate

Project current statuses	Not yet constructed; permitting stage
Environmental approvals	Site has previous approval (21/10/2010)
Responsibility	SWMU, Qena

#### 1.4.2 PROJECT SITE DESCRIPTION

The project is located outside the residential areas on state property lands and used as an open dump of a mixture of demolition waste and household waste. Agriculture fields are adjacent to the site in the south, east and west directions. Distance to the nearest residential area exceeds 1,000 m. The TS site is located close to Aswan/Cairo road and the distance to Naga Hammadi MBT facility is 37 km.

#### 1.4.3 PROJECT AREA AND COMPONENTS

The plot of the proposed TS has an area of 3600 m<sup>2</sup> where the following components will be included:

- Entrance/exit gate
- Weighbridge for determining the delivered and transferred waste quantities
- Ramp that leads to reception area, where waste shall be discharged before being removed into the large containers (24m<sup>3</sup>) that will be transported to the treatment facility.
- Administration building
- Workshop (for small repair)
- Parking area for cars
- Internal roads

#### 1.4.4 CONSTRUCTION PHASE

Construction activities will include the following:

- Removing the accumulated waste at the project site (including contaminated soils if identified) and disposing it in a landfill
- Site clearance and preparation activities
- Erection of reception area, 2.25 meters high, with an area of 180 m<sup>2</sup>
- Construction of slopes to facilitate loading and unloading operations
- Asphalted internal corridors for vehicle traffic
- Erection of site service buildings (an administrative building - guard room - truck scale control room - bathrooms - maintenance workshop)
- Fencing and planting of green belt with trees surrounding the site
- Other construction works such as equipment, electrical and civil works, and sanitation equipment

#### 1.4.5 OPERATIONAL PHASE

Operation of the facility will consist of the following main activities:

- Collection trucks enter the TS and are weighted and registered (including time, truck number, load, etc.)
- The truck moves to the reception area over a ramp and unloads the waste using the skip device directly into the large container
- After unloading the waste, the collection truck leaves the reception area over the ramp to the exit gate.

#### **1.4.6 SUMMARY OF MITIGATION MEASURES AND RESIDUAL IMPACTS**

The potential negative environmental and social impacts of the project, mitigation measures, and residual impacts after mitigation are summarized in Table 1-1: Impact Assessment and Mitigation Measures Summary During Pre-Construction and Construction Phases and Table 1-2: Impact Assessment and Mitigation Measures Summary During Operation Phase.

**Table 1-1: Impact Assessment and Mitigation Measures Summary During Pre-Construction and Construction Phases**

Impact	Source	Mitigation	Impact Level Before Mitigation	Residual Impact
<b>The Environmental Impacts</b>				
Air Pollution	<p><b>Firstly:</b> During transporting and removing the accumulated waste on the site, air quality can be affected by:</p> <ul style="list-style-type: none"> <li>Dust from solid waste transportation operations</li> <li>Gaseous emissions from vehicles and trucks</li> </ul> <p><b>Secondly:</b> During the construction phase, air quality may be affected by:</p> <ul style="list-style-type: none"> <li>Dust from movement of construction equipment, transport trucks, and drilling equipment</li> <li>Gaseous emissions from vehicles on site</li> </ul>	<ul style="list-style-type: none"> <li>Apply water for dust suppression</li> <li>Enforce a slow driving speed of transportation vehicles</li> <li>Provide workers with awareness on maintaining good practice driving and machinery usage</li> <li>Maintain machinery and vehicles in good working conditions</li> <li>Avoid work during unfavorable climatic conditions</li> <li>Ensure specification of combustion equipment should include emission limits to be complied with where applicable</li> </ul>	MINOR	NEGLIGIBLE
GHG Emissions	<ul style="list-style-type: none"> <li>Emissions of vehicles and machinery used during pre-construction and construction phase</li> </ul>	<ul style="list-style-type: none"> <li>Ensure that technologies and equipment used in the project are new</li> </ul>	MINOR	NEGLIGIBLE

Impact	Source	Mitigation	Impact Level Before Mitigation	Residual Impact
		<ul style="list-style-type: none"> <li>If possible, ensure that equipment and material used in the construction phase are obtained from a nearby area to minimize transport emissions</li> <li>Provide workers with awareness on maintaining good practice for machinery usage</li> <li>Maintain machinery and vehicles in good working conditions</li> </ul>		
Increase in Noise Levels	<ul style="list-style-type: none"> <li>Operation of heavy equipment and movement of vehicles</li> </ul>	<ul style="list-style-type: none"> <li>Maintain machinery and vehicles in good working conditions</li> <li>Maintain site roads in good condition</li> <li>Select equipment that has low noise emission levels</li> <li>Use containment measures to reduce noise from inherently noisy plant equipment</li> <li>Follow the manufacturers' recommended maintenance schedule for engines and mechanical parts</li> <li>Allow work hours only during daytime except in case of emergency reasons</li> </ul>	MINOR	NEGLIGIBLE
Soil and Groundwater pollution in pre-	The current site is used as an uncontrolled dumpsite and this activity is likely to impact negatively on the soil and groundwater through the leakage of waste's leachate into the site's soil and groundwater. Therefore, the	<ul style="list-style-type: none"> <li>Collect soil samples after removal of wastes to confirm the presence of contaminated soils; if required, remove contaminated soils and dispose of them through approved contractors</li> </ul>	MODERATE	MODERATE (positive)



Impact	Source	Mitigation	Impact Level Before Mitigation	Residual Impact
construction phase	<p>process of transporting and disposing of the accumulated waste will improve soil and groundwater quality in the project area.</p> <p>There is a need however to confirm whether there is a need to remove contaminated soils.</p>			
Soil and groundwater pollution in construction phase	<ul style="list-style-type: none"> <li>Mismanagement of wastewater resulting from the facility</li> <li>Accidental spills from machinery such as oils, grease, etc.</li> <li>Mismanagement of daily waste resulting from the site workers activity</li> </ul>	<ul style="list-style-type: none"> <li>Implement site management procedures and good housekeeping activities</li> <li>Ensure proper waste management measures and storage</li> <li>Implement measures for spill prevention</li> <li>Ensure periodic inspection of equipment and machinery</li> <li>Ensure waste collection by a licensed contractor for treatment and final disposal</li> <li>Sewage storage tank should be properly insulated for leak prevention. Contents should be emptied regularly for disposal at the nearest wastewater treatment plant</li> <li>Ensure the proper management of hazardous waste, treatment, and disposal by an accredited contractor</li> </ul>	MINOR	NEGLIGIBLE

Impact	Source	Mitigation	Impact Level Before Mitigation	Residual Impact
Impact on biological environment	<p>During both, pre-construction and construction phase, the biological environment will be impacted through:</p> <ul style="list-style-type: none"> <li>Emissions, noise, vibrations and human presence that could affect local wildlife</li> <li>Increased traffic may increase the chances of animals being killed accidentally</li> <li>Poor management of solid waste and wastewater</li> </ul>	<ul style="list-style-type: none"> <li>Same mitigation measures aiming at reducing air emissions, noise, solid waste, and wastewater</li> <li>Provide awareness to the workers on the negative impacts of disturbing any wild fauna</li> <li>Avoid working at night and avoid high intensity light that may disturb fauna; and</li> <li>Ensure speed control and the prohibition of off-track driving</li> </ul>	MINOR	NEGLIGIBLE
<b>Socio-Economic Impacts</b>				
Public health and amenity	<ul style="list-style-type: none"> <li>Emissions, noise</li> <li>Traffic accidents</li> </ul>	<ul style="list-style-type: none"> <li>Choose routes for construction trucks that avoid passing by the local communities</li> <li>Monitor air pollution regularly to take corrective actions timely, if needed</li> <li>Engage effectively with local residents and farmers who live or make their living in the close vicinity of the project site</li> <li>Include a clear community grievance mechanism</li> <li>Enforce traffic and road safety measures</li> </ul>	MODERATE	MINOR

Impact	Source	Mitigation	Impact Level Before Mitigation	Residual Impact
		<ul style="list-style-type: none"> <li>Prepare non-technical information to be disclosed and disseminated to the public to explain the Project with its impacts</li> </ul>		
Traffic and road safety	<ul style="list-style-type: none"> <li>Increased traffic during the construction phase, as well as the stage of transporting waste from the current site to disposal sites</li> <li>Traffic accidents</li> </ul>	<ul style="list-style-type: none"> <li>Develop a traffic management plan</li> <li>Include conditions in contractors' contracts that require them to periodically inspect the safety and efficiency of vehicles and trucks</li> <li>Require contractors to comply with traffic rules</li> <li>Drivers and staff shall maintain a good driving conduct</li> <li>Add signs, signals, and pavement markings</li> <li>Require adequate queuing distance</li> <li>Require an onsite traffic pattern design</li> <li>Schedule operating hours and delivery</li> </ul>	MODERATE	MINOR
Workplace health and safety	<p><b>Firstly:</b> During transporting and removing the accumulated waste on the site, workplace health and safety can be affected by:</p> <ul style="list-style-type: none"> <li>Absence of environmental management plan to manage the transportation operations.</li> <li>The site may contain vectors of diseases such as insects, pests, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Avoid ignition sources while removing the wastes (such as smoking) to limit risks of explosion</li> <li>Continuous supervision of construction workers</li> <li>Ensuring that workers are always wearing Personal Protective Equipment (PPE) while working or onsite</li> <li>Periodic equipment maintenance according to manufacturers' schedule</li> <li>Ensure that workers obtain a proper first aid training</li> </ul>	MODERATE	MINOR

Impact	Source	Mitigation	Impact Level Before Mitigation	Residual Impact
	<ul style="list-style-type: none"> <li>Exposure to high levels of noise or high levels of dust</li> <li>Exposure to explosive environment in case methane levels in the area are within explosive limits</li> <li>The risks that are related to physical works such as loads, risks of falls, etc.</li> </ul> <p><b>Secondly:</b> The health and safety of workers during the construction phase may be affected by:</p> <ul style="list-style-type: none"> <li>Dust and air emissions,</li> <li>Increased noise levels of machines and vehicles</li> <li>Accidental slipping of workers</li> </ul>	<ul style="list-style-type: none"> <li>Ensure the availability of first aid kits</li> <li>Provide and install fire extinguishers and fire kit and ensure that workers are trained to use them</li> <li>Implement good housekeeping practice and ensure that proper hygiene measures</li> <li>Ensure the availability of a well-equipped ambulance car within the site</li> <li>Restrict vehicles speed so that they do not exceed the safety limit (15-20 km/h)</li> <li>Ensure storage of flammable materials in an isolated and shaded area</li> <li>Provide periodic training to construction personnel on the safe use of equipment</li> <li>Select security personnel based on performance-based screening process</li> <li>Comply with all the executive regulations of Labour Law 12/2003 and specifically the ones related to operation of equipment and machinery</li> </ul>		
Impacts on archaeology	There are no visible archaeological features within or near the site. However, archaeological remains (if any) may be affected by vibrations, trucks movement, and earthmoving and excavation machinery.	<ul style="list-style-type: none"> <li>In case of any unearthed antiquities, activities during construction will be stopped in the area</li> <li>The Ministry of State for Antiquities (MSA) will be notified for investigation and the chance find</li> </ul>	MINOR	NEGLIGIBLE

Impact	Source	Mitigation	Impact Level Before Mitigation	Residual Impact
		<p>procedure mentioned in Chapter 7 will be applied.</p> <ul style="list-style-type: none"> <li>• Chance find procedure will be communicated to the contractors</li> </ul>		

**Table 1-2: Impact Assessment and Mitigation Measures Summary During Operation Phase**

Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
<b>Impact of Project on the Environment</b>				
Air pollution	<ul style="list-style-type: none"> <li>Dust resulting from waste unloading and loading activities</li> <li>Exhaust from trucks and loaders</li> <li>Dust resulting from cleaning the site, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Consider building orientation based on predominant wind direction</li> <li>Implement good housekeeping procedures</li> <li>Sweep waste management areas regularly</li> <li>Provide workers with guidelines for driving and machinery usage</li> <li>Ensure regular inspection and maintenance of machinery and vehicles to keep them in good working conditions</li> <li>Avoid idling of equipment</li> <li>Clean and wash vehicles routinely</li> <li>Ensure equipment specifications refer to maximum allowable emissions where applicable</li> <li>Carry out monitoring tests for the generator and ensure their compliance with the national laws</li> </ul>	MODERATE	MINOR
GHGs Emissions	<ul style="list-style-type: none"> <li>Exhaust from trucks and loaders</li> <li>Methane emissions from microbial biodegradation of wastes</li> <li>Accidental self-waste combustion.</li> </ul>	<ul style="list-style-type: none"> <li>Waste should not be left to accumulate and should be sent to final disposal within 24 hours from receipt to the TS</li> <li>Ensure that technologies and equipment used in the project are new</li> <li>Avoid idling of equipment</li> </ul>	MODERATE	MINOR

Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
		<ul style="list-style-type: none"> <li>Maintain machinery and vehicles in good working conditions</li> <li>Provide workers with awareness on procedures to be followed to maintain machinery and vehicles in good working conditions</li> </ul>		
Odour	<ul style="list-style-type: none"> <li>Accumulation MSW for long time</li> <li>Microbial activity and the decomposition of MSW organic matter.</li> </ul>	<ul style="list-style-type: none"> <li>Implement a just-in-time operational procedure for the facility to avoid waste accumulation; Avoid delaying the transfer of newly delivered and rapidly decomposable wastes to the final disposal facility; all wastes should be transferred to the final disposal facility within 24 hours of receipt at the TS (this will avoid generation of odours)</li> <li>Workers will be required to wear protective equipment such as masks</li> <li>Ensure regular cleaning of the site</li> </ul>	MODERATE	MINOR
Increase in noise Levels	<ul style="list-style-type: none"> <li>Daily work activities and movement of trucks inside the site</li> </ul>	<ul style="list-style-type: none"> <li>Machines and equipment should meet noise statutory regulations</li> <li>Acoustic enclosures are installed for noise generating equipment, wherever possible</li> <li>Ensure regular inspection and maintenance of equipment</li> <li>Ensure the facility is operated during daytime to avoid public nuisance</li> </ul>	MODERATE	MINOR

Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
Soil and Groundwater pollution	<ul style="list-style-type: none"> <li>Poor waste management within the TS</li> <li>Leaking of petroleum products from trucks</li> <li>Leakage of MSW Leachate (if any) into the soil</li> <li>Accidental leaks and spills of vehicles if the transported waste is wet</li> </ul>	<ul style="list-style-type: none"> <li>Ensure trucks specifications include drainage and storage of leachate so it does not drain on the streets</li> <li>Use impermeable materials for roads, waste handling areas, and vehicle washing areas</li> <li>Collect runoffs from areas used for waste handling, and treat runoff to meet applicable environmental standards before discharge to surface water or the municipal sewage system</li> <li>Discharge of runoff to the municipal sewage system is preferred versus discharge to local surface waters</li> <li>Waste will not be left to accumulate for a long time (will be transferred to final disposal site within 24 hours from receipt in the TS)</li> <li>Implement site management procedures and good housekeeping procedures</li> <li>Implement spill prevention measures</li> <li>Ensure periodic inspection of equipment and machinery</li> <li>Sewage storage tank should be properly insulated for leak prevention. Contents should be emptied regularly for disposal at the nearest wastewater treatment plant at adequate intervals through a licensed contractor</li> <li>Ensure the proper management of hazardous waste, treatment and disposal by an accredited contractor; in case small quantities are generated, they will be</li> </ul>	MODERATE	MINOR



Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
		<p>collected and disposed of by safe methods and delivered to an approved contractor from the EEAA</p> <ul style="list-style-type: none"> <li>• In case large quantities of hazardous wastes are found in incoming trucks, they will not be received and the relevant authorities will be informed</li> <li>• Hazardous wastes/liquid wastes generated from maintenance works will be collected in special containers and delivered to an approved authority for safe disposal</li> <li>• Trucks or vehicles will not be supplied with fuel inside the station</li> <li>• Covered and closed trucks will used though MSW transporting, unloading, and loading processes</li> <li>• Station will be provided with suitable drainage channels</li> <li>• Water collected from the drainage channels will be collected in an isolated septic tank that will be regularly emptied by an approved party from EEAA</li> </ul>		
Impact on the biological environment	<ul style="list-style-type: none"> <li>• Dust emissions from daily operating activities</li> <li>• Littering of solid wastes during transport and unloading that could directly affect sheep or other grazing animals (if any)</li> </ul>	<ul style="list-style-type: none"> <li>• Commit to highest standards of solid waste management within the TS</li> <li>• Implement the mitigation measures to minimize impacts on soil and groundwater</li> <li>• Implement the mitigation measures to minimize air pollution and noise</li> </ul>	MINOR	NEGLIGIBLE

Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
	<ul style="list-style-type: none"> <li>The possibility of disease and rodent vectors that may affect animals and nearby crops</li> </ul>	<ul style="list-style-type: none"> <li>Transfer all waste from the facility daily to the final disposal site</li> <li>Check the facility routinely to ensure that vectors do not settle in any part of the facility</li> <li>Erect a green belt around the facility to minimize occurrence of windblown waste</li> <li>Ensure trucks are properly covered to avoid windblown wastes during transport</li> <li>Avoid working at night and avoid high intensity light that may disturb fauna.</li> <li>Ensure speed control and the prohibition of off-track driving.</li> </ul>		
Attraction of pests	<ul style="list-style-type: none"> <li>Poor waste management inside the TS</li> <li>If TS is not maintained, animals, insects and disease vectors may prevail within the site, which may lead to disease transmission to workers and local population</li> <li>This effect may indirectly affect agricultural activity (crops), as the spread of such pests and rodents may cause damage to some crops, and may also harm animals, such as grazing animals</li> </ul>	<ul style="list-style-type: none"> <li>Fence the site to limit undesired faunal access</li> <li>Avoid delaying the transfer of newly delivered and rapidly decomposable wastes to the final disposal facility; all wastes should be transferred to the final disposal facility within 24 hours of receipt at the TS</li> <li>If necessary, use environmentally safe biocides to control mosquitoes and flies; and</li> <li>Inspect site for growth of marginal vegetation and regularly remove it, should it develop</li> <li>Preventing and removing any plants or weeds inside the station.</li> <li>Clean the facility floor daily</li> </ul>	MODERATE	MINOR

Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
		<ul style="list-style-type: none"> <li>• Use covered and closed equipment, containers and vehicles</li> <li>• Check the facility routinely to ensure that such vectors do not settle in any part of the facility</li> <li>• Seek support of specialists in pest and rodent control, if necessary</li> </ul>		
Socio-Economic Impacts				
Public health and amenity	<ul style="list-style-type: none"> <li>• Emissions, noise and odours</li> <li>• Traffic accidents</li> </ul>	<ul style="list-style-type: none"> <li>• Choose routes for waste transfer trucks that avoid passing by the local communities, if possible</li> <li>• Ensure proper maintenance of the trucks and that the solid waste is properly covered during transportation</li> <li>• Build a high fence of 3 meters around the site to isolate it completely from residential areas and erect a green belt around the site</li> <li>• Monitor air pollution regularly to take corrective actions timely</li> <li>• Implement a community grievance mechanism</li> <li>• Traffic and road safety mitigation measures shall be followed</li> <li>• Avoid delaying the transfer of newly delivered and rapidly decomposable wastes to the final disposal facility; all wastes should be transferred to the final disposal facility within 24 hours of receipt at the TS (this will avoid generation of odours)</li> </ul>	MODERATE	MINOR

Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
		<ul style="list-style-type: none"> <li>Manage the facility based on a just-in-time operational approach</li> </ul>		
Traffic and road safety	<ul style="list-style-type: none"> <li>Increased traffic caused by solid waste transport vehicles</li> <li>Possible traffic accidents during transportation</li> </ul>	<ul style="list-style-type: none"> <li>Same as construction phase</li> </ul>	MODERATE	MINOR
Workplace health and safety	<ul style="list-style-type: none"> <li>Gas and dust emissions</li> <li>Noise</li> <li>Traffic inside TS</li> <li>Work accidents like falling from high places</li> <li>Daily handling of solid waste</li> </ul>	<ul style="list-style-type: none"> <li>Enforce Local and IFC performance standard of labour and working conditions</li> <li>Use fire resistant /retardant material in building construction</li> <li>A list of emergency hospitals shall be available for quick contact in emergency cases</li> <li>Implement the rules and procedures of the Occupational Safety and Health Plan</li> <li>Comply with the instructions of the Civil Defence Authority</li> <li>Ensure continuous supervision of construction workers</li> <li>Ensure that workers are always wearing PPEs while working or onsite</li> <li>Ensure periodic maintenance of equipment according to manufacturers' schedule.</li> <li>Ensure that workers obtain a proper first aid training.</li> <li>Ensure the availability of first aid kits.</li> </ul>	MODERATE	MINOR

Impact	Sources	Mitigation	Impact Level Before Mitigation	Residual Impact
		<ul style="list-style-type: none"> <li>• Provide and install fire extinguishers and fire kit and ensure that workers are trained to use them.</li> <li>• Implement good housekeeping practices and ensure that proper hygiene measures are taken.</li> <li>• Restrict vehicles speed so that they do not exceed the safety limit (15-20 km/h).</li> <li>• Store flammable materials in an isolated and shaded area.</li> <li>• Provide regular training of the operational procedures to workers.</li> <li>• Comply with all the executive regulations of Labor Law 12/2003 and specifically the ones related to operation of equipment and machinery.</li> </ul>		
Social and economic impact on local community	<ul style="list-style-type: none"> <li>• Positive impacts from job generation and cleaner environment</li> <li>• Improvement of public health, environmental conditions and economic sustainability. The area currently suffers significantly from the presence of the uncontrolled dumpsite</li> <li>• Reducing the visual pollution resulting from the current site usage (uncontrolled dumpsite)</li> </ul>	<ul style="list-style-type: none"> <li>• Prioritize hiring of locals for the operation of the station</li> </ul>	MODERATE (Positive impact)	-

## 1.5 CONCLUSIONS

The Abu Tisht Transfer station will receive MSW from Abu Tisht District and its villages, and secure their timely transfer in larger containers to their final disposal site. This will ensure a more cost-effective and environmentally friendly transportation of wastes in the District. The negative impacts that may be caused at the time of TS operation are limited, and can be mitigated by following the environmental management plan as well as the methods of control and mitigation mentioned in the ESIA study (Environmental Management Plan).

The project has several positive environmental and social impacts as follows:

- Improvement of health conditions in Qena Governorate.
- Creation of job opportunities for local population during construction and operation of the project.
- Enhancing landscape quality and reduction in visual impacts attributed to enhanced waste collection and transportation.
- Mitigation of greenhouse gases through more efficient transportation of municipal solid wastes.
- The project site is utilized as open dumpsite and changing it to proposed transfer station will improve the socio-environmental condition of area. Currently the land users and residents suffer from significant impacts from the existing situation; the proposed project will significantly improve their living conditions through the removal of the existing dumpsite and operation of a modern TS.

No high significance residual impacts are expected to prevail should the EMP be effectively implemented.

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## 2. INTRODUCTION

The NSWMP, in collaboration with international partners, aims to contribute to the protection of the environment and climate, the conservation of resources, and the reduction of health risks to the population of Egypt through the establishment of an environmental and climate friendly Solid Waste Management (SWM) system. The program shall be implemented according to national laws and regulations as well as applicable international standards and improve the institutional capacities, technical and administrative skills at national, Governorate, and local levels to ensure the sustainability of the waste management investments.

As part of the NSWMP, TS for transporting MSW will be built and operated in Qena Governorate. This ESIA report covers the Abu Tisht TS. The site was chosen and made available by the SWMU in Qena.

MSW will be collected from the District villages and sent to the TS site and will then be transported by large trucks to the treatment and landfill facility located the Naga Hammadi District. This will reduce waste transportation costs and ensure a more sustainable waste management system with less emissions and less hazards related to waste transport (such as road accidents and possibilities of spills and waste littering).

The purpose of an ESIA is to ensure the protection of the environment and natural resources, including aspects related to human health, through a systematic identification and assessment of impacts followed by the identification of mitigation and monitoring measures to effectively reduce these impacts to acceptable residual levels.

According to Law 4/1994 modified by Laws 9/2009 and 105/2015, any new project or modification will require an environmental approval from EEAA. On the other hand, TS facilities are included in the project categorization list as Category B projects, which does not require the preparation of an ESIA study and does not require organizing a public consultation meeting. Instead, a Form B should be prepared and submitted to EEAA for review and environmental approval. Nevertheless, and as part of the financing agreements between KfW and NSWMP, an ESIA should also be prepared for TS and should comply with KfW requirements and international standards. In general, KfW bases the project impact assessment on the regulations of the host country. However, these regulations must be consistent with the international standards set by the EU, the leading OECD countries, as well as IFC Performance Standards and World Bank's EHS Guidelines, and the Environmental and Social Standards of the WB. In this respect, EEAA's Category B projects correspond to WB Category "B" projects.

### 2.1 ESIA OBJECTIVES

The main objectives of this ESIA Study are to systematically identify and examine potential environmental and social impacts associated with the construction and operation of the proposed Abu Tisht TS, to recommend appropriate environmental and social mitigation and management measures for the proposed project and to identify those responsible for implementing these measures. A core outcome of the study is an Environmental and Social Management and Monitoring Plan (ESMMP) for the project. The ESIA also emphasizes the advantages and positive impacts of the project to the local communities and underlines the potential contribution of the project to the community development. The ESIA study is intended to fulfil the environmental legal requirements of Egyptian Environmental Law 4/1994, updated by Law 9/2009 and Law 105/2015, and its executive regulations, as well as the requirements of the Waste Management Regulatory



Authority (WMRA) and KfW. In this respect, the ESIA follows the latest version of the ESIA Guidelines for MSW Management Projects developed for NSWMP in 2019.

## **2.2 IMPORTANCE OF SOLID WASTE TRANSFER STATIONS**

A TS is a transit point in the movement of MSW to a solid waste processing plant, a landfill site, or a final disposal facility. As such, it is generally considered as being a complementary activity as part of integrated solid waste management (ISWM) activities. A TS also:

- Reduces the cost of transporting waste to treatment/disposal facilities. Consolidating smaller loads from collection vehicles into larger transfer vehicles reduces hauling costs by enabling collection crews to spend less time travelling to and from distant disposal sites, and more time collecting waste.
- Reduces fuel consumption and collection vehicle maintenance costs, and produces less overall traffic, air emissions, and road wear.
- Provides opportunity to screen waste prior to disposal.
- Provides flexibility in selecting waste disposal options.

## **2.3 THE PROJECT OBJECTIVES**

The objectives of the Abu Tisht transfer station are to:

- Contribute to the implementation of the NSWMP outputs in Qena Governorate
- Ensure the optimal use of state-owned land to implement NSWMP projects
- Contribute to environmental protection and improvement of public health
- Create jobs in the waste management value chain
- Reduce greenhouse gas emissions

## **2.4 THE ESIA METHODOLOGY**

The ESIA is based on the review of the project components and activities, assessment of site-specific conditions and presence of sensitive receptors, followed by the identification of possible environmental and social impacts, an assessment of their significance, and development of mitigation and monitoring measures to ensure impact significance remains as low as reasonably practicable. The assessment was conducted for both the construction and operation phases. The mitigation measures were developed and included in an Environmental and Social Management Plan (ESMP). Additionally, the monitoring plan was developed to monitor implementation of the ESMP. EIA study form (B) for the TS will be submitted to EEAA with details about the project included baseline identification and assessment for the TS (in line with the outcomes of this ESIA). Last but not least, a Grievance Mechanism was also developed and included in the ESIA in line with international standards. Establishment of baseline conditions was largely based on the review of secondary data, site visits, and inputs from stakeholders.

## **2.5 ESIA REPORT STRUCTURE**

1. Executive summary
2. Introduction
3. Legal and legislative framework
4. Project description
5. The current environmental situation
6. Project alternatives
7. Environmental and social impacts assessment and methods of control and mitigation
8. Environmental and Social Management Plan
9. Stakeholder Engagement Mechanism, Community Consultation, and Grievance Mechanism
10. References

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### 3. LEGAL AND INSTITUTIONAL FRAMEWORK

This section summarizes the relevant national and international environmental and social legislation that the project should comply with in addition to the institutional framework. Relevant legislation was identified according to the proposed project type, geographic location, and expected impacts. Since the project is implemented under the NSWMP and co-funded by KfW, the project must not only meet all relevant Egyptian requirements but must also follow the international standards of the funding institutions as reflected in the ESIA guidelines approved by KfW.

#### 3.1 THE ADMINISTRATIVE FRAMEWORK AND NATIONAL AUTHORITIES

Environmental legislation in Egypt was first established through Law No. 4 /1994 and its executive regulations issued by decree No. 338 /1995, and amended by decree No. 1741/2005. Law No. 9 /2009 further amended Law No. 4/1994 for the protection of the environment and Law 105/2015 assigned the EEAA as the authority to set and monitor the environmental standards of projects and to take legal action against violators.

According to Law 4/1994, the project proponent must prepare an EIA for the approval of the EEAA and the WMRA. Accordingly, the environmental requirements are integrated into the existing licensing system. Projects were classified by EEAA according to the severity of potential impacts into 4 categories. The proposed project (TS in Abu Tisht) is classified under the existing List B.

The overall procedures for submittal and approval of ESIA studies are shown in detail in the EIA Guidelines of 2010. With respect to MSW projects, the procedures will differ slightly if the projects are implemented within the NSWMP, or outside of the NSWMP - essentially meaning with or without international funding.

#### **MSW Projects under the NSWMP**

The following presents the detailed description of the steps of the ESIA process for MSW projects:

*Step 1:* SWMU issues Terms of Reference (ToR) to bidding Contractors for design of new SWM facility

*Step 2:* Selected Contractor prepares Project Design

*Step 3:* The Consultant for Project Implementation prepares ESIA package based on Project Design, and submits to Competent Administrative Authority (CAA)

*Step 4:* CAA forwards ESIA to EEAA

*Step 5:* Initial review of ESIA and forward to WMRA for opinion

*Step 6:* Technical review of ESIA by WMRA, and PMU reviews conformance with KfW/International Standards

*Step 7:* WMRA sends ESIA comments to EEAA

*Step 8:* Final review and decision

*Step 9:* EEAA informs CAA of decision

*Step 10:* CAA informs SWMU of decision on ESIA

The figure below depicts a simplified view of the ESIA process for MSW projects implemented under the NSWMP, and for which the SWMU has the role of Project Proponent, and the ESIA must consider the international lender requirements.

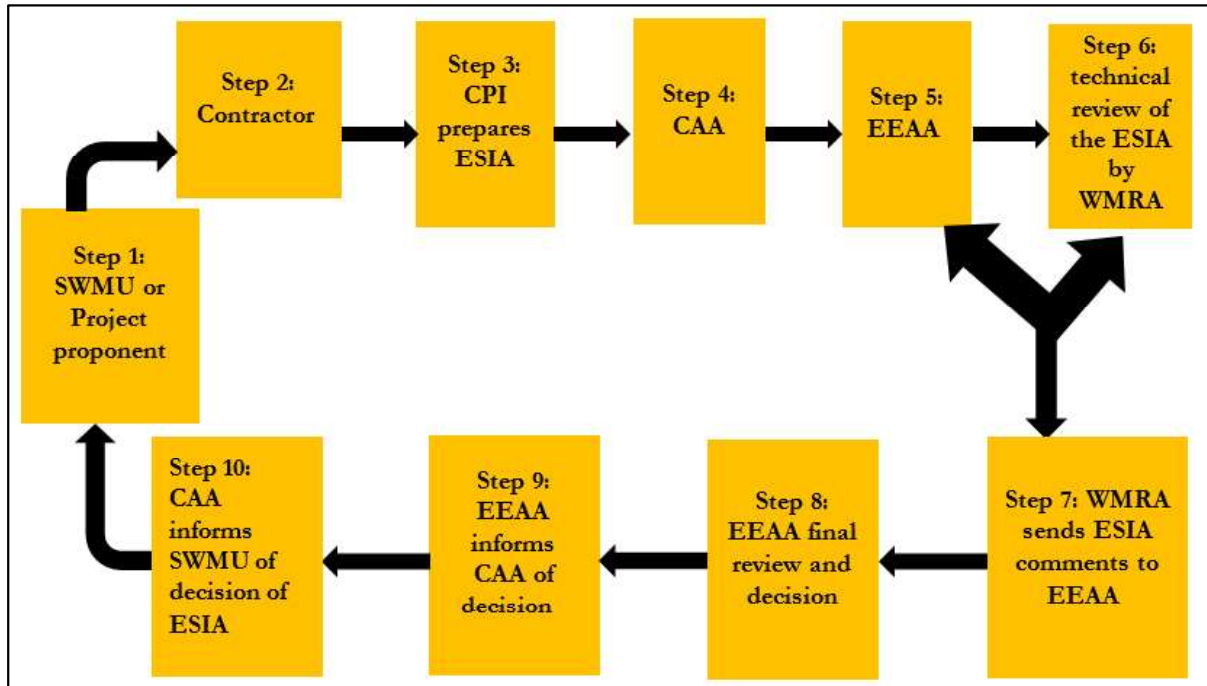
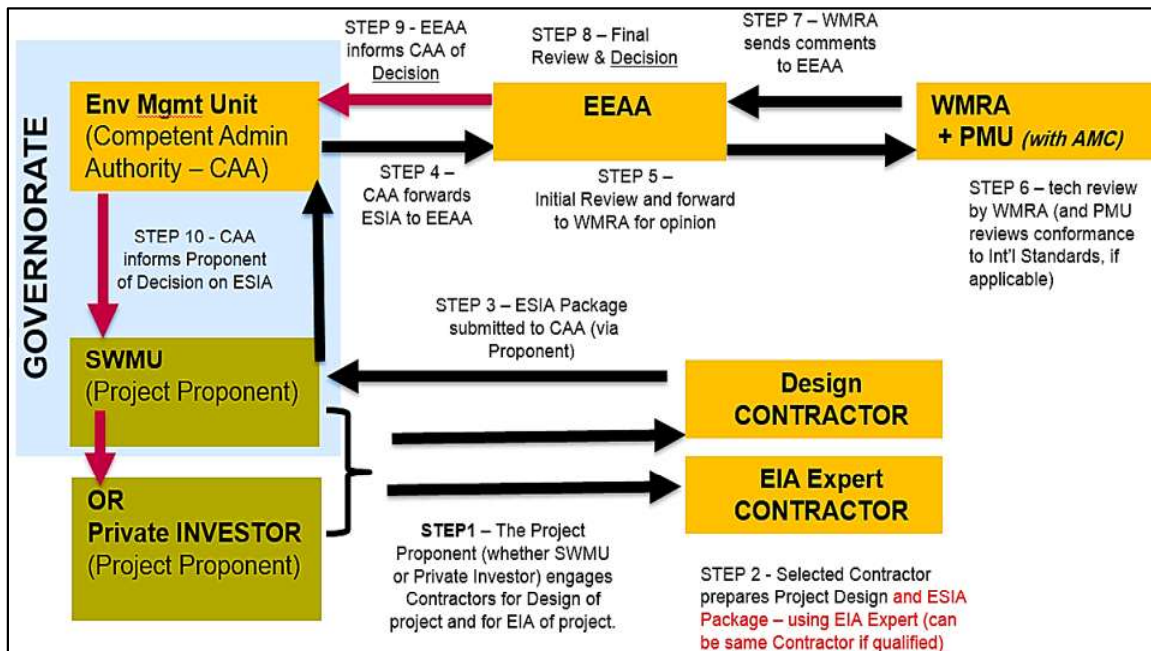


Figure 3-1: Flowchart for NSWMP Program

### **MSW Projects Outside of the NSWMP**

The figure below shows the ESIA process for MSW projects outside of the NSWMP. In this case, the SWMU might be the project proponent – or else a private investor. In either case, the proponent will usually need to issue tenders not only for the project design, but also for the certified ESIA expert/firm to perform the ESIA (STEP 2). The ESIA is then submitted in STEP 3 via the proponent to the CAA and the remaining review process is similar to that of projects within the NSWMP described above, except that approval by an international lender will not be required as per STEP 6 in Figure (3-1).



**Figure 3-2: Flowchart for NSWMP Outside the Program**

After submitting the EIA/ESIA reports, the EAAA reviews the reports within 30 days before issuing approval of the report. In the event that the EAAA rejects the project, the project administration has the right to file a grievance within 30 days of receiving the EAAA decision.

It is worth noting that once the EIA/ESIA study is approved, the ESMP as an integral part of the project and the project management is legally responsible for implementing this plan in the construction or operation process.

### 3.2 NATIONAL LAWS AND REGULATIONS

Solid waste management is regulated by several national environmental laws and ministerial decrees, including the following:

1. Law No. 38 of 1967 concerning cleanliness and its Executive Regulation issued by the Minister of Housing, Utilities, and Urban Communities' Decree No.134 of 1968
2. Law No. 43 of 1979 (Local Administration Law) concerning responsibilities related to infrastructure and City Councils
3. Law No. 137, 1981 concerning occupational safety
4. Law No. 4 of 1994 promulgating the Law concerning the Environment and its Executive Regulation issued by Prime Minister's Decree No. 338 of 1995
5. Law No. 9 of 2009 amends Law No. 4/1994 for the protection of the environment, in addition to law 105/2015
6. Law No. 10 of 2005 amending certain Provisions of Law No. 38 of 1967 concerning Public Cleanliness.

### **3.2.1 ESIA PROCEDURE ARTICLES IN ACCORDANCE WITH EGYPTIAN ENVIRONMENTAL LAW NO. 4 OF 1994 AND ITS SUBSEQUENT AMENDMENTS (LAW NO. 9 OF 2009 AND 105/2015).**

#### Article 19 :

Every natural or legal person, public or private, shall be committed to presenting a study of Environmental Impact Assessment of the establishment or the project to the competent administrative body or the licensing authority before starting implementation thereof. The study shall be carried out in accordance with the elements, designs, specifications, bases, and pollutants loads determined by EEAA in coordination with the competent administrative bodies. The competent administrative bodies should provide maps of industrial areas clarifying types of the industries allowed depending on environmental loads.

#### Article 20 :

The competent administrative authority or the licensing body shall forward the abovementioned EIA studies to the EEAA for consideration. The EEAA may give the body preparing the study suggestions concerning preparations and systems necessary to treat the negative environmental effects and demand implementation thereof. The EEAA may also ask the body to provide all the data, designs, or clarifications necessary for consideration of the study. The EEAA shall have to inform the competent administrative authority or the licensing authority with its consideration within a maximum of 30 days from the date of the receipt or completion of the study, or execution of the proposals; otherwise, failing to reply shall mean that the study is accepted by the EEAA. The project shall have to start operation within the period granted by the license; otherwise, the environmental approval shall be considered null and void.

#### Article 21:

The competent administrative authority shall notify the owner of the establishment of the result of the assessment by a registered letter with return receipt requested. The owner of the establishment may object to the result in writing within thirty days of notification before a committee to be formed by a decree of the Minister in charge of Environmental Affairs. The EEAA, the competent administrative authority or the licensing authority and the owner of the establishment shall be represented on the committee. The executive regulations shall determine the functions of the committee as well as its operating and complaint procedures.

#### Article 22 :

The official responsible for managing the establishment, according to provisions of this law, shall keep a written record of the impact of his establishment on the environment (Environmental Record). The Executive Regulation shall include a template of the required record and timetable to be kept by the establishments and the data to be entered therein. The EEAA shall follow up these records to ensure their genuineness, take necessary samples and conduct appropriate tests to determine the impact of the establishment activities on the environment and the extent of its compliance with environmental protection standards or the pollutants loads.

If it is transpired that the establishment is not keeping an environmental record, not updating data regularly or is not genuine, or that the establishment is not complying with the aforementioned standards or loads or violating any provision of this Article, the EEAA shall notify the competent administrative authority to demand the establishment's proprietor to rectify such violation promptly. If he fails to comply within 60 days from the date of his tasking, The EEAA shall be entitled, after notifying the competent administrative authority, to taking any of the following measures:

1. Granting the establishment fixed additional grace period to rectify violations; otherwise, the EEAA shall have the right to proceed with rectification at the expense of the violating establishment.
2. Halting the violating activity, till the removal of violation traces, without detriment to its workers' wages. In case of grave environmental hazard, the sources of the hazard should be stopped by all necessary means and measures

### 3.2.2 THE EGYPTIAN EIA GUIDELINES

The EEAA issued EIA guideline in 2010 that describes the contents of "C" Categories EIAs. Furthermore, NSWMP developed specific guideline for ESIA of MSW management projects. The guideline developed by NSWMP focuses more on the social aspects from the guideline developed by EEAA. The contents of the ESIA are the following:

- Non-technical summary
- Introduction and background of the project
- Outline of important characteristics of the proposed project
- Description of the proposed project
  - o Objective
  - o Location
  - o Description of surrounding activities, near ecological hotspots, and land use plan
  - o Project layout including associated facilities
  - o Construction phase activities including construction activities, resources expected to be consumed, pollutants expected to be emitted, etc.
  - o Operation and maintenance phase including equipment description resources expected to be consumed, pollutants expected to be emitted, pollution control, and
  - o Description of planned closure activities including equipment description and expected activities
- Applicable legislative framework and the regional and international conventions
- Baseline Environmental Conditions
  - o Physical (Climate, Hydrology, Geology)
  - o Ecology and biological description (habitats, fauna and flora)
  - o Land Use
  - o Air Quality
  - o Water Quality
  - o Noise
  - o Socioeconomic Issues, and
  - o Traffic.
- Project alternatives taken into consideration including the no-project alternative, location alternative, technical alternatives, etc.
- Prediction and evaluation of Impacts and mitigation measures
  - o Waste water management and quality
  - o Air emissions and noise
  - o Solid Waste
  - o Hazardous Materials
  - o Socioeconomic
- Environmental and Social Management Plan
- Monitoring plan
- Description of consultation activities undertaken with local public/stakeholders



### 3.2.3 REGULATORY FRAMEWORK FOR MUNICIPAL WASTE MANAGEMENT

The conditions that must be observed when allocating and constructing TS are included in Article 17 of the Executive Regulations of Law 38/1967 regarding public cleanliness and in Article 38 of the Executive Regulations of Law 4 of 1994 regarding the protection of the environment while respecting the requirements determined by the local units and EEAA. The following requirements and conditions must be met:

1. Conducting an integrated topographical study of the proposed project region and preparing regional waste characterization study
2. The project site should be away from the residential, industrial, agricultural, and waterway areas, so that it is at least 1,500 meters from the nearest residential or industrial area
3. The project site should be against the prevailing winds from residential and industrial areas
4. The project capacity must be suitable for the works size and transported MSW
5. The site should be surrounded by a suitable fence, with a height not less than 1.80 m
6. The site fence should be equipped with entrances and exits suitable for the size of trucks
7. The site should be equipped with water sources and means of fire fighting
8. The site should have a sufficient number of bathrooms and showers
9. An ESIA study should be prepared in accordance with the previously mentioned guidelines
10. The project management authority shall comply with the air pollutants limits allowed by the related laws, such as Appendix No. 6 of the executive regulations of Law No. 9/2009 related to any change in the characteristics of natural air, as it entails a risk to human health and the environment. Emissions should also be in accordance with Articles 35 and 36 of Law 4 of 1994 and in accordance with the executive regulations.

### 3.2.4 REGULATORY FRAMEWORK FOR EMISSIONS TO AIR

Article 35 of Law 4 of 1994 and Article 35 of Annex 5 of the Executive regulations (710/2012) define the maximum allowable limits of ambient air pollutants (Table 3-1).

According to the IFC guidelines, projects with significant sources of air emissions and potential for significant impacts to the ambient air quality should strive to prevent/minimize their impacts by ensuring that emissions do not result in pollutant concentrations that reach or exceed ambient quality standards stated by the national standards, prevailing World Health Organization (WHO) Air Quality Guidelines, or other internationally recognized sources. The following emissions levels are normally acceptable to the WB Group in making decisions regarding provision of WB Group assistance. The emissions levels given here can be consistently achieved by well-designed, well-operated, and well-maintained pollution control systems.

**Table 3-1: Maximum Limits of Ambient Air Pollutants**

Pollutant	Area	Maximum Allowable Limits			
		1 hr	8 hrs	24 hrs	1 year
Sulphur Dioxide ( $\mu\text{g}/\text{m}^3$ )	Urban Areas	300	-	125	50
	Industrial Areas	350	-	150	60
International guidelines (IFC)		-	-	20	-
Carbon Monoxide ( $\text{mg}/\text{m}^3$ )	Urban Areas	30	10	-	-
	Industrial Areas	30	10	-	-
International guidelines (IFC)		-	-	-	-
Nitrogen Dioxide ( $\mu\text{g}/\text{m}^3$ )	Urban Areas	300	-	150	60
	Industrial Areas	300	-	150	80
International guidelines (IFC)		400	-	150	-
Total Suspended Particles ( $\mu\text{g}/\text{m}^3$ )	Urban Areas	-	-	230	125
	Industrial Areas	-	-	230	125
International guidelines (IFC)		-	-	-	-
PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	Urban Areas	-	-	150	70
	Industrial Areas	-	-	150	70
International guidelines (IFC)		-	-	150	70

Article 36 of the same law, and article 37 and Annex 6 of the ER (Executive Regulatory) provides the maximum allowable limits of vehicles exhaust gas emissions. Table 3-2 and Table 3-3 show the limits for different types of vehicles.

**Table 3-2: Maximum Emission Limits in Vehicles Using Gasoline Fuel**

Annex 6 (Table 23) Executive Regulations of Law 4, 1994 (as amended by Decree No. 710 of 2012) Regarding Vehicles Using Gasoline Fuel (Measured at Idle speed 900 cycle/minute)						
	Before 2003		From 2003 – 2009		From 2010 till present	
Pollutants	HC ppm	%CO	HC ppm	%CO	HC ppm	%CO
Maximum limits	600	4	300	1.5	200	1.2

**Table 3-3: Maximum Emission Limits in Vehicles Using Diesel Fuel**

Annex 6 (Table 24) Executive Regulations of Law 4, 1994 (as amended by Decree No. 710 of 2012) Regarding Vehicles Using Diesel Fuel (Measurements are done according to International Standard Specifications [ISO – 11614])		
Year of manufacture (model)	Before 2003	From 2003 till present
Smoke density coefficient K ( $\text{m}^{-1}$ )	2.8	2.65

### 3.2.5 REGULATORY FRAMEWORK FOR NOISE NUISANCE

Article 42 of Law 4/1994 and article 44 of its modified ER (710/2012) present the maximum allowable limits for sound intensity. Fehler! Verweisquelle konnte nicht gefunden werden. presents the maximum limits of ambient noise levels in different areas.

**Table 3-4: Maximum Limit Permissible for Noise Level in the Different Zones According to Annex 7 of the Modified ERs of Law 4/1994**

Type of Zone	Permissible Limit for Noise Level, dB (A)	
	Day time 7 am – 10 pm	Night 10 pm – 7 am
Areas on roads whose width is 12 m or more, or industrial areas which comprise light industries and other activities	70	60
International guidelines	70	70

### 3.2.6 REGULATORY FRAMEWORK FOR WASTEWATER DISPOSAL TO SEWERS

The waste is not expected to be accumulated at the TS for a long time. Therefore, practically no leachate is expected to be generated at the TS provided that the waste is not very humid. The wastewater expected to be generated from the TS is the municipal wastewater, and wastewater generated from the truck cleaning station. Decree 44/2000 of the Ministry of Housing modifying the executive regulations of Law 93/1962 which addresses the conditions and maximum allowable limits for discharge of wastewater to the public sewer network. Article 14 of the Decree sets the specifications for the quality of wastewater to be drained in public sewerage networks, which are illustrated in the following Fehler! Verweisquelle konnte nicht gefunden werden.3-5.

**Table 3-5: Standards and Specifications of Wastewater to be Discharged to Sewer Systems**

Parameter	Maximum allowable limits (mg/l unless otherwise noted)
pH	5-6.9
BOD	600 ppm
COD (Dichromate)	1100 ppm
Temperature (°C)	43 °C
Total Suspended Solids (TSS)	800 ppm
Settled Solids (after 10 and 15 min)	8 cm <sup>3</sup> /15 cm <sup>3</sup>
Oil & Grease	100 ppm
Total Nitrogen	100 ppm
Total Phosphorus	25 ppm
Phenol	0.05 ppm
Sulphide	10 ppm
Ammonium	100
Cyanide	0.2 ppm
<b>The total of the following heavy metals shall not exceed 5mg/l</b>	

Parameter	Maximum allowable limits (mg/l unless otherwise noted)
Arsenic	2
Boron	1
Cadmium	0.2
Copper	1.5
Chromium 6	0.5
Lead	1
Mercury	0.2
Nickel	1
Silver	0.5

### 3.2.7 REGULATORY FRAMEWORK FOR POTABLE WATER QUALITY

The Decree of the Minister of Health 458/2007 provides the acceptable specifications of potable water. The parameters are categorized under five categories as follows:

1. Physical parameters: such as colour, odour, turbidity and pH
2. Inorganic parameters: such as hardness, dissolved salts, sulphates and chlorides, and metallics
3. Heavy metals and organic pesticides
4. Microbiological parameter
5. Radioactive substances

Table 3-6 below presents example parameters relevant to potable water quality for drinking and domestic purposes according to national law.

**Table 3-6: Parameters Relevant for Potable Water Quality**

Parameter	Maximum allowable limits (mg/l)
<b>Physical Parameters</b>	
Dissolved salts at 120 <sup>o</sup> C	1000
Total hardness (as CaCO <sub>3</sub> )	500
Sulphates (SO <sub>4</sub> )	250
Chlorides (Cl)	250
Iron (Fe)	0.3
Manganese (Mn)	0.4
Copper (Cu)	2
Zinc (Zn)	3
Sodium (Na)	200
Aluminium (Al)	0.2
<b>Microbiology Parameters</b>	

Parameter	Maximum allowable limits (mg/l)
Total bacteria count	<ul style="list-style-type: none"> <li>- Not exceeding 50cell/cm<sup>3</sup> at 37<sup>o</sup>C for 24 hours</li> <li>- Not exceeding 50cell/cm<sup>3</sup> at 22<sup>o</sup>C for 48 hours</li> </ul>
Total coliform	<ul style="list-style-type: none"> <li>- 95% of the samples up to 100 cm<sup>3</sup> examined a year should be totally free of coliforms</li> <li>- No sample should exceed 2 cell/100 cm<sup>3</sup> provided that this limit does not occur in two successive samples form one sampling source.</li> </ul>
Streptococcus pyogenes	<ul style="list-style-type: none"> <li>- None</li> </ul>
Algae	<ul style="list-style-type: none"> <li>- Microcystis should not exceed 1µg/l in case of blue green algal bloom</li> </ul>
Microscopic examination	<ul style="list-style-type: none"> <li>- Totally free of living protozoa and pathogenic organisms</li> </ul>

### 3.3 REGULATORY FRAMEWORK FOR SOCIAL AND LABOUR ASPECTS

#### 1) Grievance

*Law 4/1994:* Every citizen and organization concerned with the protection of the environment shall have the right to report any violation of the provisions of this Law.

*Article 85 of the Constitution:* Everyone has the right to address public authorities in writing and signed, but should not address it on behalf of groups, only as juridical persons.

#### 2) Inclusivity/vulnerable groups

*Article 9 of the Egyptian Constitution:* The state is committed to achieving equality of opportunity for all citizens, without discrimination.

*Article 11 of the Egyptian Constitution:* The State guarantees equality between women and men in all civil, political, economic, social and cultural rights in accordance with the provisions of the Constitution. The State shall endeavour to take measures to ensure appropriate representation of women represented in parliaments, as prescribed by law, and guarantee women the right to hold public office and functions of senior management in the state, and the appointment of competent judicial bodies, without discrimination against them. The State is committed to protecting women against all forms of violence, and to ensure the empowerment of women to reconcile their family duties and work requirements. It is also committed to providing care and protection of motherhood and childhood and women breadwinners and elderly and women most in need.

#### 3) Governance and Human Rights

*Law no. 94/2003 on establishing the National Council for Human Rights (NCHR):* It aims to promote, ensure respect, set values, raise awareness, and ensure observance of human rights. At the forefront of these rights and freedoms are the right to life and security of individuals, freedom of belief and expression, the right to private property, the right to resort to courts of law, and the right to fair investigation and trial when charged with an offence.

#### 4) Labour working conditions

The Egyptian Labour Law number 12/2003 defines working conditions and management of worker relationship in chapters one to four of Book 5 of the Labour Law. The national labour law in its different articles; addresses the following aspects:

- The individual labour contracts
- Terms of employment
- Wages and leaves
- Collective negotiations and collective labour agreements and litigations, and
- Vocational training

#### 5) Child Labour

Article 64 of the Child Law 12/1996 states that *“children shall not be employed for work before reaching the age of fifteen (15) calendar years”*.

Articles from 98 to 103 of the Labour Law 12/2003 (amended by law 90/2005) address working conditions for children and obligations on the owner who has child labour working in their project. Minister of Labour decree 118/2003 concerning child labour describes terms and conditions for recruiting a child, such as providing periodical medical examinations, first aid, good working environment, PPEs and a list includes names, age, date of recruitment for each child and post it clearly at the site as well as providing healthy meals.

The below articles of the ministerial labour decree 118/ 2003 concerning child labour indicate the following:

- Article 1 indicates a list of jobs where it is prohibited to employ a child under 18 years old
- Article 2 indicates a list of jobs where it is prohibited to employ a child under 16 years old. It includes jobs which require a lot of physical and mental work. It also includes jobs that put them at physical, chemical, or biological risks
- Articles 3 to 8 describe terms and conditions for recruiting a child such as providing periodical medical examinations, first aid, good working environment, PPEs and a list includes names, age date of recruitment for each child and post it clearly at the site as well as providing healthy meals.

### **3.4 LEGISLATION APPLICABLE TO CULTURAL HERITAGE**

Law No. 117 of 1983 promulgating the Antiquities’ Protection Law, as amended by Law No. 3 of 2010, deals with the protection of antiquities. It is the main law in Egypt regarding the protection of archaeological and historical sites. The Ministry of State for Antiquities (MSA) is the authority concerned with the supervision of all archaeological affairs and sites in the country (Article 5).

### **3.5 INTERNATIONAL REQUIREMENTS**

International funding agencies, such as the KFW and the WB require that the projects they finance be in compliance with both the country’s national standards, as well as their own environmental and social policies. Therefore, in addition to the national regulations, the project aims at complying with the international safeguard policies and guidelines. The policies help to ensure the environmental and social soundness and sustainability of investment projects. They also support integration of environmental and social aspects of projects into the decision making process. In addition, the policies promote environmentally sustainable development by supporting the protection, conservation, maintenance, and rehabilitation of natural habitats. The TS project in Abu Tisht is classified as a category B project by EEAA, which requires mandatory EIA as it may

have moderate impacts on the environment. The project is classified as Category B according to the KfW and WB classification criteria.

The WB Environmental and Social Framework (ESF) enables WB and Borrowers to have a better management of environmental and social risks of projects, to decrease the negative impacts of these projects, and to improve development outcomes. It was launched on October 1, 2018. The ESF covers the environmental and social risks broadly and systematically. The ESF covers areas such as transparency, non-discrimination, public participation, and accountability. The ESF consists of 10 Environmental and Social Standards (ESS), which set out the requirements applied to borrowers.

#### ESS1 Assessment and Management of Environmental and Social Risks and Impacts

It sets out the Borrower's responsibilities for assessing, managing, and monitoring environmental and social risks and impacts associated with each phase of any project funded by the Bank, in order to reach environmental and social performance consistent with the ESS.

#### ESS2 Labour and Working Conditions

It recognizes the importance of creation of job opportunities, economic growth, and income generation. It states the requirements for safe and healthy working conditions, and labour protection.

#### ESS3 Resource Efficiency and Pollution Prevention and Management

It recognizes that economic activities may lead to pollution of the environment, and consume finite resources that may threaten people, ecosystem services, and the environment at the local, regional, and global level. This ESS sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life-cycle.

#### ESS4 Community Health and Safety

It addresses the health, safety, and security risks and impacts on project-affected communities, and the responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to vulnerable groups.

#### ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

It addresses the appropriate measures to mitigate adverse impacts on displaced persons and host communities receiving displaced persons due to involuntary resettlement.

#### ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

It recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development, and it recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. ESS6 also addresses sustainable management of primary production and harvesting of living natural resources and recognizes the need to consider the livelihood of project-affected parties, including Indigenous Peoples, whose access to, or use of, biodiversity or living natural resources may be affected by a project.

#### ESS7 Indigenous Peoples

It means to avoid adverse impacts of projects on Indigenous Peoples (Historically Underserved Traditional Local Communities), or when avoidance is not possible, to minimize, mitigate and/or compensate for such impacts.

#### ESS8 Cultural Heritage

It sets out measures designed to protect cultural heritage throughout the project life cycle.

### ESS9 Financial Intermediaries (FIs)

It recognizes that strong domestic capital and financial markets and access to finance are important for economic development, growth and poverty reduction.

### ESS10 Stakeholder Engagement and Information Disclosure

It recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation.

## **3.6 INTERNATIONAL CONVENTIONS AND AGREEMENTS**

Egypt has signed and ratified a number of international conventions that commit the country to conservation of environmental resources. The following is a list of the key conventions:

- 1) International Plant Protection Convention (Rome 1911)
- 2) African Convention on the Conservation of Nature and Natural Resources (Algeria 1922)
- 3) UNESCO Convention for the protection of the world cultural and natural heritage (Paris, 1978)
- 4) United Nations Climate Change Convention (New York 1998). The agreement covers greenhouse gas emissions control measures from various sources, including transportation.
- 5) United Nations Climate Change Convention and Kyoto Protocol 1997
- 6) The Convention on Biological Diversity (Rio de Janeiro 1992) covering habitats, plant, and animal species
- 7) Ozone Layer Convention Vienna 1921
- 8) Convention on the Protection of Workers from Occupational Hazards in the Work Environment Resulting from Air Pollution and Noise in the Work Environment, Geneva 1977.



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## 4. PROJECT DESCRIPTION

### 4.1 INTRODUCTION

This chapter presents a description of the key features of the construction and operation of the proposed TS facility located in Abu Tisht, Qena Governorate.

The Abu Tisht TS is part of an integrated waste management system for Qena Governorate. The TS facility will receive MSW daily and transfer from collection trucks (small volume) to larger trucks. The local SWMU will operate the TS. The collected MSW from Abu Tisht District and its villages will be sent to the TS, then to the final disposal site in Naga Hammadi District. The proposed Abu Tisht TS shall:

1. Provide flexibility in MSW handling and transportation.
2. Extend the life of waste transport trucks.
3. Reduce fuel consumption and collection vehicle maintenance costs.
4. Generate less overall traffic, air emissions, and road wear.
5. Provide opportunity to screen waste prior to disposal, flexibility in selecting waste disposal options.
6. Reduce environmental pollution, especially visual pollution.

The direct loading system is the proposed operating mechanism for the Abu Tisht TS: collection trucks enter the transfer station in Abu Tisht; at the gate, waste is weighted and registered (including time, truck number, load, etc.); the truck is directed to the reception area; over a ramp, collection truck reaches the reception area, where waste is unloaded; large containers (24 m<sup>3</sup>) will be stationed and loaded with MSW; finally loaded containers will be transported to the disposal sites (Naga Hammadi facilities) by hooklift trucks.

### 4.2 MAIN PROJECT CHARACTERISTICS

The project is located on governmental lands, near Cairo / Aswan road in Qaser Bakhanes village, Abu Tisht district, Qena Governorate. The total TS area is 3600 m<sup>2</sup> and the distance from the TS to Abu Tisht district is about 15 km.

There is no residential area at a distance of 1 km from the TS site. The distance from TS Abu Tisht to Naga Hammadi (final disposal facilities) is about 37 km. The project is located along a tar road (4 m width) that links the TS site to the main road (Cairo/Aswan road).

The site is currently being used as an uncontrolled dumping site for MSW and construction and demolition (C&D) waste.



**Figure 4-2: Current Use of the Proposed Site**



**Figure 4-1: Agriculture Lands Surrounding Proposed Site**



**Figure 4-4: Close View Of Wastes Dumped Near the Site (Including Slaughterhouse Wastes)**



**Figure 4-3: Solid Waste Transportation Truck Near the Site**

### **4.3 PROJECT LOCATION**

#### **4.3.1 PROJECT AREA AND LOCATION**

The proposed TS in Abu Tisht District is a facility with a designated receiving area where MSW collection vehicles discharge their loads. While the total TS area is 3600 m<sup>2</sup> with dimensions of 90 m x 40 m, the total area for buildings is 160 m<sup>2</sup>. The proposed project belongs administratively to Abu Tisht District, Qena Governorate. The coordinates of the site are shown in the table below: