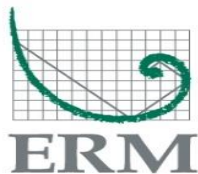




National Solid Waste Management Program

NSWMP
ESIA Guidelines for
Municipal Solid Waste Management
Projects

November 2018



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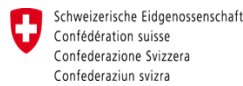


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Supplemental Guidance Documents

- Supplement for Transfer Stations
- Supplement for Composting Facilities
- Supplement for Sanitary Landfills

List of Acronyms and Terms

Abbreviations	Full Name
AIDS	Acquired Immunodeficiency Syndrome
AMC	Associated Measures Consultant (under the NSWMP)
AOI	Area of Influence
BAT	Best Available Techniques
BP	Bank Procedures
CAA	Competent Administrative Authority
CBO	Community-Based Organizations
CPI	Consultant for Project Implementation (under the NSWMP)
CSEP	Common Stakeholder Engagement Plan
CSR	Cooperate Social Responsibility
EEAA	Egyptian Environmental Affairs Agency
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EPC	Engineering, Procurement and Construction
ESAP	Environmental and Social Action Plan
ESAP-SPS	Environmental and Social Action Plan – Social Performance Specialist
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 Program
ESMS	Environmental and Social Management System
ESS	Environmental and Social Standards
EU	European Union
FGD	Focus Group Discussion
FPIC	Free, Prior, and Informed Consent
GDP	Gross Domestic Product
GIIP	Good International Industry Practice
GHG	Green House Gases
GM	Grievance Mechanism
ha	Hectare
HIV	Human Immunodeficiency Virus
HRIA	Human Rights Impact Assessment
ICP	Informed Consultation and Participation
IFC	International Finance Corporation
IFC PS	International Finance Corporation Performance Standards
IFI	International Financial Institution
ILO	International Labour Organization
KII	Key Informant Interview
KPI	Key Performance Indicator
LACF	Land Acquisition and Compensation Framework
LCPP	Local Content and Procurement Plan

Abbreviations	Full Name
Markaz	Subdivision in rural governorates divided into cities and local units
MBT	Mechanical-Biological Treatment
MoU	Memorandum of Understanding
MSW	Municipal Solid Waste
NGO	Non-Governmental Organisation
No.	Number
NSWMP	National Solid Waste Management Program
PID	Project Information Document
PMU	Project Management Unit (entity of WMRA implementing the NSWMP)
Project Company	Company implementing a specific MSW project
SDO	Social Development Officer
SEP	Stakeholder Engagement Plan
SWMU	Solid Waste Management Unit in each Governorate
ToR	Terms of Reference
WMRA	Waste Management Regulatory Authority, under the Ministry of Environment responsible for regulating MSW in Egypt

ESIA Guidelines for Municipal Solid Waste Management Projects

1 Introduction to EEAA Guideline on ESIA for MSW

Each municipal solid waste (MSW) project has unique characteristics depending on the facility design, location, surrounding populations and other factors. As such, not all elements addressed within this guideline will be applicable to every MSW project. Therefore, each Environmental and Social Impact Assessment (ESIA) must be undertaken to suit the scale and potential impacts of the specific project. The guideline should be used as a tool to guide and facilitate the preparation of ESIA. However, they do not replace the professional expertise and experience of ESIA experts. ESIA in Egypt are reviewed and a decision made on their approval and/or rejection by the Egyptian Environmental Affairs Agency (EEAA).

Proponents should be fully aware of their obligations under all laws and guidelines applicable to the proposed project. Identification of several of the key laws and regulations relevant to MSW in Egypt are presented in Section 4.5 of the guideline. Proponents are strongly encouraged to continuously update their legal registers to ensure they are abiding by the most recent applicable regulations.

1.1 Purpose and scope

This guideline identifies the main elements to be addressed when preparing an ESIA for a proposed project related to the construction (or significant expansion) and operation of MSW facilities. The guideline has been specifically prepared for the following MSW facilities: (i) Transfer Stations (TS) (including collection), (ii) Composting/Mechanical-Biological Treatment (MBT) treatment facilities; and (iii) Sanitary Landfills. This version of the guideline (2018) does not include Incineration as a treatment option.

The guideline is designed to be used by the project proponents and the experts engaged in preparing ESIA for MSW projects. The EEAA stipulates that ESIA can only be prepared by certified ESIA specialists, consultants and firms. Such certification is granted by the EEAA and all proponents are required to ensure that their ESIA are completed by certified persons/firms. Proponents are encouraged to use this guideline in conjunction with the general guidelines prepared by the EEAA in 2010 for the completion of ESIA¹.

The purpose of ESIA is to protect the environment and ensure conservation of the natural resources, protect the climate, and support social development. The long-term objective is to establish a sustainable economy for the host country - one that meets the present needs without compromising the ability of future generations to meet their own needs. ESIA are an important tool in the integrated environmental management approach.

¹ EEAA Guidelines of Principles and Procedures for Environmental Impact Assessment 2nd Edition (2010)

Projects with international funding

Although Egypt's existing ESIA Guidelines are based on requirements set by the World Bank Environmental and Social standards, proponents applying for funding from international financial institutions (IFIs) are required to ensure that their projects meet IFI environmental and social requirements, in addition to complying with Egyptian environmental and social laws and regulations. This usually entails a more comprehensive scope of work for the ESIA. The current guidelines have been designed in a manner that consistently addresses both Egyptian and general IFI environmental and social requirements. However, project proponents are strongly advised to notify their consultant(s) in advance of the source of funding for their project(s) in order to make sure that the ESIA is undertaken according to the required standards.

1.2 Limitation

This document provides high-level guidance on tendering and review of ESIA's using "typical" SWM projects and related generic impacts as a basis; the guidance should not be considered to be exhaustive. The details and requirements of the ESIA for any specific project will of course depend on numerous factors such as the type of activity, scale, and location.

It is therefore the responsibility of the ESIA authors to carefully assess the impacts and appropriate mitigation measures of each project also in consideration of inputs received from the relevant stakeholders, and to complete the ESIA in accordance with the applicable requirements.

1.3 How this document is organized?

The main part of this guideline provides information and guidance that applies to ESIA's for all types of MSW facilities. Additional information that is specific to the various types of MSW facilities is provided in a set of "**Supplement Guidance Document**" attached for:

- Transfer Stations (including collection);
- Composting/Mechanical-Biological Treatment (MBT); and
- Sanitary Landfill.

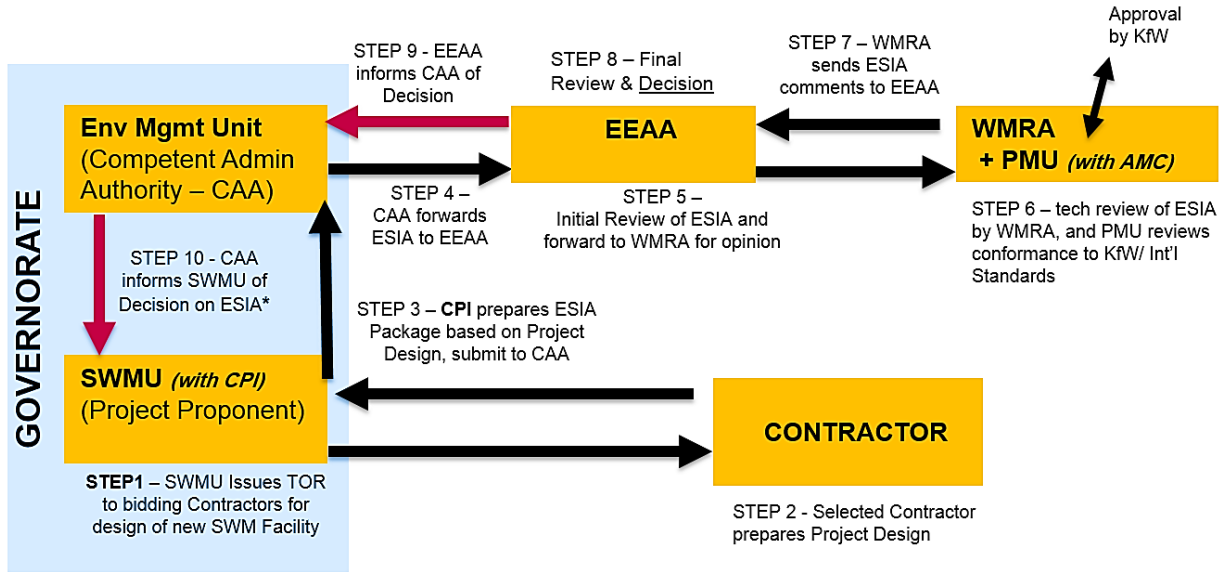
In case of uncertainty about the use of these guidelines, the users are requested to contact EEAA for support.

1.4 Procedures for submitting the ESIA studies for approval

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 National Solid Waste Management Program (NSWMP) or outside of the NSWMP - essentially meaning with or without international funding.

MSW Projects Under the NSWMP

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



* Upon Approval of the ESIA (and separately of the Project Design), the SWMU can then commence with the tender process for the Project Construction and the further permitting approvals for the MSW project

Figure 1: Flowchart for NSWMP Program

In this case, under the NSWMP, the Consultants for Project Implementation (CPIs) supporting each SWMU will prepare in STEP 3 the ESIA package based on the preliminary design of the selected Design Contractor (STEP 2). The Competent Administrative Authority (CAA) for all MSW projects will normally be the Environmental Management Unit of the respective Governorate. As with all ESIA's in Egypt, the EAA is responsible for reviews and final approval (STEPS 5 and 8), whilst seeking input on technical matters for MSW projects from Waste Management Regulatory Authority (WMRA) (STEP 6). For NSWMP projects, the Project Management Unit (PMU) will also review the ESIA's with support from Associated Measures Consultant (AMC) with respect to international aspects - and typically, the international lender will give their formal review/approval (in case of NSWMP the KfW).

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 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 1**.

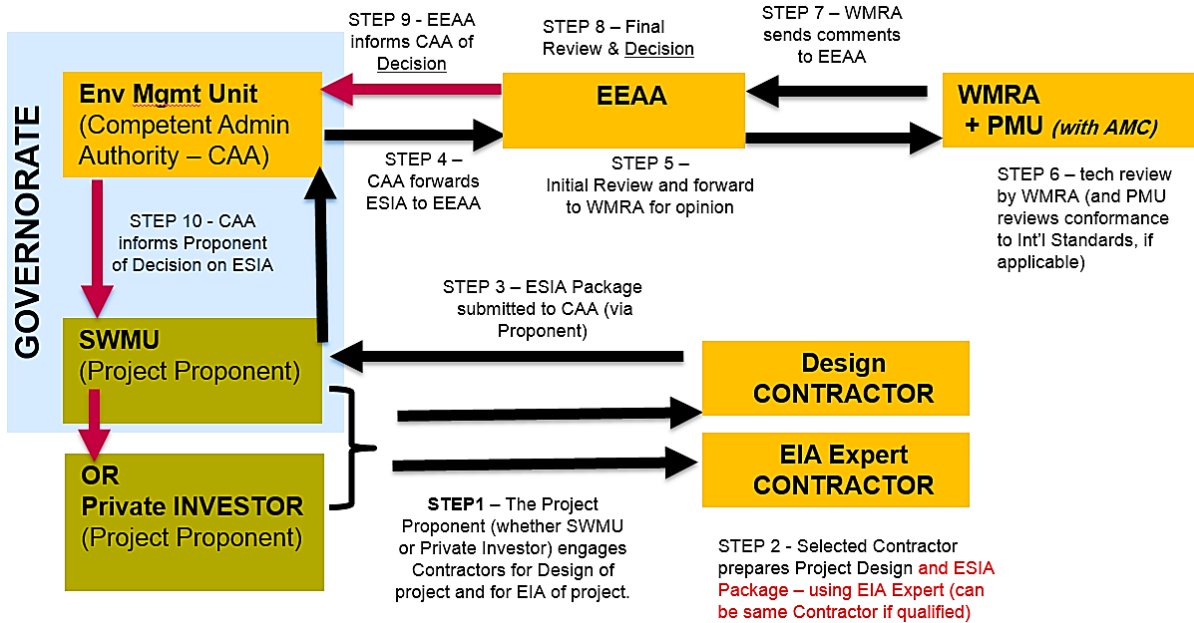


Figure 2: Flowchart for NSWMP outside the Program

2 Objectives of the Environmental and Social Impact Assessment

The ESIA is a guiding principle that can help achieve sustainability through the following:

1. Modifying and improving the design by selecting the most appropriate design and/or technology
2. Ensuring efficient resource use by identifying the proper resources management system
3. Ensuring compliance with the laws, regulations and any applicable standards and guidelines
4. Enhancing social aspects through the full involvement of the public and providing transparent, clear and easily understood descriptions of the project
5. Identifying the key environmental and social impacts, and devising the proper mitigation measures for minimizing, reducing if not avoiding the environmental, social and climate impacts and risks in order to meet the legal requirements and ensure the projects sustainability
6. Informing decision making and condition setting
7. Avoiding serious and irreversible damage to the environment and the society
8. Protecting the society and workers health and safety by ensuring the implementation of best practices

The ESIA is a mean by which environmental, social and climate impacts and risks taken into account throughout the life cycle of a project - from the initial concept through detailed design, construction and operation to eventual restoration and reclamation.

To develop an effective and sufficient ESIA report, those preparing ESIA should identify the essential data to be gathered in order to make informed decisions on the scope of the ESIA. Thus, the ESIA process could be broken down to the following steps:

1. Ensure accurate description of the project components and its different phases
2. Identify the laws and regulations, in addition to the regional and international conventions², treaties and agreements addressing labour standards as well as environmental protection that were ratified by Egypt.
3. Identify the environmental and social baseline conditions

² International Conventions, Multilateral Environmental Agreements, EEAA website. Available [online] at: <http://www.ceaa.gov.eg/en-us/laws/conventions.aspx>

4. Discuss the project's alternatives
5. Identify the environmental, social and climate impacts and risks that might be affected from/on the project during its different phases
6. Evaluate and screen the significance of the impacts identified and propose a proper mitigation measures plan
7. Propose a proper monitoring plan
8. Ensure fully involvement of the public, relevant authorities, stakeholders ... etc.

3 Summary of the ESIA Report Contents

The formal content of an ESIA report should include the following content:

- A) Abbreviation list
- B) A non-technical summary
- C) Introduction
- D) Description of the proposed project
- E) Background information covering the applicable legislative framework and the regional and international conventions
- F) Alternatives consideration
- G) Description of the existing environmental and social baseline
- H) Prediction of impacts and evaluation of significance environmental and social effect
- I) Mitigation measures including the environmental and social management and monitoring plan
- J) Description of consultation activities undertaken with local public/stakeholders
- K) Conclusion and summary of the outcomes
- L) List of references and supporting documents
- M) Annexes include (yet not limited to):
 - List of consultants participating in the study and their role
 - Land documents
 - Engineering designs drawings
 - Equipment brochures, identifying the operation and maintenance specs
 - Agenda of the consultation activities
 - Lists of attendees in the consultation activities
 - Others

4 The ESIA Preparation Process

4.1 Abbreviation list

A list of abbreviations and acronyms for the lengthy expressions should be provided in the beginning of the ESIA study.

4.2 An executive or non-technical summary

An Executive Summary in the form of a non-technical summary, not exceeding 20 pages, should be presented in the beginning of the ESIA. The Executive Summary will touch on all of the sections of the report and offer the reader a brief yet concise overview of the respective sections. It should be written in a manner easily understood by the public.

4.3 Introduction

An introduction chapter should briefly explain the aim of the proposed project and present an overview regarding the ESIA. It should provide the reader with a roadmap, or a guide, that they will be able to use as they continue on reading.

The introduction chapter should provide a briefing on the proposed project (i.e. project owner, project category under the Egyptian law and/or international standards), and the objectives of the proposed project. It should also provide the benefits, employment opportunities, as well as the technical, economic and environmental features essential to the project. It should include general background information needed to understand the proposed project based on a review of the existing literature already published in the field and similar/relevant projects.

4.4 Project Description

A comprehensive description of the project including its phases, design, components and activities should be included in this section of the ESIA. It should clearly display significant information to develop a good understanding of the project in the minds of the people and organizations involved in the planning and development process.

The detailed description should help to foresee and/or predict the impacts and accordingly plan, organize and control the activities by applying best practices to manage impacts. At the same time, it is important to avoid including too many technical details on matters that are not directly relevant for the ESIA process, as this will unduly complicate and lengthen the document.

Writing Tip: It is important to consider the 4C rule: *Clear, Concise, Complete and Credible* during the development of the project description chapter in the ESIA to keep the structure and content of the document well understood for the target audience and reviewers.

Clear by using simple and generally accepted words and terminologies to describe the project and avoid complicated and confusing words and/or sentences.

Concise by only focus on the proposed project, with no reference to any other projects or information not relevant and/or related to the project.

Complete by ensuring that all information and details that concerns and deal with the project are included. It should covers every critical aspect that is required for the reader to understand.

Credible by using relevant information and data only. Any data and/or information that is not related and/or relevant to the project or does not support the idea of your project should not be used.

The following information should be included in the project description:

Required Information	Municipal Landfill	TS	MBT
Site location, including maps showing the following as a minimum: - Project location - Project components - Boundaries of the proposed site - Existing infrastructure - Adjacent land uses (surrounding activities) - Any important environmental features	√	√	√
Description of the site and its surroundings showing the project's footprint and buffer zones	√	√	√
Project layout and design, including associated facilities	√	√	√
Description of the existing facility and its operation (if applicable)	√	√	√
Description of the construction phase including the	√	√	√

Required Information	Municipal Landfill	TS	MBT
following information as a minimum: - Duration per construction phase - Number of employees and gender - Work shifts - Pollution control (gases, dust, noise, surface water, groundwater, etc.) - Details of type and quantity of equipment and vehicles used - Approximate resources consumption rate and sources			
Description of the operation and maintenance phase including the following information as a minimum: - Project lifespan - Number of employees and gender - Work shifts - Pollution control (odour, noise, dust, litter, surface water, groundwater, etc.) - Details of type and quantity of equipment and vehicles used - Resources consumption rate and sources - Maintenance procedures and frequency	√	√	√
Description of planned reclamation/closure/decommissioning including the following information as a minimum: - Duration - Number of employees and gender - Work shifts - Pollution control (gases, odour, dust, noise, surface water, groundwater, etc.) - Method used - Details of type and quantity of equipment and vehicles used	√	√	√
Description of the technology used	√	√	√
Nature and quantity of waste processed	√		√
Description of prohibited (rejected) waste, amounts, method of handling, storage and final disposal	√	√	√
Daily and annual project receiving and processing capacity	√	√	√
Waste acceptance procedures	√	√	√
Waste preparation procedures		√	√
Waste handling procedures	√	√	√
Waste storing and segregation procedures	√	√	√
Site security (such as fencing, gate and signs)	√	√	√
Access roads and ramp	√	√	
Traffic management onsite/offsite	√	√	
Description of leachate collection system	√		
Description of base liner	√		
Description of gas management	√		√
Description of final cover design	√		
Site Tidiness Procedures	√	√	√
Emergency Procedures	√	√	√
Nuisance Control Procedures	√	√	√

Required Information	Municipal Landfill	TS	MBT
Scavenging System	√	√	
Details of vector and wildlife management	√	√	√
Description of safety features	√	√	√
Description of utilities and power supply	√	√	√
Details of main materials to be used	√	√	√
Details of hazardous materials management and storage (if any)	√	√	√

4.5 Legislative Framework

This chapter refers to the laws and their executive regulations considered during the planning of the project.

Key Egyptian legislation dealing with solid waste management:

- Law No. 4 of 1994 amended by laws 9 of 2009 and 105/2015 regarding the protection of the environment and its executive regulations.
- The Minister of Housing and Utilities Decree No. 134 of 1968 issued the Executive Regulation of Law No. 38 of 1967 as amended by Law 31/1976, which is currently in force.
- Law No. 159 of 1953 concerning the cleanliness of fields, roads and streets, in addition to organization of collection and transport of garbage.
- Law No. 151 of 1947 on the clearing of land amended by Law No. 38 of 1967 regarding hygiene.

Additional relevant legislation includes:

- Prime Minister Decree No 1095/2011 amending the Executive Regulations of Law 4/1994 and covering regulations for the solid waste management and responsibility of the component authority with coordination with EEAA to assess the landfill sites according to the criteria provided in Annex 11 of that decree.
- Presidential Decree No 86/2010 regulating the closure of existing dumping sites and the landfill at Greater Cairo and allocation of five new sites outside the residential and commercial belt of Greater Cairo.
- Prime Minister Decree No 1741/2005 amending the Executive Regulations of Law 4/1994 and covering regulations for the selection of sites for recycling and land filling and equipment requirements for waste collection and transfer.
- Law 9/2009 amending Law 4/1994 for regulating collection, treatment and disposal of hazardous waste.
- Law No. 10/2005 establishing a solid waste collection fee system.
- Law 89/1998 and its Executive Regulation 1367/1998 issued by the Ministry of Finance amended by Law 191/2008, govern all Government tenders for procurement of goods and services.
- Laws 106/1976 and 101/1996 allow local governments to include the management of CDW in the permits required for construction activities³
- Labour Law 12 of 2003 regarding health and safety in the workplace
- Law 48 of 1982 for the Protection of the River Nile and Waterways against Pollution
- Ministerial Decree No. 44 of 2000 for wastewater discharge on the public sewage network

³ Abt Associates, Inc., SCS Engineers, Community & Institutional Development, and the Institute for Public-Private Partnerships, Inc. (2001), M Privatization Procedural Manual - Chapter 9: Construction and Demolition Debris Management”, Solid Waste Technical Assistance, Egyptian Environmental Policy Program/MSEA/USAID

In addition, Egypt has signed and ratified a number of international conventions⁴, treaties and agreements that commit the country to the conservation of environmental resources and protection of workers' health & safety and labour rights.

Many of the specific obligations of Egypt under these international agreements have been codified within the Egyptian legislation. In any case, the Egyptian laws and any additional commitments under such agreements form the “foundation” for the legal framework for MSW management in Egypt.

The projects being implemented under the NSWMP are co-funded by the KfW together with European Union (EU) and the Swiss SECO. As such, the projects must not only meet all relevant Egyptian requirements, but must also be aligned to the international standards of the funding institutions. For the NSWMP, the following international standards are relevant:

- KfW Sustainability Guidelines¹
- World Bank Group E&S Safeguards – Environmental and Social Standards
 - Environmental and Social Standard 1: Assessment and Management of Environmental and Social Risks and Impacts;
 - Environmental and Social Standard 2: Labour 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 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities;
 - Environmental and Social Standard 8: Cultural Heritage;
 - Environmental and Social Standard 9: Financial Intermediaries; and
 - Environmental and Social Standard 10: Stakeholder Engagement and Information Disclosure.

- World Bank Group/IFC Performance Standards
 - Performance Standard 1: Social and Environmental Assessment and Management System
 - Performance Standard 2: Labour and Working Conditions
 - Performance Standard 3: Pollution Prevention and Abatement
 - Performance Standard 4: Community Health, Safety and Security
 - Performance Standard 5: Land Acquisition and Involuntary Resettlement
 - Performance Standard 6: Biodiversity Conservation and Sustainable Natural Resource Management
 - Performance Standard 8: Cultural Heritage
- World Bank Group/IFC EHS Guidelines¹.

⁴ International Conventions, Multilateral Environmental Agreements, EEAA website. Available [online] at: <http://www.eeaa.gov.eg/en-us/laws/conventions.aspx>

A list of all approvals and licences is required under any legislation. This list should also identify the relevant authorities involved in the assessment and regulation of the proposal. **(Kindly see Supplement Guidance Document).**

4.6 Alternatives Consideration

The selected approach to implement the project should be:

1. Environmentally and socially sustainable
2. In compliance with laws and standards
3. Accepted by the local community, relevant authorities, stakeholders ... etc.

There are always other alternatives to implement the same project, meeting the same business need and achieving the same results regardless of the selected approach. Identification of project alternatives is preferable at an early stage of the project in order to provide options for completing the project, while addressing the original project problem and ensure delivering the expected project benefits.

Alternatives should be derived from the outcomes of a preliminary investigation of baseline conditions, consultation with regulatory bodies, stakeholders (i.e. local communities) and a preliminary site visit. The procedures or methodology used to identify and prioritise issues should be outlined and should include:

- Relevant guidelines issued by government authorities, provisions of any relevant environmental, climate and social protection legislation, and relevant strategic plans or policies;
- Relevant research or reference material or MSW facilities studies, and relevant preliminary studies or pre-feasibility studies.

Project alternatives should include, but not be limited to the following:

1. The No-project
2. Project location, space availability, proximity to residential areas, transfer distance and road conditions ... etc.
3. Technical feasibility
4. Acceptance by pollution (i.e. avoid, reduce or limit environmental pollution and damage including climate-damaging emissions and pollution);
5. Urban structure
6. Management and/or operational practices
7. Resources availability and consumption
8. Availability of infrastructure
9. Waste, effluent and emissions management methods
10. Waste, effluent and emissions disposal methods
11. Time schedule for implanting the project

Identified alternatives (except for the No Project alternative) should be reasonable and valid to implement, however, the selected approach should be the most applicable and preferable choice.

4.7 Description of the Environmental and Social Baseline Conditions

4.7.1 Overview

Existing baseline conditions should be clearly defined and understood to be used as a benchmark to be able to identify, evaluate and assess the potential deviations that the proposed project may have on and/or may face from the existing environment and community throughout its various stages.

This section should be discussed at two levels:

1. Local context: Site specific baseline, describing the project site location and its surroundings
2. Regional context: General baseline, describing a wider area such as the governorate in which the project will be developed in.

Baseline conditions should be categorized as physical, biological or socioeconomic. The baseline should be based upon the findings of both primary and secondary data.

The scope of the baseline study, including attributes that should be appraised, and the geographical extent of the analysis, should typically be agreed with the relevant decision makers. It is important to re-emphasize that the scope (and detail) of the baseline study should be consistent with the size and scale of the project and hence the potential changes that the project may have upon the environment and society.

The baseline study should typically be developed in three stages as presented in the figure below.

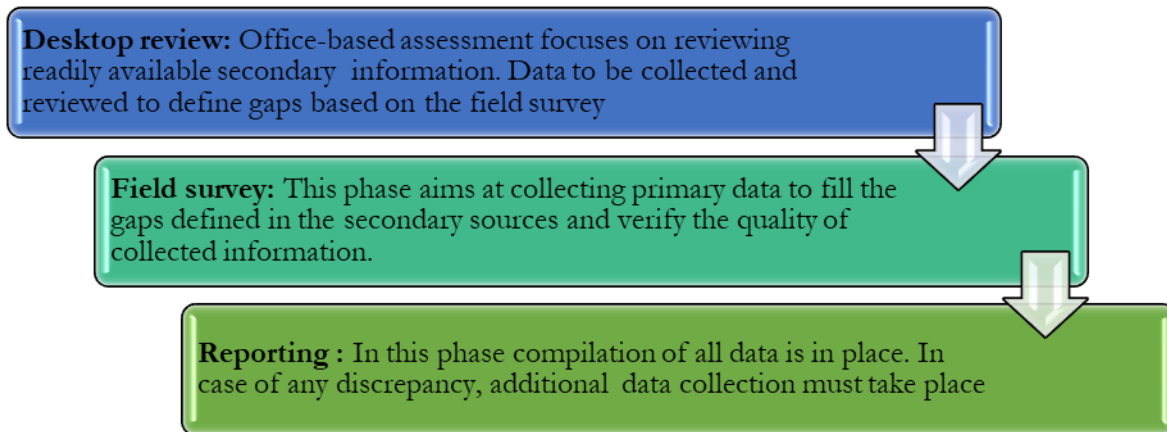


Figure 3: typical three stages for establishing baseline study

The baseline should aid in the site selection decision, where it should consider the following:

1. Land use in the area. This is achieved by consulting with the appropriate local and national authorities
2. The sensitivity of the area, either environmentally and/or socially
3. The project is compatible with the nearby land uses and its sensitivity to impacts
4. Initial site investigation to indicate the site is fundamentally suitable for the project.

Site selection is an essential tool in ensuring that the project is both environmentally and socially acceptable.

Examples of preliminary site selection criteria for MSW facilities as per the Egyptian law requirements are found in the attached **Supplement Guidance Document**.

Careful site selection should:

1. Reduce the potential environmental and/or social impacts and consequently, the need for mitigation measures and ongoing management measures
2. Reduce levels of public controversy
3. Avoid potential delays in the approval process.

4.7.2 Environmental Baseline

General information to be provided for specific environmental issues identified as potentially important in the assessment of impacts from MSW facilities proposals is discussed in the following subsections, and includes:

- Land Characteristics and Use

MSW facilities development involves occupying land, thus, the environmental baseline should include the following:

- The existing surface characteristics such as soil topography, terrain, stability, and susceptibility to erosion or subsidence;
- The existing land uses occupying the site;
- The existing surface characteristics of the surrounding area;
- The existing land uses occupying the surrounding area and particularly those land uses, which could be sensitive to the proposed project development.

The land characteristics and uses should also be relevant to other parts of the baseline, e.g. landscape and visual character.

- Landscape Character and Existing Views

Aesthetics and landscape quality might be affected by the proposed project development and by loss of attractive features such as vegetation, hills ... etc. The baseline should describe:

- The existing character of the landscape both on the site and in the surrounding area
- Views of the site from adjoining properties and public areas particularly where these are sensitive, e.g. residential, recreational or tourist areas.

- Air Quality and Noise Intensity

Air quality is likely to be significantly affected by MSW facilities, during both construction and operation. Likely major issues include dust sources during construction, and odours and aerosols produced during operation of such projects. Noise generated during construction is also likely to have a significant impact if the proposed site is near centres of population.

Assessment of baseline conditions should include:

- Identification of sources of existing odours at or near the proposed site;
- Identification of sources of existing dust generation at or near the proposed site;
- Identification of sources of existing noise at or near the proposed site.
- Collection of meteorological data which will affect distribution and severity of air quality impacts, in particular:
 - Strength and direction of prevailing wind
 - Rainfall frequency, duration and quantity.
 - Temperature and relative humidity
 - Risk of inversion
- Collection of topographical information which will affect distribution of air quality (e.g. steep slopes, presence of tall vegetation)
- Identification of sensitive receptors (e.g. schools and hospitals which may be affected by odours, dust and noise; important crops or natural areas which may be affected by dust and/or noise) within the area likely to be affected by improved or deteriorating air quality.

Consideration should be given to providing modelling studies to determine the likely distribution of odours, dust and noise during the different phases of the project.

- Flora and Fauna

Terrestrial flora and fauna or their habitats, which are likely to be disturbed or obliterated during construction and/or operation of the MSW facilities should be identified and their importance evaluated. As a rule, distribution data should be presented as habitat or species location maps, shown in relation to the proposed works. Data collection and surveys should include:

- Identification, description and distribution of areas of terrestrial habitats that may be directly or indirectly affected especially those:

- Supporting threatened or protected/rare species or habitats;
- Of commercial importance;
- Of community importance;
- Of nature conservation or scenic importance.
- Assessment of the importance of the habitats or species identified above, in terms of international, national, regional or local importance.
- Hydrology and Groundwater

Baseline information on the hydrology and groundwater present in the project area (if applicable) should include the following:

- Underlying aquifers and major faults
- Physical properties of the hydrogeological units (porosity, hydraulic conductivity, etc.)
- Groundwater flow rates and patterns
- Estimated depths to the groundwater table
- Groundwater quality, including chemical, physical and biological properties
- Groundwater use in the project area
- Presence of wells in the project area and their locations.

4.7.3 Socio-Economic Baseline

Given the nature of waste projects, social aspects tend to be of more significance than environmental impacts. Acceptance of communities to host landfills, transfer stations and MBT sites remains one of the barriers facing waste management projects. As such, adverse social impacts can jeopardize the viability of a proposed development.

Landfills and recycling projects are not welcomed in urban communities; therefore, provision of a robust socioeconomic baseline might guide the project to take decisions beneficial to the project.

The project may provide positive benefits for local communities in terms of job creation, upgrading the capacity of local labourers and an enhancement of the local economy by increasing trade/supply with local suppliers. Additionally, the project might provide benefits as Social Corporate Responsibility initiatives. Baseline studies for social aspects aim to compile a socio-economic description of Area of Influence (AoI)⁵ and are typically determined through secondary data published in recent national and international reports and, if necessary, may be supplemented by data collected using structured questionnaires, Focus Group Discussions (FGDs) and community surveys often conducted through in-depth interviews and participatory observation.

The scope of the socio-economic baseline study is outlined below:

- Local Context

Describe the recent development (over the past 5 years) of the local economy in the project Area of Influence (AOI). This should describe as a minimum: the gross domestic product (GDP) of the community, city, region or state in which the project is located. The baseline should identify the contribution of key sectors to the economy and how these might have changed in the review period (5 years) while identifying the factors of change. The contribution of sectors to the economy should be extended to include existing businesses operating in the area. Where practicable, the baseline should consider the future development prospects in the area to determine whether the proposed development is compatible with the projected economic growth plans and regional long term plans.

⁵ This area of influence encompasses, as appropriate: The area likely to be affected by: (i) the project and the client's activities and facilities that are directly owned, operated or managed (including by contractors) and that are a component of the project; (ii) impacts from unplanned but predictable developments caused by the project that may occur later or at a different location; or (iii) indirect project impacts on biodiversity or on ecosystem services upon which Affected Communities' livelihoods are dependent. (Source: <https://www.ifc.org>)

- Community Profile

The community profile will take into consideration communities in the area of influence, along the access road to the project site and the nearby surroundings.

Defining the social demographic profile of adjacent communities is crucial and should avail demographic data segregated by age and gender of the community, population growth (over a 5 year period). The demographic profile should also focus on describing the nature of population groups, natural increase, mortality rates, birth rates, cultural diversity, language distribution, family and household characteristics (for example, household/dwelling type, household income, family structure, etc.). Special attention should be given to describing the nature, number and distribution of indigenous⁶ (i.e. remote areas in Matrouh and Sinai) and ethnic vulnerable people that may live in the project area.

- Land and Natural Resource Use

The purpose of the land and natural resource use study is to assess the need for physical or economical displacement as a result of the project activities. The study should be based on the interpretation of satellite images covering the entire project area to be provided by the project owner and verified by site visits especially in the project area.

- Government and Local Authorities

Provide an overview over the governing structure in the project area, including the administrative structures and organizations, a broad review of local and regional development plans and challenges faced by the local authorities, elected officials and natural leaders, complaints and grievance structure.

- Civil Society

A description of the project residents and their affiliations. The description should also cover social structures and highlight bonds and rifts within the community in addition to providing a listing of social and civil society organizations by affiliation and evaluation.

- Culture and Cultural Heritage

The construction of sanitary landfills, transfer stations and MBT projects may influence archaeological and cultural sites. Therefore, the baseline should describe previous archaeological and cultural heritage studies completed in the project area and its vicinity in relation to previous activities, especially related to waste management and treatment facilities. This should include cultural and sites specificities, diversity, religious and cultural traditions, as well as a guideline of culturally permissible behaviours for non-locals.

In addition to complying with applicable law on the protection of cultural heritage including, national law implementing the host country's obligations under the Convention Concerning the Protection of the World Cultural and Natural Heritage, the Project developer should identify and protect cultural heritage by ensuring that internationally recognized practices for the protection, field- based study, and documentation of cultural heritage are implemented.

⁶ Performance Standard 7 recognizes that Indigenous Peoples, as social groups with identities that are distinct from mainstream groups in national societies, are often among the most marginalized and vulnerable segments of the population. In many cases, their economic, social, and legal status limits their capacity to defend their rights to, and interests in, lands and natural and cultural resources, and may restrict their ability to participate in and benefit from development. For projects with adverse impacts to Indigenous Peoples, the client is required to engage them in a process of Informed Consultation and Participation (ICP) and in certain circumstances the client is required to obtain their Free, Prior, and Informed Consent (FPIC). The requirements related to Indigenous Peoples and the definition of the special circumstances requiring FPIC are described in Performance Standard 7.

The cultural heritage baseline assessment should be defined prior to planning the project. The local study area should typically comprise of two elements:

- The footprint of the preliminary scheme, which should focus of archaeological surveys; and
- The communities within proximity to the project (for example, to consult and determine their cultural sites and traditions).

The objective of a cultural heritage baseline study is to collect comprehensive, robust data in order to undertake an assessment of the potential effects of a proposed project on cultural heritage sites and receptors within a clearly defined study area. Receptors could be tangible or intangible.

Tangible cultural heritage could include:

- Archaeological and artefacts;
- Historic and/or architecturally significant structures and buildings;
- Historic districts;
- Historic or cultural landscapes;
- Religious sites, including cemeteries and cultural or sacred/spiritual sites (which can include natural features); and
- Paleontological sites.

Intangible cultural heritage could include:

- Cultural traditions;
- Traditional knowledge;
- Festivals;
- Ceremonies;
- Music, songs, dance and artistic expressions; and
- Traditional lifestyles and customs.

The basic requirements to conduct cultural heritage assessments could be summarized as follows:

- A desk-based review of available aerial imagery, mapping and published literature should be undertaken prior to any fieldwork in order to identify and record the locations of known designated and undesignated cultural heritage features and to gain an understanding of the site types and cultural heritage traditions that may be present. The Centre for Documentation of Cultural and Natural Heritage enabled information about tangible cultural heritage in Egypt.
- After conducting the desk review, field data collection strategy would then follow and could be divided into two main activities:
 - Archaeological survey(s) within the area(s) of proposed development; the landscape and mapping all discoveries, including the application of scientific techniques, such as remote sensing, if appropriate; and
 - Consultations to identify:
 - A) Valuable sacred sites and practices of cultural heritage value associated with the communities that lie within proximity of the development.
 - B) Norms and traditions that can never be violated

For cultural heritage issues, the following groups may be relevant for consultation:

- Religious leaders and/or groups;
- Religious places;
- Users and owners of cultural heritage;
- Communities representing traditional lifestyles;
- National heritage institutions and government ministries;
- Museums, institutes and universities; and
- Historical preservation groups; and

The findings of the desk-based study and field-work should aim at identifying specific cultural heritage elements requiring protection and to identify those sites and traditions within the study area most sensitive to change. This will support in the finalization of design options and project layouts.

The information gathered should be presented in a report summarizing the key characteristics of the cultural heritage environment and the sensitivity of each site/type, and should provide accompanying maps and photographs. Preferably, the cultural heritage team would work in collaboration and share data with other environmental and social teams throughout the baseline phase.

- Public Safety and Security

In light of the understanding of the local community, the project should point out main safety issues in the project area including any concerns from past feuds/conflicts especially ones related to workers in the waste management sector, as well as existing grievance management systems.

The project should also investigate road safety and associated behaviours in addition to access roads to the project location and identify the communities on access roads.

- Traffic and Transport

Transferring waste might influence traffic in hosting communities. Additionally, traffic should be seen as a critical community safety concern. Therefore, the ESIA should establish the traffic volume associated with the movement of waste/materials and/or personnel on public roads.

Based on this information, a traffic routing plan and program should be prepared in advance of the commencement of any activities. The main concern for the traffic assessment is the impact of construction traffic loads, specifically during the transportation of heavy equipment to site.

The primary scope of the traffic assessment should determine the following:

- The transportation requirements of all aspects of the landfill, MBT and transfer stations operations that will not only be restricted to the operations themselves but also include the input and output logistical operations;
- The expected impact on the transportation system and road network, especially in terms of heavy vehicle movements of obscene loads;
- The long-term maintenance and management actions that are required to ensure a sustainable solution from a transportation point of view;
- The required layout (geometric standard, cross-section, number of lanes and type of traffic control) of all the critical elements (bottlenecks) of the road network, including accesses, from a capacity and operational point of view;
- The additional impacts of informal (typically unpaved) roads during the construction phase (for example, dust, noise, etc.) potentially creating significant nuisance to local communities; and
- Any need for the provision of public transport facilities that are linked to the road network, the location and the layout of these facilities.

Basic methodology to conduct a traffic baseline study is as follows:

- Desktop review should be conducted through:
 - Collecting data, evaluating and interpreting transportation planning information, such as available local and regional road network planning;
 - Collecting data about spatial land-use planning information on the expansion and future growth of the area or region.
- Field work:
 - Plan and conduct field surveys, including defining the main roads to and from the project sites, heavy machinery sources (seaport, railways ... etc.)
 - Field surveys should assess the classified vehicular counts and traffic loads;

- Identify and formulate various road network alternatives based on available transportation and land-use planning information.

- Human Development Profile

Describe the social and economic development level of the project specifically considering health status, education and standard of living.

- Human Rights Context

A human rights impact assessment (HRIA) is a process to systematically identify, predict and respond to the potential impact on human rights of a development project. They have historically been conducted as standalone exercises but are increasingly being incorporated into ESIA processes.

Recently, aspects pertaining to human rights escalated and project owners are required to ensure that their projects:

- Do not result in or cause any adverse human rights provoking impacts; and
- Seek to prevent or mitigate adverse human rights impacts that are directly linked to their operations, products or services by their business relationships, even if they have not contributed to those impacts.

Given the wide scope of human rights, there is no standardized global approach to addressing human rights issues within an ESIA. However, approaches should include assessing:

- The human rights context prior to the proposed project, with a specific emphasis on understanding who may be affected; and
- The relevant human rights standards and issues, projecting how the proposed activity (and associated business relationships) could have adverse human rights impacts on those identified. Internationally recognized human rights issues should be used as a reference point since any of these rights may be impacted by a particular development.

The emphasis of HRIA within an ESIA is in large part for individuals from vulnerable and marginalized groups, including indigenous peoples, minorities, migrants, persons living in poverty, persons living under repression and occupation, the elderly, persons with disabilities, and youth.

Human rights assessment should focus on describing practices that are not consistent with international best practices i.e. right to gain information, child labour rights and workers' rights.

Human rights baseline methodology should be as follows:

- Desktop review could be conducted through:
 - Collecting data, evaluating and interpreting information, such as human rights reports data;
 - Collecting data about workers' rights in the project areas.
- Field work:
 - Plan and conduct field surveys, including defining the main marginalized groups and how they obtain information
 - Field survey should assess the child labour and working condition in the waste management projects in the area;
 - Collect data about informal sector and barriers they face, particularly, ones related to human rights.

- Community Health, Safety and Security

Identify and map regional and local health facilities and services and their utilization, key health challenges and issues facing the local community (in particular vulnerable groups or individuals); identification of road safety issues and their impact on mortality, infrastructure and environmental

factors with impacts on health, for example waste collection and treatment and access to drinking water and sanitation.

The levels of crime in the area should be put into consideration, along with any political instability in the wider context. The health status of the community should be described, considering the key disease indicators, such as HIV/AIDS, respiratory illnesses, gastrointestinal illnesses, rates of childbirth survival, etc.

Community health and security data could be obtained from secondary resources and from interviews with the key players and community leaders in the area of influence.

- Community Education

The project should identify and map the level of education on the local and regional level including enrolment numbers, literacy numbers, education facilities at different levels and potential obstacles to the education process should be identified. Additionally, a mapping of access and use of information technologies and communication tools as well as availability and access to recreational and sporting facilities.

- Community Services

It will be useful to shed light in the baseline on the available community services. The basic services are as follow:

- Basic services such as housing, sanitation, electricity ... etc.
- Public services such as public water sources and distribution networks, infrastructure, energy networks etc.
- Private services such as private water wells, availability and costs.
- Local Economy
 - Assessment of Resources and Activities

The employment status of the community should be described and should take into consideration the level of unemployment in the community, income levels, type of employment relationship (employee/ self-employed/ unpaid/ for own consumption/ full-time/ part-time/ formal/ informal, etc.), whether people are employed locally and the industries in which the community is employed.

- It will be useful to focus on waste related employment opportunities (formal and informal)
- Labor market information by sector: employment rate, distribution by gender, age, fast-growing sectors that are providing jobs, employment law (salaries, diversity, hiring and contract practices, personnel management, unions, forced labor and child labor).
- Local businesses– spheres of activity, development capacity, local hiring potential, HSEQ standards, and commitments to purchase from local communities.
- Local resources and community access to natural resources.
- Identification of areas and sectors of activity (agriculture, animal rearing, fishing, forestry etc.) liable to incur compensation or require remediation due to the impacts of the Project.
- Infrastructure

An infrastructure study should cover both public and private infrastructure facilities, as well as communication infrastructure.

Key infrastructure to be considered should include:

- Community infrastructure (for example, schools and universities in the project area, libraries, hospitals and clinics, youth centers and other facilities, etc.);

- Emergency services (for example, fire management, ambulances, etc.);
- Waste management infrastructure (for example, landfill sites, etc.);
- Energy infrastructure (for example, power generation, transmission lines, pipelines, etc.); and
- Water and wastewater infrastructure (for example, reservoirs for regional water supply, reticulation pipelines, effluent release, etc.);
- Transportation infrastructure (for example, road, waterway, railway, ports and harbors, etc.);
- Telecommunications (for example, telephone, internet, etc.).

○ Involuntary resettlement and land acquisition

The involuntary economic or physical resettlement of people is one of the most significant social impacts that waste projects might face and, if such an impact is left unmitigated, it might result in significant risks to the project and/or the reputation of project owner. In addition, if resettlement activities are poorly planned, resettlement could result in unnecessary hardship for the project-affected communities and potentially to the environments into which they have been settled.

In order to ensure that a limited number of the households planned for resettlement facing significant hardship when establishing a landfill, transfer station and MBT plant, a Resettlement Action Plan (RAP) should be developed. Alternatively, in case of economic displacement a Livelihood Restoration Plan (LRP) must be developed.

The socioeconomic section within the ESIA should provide the following baseline data:

- Plots of lands needed for the project activities
- Type of land tenure and the status of customary ownership
- Project affected people who might lose their assets, lands or source of income
- Describe the characteristics of project affected people and mapping
- Entities responsible for mitigating impacts related to resettlement and livelihood impacts
- Consult with the project affected people about project impacts and proposed remedial actions

○ The baseline report

The findings of the baseline studies should be presented in a baseline report. There is a requirement to submit the baseline report to the relevant planning authorities (EEAA) for approval as an integral step in the ESIA process. It is recommended that interested stakeholders (including the public) also be given the opportunity to comment on the baseline report, providing an opening for input as the ESIA develops.

It is recommended that the language and the structure of each chapter be presented consistently to provide a coherent description of the existing environment prior to any development taking place.

The baseline report should summarize the field surveys that have been carried out, the methodology adopted, sample size and duration of fieldwork. Any data collected should be referenced and source of data should be presented.

4.8 Prediction and Evaluation of the Environmental and Social Impacts

There are two types of impacts that should be identified, in terms of environmental, social and climate aspects by overviewing the affected environmental and the community:

1. Impacts from the project on the environment, climate and the community

2. Impacts on the project resulting from the environment (natural factors such as heavy rains, floods, earthquakes ... etc.), climate change and the culture community (such as common practices, activities, habits ... etc.)

A discussion of impacts should be included during pre-construction, construction, operation and maintenance and decommissioning of the proposed project. Impacts of different aspects of the proposed project on the above sectors of the environment, climate and social should be considered separately.

Criteria for evaluation of the significance of impacts should distinguish between impacts, which are:

- Positive and negative;
- Reversible and irreversible;
- Duration;
- Direct and indirect;
- Cumulative;
- Public interest and political echo

Criteria should be based on local legislative standards wherever possible. Where these are not available, acceptable international standards should be used (e.g. KfW, WB, IFC, etc. guidelines). In all cases, the choice of the appropriate standard must be robust and defensible. If no suitable standard is available, then the criteria developed and used must be clearly explained in the ESIA.

Use of matrices can be very helpful in co-ordinating and summarising information for this section of the ESIA report.

For this section of the report, impacts should be considered before or without mitigation, unless particular mitigation is already incorporated into the design and development description included in the earlier part of the ESIA report.

Table 1: Impacts Caused by Existing Waste Management Systems in Egypt

Aspect	Impact
Waste Collection and Transport	
Litter and Clandestine dumping	Litter and dumping are caused by unavailability of garbage bins and proper disposal areas and due to lack of public awareness. It is also due to the vandalism and theft of public disposal bins. Waste collection companies face the challenge of proposing appropriate methods of waste collection that will be culturally viable and sustainable in the long run.
Dust, bio-aerosols and odours	The accumulation of waste and dust may have a direct impact on the health of waste collectors and street sweepers. Bio-aerosols are of a particular concern due to the effect on the lung function and the increased risk of respiratory disease for workers who are in close proximity.
Vehicle emissions	The increased movement of waste transport vehicles may increase Particulate matter (PM) and Carbon Monoxide (CO) emissions.
Impact on livelihood of informal waste collectors	The establishment of waste collection companies/services may have negative effects on the livelihood of the workers in the informal waste collection sector if they cannot be integrated into the formal sector.
Waste Receipt, Unloading, Processing and Storage	
Contaminated runoff	Waste piles, which contain liquid content or those exposed to water through rainfall, may cause contaminated runoff, which may contaminate soil, surface water and groundwater. It may also cause impacts such as eutrophication and acidification of

Aspect	Impact
	surface water and contamination of water supplies.
Litter	In addition to the impacts of litter mentioned above in the waste collection and transport, the lack of waste storage facilities for waste awaiting processing may cause litter.
Air Emissions	Air emissions during the waste receipt and processing phase usually originate from transport vehicle emissions as well as the emissions of dust, bio-aerosols and odours.
Noise and Vibration	Equipment used in the transport, sorting and processing of waste such as loaders, compactors, grinders, cranes may all cause significant noise and vibration to their surroundings
Biological Treatment	
Leachate and runoff	The possibility of hazardous components in organic waste may cause significant impacts on the leachate and runoff of waste storage in biological treatment facilities. Municipal waste may include animal and human faecal matter, and animal carcasses that may include diseases, viruses, parasites and bacteria. These types of micro-organisms are not eliminated in biological treatments. Their leachate and runoff may significantly affect soil and water receptors. Especially when compost might be used as fertilizer for agricultural use, hazardous components and micro-organisms can enter the food chain and become a problem for public health.
Air Emissions	Stack and fugitive emissions from biological processes may include PM, bio-aerosols, ammonia, amines, VOCs, sulphides, and odours.
Fire	Due to the combustible nature of biodegradable waste and the fact that aerobic degradation is an exothermal process, the spontaneous combustion of waste may cause fire.
Landfilling	
Impact on landfill surroundings	The location of landfills may cause significant impact on residential, recreation, agricultural, natural protected areas, and wildlife habitat and areas prone to scavenging wildlife.
Leachate generation	The lack of a collection and disposal system for leachate in landfills may contaminate soil, groundwater and surface water.
Landfill gas emissions	If no gas collection and treatment systems exist, methane and CO ₂ migrate out of landfills causing landfill emissions. Trapped methane in landfills may also cause explosions.

Examples of potentially significant impacts of MSW facilities are found in the attached **Supplement Guidance Document**.

4.9 Mitigation Measures and Management Plan

4.9.1 Mitigation Strategy

Proponents are strongly encouraged to adopt a mitigation hierarchy in which the proponent will favour avoidance of the impact over minimization, mitigation and offsetting the impact(s). Project proponents should consider mitigation measures that are financially and technically feasible to address identified impacts. Mitigation measures should be devised to ensure that the project's environmental and social performance complies with Egyptian laws and regulations and to meet the requirements of IFIs (if applicable).

Mitigation must comply with the following requirements:

1. Sustainability;
2. Integration;
3. Feasibility; and
4. Compliance with statutory obligations under other licenses or approvals.

Mitigation strategy should outline the environmental, climate and social management principles to be followed in the planning, design, establishment and operation phases of the proposed development.

The following KfW principles¹ should be adopted at the minimum:

- Avoid, reduce or limit environmental pollution and damage, including climate damaging emissions and pollution;
- Reservation and protection of the biodiversity and sustainable manage of natural resources;
- Consider probable and foreseeable impacts of climate (climate variability and long-term climate change) change, including using the potential to adapt to climate change;
- Avoid adverse impacts upon the living conditions of communities, in particular indigenous people (if any) and other vulnerable groups, as well as to ensure the rights, living conditions and values of indigenous people;
- Avoid and minimise involuntary resettlement and forced eviction of people and their living space as well as to mitigate adverse social and economic impacts through changes in land use by reinstating the previous living conditions of the affected population;
- Ensure and support health protection at work and the occupational health and safety of people working within the framework of the project measures;
- Convict forced labour and child labour, ban discrimination in respect of employment as well as occupation and support the freedom of association and the right to collective bargaining;
- Protect and preserve cultural heritage;
- Support the executing agency in the management and monitoring of possible adverse environmental, social and climate impacts as well as risks within the framework of the

Some mitigation measures are easily to be implemented at a very early stage of design of the works, but are difficult or expensive to implement once early design has been completed. Therefore, it is vital that any mitigation should be discussed and developed in consultation with the developer and regulatory authorities throughout the ESIA process.

This section of the ESIA report should therefore be a summary of any mitigation already implemented in the ongoing design of the facility, and include any recommended mitigation strategy to be implemented during construction, operation & maintenance and decommissioning of the works.

This section may also include any enhancement measures for which there is a commitment from the developer, which will enhance and maximize any positive impacts of the development. This may include measures such as planned public education programmes in the operation of MSW facilities.

4.9.2 Specific Mitigation Measures

It should include specific locational, layout, design or technology features and an outline of the ongoing management plan with the aim of sustainability and avoiding adverse environmental, social and climate impacts and risks. **Table 2** below presents a general non- exhaustive list of mitigation measures for MSW facilities.

Examples of measures to reduce negative impacts from the TSS, MBT and Landfills are found in the attached **Supplement Guidance Document.**

Table 2: A General non- Exhaustive List of Mitigation Measures for MSW facilities ⁷

Impact	Appropriate Mitigation Measures
Litter and clandestine dumping	<ul style="list-style-type: none"> • Encourage use of containers or bags for waste at the point of collection • Implement good housekeeping procedures; • Implement a regular collection schedule with sufficient frequency to avoid accumulation of garbage • Provide adequate storage for waste not immediately treated or disposed of; • Use vehicles appropriate for the geographic conditions and waste types to maximize reliability of collection • Encourage separation of recyclable materials at the point of generation • Cover collection and transfer vehicles along the entire route of transport to avoid windblown litter • Consider use of enclosed/covered areas for waste tipping, shredding, compacting, etc.; • Clean vehicles used for waste hauling before transportation of any goods, including compost • Encourage residents, public, workers ... etc. to put waste out at designated times and locations • Install catch fences and netting to trap windblown litter.
Air emissions, Dust, bio-aerosols and odours	<ul style="list-style-type: none"> • Establish frequent waste collection schedules • Implement a washing program for waste collection vehicles and for company-owned waste collection and transfer containers • Promote the use of bags to reduce the odours from soiling of waste collection and transport equipment • Select vehicles and containers that minimize air emissions during waste loading and unloading; • Design drop-off points to minimize queuing of vehicles • Sweep waste management areas and roads frequently and use water spray for dust control where needed; • Pre-treat wastes as needed (e.g., solidification, encapsulation, or wetting sufficient to reduce dust but without forming leachate); • Use enclosed waste handling and storage areas for malodorous wastes or wastes that generate hazardous dust (e.g., asbestos). Enclosed waste storage and handling areas are preferred for all wastes; • Use extraction system to remove dust from working areas, buildings, and storage vessels, and treat as needed to control particulate emissions (e.g., bag filter); • Remove, treat, or dispose of all biological/malodorous wastes in an expeditious manner; • Use odour-neutralizing sprays where necessary; • Use negative pressure in processing buildings and appropriate air filtration (e.g., bio-filter) to remove odour,
Vehicle and equipment emissions	<ul style="list-style-type: none"> • Implement transfer stations for small vehicles to consolidate waste into large vehicles for transportation to a treatment or disposal facility • Waste collection and transport vehicle owners and operators should implement the equipment manufacturers' recommended engine

⁷ The proposed mitigation measures have been derived from the IFC guidelines on waste management facilities.

Impact	Appropriate Mitigation Measures
and safety	<p data-bbox="450 233 1968 264">maintenance, along with the mechanical maintenance for the safe operation of the vehicle /equipment, including proper tire pressure</p> <ul data-bbox="450 264 1968 475" style="list-style-type: none"> <li data-bbox="450 264 1968 328">• Drivers should be instructed on the benefits of driving practices and trained to reduce both the risk of accidents and fuel consumption, including measured acceleration and driving within safe speed limits. <li data-bbox="450 328 1968 392">• Equipment operator(s) should be instructed on the benefits of applying best practices operation methods and trained on visual inspection of the equipment condition to reduce equipment failure and/or defect. <li data-bbox="450 392 1968 424">• Apply continuous inspection and maintenance program <li data-bbox="450 424 1968 475">• Optimize waste collection routes to minimize distance travelled and overall fuel use and emissions
Contaminated runoff	<ul data-bbox="450 483 1968 863" style="list-style-type: none"> <li data-bbox="450 483 1968 579">• When siting, consider the proximity of waste handling and storage areas to water supply wells for people and animals, irrigation canals, and surface water bodies that support aquatic life and the ability to prevent contaminated leachate and drainage from entering surface and ground water; <li data-bbox="450 579 1968 643">• Use impermeable materials for roads, waste processing and storage areas, and vehicle washing areas, and install curbs to prevent runoff to permeable areas; <li data-bbox="450 643 1968 738">• Collect runoff and leachate from areas used for waste storage, and treat runoff to meet applicable environmental standards before discharge to surface water or the municipal sewage system (e.g., screen to remove large material, install silt traps to remove particulates, and remove separate-phase liquids with an oil/water separator).. <li data-bbox="450 738 1968 802">• Discharge to the municipal sewage system (via pipe or tanker truck), where available, is preferred for runoff from waste storage and handling areas; <li data-bbox="450 802 1968 863">• Re-use collected water in on-site disposal processes to the extent practical or store with collected leachate awaiting treatment.
Noise and Vibration	<ul data-bbox="450 871 1968 1193" style="list-style-type: none"> <li data-bbox="450 871 1968 903">• Construct a buffer zone between the facility and the external environment or locate facilities away from sensitive receptors; <li data-bbox="450 903 1968 967">• Include noise and vibration considerations during design, including use of models to predict noise levels at specified noise-sensitive locations, using standardized sound power levels for construction plant; <li data-bbox="450 967 1968 999">• Maintain site roads in good condition to reduce noise and vibration from vehicle movements; <li data-bbox="450 999 1968 1031">• Use acoustic screens around fixed/mobile plant and equipment; <li data-bbox="450 1031 1968 1062">• Select equipment that has low noise emission levels; <li data-bbox="450 1062 1968 1094">• Fit silencing equipment to plant, e.g. baffles/mufflers; <li data-bbox="450 1094 1968 1193">• Use buildings to contain inherently noisy fixed plant equipment (e.g., locate waste shredder in the tipping hall, and enclose tipping hall on all sides) and consider use of sound-insulating materials in construction.
Impact on livelihood of informal waste collectors	<ul data-bbox="450 1201 1968 1378" style="list-style-type: none"> <li data-bbox="450 1201 1968 1233">• Conduct survey to estimate number of affected individuals <li data-bbox="450 1233 1968 1265">• Provide support to communities of affected individuals through CSR projects <li data-bbox="450 1265 1968 1297">• Provide technology transfer through trainings <li data-bbox="450 1297 1968 1329">• Train affected individuals and provide them with employment opportunities within new settings (formalization) <li data-bbox="450 1329 1968 1378">• Facilitate and coordinate with government bodies in the improvement of the livelihoods of affected individuals: access to healthcare,

Impact	Appropriate Mitigation Measures
	education, personal identification.

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4.9.3 Residual Impacts

This section should describe those adverse impacts, which will remain after mitigation has been implemented. The project proponent should provide an analysis of the significance of the residual impact post-mitigation.

4.9.4 Environmental and Social Management Plan

The proponent is required to prepare an environmental and social management plan (ESMP) based on the findings of the environmental and social impact assessment process, as well as the outcomes of stakeholder engagement. The ESMP will be prepared for each phase of the project and include the following elements as a minimum:

- Project requirements (e.g. National laws and regulations, IFI standards (if applicable) ... etc.)
- Objectives
- Key Performance Indicators (KPIs)
- Summary of impacts
- Mitigation measures/management measures
- Roles and responsibilities
- Training
- Reporting requirements

4.9.5 Environmental and Social Monitoring Plan

An environmental and social monitoring plan should be developed as part of the ESMP in order to assess its implementation and effectiveness in addressing any adverse environmental, social and climate impacts and risks. Environmental and social parameters to be monitored should be clearly identified, including the frequency of which they will be monitored and by whom.

Examples of environmental parameters to be monitored include:

- Wind
- Odour
- Gases emissions and dust
- Green House Gases
- Noise
- Groundwater and/or surface water quality
- Vermin

Examples of social parameters to be monitored include:

- Number of worker and/or community grievances filed
- Work-related injuries and illnesses
- Community acceptance of the project Engagement activities
- Monitoring of complaints (grievance) received
- Community engagement activities
- Incident Reporting

4.10 Involvement of the Stakeholders

4.10.1 Overview

“Stakeholders are persons or groups who are directly or indirectly affected by a project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively. Stakeholders may include locally affected communities or individuals and their formal and informal representatives, national or local government

authorities, politicians, religious leaders, civil society organizations and groups with special interests, the academic community, or other businesses”⁸

4.10.2 Objectives of Stakeholders Engagement

Both international standards (IFC performance standards) and national laws (Environmental Law No. 4 of Year 1994 and its amendments by Law No. 9 of Year 2009) focus on establishing active communication channels with the surrounding communities. The main objectives of the SEP are:

- Foster long-term relationships with the project stakeholders and establish of a positive community presence and manage expectations and possible misconceptions;
- Identify and prioritize stakeholders, including vulnerable groups, within the Project’s area of influence (AOI);
- Establish a system for managing and addressing community grievances (Grievance Mechanism);
- Generate a good understanding of the project amongst stakeholders, including project updates, environmental and social assessments and mitigation measure and management plans;
- Engage with and receive feedback from stakeholders regarding environmental and social risks and impacts associated with the project, along with proposed measure and actions to address them;
- Demonstrating the project commitment to all stakeholders with respect to environmental and social issues;
- List corrective procedures suggested by stakeholders and include them in the project planning;
- Avoiding conflict by addressing impacts and issues raised by stakeholders promptly; particularly with the communities that will not be served by the project;
- Illustrate the ability to comply with standards and expectations that may arise in the future;
- Propose a guide for the systems to be implemented at the plant and how they combine to achieve an effective environmental and social management system (ESMS);
- Fulfil the lender(s) requirements with regard to public access to information and public involvement in the decision-making process.

Stakeholder engagement aims at providing a mechanism through which people from different groups who are likely to be impacted by the project are enabled to voice their concerns and worries in proper sphere.

4.10.3 Regulatory Context

4.10.3.1 EEAA legal requirements for stakeholder engagement (Public Consultation)

As per the Egyptian Environmental Law No. 4/1994 and its executive amendment no. 9/2009 modified with Ministerial Decrees no.1095/2011 and 710/2012, a number of institutional stakeholders (representatives of the Egyptian Environmental Affairs Agency "EEAA" and its regional branches, related governmental authorities, governorate where the project is located, local parliaments and influenced groups of nearby institutions or residents) must be represented in the public consultation held prior to the approval for proposed projects that need an Environmental and Social Impact Assessment (ESIA). Other parties might participate such as the NGOs and the universities.

According to EEAA methodology of public consultation, the following activities should be implemented for the project.

1. Preparation of the Public Consultation Plan before Starting

⁸Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets

Before starting the consultation activities in the ESIA scoping phase, the project proponent should prepare a plan indicating the methodology of the public consultation to be adopted in the two public consultation phases (ESIA scoping phase and consultation on the draft ESIA). The plan should indicate the concerned parties that should be consulted, method of consultation and other points of interest. A meeting should be held with EEAA to discuss the plan.

The plan should be prepared in accordance with the following:

2. Public consultation during ESIA Scoping

The following outlines the objective and method of consultation in this phase

The ESIA scoping phase should aim to agree on the aspects and impacts that will be addressed and analysed in the ESIA study in accordance with the nature of the project and the affected environment and community. Accordingly, it is important to involve the concerned parties in indicating these aspects and impacts and seek their opinion regarding these potential impacts to ensure that all potential aspects have been addressed in the study.

Method of consultation

Consultation in this phase could be carried out in different ways. This could be done with by meetings held with each concerned party, individually, or 'unified' meetings with all stakeholders. The project proponent should be responsible for contacting the concerned parties to request for a meeting and the concerned party should indicate the meeting timing and delegate its representative in the meeting.

The following should be presented in the meeting:

- Project components and the activities of each component and summary of the project location features;
- List of concerned parties identified on the basis of location and nature of the project;
- The proponents view of the project's environmental and social issues as well as potential impacts;
- Commitment of the project owner towards improving the environmental condition in the surrounding area and to support the neighbouring community.

3. Consultation on the Draft EIA Report

Objective of the consultation in this phase

After the draft ESIA is prepared and before the submittal of the study to the EEAA, consultation should be undertaken on the study to disclose its results and provide the concerned parties with the opportunity to be reassured that points indicated in the scoping meetings have been addressed in the study and to be comfortable with the mitigation measures to which the proponent is committed.

Method of consultation

A unified meeting should be held (hearing session). Representatives of all concerned parties, including those who have participated in the scoping meeting, must attend the meeting. Meeting should be held in a venue that is accessible to all participants and concerned parties delegated representatives to attend.

In the meeting, the following should be presented:

- Results of the study while referring to the points raised by the concerned parties in the ESIA scoping phase;
- Presentation of the mitigation measures to which the project proponent is committed, aimed to reduce or mitigate negative impacts;

More than one third of the meeting duration should be dedicated to open discussion. This related to the presentation and the mitigation measures. During the meeting, EEAA representatives should ensure the participants that all points raised by the concerned parties have been addressed.

4.10.3.2 World Bank requirements for stakeholder engagement and public consultation

World Bank policies pertaining to stakeholder engagement activities are:

- Environmental and Social Standard 10: Stakeholder Engagement and Information Disclosure

4.10.3.3 IFI requirements for stakeholder engagement and public consultation

Proponent is committed to developing the project in line with international good practice standards and in particular the IFC PS 2012. The specific standard of reference is PS1 “Assessment and Management of Environmental and Social Risks and Impacts”

- PS1 requires a systematic approach to stakeholder engagement, which considers the views, interests and concerns of stakeholders, particularly those within the AOI. Such an approach is designed to help build and maintain a constructive relationship with Project stakeholders.
- PS1 requires the development of a Grievance Mechanism (GM) for the Project, which needs to be disclosed to affected communities and project workers, as appropriate, to ensure there is good understanding of the process.
- PS1 also states that in addition to meeting the requirements of the Performance Standards, ‘clients must comply with applicable national law, including those laws



Figure 4: Project stakeholder matrix

4.10.4 Stakeholder Identification

The first step in the process of stakeholder engagement should be the stakeholder identification:

- Determining who are the project stakeholders;
- Their key groupings and sub-groupings;
- How they will be affected and to what degree;

- What influence they could have on the project;

The answers to these questions will provide the basis from which to build the stakeholder engagement strategy. Here it is important to keep in mind that not all stakeholders in a particular group or sub-group will necessarily share the same concerns or have unified opinions or priorities. In addition, certain stakeholder groups might be pre-determined through regulatory requirements.

Defining project stakeholders requires clear description of their interest in the project as it will define the assessment and mapping of stakeholders.

IFC stakeholder engagement book provided practical steps to engage various stakeholders. They are as follow:

- Identify stakeholders directly and indirectly affected by the project.
- Identify those whose “interests” determine them as stakeholders.
- Being strategic and clear as to whom you are engaging with and why, before jumping in, could help save both time and money.
- Refer to historical stakeholder information related to your project or locality can save time and flag up risks, liabilities, or unresolved issues that can then be prioritized and managed in relation to the different strategic alternatives being considered.
- Develop socio-economic fact sheets with a focus on vulnerable groups.
- Verify stakeholder representatives and consulting with and through them should be an efficient way to disseminate information to large numbers of stakeholders and receive information from them.
- Engage with stakeholders in their own communities: in general, companies that choose a venue where stakeholders feel more comfortable - most likely at a location within the community – tend to have more productive engagement processes,
- Remember that government is a key stakeholder: there are many important reasons to establish and maintain good working relationships with governmental authorities at different levels.
- Work with representative and accountable NGOs and community-based organizations.
- Recognize employees as a good channel of communication: local communities tend to be viewed as those “outside” the company gates.

Below is an example of a list of stakeholders:



Figure 5: Sample of stakeholders

4.10.5 Stakeholder Engagement Process

Engagement of stakeholders is an evolving process that commences from screening phase and continues along project life. Each stage and phase has its specific objectives of engagement and result in specific output to be integrated in the ESIA study.

Below is a summary of Stakeholder Engagement Process:

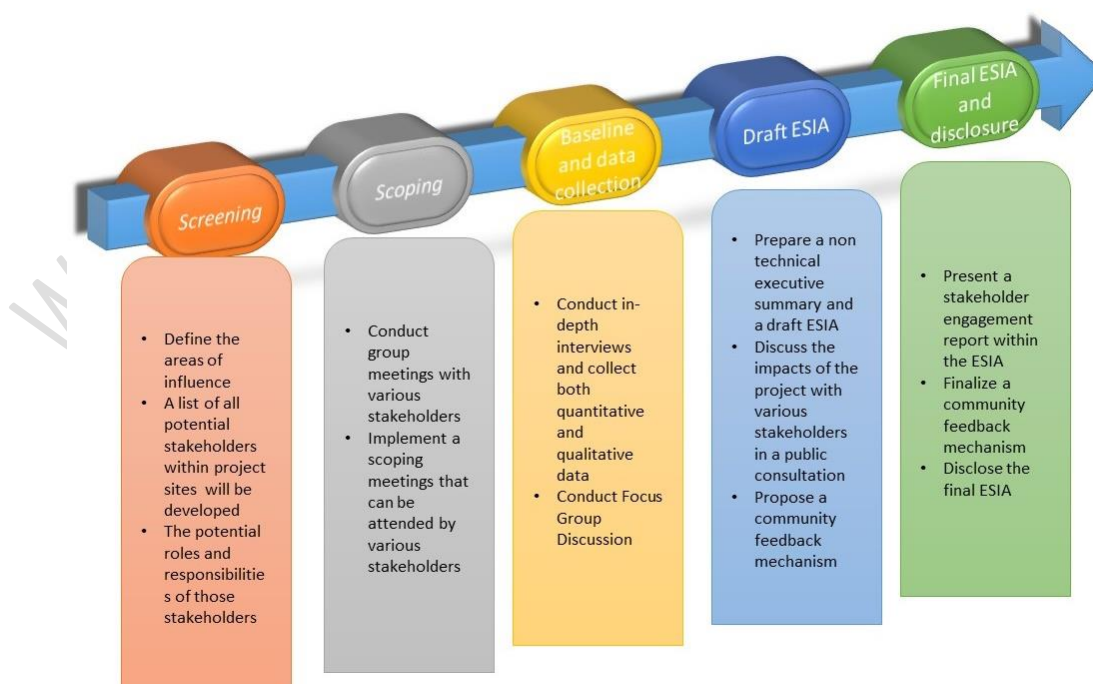


Figure 6: Stakeholder engagement process during the ESIA phases

4.10.5.1 Stakeholder engagement methods

Various techniques might be employed through stakeholder engagement exercises.

A) Public hearings

Public hearings are often the cornerstones of public participation processes and provide the opportunity for stakeholders to raise their concerns in open forums.

B) Focus group discussion and group meetings

Focus-group discussions are useful when clarifications are required from the community or when the project owner will need to assess the population's opinions on a particular issue. Focus-group meetings should also be held, as far as logistics allow, when specifically requested by a given interest group. The community liaison committee is a critical party in focused discussions.

C) Newspaper articles and publications in popular media

Articles could be written on an ongoing basis and forwarded to the national media to promote participation in an ESIA. Topics could include:

- General presentation by the project owner;
- Presentation of the ESIA and appropriate regulatory process requirements, including envisaged timeframes, opportunities to comment, etc.

D) Project information documents

Project information documents should be prepared to share sufficient information with the community. Information to disclose include:

- The purpose, nature, and scale of the project;
- A timetable for the project activities;
- A summary of the potential risks and impacts and their proposed mitigation and management measures;
- An overview of the future stakeholder engagement activities;
- The proposed grievance mechanism for the project; and
- Contact information (i.e., the Social Development Officer).

Flyers should be developed and distributed at the meetings, in addition to notice boards at Project site and near workforce accommodation areas.

Information to be updated at project milestones

4.10.5.2 Stakeholder engagement program

The project owner should be committed to develop an engagement program defining the following:

A) A programme for public disclosure and consultation before, during and after construction, covering disclosure by internet, in the local and national press and through NGOs and relevant authorities;

- this should be designed to communicate information about the project in as coherent manner as possible and in particular to avoid confusion or duplication;
- this might for example anticipate a single website, with a central hub disclosing common and aggregate information and individual pages for each project; and
- this should also provide for the social team to (a) collate and publish general information on the project on a regular basis; and (b) receive and publish project-specific information.

B) A summary program should be prepared including:

- Who should be engaged?

- When engagement should take place?
- Frequency of engagement.
- Engagement objectives
- Main issues of discussion
- Engagement responsibility
- Support materials and project information documents
- Outcomes of engagement
- Cost and monitoring responsibility

4.10.5.3 Grievance Mechanism

Based on IFC requirements for proper grievance mechanism, the project owner is committed to prepare two grievance mechanisms. The Project owner should provide a grievance mechanism for community and workers (and their organizations, where they exist) to raise workplace concerns.

Grievance is defined as a concern or complaint raised by an individual or a group within communities affected by company operations. Both concerns and complaints could result from real or perceived impacts of a company's operations, and might be filed in the same manner and handled with the same procedure. The difference between responses to a concern or to a complaint might be in the specific approaches and the amount of time needed to resolve it.

Grievance is any issue, concern, problem or claim (perceived or actual) that an individual or community group wants a company or contractor to address and resolve.

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“The term ‘grievance’ implies that there may be a problem. In practice, however, the nature of feedback that communities may want to bring to a company’s attention will vary, since communities often find it appropriate to use the same channels to communicate not only grievances but also questions, requests for information, and suggestions. Communities”

A) Workers grievance mechanism

The Project owner should inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them. The mechanism should involve an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned, without any retribution.

The mechanism should also allow anonymous complaints to be raised and addressed. The mechanism should not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.

B) Community grievance mechanism

The project owner should establish a grievance mechanism consistent with IFC Performance Standard1 as early as possible in the project development phase. This should allow the project owner to receive and address specific concerns about project activities raised by affected persons or members of host communities in a timely fashion, including a recourse mechanism designed to resolve disputes in an impartial manner.

Basic GM should be tailored based on the following principals and conforms to IFC principles:

- Proportionality: Scaled to risk and adverse impact on affected communities;
- Cultural appropriateness: Designed taking into account culturally appropriate ways of handling community concerns;
- Accessibility: Clear and understandable mechanism that is accessible to all segments of the affected communities at no cost;
- Transparency and accountability: To all stakeholders; and
- Appropriate protection: A mechanism that prevents retribution and does not impede access to other remedies

C) What Are the Process Steps for Grievance Management?

Handling grievances encompasses a step-by-step process as well as assigned responsibilities for their proper completion. Companies establishing grievance mechanisms should follow the process steps discussed in this section. Below is a figure showing the Five Process Steps of a Grievance Mechanism.

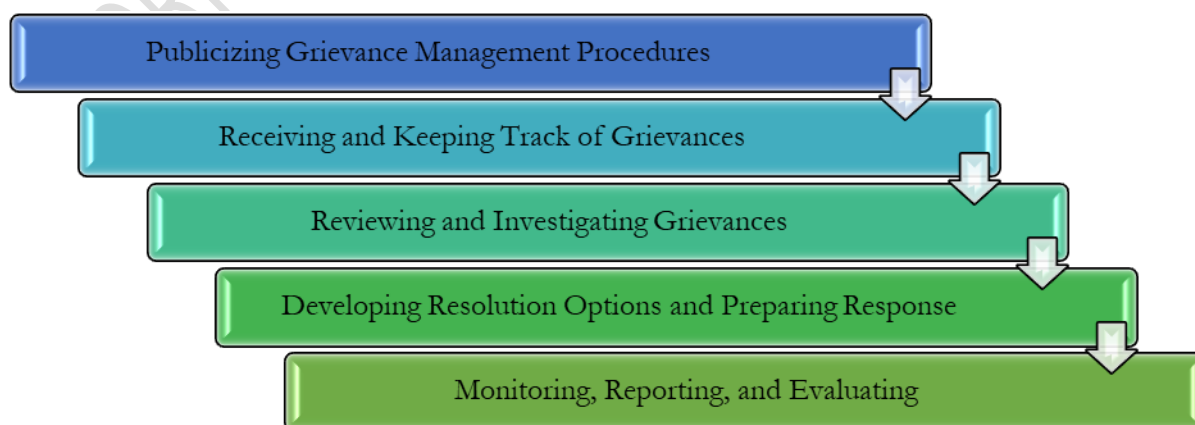


Figure 7: Five Process Steps of a Grievance Mechanism

- Step1: Publicizing grievance management procedures:
 - o The timing and the methodology grievance mechanism should be introduced to affected communities could have significant implications for its effectiveness over time.
 - o Guiding principles for publicizing a company grievance mechanism should be in line with cultural characteristics and accessibility factors. The information should include at least the following:
 - What project-level mechanisms are (and are not) capable of delivering and what benefits complainants can receive from using the company grievance mechanism, as opposed to other resolution mechanisms?
 - Who can raise complaints (affected communities)?
 - Where, when, and how community members can file complaints?
 - Who is responsible for receiving and responding to complaints, and any external parties that can take complaints from communities?
 - What sort of response complainants can expect from the company, including timing of response?
 - What other rights and protection are guaranteed?
- Step 2: Receiving and keeping track of grievances: the company needs to process the GM after informing the community about. The project owner should be responsible for 1) collecting grievances; 2) recording grievances as they come in; 3) registering them in a database; and 4) tracking them throughout the processing cycle to reflect their status and important details.
- Step 3: Reviewing and investigating grievances: all complaints should be handled as promptly as possible, depending on the nature and complexity of the matter. The central unit or person responsible for grievance handling should organize the process to validate the complaint's legitimacy and arrange for investigation of details.
- Step 4: Developing resolution options and preparing a response once the grievance is well understood, resolution options could be developed taking into consideration community preferences, project policy, past experience, current issues, and potential outcomes.
- Step 5: Evaluating the GM: monitoring and reporting could be tools for measuring the effectiveness of the grievance mechanism and whether resources are used efficiently. These tools could also highlight broad trends and recurring problems so they could be resolved proactively before they become points of contention.

4.11 Conclusion and Summary of the Outcomes

This should be a summary of the report (prediction and evaluation of impacts, mitigation and alternative processes, residual impacts and discussions outcomes), to emphasise:

- Which impacts are likely to be significant;
- How significant they will be;
- What environmental and social aspects are likely to be affected;
- Whether mitigation is possible;
- The likely success of mitigation measures adopted or recommended to alleviate those impacts;
- Outcomes of the consultation activities.

This information could be presented either as text, or as summary tables, if desired.