



Greater Cairo Air Pollution Management and Climate Change Project

Additional Finance: IMPROVED MANAGEMENT OF eWASTE AND HEALTHCARE WASTE FOR REDUCTION OF uPOPS EMISSIONS

*ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK
(ESMF ADDENDUM)*

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List of Acronyms

APCC	Air Pollution and Climate Change
CAIP	Cairo air improvement project
CAPMAS	Central Agency for Public Mobilization and Statistics
CCCD	Climate Change Central Department
EEAA	Egyptian Environmental Affairs Agency
EHS	Environmental, Health and Safety
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMMF	Environmental and Social Management and Monitoring Framework
ESMP	Environmental and Social management plan
ESS	World Bank Group Environmental and Social Safeguards
eWaste	Electronic waste
GBV	Gender Based Violence
GC	Greater Cairo
GCAPCCP	Greater Cairo Air Pollution and Climate Change Project
GEB	Global Environmental Benefits
GoE	Government of Egypt
GRM	Grievance Mechanism
HCW	Healthcare Waste
HSE	Health, Safety and Environment
IPC&WMP	Infection Prevention and Control and Waste Management Plan
IVA	Independent verification agent
LMP	Labor management procedures
MoE	Ministry of Environment

MoHP	Ministry of Health and Population
MSW	Municipal Solid Waste
NCDs	Non-Communicable Diseases
PDO	Project development objective
PPE	Personal protective equipment
uPoPs	Unintentional persistent organic pollutants
WB	World Bank

Executive Summary

On September 30, 2020, the World Bank (WB) approved the Egypt GCAPM&CC (P172548, Loan No. IBRD-91660). The additional grant activities have been designed to scale-up the long-term sustainability of the parent project and increase its Global Environmental Benefits (GEB). The additional finance (AF) new activities focus on reduction of unintended persistent organic pollutants (uPOPs) aligns with the “GEF Project Design and Review Considerations in Response to the COVID-19 Crisis and the Mitigation of Future Pandemics”. The new Component will comprise two sub-components as described below:

- Sub-component 6.1: Supporting effective eWaste management, models, and solutions (Proposed GEF grant: US\$5.0 million; Co-financing: US\$96 million). This sub-component will support the implementation of the National Policy Framework and Legal Directive on eWaste and piloting solutions and models for eWaste management and recycling to reduce air pollution and climate pollutant emissions. Activities are designed to support the country in a life-cycle approach to eWaste from understanding its generation to safe recycling and safe extraction of precious commodities.
- Sub-component 6.2: Supporting effective healthcare waste management, models, and solutions (Proposed GEF grant: US\$4.13 million; Co-financing: US\$30 million). This component will support activities to strengthen the enabling environment for sound management of Healthcare Waste and pilot innovative solutions for sound management of Healthcare Waste for reduction of air pollution, climate pollutant and uPOPs emissions to yield long-term results and systems-wide change.
- Additional activities to Support the Government of Egypt’s efforts to prepare its application to the Minamata Convention will also be executed under sub-component 6.2. The GoE has recently decided to pursue application and signing of the Minamata Convention on Mercury. In support of these efforts, the project will support an international expert and technical assistance activities towards the early stage development of the application.

Legal Framework

The main laws applicable to this project are listed below followed by more detailed description:

- Law No. 4 of 1994 Amended by Law No. 9 of 2009 (Environment Law) and its amended Articles by Resolution 1095 of 2011, Decree No. 710 of 2012, Decision of the Prime Minister No. 964 of 2015 and Decree No. 618 and 1963 of 2017. The aforementioned amendments entailed articles related to hazardous and solid waste management (collection, handling, transport and disposal). This law controls the potential environmental impacts of the proposed subprojects.
- Law No. 38 of 1967 (the Public Cleanliness Law) and its executive regulations issued by the Ministry of Housing dealing with solid waste to regulate the collect and disposal of construction and operation waste generated from subprojects under the first three components and maintaining the cleanliness of roads and public properties

- Decree No. 3005 of 2015 on establishing the Waste Management Regulatory Authority (WMRA) and its mandates, which is a key stakeholder in the execution of this project
- Traffic Law No. 66 of 1973 amended by Law 121 of 2008 and decree No. 143 of 2014 to regulate the movement of vehicles due to activities resulting from the project components such as transporting construction materials and waste
- Waste Management Law No. 202 of 2020 and its executive regulations issued in 2021 This Law consisting of 80 articles divided in five Sections and aims at regulating the organization of waste management in Egypt, excluding nuclear and radiological activities which are regulated by Law No.7 of 2010.

Healthcare waste and hazardous substances

Law 4/1994 and its amendments include procedures for handling hazardous substances and wastes, which are to a great extent conforming to international standards and best practices. It prohibits, through article 37, and articles 38, 39 and 41 of the executive regulations, the disposal of any solid wastes except in areas designated for this purpose. This includes construction and demolition wastes.

Hazardous wastes are governed through articles 29 to 33 of law 4/1994 and states that the entity producing hazardous wastes in gaseous, liquid or solid form is committed to collect and transport the generated waste to designated disposal sites, which are predetermined by the local authorities, the competent administrative authorities and the Egyptian Environmental Affairs Agency.

Also, the newly established Waste Management Regulatory Authority (WMRA) issued a Healthcare Waste Management Guidelines in 2020, which represents an updated version of the previous guideline issued in 2015. The guidelines cover the following aspects:

- Hazardous waste classification and hazards
- Current situation of the healthcare waste management system in Egypt
- Legal and institutional framework for healthcare waste management
- HCW life cycle including segregation, collection, transport, storage and treatment conditions
- External transport and final disposal conditions
- Handling of mercury and mercury-containing tools and equipment
- Green procurement
- Occupational health and safety
- Personal protective equipment
- Emergency response plan
- Public awareness
- Monitoring and evaluation

Impact Identification and Assessment

Table E1 below includes the identified negative impacts for the relevant project components. Building on the same criteria and methodology used in the Parent Project ESMF, a preliminary assessment of the potential adverse impacts during the implementation of the new component has been conducted and the significance of impacts are summarized below.

Table E1 - Description of negative impacts for the relevant project components and their significance

Component and Activity	Potential negative environmental, occupational health & safety, community health & safety and social risks and impacts	Significance ¹
Components 6.1 and 6.2 - piloting collection, safe dismantling, and recycling of eWaste, particularly older equipment and household level eWaste at strategic locations and segregation and hazardous waste disposal, particularly waste which will not be targeted through EPR; - testing of 'take-back' schemes and enhancing engagement with the private sector; - piloting appropriate recycling and re-sale of safely segregated HCW	(i) Workers health and safety due to exposure to handling, storage and disposal of HCW and eWastes	3
	(ii) Workers health and safety during operation and maintenance of project procured HCW equipment	2
	(iii) Community health and safety due to exposure to handling, disposal and/or treatment of HCW and eWaste	3
	(iv) Environmental aspects related to release of pollutants to air, water and land due to routine, nonroutine, and accidental circumstances	3
	(v) Management, including storage, transportation, disposal and/or treatment, of hazardous wastes (HCW and eWastes) in an environmentally sound and safe manner that includes the appropriate control of emissions and residues.	3
	Risks of child labor	3
	Risk of SEA/SH including among beneficiaries of the additional finance	3
	Risk of biases in the selection of trainees and/or exclusion of certain groups	3

Environmental and Social Management and Monitoring framework

A comprehensive environmental and social management and monitoring framework has been developed (Section 7 of the document) . It includes mitigation and pollution prevention and control measures for the following risks/impacts:

- Risk of biases in the selection of trainees that would lead to the exclusion of certain groups (e.g. female healthcare workers).
- Risk of SEA/SH including among beneficiaries of the additional finance
- Waste handling and infection control and spread of infection through improper managing of wastes
- Risks associated with procurement of HCW treatment equipment
- occupational health and safety risks
- Improper waste storage leading to increased probability of disease transmission

¹ Using the same methodology as in the Parent project ESMF

- Collection and Off-site transport and risk of disposal of infectious and /or chemical wastes to illegal bodies
- Waste treatment and potential soil, air, surface and groundwater contamination in addition to community health and safety impacts including increased levels of air pollution from open burning of untreated wastes.
- Emissions to Air from on-site incinerators, potentially resulting in the emissions of heavy metals; organics; various organic compounds; hydrogen chloride; and fluorides; in addition to typical combustion products such as sulfur oxides, nitrogen oxides, VOCs, CO and nitrous oxide
- Labor related risks including Occupational health and safety risks, working conditions, etc. for all the project workers
- Risk of child labor
- Risk of unresolved complaints from the local communities
- Risk of unresolved complaints from the healthcare workers
- Weak level of citizens and stakeholders' participation

Consultation activities

- A consultation session was conducted, to present the findings of the ESMF addendum in line with the national legislative requirements and the World Bank standards. The session was held in Cairo House in Cairo, 1st June 2022. and the results of the consultations are reflected in the relevant sections of this document.

Summary of the points raised in the consultation activity for the additional finance

- Challenges faced by hospitals in managing healthcare waste given the hazardous nature, including operational challenges, risk on labor.
- Formalization of those involved in recycling, electronic waste or medical waste should be supported by membership in the Federation of Egyptian Industries.
- Necessity of focusing on the economy when addressing the private sector and better understanding for the challenges the latter encounter and acknowledge the fact that the private sector primarily concerned with achieving profit and economic return.
- Necessity of giving options and incentives for informal companies to formalize. If they do not show willingness, they should not benefit from incentives (e.g training or awareness).
- Ministry of Environment to coordinate donor projects of similar interests, so there is no duplication of efforts and to ensure that lesson learnt generated from projects are disseminated to inform new projects.
- The necessity of having an economic feasibility.
- The government should provide all the required facilities to companies that dispose of hazardous waste (e.g. standardized contracts, specific sites with usufruct for a period of 15 or 20 years).
- Need to conduct awareness campaigns in the field of electronic waste, whether for factories or homes.
- Necessity of having modern technology because there is still leakage of electronic waste.

- If the informal companies are not properly integrated and feel the interest they will have, they will not comply.
- An association will be established for all informal companies.
- Recommendation to add component in the project to cover the solid waste management in Sharm El Sheikh given the high generation of eWaste.
- Ministry of Environment to enforce factories to not deal with unlicensed contractors, and therefore unlicensed traders and contractors will be forced to obtain a license.
- Providing support to the private sectors to mitigate the negative effects, such as granting them interest-free loans and providing them with modern technologies.
- Analyzing the extracted materials from eWaste to take into consideration the nanomaterial approach
- Think about incentives for recyclers and factories to encourage them to grow the waste recycling industry in Egypt
- The importance of certifications as ISO for waste recycling companies
- Importance of coordination with Ministry of Communication to establish a guidance price list for used electronic appliances in order to organize the market of E-waste

1. Background

On September 30, 2020, the World Bank (WB) approved the Egypt GCAPM&CC (P172548, Loan No. IBRD-91660). The project became effective in early June 2021 and is financed with an IBRD loan of US\$200 million. The GCAPM&CC or ‘parent’ project has five main components focusing on: (i) enhancing the air quality management and response system; (ii) supporting the operationalization of Solid Waste Management (SWM) master plans; (iii) supporting vehicle emission reduction; (iv) enhancing capacity and behavioral change; and (v) project management, monitoring and evaluation. The Improved Management of eWaste and Health Care Waste for Reduction of uPOPs Emissions (“the project”), as additional financing to the Greater Cairo Air Pollution and Climate Change Management Project is designed within the context of the US\$200M Greater Cairo Air Pollution Management and Climate Change (GCAPM&CC) project in order to benefit from significant substantive and administrative synergies with the larger project. The project development objective (PDO) remains unchanged, namely, to reduce air and climate emissions from critical sectors and increase resilience to air pollution in Greater Cairo. The objective of the Global Environment Facility (GEF)-supported component/AF is to improve management of electric and electronic waste (eWaste) and Healthcare Waste (HCW) for reduced unintentional persistent organic pollutants (uPOPs) emissions and release to the environment. As uPOPs are a component of the larger category of air emissions with both global and local impacts, this global environment-oriented objective enhances the overall PDO.

The additional grant activities have been designed to scale-up the long-term sustainability of the parent project and increase its Global Environmental Benefits (GEB). The proposed new component will address key elements of the country’s national action plan on uPOPs, focusing on improving and providing guidance within the regulatory framework (especially with regard to the new waste law and its executive regulations), supporting data collection, management and monitoring, raising awareness, improving safe handling capacity, formalizing the recycling sector, and improving disposal options. In addition, the new component will assist the country in preparing the necessary documents to formalize their application to the Minamata convention to support addressing issues related to mercury pollution in the medium to long term.

The AF new activities focus on reduction of uPOPs aligns with the “GEF Project Design and Review Considerations in Response to the COVID-19 Crisis and the Mitigation of Future Pandemics”. The current design supports the mitigation of risks to achieving the GEB through its focus on proper segregation, minimization, and disposal of HCW. Moreover, the project will contribute to green recovery and resilience elements for the GEF focal area by minimizing human health risks while reducing land, air and water pollution. Indeed, the project will help build increased health and resilience of local communities and the environment by reducing the exposure risk to hazardous waste and minimizing waste that threaten GEBs by contributing to a reduction in POPs and GHG emissions. Reducing exposure is particularly important given recent studies which link adverse effects from air pollution to the increased severity and frequency of coronavirus infection. Finally, to offset the adverse economic impacts of COVID-19 on beneficiaries, the Project will contribute towards resilient and sustainable recovery which includes a specific COVID-19 response in support of Government efforts to mitigate health and environmental hazards. The activities are focused on building responsiveness and resilience into institutions and systems with an emphasis on the health

sector in treating and minimizing contaminated waste, the service sector in enhancing worker safety as well as awareness raising on the links between increased risk of respiratory infection and air pollution. Finally, supporting the country's efforts to prepare for application to the Minamata convention supports long-term reduction in global mercury emissions and exposure.

2. Description of the Additional Finance interventions

A new Component 6 titled “Enhanced eWaste and HCW management for Reduction of uPOPs” will be added to the “**parent project**” components. The new Component will comprise two sub-components as described below:

- **Sub-component 6.1: Supporting effective eWaste management, models, and solutions (Proposed GEF grant: US\$4.8 million)** to support the implementation of the National Policy Framework and Legal Directive on eWaste and piloting solutions and models for eWaste management and recycling to reduce air pollution and climate pollutant emissions. Activities are designed to support the country in a life-cycle approach to eWaste from understanding upstream issues, such as causes and generation of e-waste to safe collection, recycling and extraction of precious commodities and disposal of non-recyclable material. Specific activities include: (i) strategy development, feasibility studies and guidance for a range of issues, including: standards for recycled plastics, management of hazardous fraction of e-waste and integration with hazardous waste management systems under the parent project, used electronic equipment, particularly at the household level including batteries and electrical appliances and their integration into existing strategies for the refurbishment, recycling, disposal and/or take back of equipment/e-waste; (ii) technical assistance, guidance, and capacity building for key public and private sector entities and agencies for the enforcement and implementation of upcoming Extended Producer Responsibility (EPR) schemes for new electronic equipment; (iii) support for formalizing and improving safety for recyclers and handlers of eWaste, including: development of standards for recycling and best available technologies/best environmental practices (BAT/BEP), assessment and technical assistance for enhanced efficiency in recycling processes, development of strategies and support for safe and effective recycling of batteries, development of risk assessment studies and risk mitigation strategies and capacity building for recyclers to ensure safer/cleaner processing for improved human and environmental health, and establishing safe exposure limits for key uPOPs; (iv) needs assessment and support for alignment with the globally harmonized systems (BAT/BEP, Sound Management of Chemicals, etc.). on waste and eWaste, particularly with regard to developing train-the-trainer programs and other training/educational tools and products; (v) technical assistance on guidance for assessing, processing and/or exporting of printed circuit boards ; (vi) support for updating and monitoring of eWaste data and utilization of the uPOPs tool kit and eWaste calculator for eWaste processing and needs assessment for establishing an integrated management information system (MIS); (vii) piloting collection, safe dismantling, and recycling of eWaste, particularly older equipment and household level eWaste at strategic locations and segregation and hazardous waste disposal, particularly waste which will not be targeted through EPR; (viii) testing of ‘take-back’ schemes and enhancing engagement with the private sector; and (ix) support small entrepreneurs in the identification of a) possible local financing mechanisms for start-ups and b) identification of possible markets for recycled materials (e.g., gold, copper, silver) nationally, regionally, and internationally.
- **Sub-component 6.2: Supporting effective healthcare waste management, models, and solutions (Proposed GEF grant: US\$4.00 million).** This component will support activities to strengthen the enabling environment for sound management of Healthcare Waste and pilot innovative solutions for sound management of Healthcare Waste for reduction of air pollution, climate pollutant and uPOPs emissions to yield long-term results and systems-wide change. The scope of activities will cover the entire cycle from the introduction of

proper measures for the reduction of potential healthcare waste to treatment of the waste using appropriate emission control technologies and/or practices². Specific activities will include: (i) undertaking an assessment of current needs and data on HCW in a range of healthcare settings, including university and health insurance hospitals, pharmacies, etc.; (ii) providing support for key agencies in the development of an integrated management information system (MIS) to support enhanced monitoring of HCW management and disposal practices; (iii) providing technical assistance to select healthcare institutions, including on utilization of possible financial mechanisms, procurement of environmentally-sound equipment ('green procurement'), training of staff, and integration with new protocols, including those on biological and chemical waste segregation and certification requirements; (iv) supporting the preparation of a plan to roll out proper HCW management throughout the country in line with new regulations and in collaboration with key agencies and stakeholders (including women and other vulnerable communities); (v) piloting appropriate treatment of HCW; and (vi) developing and modeling public/private financing and investment models for collection and treatment of HCW.

- **Sub-component 6.3: Supporting the preparation of Egypt's application to Minamata Convention (Proposed GEF grant: US\$0.33 million).** The GoE is initiating the preparation of the portfolio for Minamata Convention on Mercury. In support of this effort and building on the results of sub-components 6.1 and 6.2, the project will provide international expertise and technical assistance activities towards the early-stage development of the portfolio and initiation of key activities for the country's future compliance with the convention. These activities include the following: (i) identifying current regulatory and policy needs for meeting obligations of the convention; (ii) identifying technical needs of EEAA, MoH and other agencies to successfully undertake changes for meeting convention obligations; and (iii) identifying and filling, as possible, current gaps in data and state of knowledge for successful preparation for signing.

² The final disposal of treated and remaining untreated waste will be covered under Component 2 of the initial project.

3. Objective of this ESMF Addendum

- An addendum to the ESMF³ of the Greater Cairo Air Pollution Management and Climate Change Project (parent project) needs to be prepared to set out any additional principles, rules, guidelines and procedures to assess the environmental and social risks and impacts of the new interventions under Component 6 in a clear manner. It contains measures and plans to reduce, mitigate and/or offset adverse risks and impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing the potential new risks and impacts, and the borrower capacity to manage environmental and social risks and impacts. It also determines any specific instruments (e.g. OHS plans, hazardous waste management plans...etc.) needed to address the different E&S risks, the time to complete such instruments and the estimated budgets as well as responsible project parties. The ESMF addendum has been consulted upon on June 1st, 2022, and the results of the consultations are reflected in the relevant sections of this document.

³ [Greater Cairo Air Pollution Management and Climate Change Project \(eeaa.gov.eg\)](http://eeaa.gov.eg)

4. Legal Framework

I. National Legislation

The main laws applicable to this project are listed below followed by more detailed description:

- Law No. 4 of 1994 Amended by Law No. 9 of 2009 (Environment Law) and its amended Articles by Resolution 1095 of 2011, Decree No. 710 of 2012, Decision of the Prime Minister No. 964 of 2015 and Decree No. 618 and 1963 of 2017. The aforementioned amendments entailed articles related to hazardous and solid waste management (collection, handling, transport and disposal). This law controls the potential environmental impacts of the proposed subprojects.
- Law No. 38 of 1967 (the Public Cleanliness Law) and its executive regulations issued by the Ministry of Housing dealing with solid waste to regulate the collect and disposal of construction and operation waste generated from subprojects under the first three components and maintaining the cleanliness of roads and public properties
- Decree No. 3005 of 2015 on establishing the Waste Management Regulatory Authority (WMRA) and its mandates, which is a key stakeholder in the execution of this project
- Traffic Law No. 66 of 1973 amended by Law 121 of 2008 and decree No. 143 of 2014 to regulate the movement of vehicles due to activities resulting from the project components such as transporting construction materials and waste
- Waste Management Law No. 202 of 2020 and its executive regulations issued in 2021 This Law consisting of 80 articles divided in five Sections and aims at regulating the organization of waste management in Egypt, excluding nuclear and radiological activities which are regulated by Law No.7 of 2010.

a. Healthcare waste and hazardous substances

Law 4/1994 and its amendments include procedures for handling hazardous substances and wastes, which are to a great extent conforming to international standards and best practices. It prohibits, through article 37, and articles 38, 39 and 41 of the executive regulations, the disposal of any solid wastes except in areas designated for this purpose. This includes construction and demolition wastes. Hazardous wastes are governed through articles 29 to 33 of law 4/1994 and states that the entity producing hazardous wastes in gaseous, liquid or solid form is committed to collect and transport the generated waste to designated disposal sites, which are predetermined by the local authorities, the competent administrative authorities and the Egyptian Environmental Affairs Agency.

Law 4/1994 and its executive regulations (ER) include several relevant articles to healthcare waste, summarized below:

- Article 19: states the environmental impact assessment requirements
- Article 22: states the environmental register requirements
- Article 29: prohibits the handling of hazardous materials and wastes without a license
- Article 31: states the license requirements for establishing waste treatment facilities
- Article 33: states the requirements related to the hazardous waste register and minimizing the environmental impacts for all hazardous waste generators
- Articles 85, 88 & 95 of the Law: state the penalties for non-compliance with the law requirements
- Article 102 & 104 of the Law: related to inspection authorities

In July 2020, EEAA has also issued a Guideline for the safe handling and disposal of Personal Protective Equipment (PPEs) potentially contaminated with COVID-19 in the different sectors⁴ including the health sector. It contains the following general measures:

- 1- Assign someone responsible for managing waste at each establishment
- 2- Raising awareness
- 3- Minimize waste
- 4- Take extra precautions in the handling of bed sheets, towels, etc.
- 5- Regularly disinfect all surfaces

The Guideline clearly states that:

- All PPEs shall be considered hazardous medical waste and handled/treated/disposed accordingly
- All hazardous waste transport vehicles shall be completely disinfected once after exiting the healthcare facility (HCF) and a second time after unloading the waste at the waste treatment/disposal facility
- All HCF waste plastic bags to be placed in second plastic bag for additional safety. All bags to be disinfected regularly with a diluted Chlorine solution or with any equivalent disinfectants. All bags to be placed in a closed container.
- All HCF waste to be given the priority in handling and disposal once they are received at the waste treatment/disposal facility
- All HCF waste to be transported in closed vehicles to the nearest landfill (where a special cell should be constructed), as the preferred option over incinerators.
- Disposed of waste shall be covered with a limestone layer and sprayed with water then covered with a soil layer.

Also, the newly established Waste Management Regulatory Authority (WMRA) issued a **Healthcare Waste Management Guidelines** in 2020, which represents an updated version of the previous guideline issued in 2015. The guidelines cover the following aspects:

- Hazardous waste classification and hazards
- Current situation of the healthcare waste management system in Egypt
- Legal and institutional framework for healthcare waste management
- Healthcare waste (HCW) life cycle including segregation, collection, transport, storage and treatment conditions
- External transport and final disposal conditions
- Handling of mercury and mercury-containing tools and equipment
- Green procurement
- Occupational health and safety
- Personal protective equipment
- Emergency response plan
- Public awareness
- Monitoring and evaluation

b. Integrated Handling and Management of Hazardous Materials and Wastes (also applicable to eWastes)

Executive regulations of Law 202, 2020

4

<http://www.eeaa.gov.eg/Portals/0/Documents/guides/الوقاية%20من%20مهمات%20التخلص%20الارشادي%20الدليل%20الارشادي%20للشخصية%20الأصدار%20٢٠٢٠.pdf>

Article 50

The owner of the facility or the person responsible for its management whose activity results in hazardous waste in accordance with the provisions of the law shall keep a paper or electronic record or both wastes, and how to dispose of them, as well as the parties contracting with them for any management operations of these wastes, in accordance with the record form contained in Annex (7) attached to this Regulation. If the activity of the facility that produces hazardous materials or waste has been transferred or discontinued, the owner of the facility or responsible for its management must purify it and prepare the soil in which this activity was based, in accordance with the requirements and standards set forth in Annex No. (8) accompanying this regulation.

Article 51

The insurance policy that is obligated to be submitted by those who are licensed to handle, and integrated management of hazardous materials and waste shall require the following:

- 1- To be issued by one of the insurance companies approved by the Financial Supervisory Authority
- 2- It shall be valid for a period equivalent to the period of the license issued to the facility, plus three months
- 3- To be of the type of “comprehensive liability insurance policy”

The value of the insurance policy shall not exceed (50%) of the total estimated value of the insured activity against potential damage or pollution.

It is also required in the following letter of guarantee:

- 1- To be issued by one of the local banks approved in the Arab Republic of Egypt
- 2- It must be valid for a period equal to the period of the license issued to the facility plus three months
- 3- The letter should include the EEAA’s determination of the estimated value of the likely environmental deterioration according to the nature of the facility.

In the case of applying to the administrative authorities to obtain a license to engage in an activity related to handling or integrated management of hazardous materials or waste, or to any of the projects or entities affiliated with it, the insurance policy or letter of guarantee must be submitted to the competent ministry to cover potential damages and losses in the event of an accident or pollution resulting from the exercise of any of these activities.

Article 52

It is prohibited to use empty containers of hazardous materials or use products resulting from their recycling, except in accordance with the requirements stipulated in Annex No. (9) attached to these regulations.

Article 53

The disposal of hazardous materials and waste shall be in accordance with the conditions and standards set forth in Annex No. (10) attached to this regulation.

Article 54

All establishments that leave hazardous waste behind are obligated to provide tools and supplies, separating, collecting, transporting, and storing inside the facility, in accordance with the requirements and standards contained in appendices No. (11) and (17) accompanying this regulation. The facilities are also committed to the periodic maintenance of these tools and supplies to ensure their validity and efficiency.

c. Ambient Air quality and Emissions to Air

The provisions of Articles 34 to 40, 42, 43 and 47 in Law 4/1994, amended by Law 9/2009, Article 42 and Annex 5 and 6 of the Implementing Regulations set out maximum permissible limits for outdoor air pollutants.

Table 4-1 below clarifies the WB requirements for emissions to air specified in the WBG EHS Guidelines for Healthcare facilities. The comparison between ambient air quality and emission standards of Law 4/1994 and interim targets of the WBG EHS General Guidelines (as per the WHO ambient air quality guidelines Global Update, 2005) is presented in Table 4-2.

Table 4-1: Requirements for emissions to air, WBG EHS Guidelines Healthcare facilities.

	WBG EHS Guidelines for Healthcare facilities
Total Particulate matter (PM) mg/Nm ³	10
Total organic carbon (TOC) mg/Nm ³	10
Hydrogen Chloride (HCl) mg/Nm ³	10
Hydrogen Fluoride (HF) mg/Nm ³	1
Sulfur dioxide (SO ₂) mg/Nm ³	50
Carbon Monoxide (CO) mg/Nm ³	50
NO _x mg/Nm ³	200-400
Mercury (Hg) mg/Nm ³	0.05
Cadmium + Thallium (Cd + Tl) mg/Nm ³	0.05
Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V mg/Nm ³	0.5
Polychlorinated dibenzodioxin and dibenzofuran (PCDD/F) ng/Nm ³ TEQ	0.1

Table 4-2: Ambient Air Quality Gap Analysis.

Ambient air quality Limits (with the more stringent limits highlighted)						
	Egyptian Law 4			WBG EHS General Guidelines ⁵		
Exposure Period	1 hr	24 hrs	1 year	1 hr	24 hrs	1 year
Carbon monoxide CO (µg/m ³)	30 (urban and indus.)	N/A	N/A	N/A	N/A	N/A
Sulphur dioxide SO ₂ (µg/m ³)	300 (urban) 350 (indus.)	125 (urban) 150 (indus.)	50 (urban) 60 (indus.)	N/A	125 (IT ⁶ -1) 50 (IT-2) 20 (guideline)	N/A
Nitrogen Oxides NOx (µg/m ³)	300 (urban) 300 (indus.)	150 (urban) 150 (indus.)	60 (urban) 80 (indus.)	200 (guideline)	N/A	40 (guideline)
Particulates PM ₁₀ (µg/m ³)	N/A	150 (urban) 150 (indus.)	70 (urban) 70 (indus.)	N/A	150 (IT-1) 100 (IT-2) 75 (IT-3) 50 (guideline)	70 (IT-1) 50 (IT-2) 30 (IT-3) 20 (guideline)
Particulates PM _{2.5} (µg/m ³)	N/A	80 (urban) 80 (indus.)	50 (urban) 50 (indus.)	N/A	75 (IT-1) 50 (IT-2) 37.5 (IT-3) 25 (guideline)	35 (IT-1) 25 (IT-2) 15 (IT-3) 10 (guideline)
Total suspended particles TSP (µg/m ³)	N/A	230 (urban) 230 (indus.)	125 (urban) 125 (indus.)	N/A	N/A	N/A

d. National action Plan (uPOPs)

The Arab Republic of Egypt has signed the Stockholm Convention on 05/2002 and ratified it on 05/2003 for controlling the emission of POPs and had its National Implementation Plan (NIP) in accordance with other signatory countries. On the other hand, a set of environmental measures was adopted for environmental protection aiming among other things to minimize the emission of POPs in different environmental segments. A prominent component of the NIP was the preparation of an inventory of POPs that main industries and other activities produce.

The objectives of the implementation plan is to establish a national coordinating and monitoring mechanism for the sound management of such pollutants, and setting up a national inventory of chemicals especially the industrial and the unintentional POPs.

Laws and Ministerial decrees related to POPs.

- Decree No. 55/96 of the Ministry of Supply and Internal Trade that bans the use, import and production of 88 hazardous pesticides, which includes all substances mentioned in The Stockholm Convention

⁵ World Health Organization (WHO). Air Quality Guidelines Global Update, 2005

⁶ IT refers to Interim target, until achieving the guideline value

- Decree No. 60/86 of the Ministry of Agriculture and Land Reclamation, which prohibits the use of some pesticides that contains harmful substances for public health and environment.
- Law No. 4/1994 of Ministry of State for Environmental Affairs (MSEA) which abides the sound management to all kind of chemicals. (Article 29 establishes the prohibition of displacing hazardous waste without a license, Article 30 delegates the regulation of hazardous waste management to rules and procedures to be developed, Article 31 banning the building or operating waste disposal facilities without a license issued by the competent authorities, Article 32 prohibiting the introduction in the Egyptian territory of hazardous waste without a permit, and Article 33 regulating pollution of hazardous waste and obligation for decontamination.)
- Decree No. 338/1995 of Prime Minister for issuing the Executive Regulation of Law 4,1994
- Law No. 21/1958 and Decree No. 91/1959 of Ministry of industry that sets regulations for production, handling and importing of chemicals.
- Decree No. 413/1996 of Ministry of Health and Population abides obtaining licenses in order to handle hazardous chemicals and waste.
- Decree No. 151/1999 of Ministry of Industry mentions chemicals which are prohibited to use without obtaining a license
- Resolution No. 1445/2003 defining hazardous substances and prohibiting their handling, importation and trade – Ministry of Agriculture and Land Reclamation.
- Resolution No. 851/2006 listing hazardous and dangerous chemical substances and bans the circulation of these substances unless obtaining a license – Ministry of Trade and Industry.

e. EIA categories according to the Country System

The national Environmental and Social Impact Assessment process according to Law 4/1994 (amended by Law 9/2009), as detailed in the guidelines of principles and procedure for EIA (2009), includes the following categories: A, B, scoped B and C, representing an increasing level of impact (inverse order from ESF classification: High , Substantial , Moderate and Low Risk).

The national Guidelines classify projects based on their expected impacts:

- Category C: these include high-impact projects requiring full-fledged ESIA;
- Category Scoped EIA: This includes projects, which have relatively higher impacts than the Category B list, but still lower than Category C. Industrial projects of this category shall be classified as “C” if implemented outside licensed industrial zones and tourism projects of this category shall be also classified as “C” if implemented in protectorates;
- Category B: these projects require a Form B ESIA with less level of details than Class C full ESIA;
- Category A: these projects require a Form A ESIA with less requirements than Form B projects;
- Special condition projects which do not require the ESIA but will be licensed given that the project developer will comply with certain standard requirements.

II. World Bank Environmental and Social Framework

While the Environmental and Social Standards (ESS) relevant for the parent project will remain relevant for the project, including ESS1, ESS2, ESS3, ESS4, ESS5, ESS8 and ESS 10 as a whole (parent project ESMF⁷, section 3.2.1 p. 38), the environmental, social (including land related issues requiring land acquisition and/or resulting in physical and/or economic displacement according to ESS5) as well as cultural heritage (relevant to ESS8) are limited to the sub-components included under components 2 and 3 only.

5. Environmental and Social Baseline

a. Health Sector Overview

Healthcare services in Egypt is provided by many actors including government's different ministries, parastatals, and the private sector. The government sector consists of different parallel delivery systems maintained by various line ministries in which there is no separation between financing and healthcare service provision functions. The parastatals include (a) the Health Insurance Organization (HIO) which provides not only health insurance coverage but also health services for civil servants and preschool and school children (around 58 percent of the population), (b) the Curative Care Organization (CCO) which provides secondary hospital services to both public and private health insurance beneficiaries, and (c) the Teaching Hospitals and Institutes Organization (THIO) which provides tertiary care and treats non-HIO insured individuals. In addition, many nongovernmental organizations (NGOs) including religiously affiliated clinics and other charitable organizations also provide private-not-for-profit services.

According to the Egyptian Medical waste management Guidelines, 2019, The total number of registered hospital beds across the country is 130,795. Also, the total number of outpatient clinics, primary healthcare units, pharmacies, Laboratories, etc. is 168,085 units. Figure 1 below shows the distribution of the hospital beds and units among the actors of healthcare providers in Egypt.

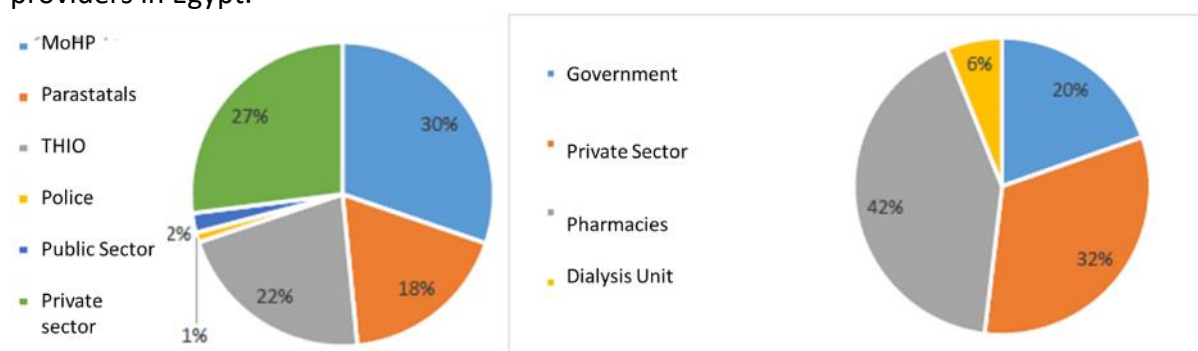


Figure 1: Distribution of the hospital beds and units among the actors of healthcare providers in Egypt

Egypt's healthcare system faces multiple challenges that affect its ability to meet the rising demands of the population before the Pandemic situation which added more burdens to the system. While a combination of rising of Non-Communicable Diseases (NCDs), high population growth, and a longer life expectancy is increasing the demand for health services, the service delivery system is seriously underfunded and fragmented between the different actors. Therefore, the GoE, initiated an ambitious reform in the sector that is based on the health pillar of Egypt's 2030 Sustainable Development Vision and the Egyptian. In December 2017, the Universal Health Insurance Law (UHIL) was issued to pave the way for the Health

⁷ [Greater Cairo Air Pollution Management and Climate Change Project \(eeaa.gov.eg\)](http://eeaa.gov.eg)

sector reform and is currently being piloted in two governorates. Under this system, the MoHP will continue to provide services related to public health, prevention, ambulance, family planning, health response in disaster and epidemic relief and other services to be provided free of charge by the Government. There will be two types of regulations: (a) financial regulations by the Prime Minister, the MOF, and the Parliament and (b) technical regulations by the General Authority for Healthcare Accreditation and Regulation (GAHAR) as the 'accreditor'.

b. Health Care Waste Management

5.2.1 Overview

Waste collection, transport, treatment and disposal systems are generally underperforming across the country. Municipal waste management is typically the responsibility of local authorities. Door-to-door collection is rare and curbside collection is the dominant mode with average coverage of about 40%. Waste disposal sites are generally overloaded, and many are unmanaged. With regards to medical waste, there are around 53 government-controlled dump sites and 9 engineered landfill cells across the country for disposal of medical hazardous wastes⁸.

5.2.2 Health Care Waste amounts and treatment infrastructure

HCW is classified into two groups namely, general waste (non-Hazardous) and hazardous waste. The composition of the general waste is similar to the municipal waste and it is mainly generated during administrative, housekeeping, dining, etc. Hazardous waste consists of specific categories of waste that are generated from different departments and specified according to law 4/1994 and health and population minister decree number 198/2001. The following chart demonstrates the types of waste generated from healthcare facilities as per the national guidelines on infection control and medical waste management⁹. Typically, the largest portion of the medical waste is non-hazardous (up to 85-90%) as per the WHO guidelines, but this is depending on several factors including type of HCF, quality of segregation, etc. According to the Ministry of Environment Guideline issued in June 2020 on Safe Disposal practice of Personal protective equipment (PPE) during COVID-19 Pandemic, all the waste streams generated within COVID-19 isolation and treatment HCFs shall be considered hazardous and shall be treated as such.

According to the Ministry of Environment Guidelines issued in October 2019, on HealthCare Waste Management, the total amount of hazardous solid waste generated in healthcare facilities across Egypt is around 294 tons per day (Source: Guidelines for Medical Waste Management – WMRA.. The estimated amount of hazardous waste generated daily from all healthcare facilities in Egypt ranges from about 55 tons in Cairo. The numbers are based on the assumptions provided on the following table building on the HCFs available data including quantities, number of beds and outpatients, utilization rate of HCFs and experience.

⁸ Guidelines for Medical Waste Management – WMRA

⁹ <https://www.moh.gov.bt/wp-content/uploads/afd-files/2014/11/ICMWM-guideline.pdf>

It is estimated that MoHP Hospitals are generating around 30% of the total amount of waste generated in Egypt (Fig.2 below). the following figure provides estimation of hazardous waste generated percentage from the different actors in the health sector in Egypt.

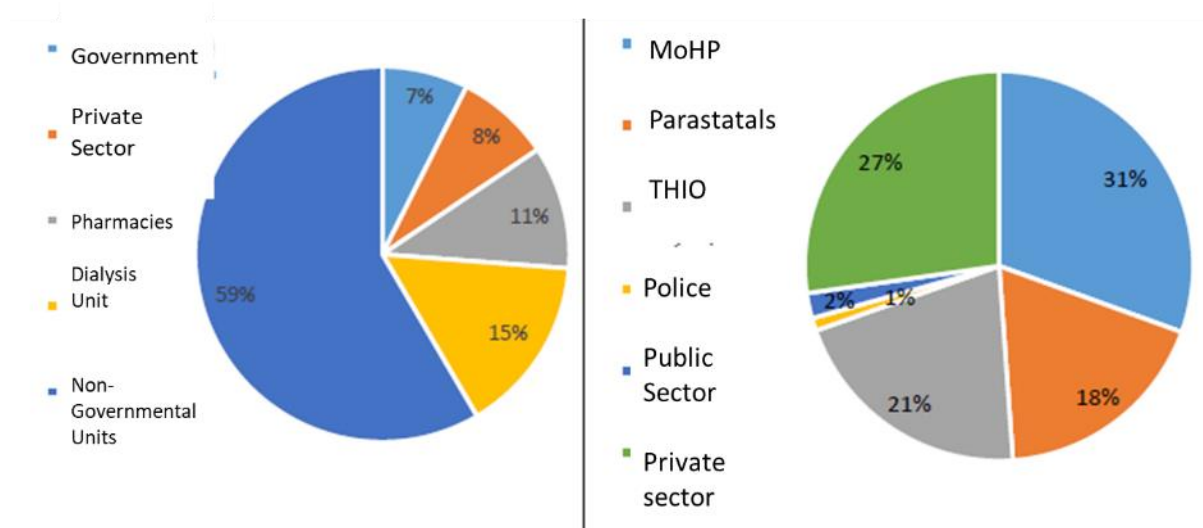


Figure 2: Estimation of hazardous waste generated percentage from the different actors in the health sector in Egypt

Figure 3 below shows the number, type and condition of hazardous waste treatment methods/facilities in Egypt

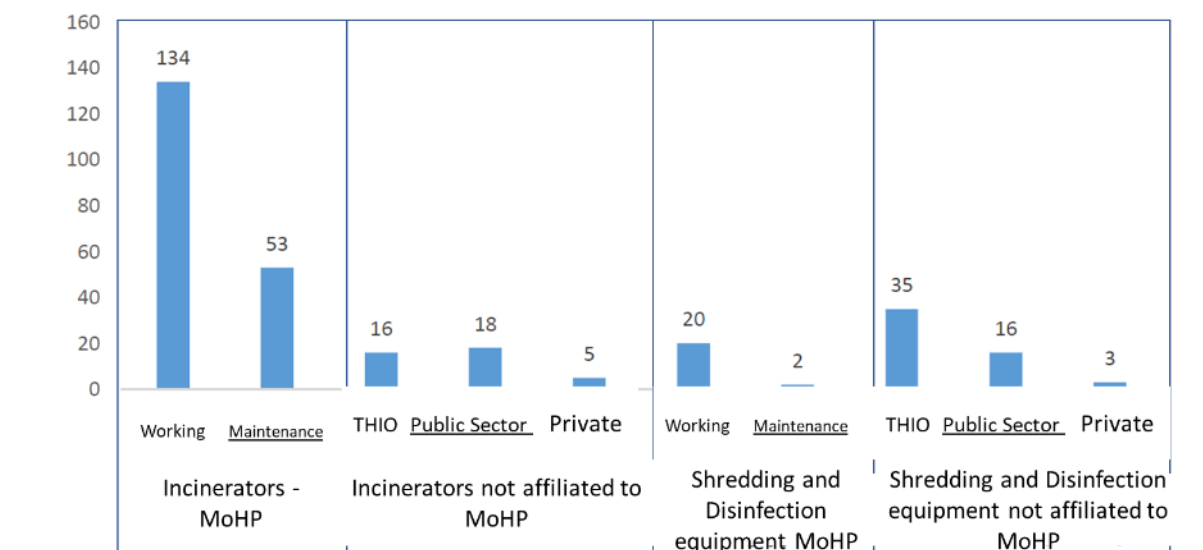


Figure 3: Number, type and condition of HCW incinerators in Egypt [Guidelines for Medical Waste Management – WMRA]

The ultimate capacity for medical hazardous waste treatment in Egypt is 145 tons/day, but due to maintenance and working conditions the actual capacity is estimated to be 93.5

tons/day (Source: WMRA). The majority of waste treatment equipment are present inside the healthcare facilities.

The following could be concluded:

- Egypt is suffering from inefficient solid and hazardous waste comprehensive management system
- Incineration is the most widely used waste treatment method in Egypt, and mostly it takes place within the MoHP entities.
- The general impression/reputation is that incineration is not conducted according to best practices due to lack of technical expertise and/or maintenance.
- Most incinerators are within hospitals located near residential clusters.
- The ash generated from incinerators is usually disposed of in municipal landfills.
- Complaints are received with regards to the emissions from incinerators and inadequate storage of the hazardous wastes from some hospitals.
- Potential emissions of unintentional persistent organic pollutants – UPOPs.

Waste transportation

There are many licensed trucks in Egypt for transporting medical hazardous waste. In the recent years, the MoHP has added to the existing fleet around 220 trucks as well as 59 from the private sector, universities and other governmental entities. In general, the recently added trucks are equipped to transfer the hazardous medical waste, but still the capacity of medical waste transportation needs further enhancements. Some of the hospitals are reporting lower frequency visits from the service providers to the MoHP.

Waste disposal

Waste is disposed of in controlled sites **managed by the city council, engineered landfills, or random dump sites**. Table 1 below shows the distribution of the total number of controlled sites over the different governorates.

Table 1: Distribution of the total number of controlled solid and HC waste disposal sites over the different governorates in Egypt.

Governorates	Waste Disposal Sites		
	uncontrolled dumpsites	Controlled sites	Engineered landfills
Cairo	5	1	-
Alex	unidentified	-	1
Port said	unidentified	2	1
Suez	unidentified	-	2
Ismailia	unidentified	4	2
Damietta	unidentified	1	-
Dakahlia	7	1	-
Sharkia	4	-	-
Qalioubia	7	-	-
Kafr El Sheikh	unidentified	10	-
Gharbia	4	-	1
Menoufia	9	-	
beheira	12	-	1
Giza	15	-	-
Beni Suef	5	2	1

Governorates	Waste Disposal Sites		
	uncontrolled dumpsites	Controlled sites	Engineered landfills
Fayoum	unidentified	1	-
Minya	unidentified	9	-
Assiut	unidentified	1	-
Sohag	11	3	-
Qena	9	-	-
Aswan	2	2	-
Matruh	unidentified	3	-
New Valley	unidentified	6	-
Red Sea	3	-	-
North Sinai	5	1	-
South Sinai	unidentified	6	-
Luxor	unidentified	-	-
Total	unidentified	53	9

Challenges within the HCW management in Egypt

From an institutional and management perspective

- Limited financial, material and human resources which are needed for managing the system
- Lack of awareness on medical waste impacts even within some HCF
- Weak performance of **infection control committees** with regards to waste management at the national level
- Lack of enforcement of the national laws and penalties
- Weak coordination between the local units with regards to installation and operation of central waste treatment facilities.

From a Technical perspective

- Some HCF are not complying with standards and regulations with respect to collection, and segregation of HC waste
- Lack of clear engineering requirements stating that three separate storage areas should exist: 1- normal waste; 2- infectious waste and 3- chemical waste in relevant HCF
- Safe Transportation of Hazardous waste capacity needs to be enhanced
- Final disposal sites and treatment facilities are not meeting the national demands
- Some of the incinerators within HCFs are not compliant with standards
- Lack of regular maintenance to the treatment units

Monitoring and Evaluation issues

- The updating of the hazardous materials and waste register is rarely monitored
- The environmental register is not developed for some of the HCFs
- Weak monitoring and evaluation for the system components in general

c. Electronic Waste Management

Due to the absence of governmental records for e-waste generation, there are no reliable quantitative data and studies regarding the numbers of computers, mobile phones, and batteries in Egypt. . However, in 2014, UN reported generation rates for Egypt of approximately 37,000 tons annually half of which consist of plastics, and the other half toxic materials. The common formal e-waste management practice for discarded hardware from government agencies is periodic auctions managed by the General Authority for Governmental Services (GAGS), which auctions the collected e-waste and sells it unsegregated to recyclers. In regard to the e-waste produced by corporate entities, they are also sold in auctions approved by the Ministry of Environment. Government and corporate e-waste that goes unsold at auctions are buried in one of the state-run dumpsites scattered around the country. No detailed information regarding the number or locations of these sites were identified or how much e-waste is buried; the largest known dumpsites is in Alexandria charging EGP 500/ton.

The statistical data of eWaste generated in Egypt in years 2015-2019, as given by The Global eWaste Statistics Partnership (GEWSP) show that, Egyptian population has increased from 92.44 (million) in 2015 to 100.39 (million) in 2019 with annual increasing rate 1.99 million (2.15%).

The electrical and electronic equipment (EEE) devices put on Egyptian market have also increased from 754 kt in 2015 to 1069 kt in 2019 at a rate of 78.75 kt (10.44%). While the E-waste increased from 477 kt in 2015 to 586 kt in 2019 at annual increasing rate of 27.25 kt (5.71%). This clearly shows that the rate of increase in EEE put on the market is almost 3.6 times the increase in population, while the rate of increase in the eWaste generated is almost double the rate of increase in the population. E-waste in particular and industrial hazardous wastes should be disposed of at the Nasreya Waste Treatment & Disposal Facility located in Borg El Arab, North of Alexandria Governorate.

6. Analysis of Alternatives

6.1 No project Alternative

As mentioned in the parent study, the first alternative would be the “No Project” option. In order to assess the “No Project” option for planned physical interventions in the HCW and E-waste sectors, the following guidelines will be followed:

- Conducting comparison between emissions of uPOPs before and after the project
- Analyzing the adverse impacts on communities and residents living near open dumpsites such as bad odors generated by decomposing waste, attraction of vectors like rodents and flies, and toxic emissions from wastes open burning and how the project will mitigate these impacts
- Estimating the amount of mismanaged waste in Greater Cairo before and after the project
- Studying the impact of the project on imposing control over illegal dumping in public roads and sites not assigned for waste disposal and their intentional open burning

6.2 HCW treatment alternatives

The following table show a comparison between three treatment technologies for HCW¹⁰.

Type of treatment & disposal method	Factors that influence effectiveness	Concerns
burial, encapsulation (simple, inexpensive)	• depth of groundwater • depth, size of trench/pit • lining of burial pit (non-porous) • sealing method/material	• no disinfection • can handle small volumes only • potential of being unburied (if pit is only soil covered, or waste not encapsulated) • presents a danger to community if not properly buried
incineration (disinfects and greatly reduces volume, produces secondary waste streams)	• turbulence/mixing • waste moisture content • combustion chamber filing • temperature/residence time • maintenance/repair	• may produce emissions & hazardous ash containing dioxins, metals & furans depending on the type of waste burned • may require pollution control equipment to meet local environmental regulations • public acceptance of incineration tends to be low • expensive to build, operate & maintain
steam autoclave (disinfects only, little reduction of volume unless used with shredder, produces secondary waste stream)	• temperature & pressure • steam penetration • waste load size • treatment cycle length • chamber air removal	• mostly for reusable materials & instruments, and to sterilize disposable sharps before disposal • can only treat some types of HCW • some models cannot handle high volumes

¹⁰ http://web.worldbank.org/archive/website01213/WEB/0__CO-80.HTM

- model (many available)
- requires electricity & water
- some models have high capital maintenance & operation costs

6.3 E-waste treatment alternatives

As mentioned in the parent study, the following remain possible treatment options for e-waste:

6.3.1 Recycling

eWaste can be recycled through different direct recovery options. For the batteries, smelting is used to recover materials such as: lithium, cobalt, and nickel inside the battery. However, the recycling process is not an easy nor cheap process. E-Tadweer application developed in coordination with the Egyptian MoE helps close the recycling loop

6.3.2 Repurposing

One of the methods to decrease eWaste disposal is to reuse them. Electric vehicle batteries can be used for things like home energy storage. In countries, such as Japan, Nissan repurposed batteries for powering streetlights. In Paris, Renault used the batteries for backing up elevators. In the United States, General Motors is backing up its data center with used Chevy Volt batteries [27]. Other use for old batteries includes storing solar energy and backing up traditional electrical grids [27]. Toyota started an initiative to use old electric vehicle batteries along with solar panels for powering 7- Eleven stores in Japan [28]. For other eWaste, refurbishment remain a viable option especially for old desktop, laptop computers and mobile phones. This however requires an efficient collection and incentive system in place.

6.3.3 Return to manufacturer where possible

As a part of extended producer responsibility, eWaste could be returned to the manufacturer as per an agreement realized during the procurement and contracting phase. As per the conditions of the Basel convention on the transport of wastes, Basel notification procedures issued by EEAA should be followed for shipping eWaste including used batteries outside the country.

6.3.4 Landfilling

Landfilling in engineered cells is an option. There is a risk of soil and groundwater contamination in case of lining breakage in addition to the loss of the recovery potential of the waste.

7 Identified Environmental and Social Impact, Risks and Mitigation

The new interventions under this additional finance do not change the project development objectives nor the overall risk rating of the Project. Activities of the AF will in fact enhance and complement the PDO achievement. All standards which are applicable to the Parent Project (Greater Cairo Air Pollution Management and Climate Change Project - P172548) will remain relevant and they cover all anticipated activities under this additional finance. While most of the planned interventions are focused on technical assistance, capacity building, developing models and conducting studies, some pilot physical interventions may take place as well as potential for procurement of waste management equipment. Impacts are assessed according to the WB ESSs and the applicable Egyptian laws. **The overall risk rating of the Project including the AF are assessed as “High”.**

7.1 Positive Impacts

The Project is anticipated to bring positive social outcomes to the residents of GCA. This was confirmed through the prepared ESMF and the site specific preliminary ESIA. Improving the waste management will contribute to a better organized solid waste management cycle. This will then contribute to a cleaner neighborhood, less random dumping, more efficient waste collection and transportation, and consequently a higher level of satisfaction from the citizens. The construction and operation of the different facilities under this project will result in the creation of large number of job opportunities (both short and long term). Economic opportunities will also likely benefit the vulnerable groups, including the most marginalized groups who are currently informally engaged in the waste managed related sector. The ESMF helped in better identification and profiling of the informal sector groups. In the meantime, the Bank has carried out a Social Inclusion Study as part of the Bank’s due diligence during the Project preparation and the findings of this study will help in informing the project interventions of the different project components that will be phased. This will in turn help to ensure that the components are designed in a manner that will bring fair opportunities to the groups of the informal sector and will mitigate the risk on negative implications on their livelihoods. With regard to the potential positive impacts from the project additional finance activities, the mentioned activities are expected to result in several positive outcomes particularly in relation to strengthening the capacity of the country to adopt sound management of Healthcare Waste and E-waste successfully and to undertake changes for meeting international convention obligations. The AF activities will support in building the capacity of different key agencies and in establishing MIS system that will support in enhancing the monitoring of HCW management and E-waste management and disposal practices. In the meantime, it will help in the creation of pilot models for partnership between public entities and the private sector with focus on the informal sector players and those recently formalized.

7.2 Negative Impacts

The planned interventions have some direct and indirect environmental and social risks which are well addressed under the parent project. E&S risks and impacts resulting from this additional finance planned interventions, specifically under components 6.1 and 6.2 will require the borrower to recognize that these risks stem from the fact that streams of

hazardous waste will be more concentrated hence presenting enhanced health risks to workers and the general population. Consequently the borrower will conduct further assessment of the associated risks mainly related to (i) workers health and safety due to exposure to handling, storage and disposal of HCW and E-wastes, (ii) workers health and safety during operation and maintenance of project procured HCW equipment, (iii) community health and safety due to exposure to handling, disposal and/or treatment of HCW and eWaste, (iv) environmental aspects related to release of pollutants to air, water and land due to routine, nonroutine, and accidental circumstances, and (v) management, including storage, transportation, disposal and/or treatment, of hazardous wastes (HCW and eWastes) in an environmentally sound and safe manner that includes the appropriate control of emissions and residues.

The prepared social instruments pointed out certain social risks that are linked to the Parent Project scope such as the risks of child labor, community health and safety during construction, temporary labor influx that might result in unfavorable impacts on the project candidate areas, including potential risk of GBV, potential impacts on land use. They also flagged potential risks related to land acquisition and loss of livelihoods

The instruments also pointed out the disadvantaged and marginalized groups which may be impacted by the project, including most importantly the informal sectors groups, of poor families, women and children, those who could be affected from land acquisition particularly the poor who are acquiring livelihoods from the land without legal title, groups near waste facilities during construction and operation. Mitigation measures to deal with the potential risk and impacts on each of the identified groups have been included in the ESMF, the ESIA and the RF.

With regard to the activities of the additional finance, specific social risks from the Parent Project will still apply, including the risks of child labor in relation to the pilot planned interventions. Risks related to sexual exploitation, abuse and sexual harassment (SEA/SH) as identified in the Parent Project will still apply. In the meantime, and specifically relevant to the additional finance is the risk of excluding certain groups (e.g. informal groups, women employees in relative governmental entities) from the benefits of training and capacity development may apply. The activities of the additional finance should be implemented based on an inclusive and transparent set of criteria to support in further integration of informal sector players and those recently 'formalized.' Other groups like women in Governmental entities as well as support teams engaged in the relevant activities (e.g. healthcare waste management) should be also integrated in the training.

Impact Assessment Methodology

A rating method is applied to determine the significance of the impacts.

Step 1: Determination of Overall Severity and Probability of Impact

The severity of each impact is determined according to evaluation criteria ranked on a scale of 1 to 5. Evaluation criteria for severity are presented in Table 7-1

Table 7-1 : Scale for ranking of severity level of impacts

Impact evaluation criteria	Rating				
	1	2	3	4	5
	Very low	Low	Medium	High	Very high

Spatial Scale	Immediate vicinity- On-site	Off-site		National	global
Temporal Scale Duration	Extremely short term 1 day	Less than 1 month	1-6 months	Less than 1 year	Long term More than 1 year or continuous
Difficulty in changing and/or reversing impact	Easy-reversible	Minor level of effort required	Moderate effort required	Major effort required	Impact cannot be changed Only managed
Concerns of interested parties-stakeholders	No concerns	Minor interest at local level Limited number of parties	Moderate interest/management at local/governorate level Limited number of parties	Major interest at national level More widespread > number of parties	Extreme impact

Overall severity for an impact is determined from the average of ratings of applicable evaluation criteria according to Equation 1.

Equation 1- Severity of Impact Overall Rating

$Severity\ S = AVERAGE\ R_{spatial\ scale}, R_{Temporal\ scale}, R_{Difficulty\ in\ changing}, R_{Interested\ parties\ concerns}$

Probability of occurrence (P) level is ranked on a scale of 1 to 5 (Table 7-2). The definitions for evaluation criteria scale are presented in Table 7-3

Table 7-2: Scale for Ranking of Probability of Impacts

	Rating				
Evaluation criteria	1	2	3	4	5
Probability of occurrence	Rare	Unlikely	Possible	Likely	Certain

Step 2: Determination of Risk Level of Impact

The risk level of each impact is determined from the product of severity of the impact and the probability of its occurrence (determined in Step 1):

$$Risk\ level = Severity \times Probability$$

Step 3: Determination of Significance of Impact

An impact is considered significant if overall severity (S) is > 2 and/or risk level (S * P) > or equal to 5. Measures for avoiding, minimizing, mitigating impacts commensurate with the significance level will have to be developed. The definitions of significance according to overall ranking of severity and risk level are presented in Table 7-3 and Table 7-4 respectively.

Table 7-3: Definition of Significance according to Overall Severity Ranking of Impacts

Severity of impact	Significance
1	Low/minimal impact- no mitigations actions required
2	Low-Medium and localized, but readily containable
3	Medium impact over multiple locations
4	Medium-High and/or regional
5	High impact and/or potential for global impact

Table 7-4: Definition of Significance according Risk Level

Risk level of impact (Probability * Severity)	Significance
[1 -5]	Low
[5-10]	Low-medium
[10-15]	Medium
[15-20]	Medium-high
>20	High- catastrophic

The Table below includes the identified negative impacts for the relevant project components. Building on the same criteria and methodology used in the Parent Project ESMF, a preliminary assessment of the potential adverse impacts during the implementation of the new component has been conducted and the significance of impacts are summarized below in Table 7-5.

Table 7-5: Description of negative generic impacts for the relevant project components and their significance

Component and Activity	Potential negative environmental, occupational health & safety, community health & safety and social risks and impacts	Significance ¹¹
Components 6.1 and 6.2 - piloting collection, safe dismantling, and recycling of eWaste, particularly older equipment and household level eWaste at strategic locations and segregation and hazardous waste	(i) Worker health and safety due to exposure to handling, storage and disposal of HCW and E-wastes	3
	(ii) Worker health and safety during operation and maintenance of project procured HCW equipment	2

¹¹ Using the same methodology as in the Parent project ESMF

Component and Activity	Potential negative environmental, occupational health & safety, community health & safety and social risks and impacts	Significance ¹¹
disposal, particularly waste which will not be targeted through EPR; - testing of 'take-back' schemes and enhancing engagement with the private sector; - piloting appropriate recycling and re-sale of safely segregated HCW	(iii) Community health and safety due to exposure to handling, disposal and/or treatment of HCW and eWaste	3
	(iv) Environmental aspects related to release of pollutants to air, water and land due to routine, nonroutine, and accidental circumstances	3
	(v) Management, including storage, transportation, disposal and/or treatment, of hazardous wastes (HCW and eWastes) in an environmentally sound and safe manner that includes the appropriate control of emissions and residues.	3
	Risks of child labor	3
	Risk of SEA/SH including among beneficiaries of the additional finance	3
	Risk of biases in the selection of trainees and/or exclusion of certain groups	3

7.3 Environmental and Social Management and Monitoring framework

Potential negative E&S risks and impacts ¹²	Mitigation measures/studies to be prepared or implemented	Monitoring		
		Requirements	Responsibility	Cost estimation (EGP)
- General for both components 6.1 and 6.2	- Preparation of Infection Prevention and Control and Waste Management Plan (IPC&WMP) and an eWaste Management Plan (E-WMP) (according to the template included in Annex 2) during the bidding stage to be submitted with the bidding documents AND before commencement of any project work. - Both plans should be developed according to the template provided and shall cover but not necessarily be limited to all the risks/impacts included in the ESMP framework below	Plans to be prepared , submitted and approved	PCU/ consultants assigned by PCU	150,000 for the HCWMP 150,000 for the E-WMP
- Risk of biases in the selection of trainees that would lead to the exclusion of certain groups (e.g. female healthcare workers).	- Clear, inclusive and transparent criteria are systematically set for selection of trainees. This includes but is not limited to: -1) Adequate representation male/female distribution of the existing health workforce; -2) inclusion of informal workers where and if possible	Verification Report	IVA	Project Cost

¹² Risks and impacts are mainly associated with the piloting activities for HCW and eWaste under components 6.1 and 6.2 in addition to the training and capacity building and training- the-trainer activities.

Potential negative E&S risks and impacts ¹²	Mitigation measures/studies to be prepared or implemented	Monitoring		
		Requirements	Responsibility	Cost estimation (EGP)
	- The IVA report to verify following the above criteria.			
- Risk of SEA/SH including among beneficiaries of the additional finance	Same measures applied under the Parent Project for addressing this risk should be scaled up and applied on the level of the AF	Code of Conduct to be established and signed Anonymous complaints system to operationalize Clear referral system to be established and announced	PCU	Project cost
- Waste handling and infection control and Spread of infection through improper managing of wastes - Sprawling and spread of infectious and hazardous chemical wastes and e-waste	- All personnel handling infectious medical waste shall wear gloves and additional protective medical clothing and personal protective equipment (PPE) appropriate to the level of risk they encounter and shall remove any protective medical clothing used prior to leaving the work area and to place it in a designated area or container. When performing procedures where splashing is not expected, gloves are the minimum PPE that may be worn; - Protective medical clothing and PPE should not be submitted for laundering unless sterilized; - Provide adequate facilities for hand washing. Hand washing is the single most	Infection Prevention and Control and Waste Management Plan (IPC&WMP) for participating HCFs including transport, treatment and disposal	PCU in coordination with the ministries	Project cost

Potential negative E&S risks and impacts ¹²	Mitigation measures/studies to be prepared or implemented	Monitoring		
		Requirements	Responsibility	Cost estimation (EGP)
	important procedure for preventing infections (e.g. nosocomial and community). Hand washing should involve use of soap / detergent, rubbing to cause friction, and placing hands under running water. Washings of hands should be undertaken before and after direct patient contacts and contact with patient blood, body fluids, secretions, excretions, or contact with equipment or articles contaminated by patients. Washing of hands should also be undertaken before and after work shifts; eating; smoking; use of personal protective equipment (PPE); and use of bathrooms. If hand washing is not possible, appropriate antiseptic hand cleanser and clean cloths / antiseptic towelettes should be provided. Hands should then be washed with soap and running water as soon as practical - Do not bend, recap, or remove contaminated needles and other sharps unless such an act is required by a specific procedure or has no feasible alternative; - Do not shear or break contaminated			

Potential negative E&S risks and impacts ¹²	Mitigation measures/studies to be prepared or implemented	Monitoring		
		Requirements	Responsibility	Cost estimation (EGP)
	sharps; - Have needle containers available near areas where needles may be found; - Discard contaminated sharps immediately or as soon as feasible into appropriate containers; - Used disposable razors should be considered contaminated waste and disposed of in appropriate sharps containers. - Establish policies to exclude animals from facility property.			
Procurement of HCW treatment equipment - Non-compliance with standards, WHO guidelines and GIIP in terms of product quality and/or suitability for the intended action - Use of PPEs and Equipment by untrained personnel may lead to occupational health and safety risks - Hazardous waste associated with disposal of waste	- Review the procured equipment and consumables technical specifications to ensure they are compatible with relevant standards , the WHO guidelines and recommendations and GIIP. - Ensure that staff as relevant to use the procured equipment and consumables Develop , adopt and implement Infection Prevention and Control and Waste Management Plan (IPC&WMP)	Report including the assessment and an inventory of procured equipment and consumables Training plans and waste records of the pilot facilities	PMU in coordination with the ministries	Project cost
	- Verify the requirements of equipment and consumables technical specifications were adhered to	Verification report	IVA	Project cost

Potential negative E&S risks and impacts ¹²	Mitigation measures/studies to be prepared or implemented	Monitoring		
		Requirements	Responsibility	Cost estimation (EGP)
	- Audit the pilot treatment locations and transport vehicles			
- Waste segregation and risk of cross contamination and disease transmission	- Purchase of color-coded plastic bags, containers with tight lids, and large bins as necessary for the storage of expected waste amounts at each pilot treatment location - At the point of generation, waste should be identified and segregated. Non-hazardous waste which was mixed with hazardous waste, such as paper and cardboard, glass, aluminum and plastic, should be collected separately (even though they will be considered hazardous) - Infectious and/or hazardous wastes should be identified and segregated according to their category using a color-coded system. - Sharps shall be placed in rigid, leak and puncture resistant containers. - Separate residual chemicals from containers and remove to proper disposal containers to reduce generation of contaminated wastewater. Different types of hazardous chemicals should not be mixed.	Infection Prevention and Control and Waste Management Plan (IPC&WMP) including transport, treatment and disposal	PMU in coordination with the ministries	Project cost

Potential negative E&S risks and impacts ¹²	Mitigation measures/studies to be prepared or implemented	Monitoring		
		Requirements	Responsibility	Cost estimation (EGP)
- Improper waste storage leading to increased probability of disease transmission	Important storage considerations include but are not necessarily limited to: - Seal and replace immediately waste bags and containers when they are approximately three quarters full; - Plastic bags should never be stapled but may be tied or sealed with a plastic tag or tie; - Waste should be identified and labeled appropriately, noting the substance class, packaging symbol (e.g. infectious waste, radioactive waste), waste category, point of origin, and final destination; - Volume/weight of waste generated should be identified based on the number of bags; - Bags or containers should be replaced immediately with new ones of the same type. - There should be enough buckets/containers provided to ensure an appropriate number of clean buckets in rotation. Buckets should be washed and disinfected before reuse. - The waste should be placed in rigid or semi-rigid and leak-proof containers; - Hard, impermeable floor with drainage, and designed for cleaning / disinfection with available water supply; - Secured by locks with restricted access;	Infection Prevention and Control and Waste Management Plan (IPC&WMP) including transport, treatment and disposal	PMU in coordination with the ministries	Project cost

Potential negative E&S risks and impacts ¹²	Mitigation measures/studies to be prepared or implemented	Monitoring		
		Requirements	Responsibility	Cost estimation (EGP)
	- Designed for access and regular cleaning by authorized cleaning staff and vehicles; - Protected from sun, and inaccessible to animals / rodents; - Equipped with appropriate lighting and ventilation; - Segregated from food supplies and preparation areas; - Equipped with supplies of protective clothing, and spare bags / containers; - Unless refrigerated storage is possible, storage times between generation and treatment of waste should not exceed 48-72 hours in winter, 24 hours in summer			
- Collection and Off-site transport and risk of disposal of infectious and /or chemical wastes to illegal bodies where the wasted materials can be reused and transmitting all types of infection	- Transport of hazardous medical waste should be conducted in compliance with Egyptian regulations (Article 29 of Law 4/1994) and WBG EHS general guidelines. The WMP developed for shall be reviewed and approved by the PMU and the WB prior to the beginning of the pilot phase. - A waste collection or collection/treatment company should be contracted (where applicable – in cases where the private sector is the most plausible option) as soon as the WMP is prepared and relevant sections of this plan to be included as clauses in the	Infection Prevention and Control and Waste Management Plan (IPC&WMP) including transport, treatment and disposal	PMU in coordination with the ministries	Project cost

Potential negative E&S risks and impacts ¹²	Mitigation measures/studies to be prepared or implemented	Monitoring		
		Requirements	Responsibility	Cost estimation (EGP)
	contract. - Transport packaging for infectious waste should include an inner, watertight layer of metal or plastic with a leak-proof seal. Outer packaging should be of adequate strength and capacity for the specific type and volume of waste. - No bags should be removed unless they are labeled with their point of production (health unit/center) and contents. - Transport vehicles should be dedicated to waste and the vehicle compartments carrying waste sealed. - Bulk liquids to be transported off-site shall, in addition to the above requirements, be placed in rigid containers. - Establish a GPS system to track the mobilized vehicles over their decided routes. The system will be operated under the management of each HCF, under the general supervision of the PMU. This is in addition to a chain of custody papers to be kept as a record by the generating HCF - -			
Waste treatment and potential soil, air, surface and groundwater	- As part of the developed WMP, the proposed waste treatment pilot facility	Waste Management Plan including transport,	PMU in coordination	Project cost

Potential negative E&S risks and impacts ¹²	Mitigation measures/studies to be prepared or implemented	Monitoring		
		Requirements	Responsibility	Cost estimation (EGP)
contamination in addition to community health and safety impacts Increased levels of air pollution from open burning of untreated wastes.	should be audited prior to plan implementation and a maintenance action plan developed and implemented. - Ensure that all activities follow relevant provisions of the WBG EHS Guidelines, including the WBG EHS Guidelines for Healthcare facilities. -	treatment and disposal	with the ministries	
Only applicable if incinerators were used: Emissions to Air from on-site incinerators, potentially resulting in the emissions of heavy metals; organics; various organic compounds; hydrogen chloride; and fluorides; in addition to typical combustion products such as sulfur oxides, nitrogen oxides, VOCs, CO and nitrous oxide -	Follow the control and pollution prevention measures of the WBG EHS Guidelines for health Care Facilities under the Incineration Section including but not limited to : - Application of waste segregation and selection including removal of halogenated plastics (e.g. PVC), pressurized gas containers, large amounts of active chemical waste, silver salts and photographic / radiographic waste, waste with high heavy metal content and sealed ampoules or ampoules containing heavy metals - Obtain the required operational permits - Operation of incinerators by trained employees			

Potential negative E&S risks and impacts ¹²	Mitigation measures/studies to be prepared or implemented	Monitoring		
		Requirements	Responsibility	Cost estimation (EGP)
	Secondary air pollution control measures for waste incinerators should include the following: - Wet scrubbers to control acid gas emissions - Use of cyclones, fabric filters, and / or electrostatic precipitators (ESP). - Management of incineration residues such as fly ash, bottom ash and liquid effluents from flue gas cleaning as a hazardous waste (see General WBG EHS Guidelines) as they may contain high concentrations of POPs.			
- Risks and impacts arising from improper management of eWaste at pilot facilities including handling, segregation, storage, processing, treatment and disposal	- <u>Prepare an eWaste Management Plan as mentioned in Row 1</u>	eWaste Management Plan covering handling, treatment and disposal	PCU/Consultants assigned by PCU	Refer to Row 1
- Labor related risks including Occupational health and safety risks, working conditions, etc. for all the project workers - Risk of child labor - Risk of unresolved complaints from the local communities - Risk of unresolved complaints from the healthcare workers	- <u>Implement the Project LMP</u> - <u>Implement the Project SEP</u> - <u>Develop and apply the WMP</u> - <u>Develop and operationalize the project GM</u> Refer to SEP for more information on recommended methods of communication and timeline for public disclosure and consultations.	Field reports Incident reports Monitor workers' registration records		

Potential negative E&S risks and impacts ¹²	Mitigation measures/studies to be prepared or implemented	Monitoring		
		Requirements	Responsibility	Cost estimation (EGP)
- Weak level of citizens and stakeholders' participation				
- Weak/ineffective implementation of the prepared HCWMP and E-WMP	- <u>Conduct capacity building workshops for staff of selected HCFs and eWaste companies/recyclers</u>	Technical materials and manuals prepared and Capacity building workshops delivered	PCU/Consultants assigned by PCU	

7.4 Implementation Arrangements

Implementation Arrangements and Roles of different stakeholders for the Additional Finance

The institutional and legal structure for the Project serves three main functions: **‘strategic guidance’** through the Steering Committee (SC), **‘coordination and management’** through the Project Coordination unit (PCU), and **‘technical implementation’** through the Technical Implementation Units (TIUs). The following table summarizes the roles and responsibilities for the Additional Finance interventions

Institutional Structure	Roles in the Project
Steering Committee (SC)	The SC provides overall policy and strategic guidance, plays an important role in high-level decision making, facilitates the interaction and coordination between the various ministries/agencies, and ensures an enabling environment for reforms to succeed and be sustained. It also approves the annual work plans and budgets, and monitors progress towards the achievement of the national and project specific target indicators.
Project Coordination Unit (PCU)	The PCU is responsible for the overall coordination of the implementation and management (including technical procurement, financial management, environmental and social aspects, monitoring, evaluation, reporting and communication) of the Project including the AF.
Technical Implementation Unit (TIU)	Component 6 TIU will be responsible for the day-to-day coordination, implementation and management of activities The TIU is also responsible for the preparation of its annual work plan and estimated budget, and for the day-to-day implementation of its component in accordance with the approved workplans. The AF TIU will be staffed by specialists from the ministries and implementing entities and will be supplemented by full-time and part-time staff and consultants as needed.

Roles of different stakeholders

Stakeholder Groups		Role
Environmental Sector	Ministry of Environment -Egyptian Environmental Affairs Agency (EEAA)	- Responsible for developing public policies related to the protection of environment and improving its quality. In addition, it is responsible for issuing regulations for environmental determinants and monitoring their implementation. - EEAA is one of the main stakeholders that work closely with the Project in order to warrantee their level of environmental commitment; through collaboration with the PCU and relevant TIUs in reviewing and approving ESIAs, and monitoring implementation of the Environmental and Social Management Plan. - EEAA is the owner of the project
	Waste Management Regulatory Authority (WMRA)	- Responsible for regulating, following-up and overseeing all waste management processes at both central and local levels, in a manner improving the environmentally safe management. - Providing information and data available about the waste sector in Egypt. - Provide technical support to raise public awareness and community commitment. - Responsible for managing some project components
	Environmental Office within the Governorates	Responsible for monitoring the compliance to environmental and social requirements
Line ministries	Ministry of Environment (MoE)	MoE is the main implementing agency for the project. For each component separate agencies and ministries will be involved in the implementation of various project components from a sectoral perspective Managing the grievances that will be received from community members, including registering the complaints, and responding to complainants in a timely manner
	Ministry of Health and Population & Supreme Council of Universities' hospitals	Provides data pertinent to incineration of waste in all governorates through Health departments
	Ministry of Communication and National Telecom Regulatory Authority	Responsible for regulating communication and Telecom sector which affects the E-waste sector in Egypt
	Governorates	- Responsible for collecting and transporting waste through the concerned departments in each governorate - Supporting the project by providing requested services such as various permits required, and infrastructure maps, when requested. - Managing the grievances that is received from community members, including registering the complaints, and responding to complainants in a timely manner
Other Government Entities	Local Government Units (LGUs) within the targeted Governorate in	The main role of the Local Units authority is the provision of support to the project through giving permits for

Stakeholder Groups		Role
	the respective areas related to the project	electricity installation and water supply and mobilizing people to gain information about the project. Permits for the lands needed for the project, should be prepared by the Governorate and approved by the LGU.
	Cleaning and Beautification Agencies for different Governorates (CBA)	Provides collection and transfer waste to treatment facilities
	University Hospitals, Insurance Hospitals and Ministry of Health Hospitals	Participation in different project activities related to HCW sub-component
Private Sector Factories Companies	Waste recycling and waste management traders (HCW and eWaste)	- Potential participants in project activities - Cooperation with the implementing agencies
International Financial Institutions, Development partners	The World Bank (WB) Agence française de développement (AFD), European Union (EU), The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the KfW	- Provide financing and technical assistance - National Solid Waste Management Program (EU, KfW, GIZ), 1) Transforming Financing Stems for Climate Program I (GCF – AFD)
Civil Society	NGOs (International, regional, local) Grassroots Community- Based Organizations (CBO)	- Organizations with direct interest in the project and which may have useful data or insight into local issues of relevance to the project. These organizations can also influence the views of others regarding the project, nationally and internationally. - Responsible of sharing information with the community
Media	Television Newspaper Websites editors Online journalism	- Disclosure of information about the project on the website of the Ministries. - Disclosure of information about the project on the Facebook pages of the local government.
Suppliers and Traders	Private companies	Mainly potential tenderers for the construction works.
	Traders (small-scale stores) (unofficial suppliers)	- Provide construction materials. - Provide fuels to cars and machineries. - Provide workers with food and amenities.
	Contractors	Responsible for the implementation of project management plans

7.5 Procedures to Address Environmental and Social Issues

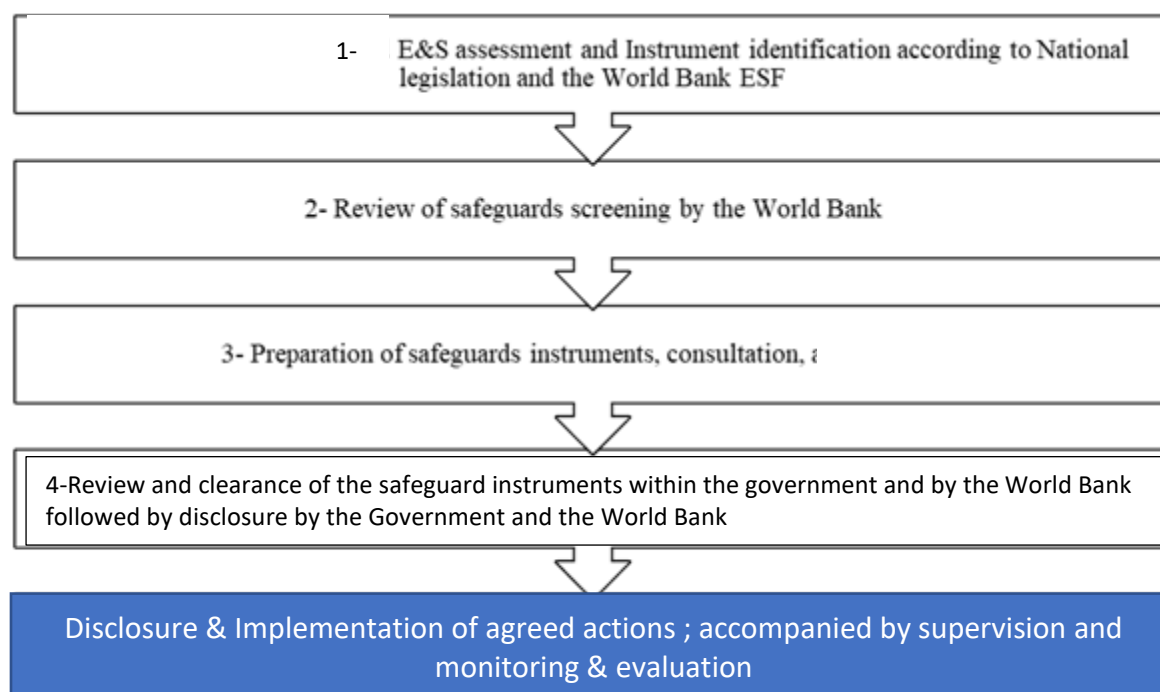
Procedures to Address Environmental and Social Issues

This section sets out in detail the procedures to be followed in identifying, preparing and implementing the project components and sub-components including the following:

- Determine the E&S instruments/plans that will be needed for pilot location(s). As required by the national Environment Law, an EIA study should be prepared for the pilot sites. Depending on the specific activity and the scale of operations a scoped B study or a category C study should be prepared. Annex 2 includes sample ToRs for both studies.
- Consultation and disclosure of E&S instruments
- Review and approval of E&S plans and instruments by both the GoE and the WB
- Disclosure both in-country and at the WB website
- Implementation and monitoring of E&S plans and instruments including the LMP, SEP as well as all the measures stipulated in this ESMF document.

The abovementioned procedures constitute a framework methodology for the screening, assessment, E&S instruments identification and development, review, approval, safeguarding, and monitoring of the E&S performance of the components of the project. The Bank will review the screening results and accordingly the relevant instruments shall be prepared, consulted with stakeholders and disclosed. Following clearance of the E&S instruments by the relevant ministries , all instruments shall be implemented, supervised and monitored. The following Figure outlines the proposed methodology.

Figure: Outline of the E&S Screening and Approval Methodology



Public Consultation and Disclosure

Consistent with the requirements for stakeholder engagement plan and in addition to the series of consultation and stakeholder engagement activities that took place as part of the preparation of the parent project (further details are found in the SEP), this section describes the consultation session conducted on June 1st 2022 on the ESMF Addendum.

7.6 Consultation Session Summary

A consultation session was conducted, to present the findings of the ESMF addendum in line with the national legislative requirements and the World Bank standards. The session was held in Cairo House in Cairo, 1st June 2022.

In order to identify the relevant stakeholders of the AF, the PCU ran a stakeholders identification assessment based on the guidance stipulated in the SEP. The identified stakeholders specific to the AF include the following who were all invited to the consultations:

- Egyptian Environmental Affairs Agency (EEAA)
 - Environmental Impact Assessment Department
 - Environmental Health Department
- Waste Management Regulatory Authority (WMRA)
- Ministry of Trade and Industry
- Federation of Egyptian Industries – Environmental Compliance Office (ECO)
- Ministry of International Cooperation
- Ministry of Health and Population
- Supreme Council of Universities Hospitals
- National Telecom Regulatory Authority (NTRA)
- Egypt Solid Waste Management Center of Excellence – Ain Shams University
- Cairo University, Faculty of Science
- eWaste and Healthcare waste Recyclers as:
 - Recyclobekia
 - TripleRe
 - Waste Marche
 - EERC
 - Al Reda Company for Waste Management
 - The Arabian Company for shredded medical waste removal.
 - EcoConServ for Medical Waste Management.
- EnviGlobe for Environmental Consultancy.

In the meantime, and based on the profile of the identified stakeholders above, decision was made to conduct a collective in person consultation meeting with all of them. All participants were sent direct invitations and the session took place in Cairo House, Ministry of Environment. This consultation will be further complemented during the implementation with additional engagement activities during the different stages of the project as per the guidance and principles of the SEP.

Please refer to **Annex 1** for the list of Attendees

A total of 27 persons attended the scoping session in addition to the PCU, about 30% of the attendees were females and 70% were males. Most of attendees participated actively during the session and shared their thoughts and insights about the parent project and the AF.

The following topics were presented during the consultation session:

- General background about the parent project and its components.
- The objective of the AF.
- Description of the sub-components under the AF.
- The Environmental and Social framework of the AF
- The expected negative and positive impacts of the AF.



7.7 Main points and findings

The following is a summary of the points raised in the consultation activity for the additional finance:

- Challenges faced by hospitals in managing healthcare waste given the hazardous nature, including operational challenges, risk on labor.
- Formalization of those involved in recycling, electronic waste or medical waste should be supported by membership in the Federation of Egyptian Industries.
- Necessity of focusing on the economy when addressing the private sector and better understanding for the challenges the latter encounter and acknowledge the fact that the private sector primarily concerned with achieving profit and economic return.
- Necessity of giving options and incentives for informal companies to formalize. If they do not show willingness, they should not benefit from incentives (e.g training or awareness).

- Ministry of Environment to coordinate donor projects of similar interests, so there is no duplication of efforts and to ensure that lesson learnt generated from projects are disseminated to inform new projects.
- The necessity of having an economic feasibility.
- The government should provide all the required facilities to companies that dispose of hazardous waste (e.g. standardized contracts, specific sites with usufruct for a period of 15 or 20 years).
- Need to conduct awareness campaigns in the field of electronic waste, whether for factories or homes.
- Necessity of having modern technology because there is still leakage of electronic waste.
- If the informal companies are not properly integrated and feel the interest they will have, they will not comply.
- An association will be established for all informal companies.
- Recommendation to add component in the project to cover the solid waste management in Sharm El Sheikh given the high generation of e-waste.
- Ministry of Environment to enforce factories to not deal with unlicensed contractors, and therefore unlicensed traders and contractors will be forced to obtain a license.
- Providing support to the private sectors to mitigate the negative effects, such as granting them interest-free loans and providing them with modern technologies.
- Analyzing the extracted materials from eWaste to take into consideration the nanomaterial approach
- Think about incentives for recyclers and factories to encourage them to grow the waste recycling industry in Egypt
- The importance of certifications as ISO for waste recycling companies
- Importance of coordination with Ministry of Communication to establish a guidance price list for used electronic appliances in order to organize the market of E-waste

7.8 Detailed Discussion (questions and answers)

The following table shows the key comments and concerns raised during the scoping session

Table 2: key comments and concerns

Participant	Question/ Comment	Response/ Feedback
Mr. Magdi Hebesha Al Reda Company for medical waste collection	The main challenge that Mr. Hebesha faces is that hospitals require him to take the shredded and sterilized medical waste along with the municipal solid waste. He explained that this waste is considered hazardous because it contains chemicals and mercury, and thus it exposes his labor to chemical and health risks sometimes. He proposes that this waste should be	Dr. Samia Galal (Senior Consultant to WMRA) responded that after shredding and sterilizing the medical waste, it should be considered as non-hazardous waste since it has been exposed to high temperature and high pressure during the autoclave process. Accordingly, the product of this process should be disposed in the state-owned landfills.

Participant	Question/ Comment	Response/ Feedback
	disposed separately in a safe and designated place.	Dr. Samia added that the state is currently converting all open landfills to covered ones. She stated that according to the Waste Management Law, every hospital must separate its chemical materials. Accordingly, the Ministry of Environment is currently training directors of hospitals and solid waste management officials in 26 governorates on how to segregate and dispose of medical waste. Dr. Samia recommended waste transport companies not to take unlabeled waste bags from hospitals, in order to ensure their safe disposal.
Mr. Muhammad Mansour The Arabian Company for Shredded Medical Waste Removal	Mr. Mansour stated that there is no autoclave machine that completes its full cycle. He explained that most of hospitals open the machine before it completes its full cycle to put in more medical waste. Accordingly, the shredded and sterilized medical waste is considered hazardous waste.	Dr. Samia stated that the new autoclave machines do not open before they complete their cycle. Therefore, the shredded and sterilized medical waste is non-hazardous waste and can be disposed in the sanitary landfills.
Dr. Sherif El Nagdy Technical Officer for Medical and Electronic Waste Management Project	Dr. Sherif mentioned that the main problem is that the shredded and sterilized medical waste usually contains chemicals and mercury because waste is not separated properly. Therefore, this waste is considered hazardous and will almost cause serious diseases.	Dr. Oaima (Head of Environmental Health Department at Ministry of Health) said that hospitals are currently being trained in the separation process, because the proper separation will ensure that the shredded and sterilized medical waste will be non-hazardous. She stated that a protocol was made with the Infection Control Department to provide infection control officer in hospitals in order to ensure that the separation is done properly.
Dr. Ahmed Kamal Federation of Egyptian Industries	Dr. Kamal mentioned that every person who works in industry sector, whether he works in recycling, electronic waste or medical waste, will not be fully formal unless he is a member of the Federation of Egyptian Industries. Dr. Kamal recommended the necessity of focusing on the economy when addressing the private sector, because they primarily concerned with achieving profit and economic return. He added it will be also	Dr. Nagwa El Karawy (Technical Expert of Solid Waste at Greater Cairo Air Pollution Management and Climate Change Project) responded that the Ministry of Environment provided all the support to around 15 informal companies in order to fulfill all the conditions to be formal. She indicated that the Ministry of Environment is currently coordinating donor projects, and after coordination is

Participant	Question/ Comment	Response/ Feedback
	important to know what they are suffering from and what challenges they face. Dr. Kamal explained that if the informal companies and collectors do not show their willingness to be formal, they should not be supported or assisted with training or awareness. Dr. Kamal demanded the Ministry of Environment to coordinate donor projects of similar interests, so there is no duplication of efforts.	completed, they will communicate with all stakeholders. Dr. Najwa stated that the Ministry of Environment announced that in the coming months there will be a data system so that informal companies will have the opportunity to register. Dr. Ehab mentioned that it is not optional for informal companies to continue operating informally because this will affect the organization as a whole negatively.
Dr. Dalia Esmat Ecoconserv Environmental Services	Dr. Esmat recommended the following: 1. The necessity of having an economic feasibility. 2. Providing specific sites with usufruct for a period of 15 or 20 years. 3. Allocating specific sites for the burial of hazardous waste at the level of the governorates of Egypt, because it is risk to transfer hazardous waste from governorate to another. 4. The government should provide all the required facilities to companies that dispose of hazardous waste. 5. Providing a standard contract that makes all hazardous waste transport companies abide by its terms. 6. It is necessary to separate medical waste from chemical waste.	Dr. Muhammad Hassan mentioned that all the recommendations will be taken into consideration during the implementation of the project.
Eng. Ahmed Salem Egyptian Electronics Recycling, General Manager	Mr. Salem thanked the Ministry of Environment for its efforts in developing a legislative framework for the waste law and for its keenness to involve all relevant stakeholders in the consultation sessions. He recommended the need to conduct awareness campaigns in the field of electronic waste, whether for factories or homes. He also recommended the necessity of having modern technology	Dr. Mohamed mentioned that this recommendation will be taken into consideration during the implementation of the AF

Participant	Question/ Comment	Response/ Feedback
	because there is still leakage of electronic waste. Mr. Salem mentioned that if the informal companies are not properly integrated and feel the interest they will have, they will not comply. Mr. Salem stated that an association will be established for all informal companies.	
Eng. Ahmed Khaled Green Star Programme Director and Waste March Company Founder	Mr. Khaled stated that almost all hotels in Sharm El Sheikh change their electronic devices such as televisions, refrigerators, computers, etc. every four or five years, and it is not known where this electronic waste is disposed of. He mentioned that there are a lot of electronic waste produces yearly from Sharm El Sheikh. In light of this, Mr. Khaled demanded to add a component in the project covers the solid waste management in Sharm El Sheikh. Mr. Khaled recommended the Ministry of Environment to enforce factories to not deal with unlicensed contractors, and therefore unlicensed traders and contractors will be forced to obtain a license.	Dr. Mohamed responded that it will be a good initiative to start work with hotels as a pilot case for eWaste management
Eng. Mostafa Hemdan Recyclobekia Company	Mr. Hemdan said that this is the third or fourth project that adopts the same objectives as the previous projects. He requested the Ministry of Environment to coordinate donor projects of similar interests, so there is no duplication of efforts. He also requested to share information about what the previous projects achieved. Mr. Hamdan suggested providing support to the private sectors to mitigate the negative effects, such as granting them interest-free loans and providing them with modern technologies. He recommended the importance of focusing on the outcomes of the project more than the promotion itself.	Dr. Muhammad stated that it is very important to determine the needs of the target groups for any project to determine their needs and the methodology of implementation. If the target group is revenue or profit oriented, so the financial benefits of the project must be highlighted

Participant	Question/ Comment	Response/ Feedback
Eng. Ahmed Ismael Ministry of Industry, Trade and Small Industries	Eng. Ahmed highlighted three main issues: 7. The importance of analyzing the extracted materials from eWaste to take into consideration the nanomaterial approach 8. It is very important also to think about incentives for recyclers and factories to encourage them to grow the waste recycling industry in Egypt 9. The last point is the importance of certifications as ISO for waste recycling companies	Dr. Mohamed Hassan stated that these issues will be taken into consideration, also the new waste regulation law no. 202 for 2020 includes some articles for the incentive of waste recyclers.
Ibrahim El Sheikh	Mr. El Sheikh mentioned that the main challenge is that there is no clear mechanism in Egypt on how to dispose of electronic waste, unlike medical waste.	Dr. Mohamed Hassan and Dr. Ahmed Kamal responded that the nature of electronic waste is different from the nature of medical waste. They explained that there is no law requiring people to dispose of their electronic devices. However, the law requires hospitals to properly dispose of medical waste. Therefore, the key issue is how to encourage people to dispose of their e-waste properly.
Eng. Rania Seif Ministry of Environment	Eng. Rania highlighted the importance of coordination with Ministry of Communication to establish a guidance price list for used electronic appliances in order to organize the market of E-waste	Dr. Mohamed Hassan has mentioned that there is already a coordination with the National Telecom Regulatory Authority (NTRA). Dr. Hassan mentioned also the importance of the Academic Research in the field of waste recycling.

Annex (1)
List of Attendees

Public Consultation Session – Component 6

Wednesday 1st June 2022 – Cairo House

No.	Name	Organization	Mobile	E-mail	Signature
1	Dr. Reham Lotfy	EEAA			
2	Dr. Adel El Shafie	WMRA			
3	Eng. Somaya Tawfik	EEAA			
4	Dr. Mohamed Beshr	EEAA			
5	Dr. Ehab Tarek	WMRA			
6	Dr. Samia Galal	WMRA			
7	Dr. Ahmed Ismail	Ministry of Trade and Industry			
8	Eng. Ayman El Saied	Ministry of Trade and Industry			
9	Eng. Ahmed Kamal	ECO – Federation of Egyptian Industries			
10	Dr. Omaima Ezzeldin	MoHP			
11	Ms. Marihan Nashaat	MoIC			
12	Dr. Naglaa	Supreme Council of Hospitals Universities			
13	Eng. Sayed	Supreme Council of Hospitals Universities			
14	Dr. Rami Ahmed	National Telecom Regulatory Authority (NTRA)			

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GCAPM&CCP Additional Finance ESMF Addendum: IMPROVED MANAGEMENT OF E-WASTE AND HEALTHCARE WASTE FOR REDUCTION OF uPOPS EMISSIONS

No.	Name	Organization	Mobile	E-mail	Signature
15	Eng. Ruaa Ibrahim Elnur	Egypt Solid Waste Management Center of Excellence – Ain Shams University			
16	Dr. Sherif El Nagdy	Faculty of Science, Cairo University			
17	Eng. Mostafa Hemdan	Recyclobekia			
18	Eng. Ahmed Youssef	TripleRe Company for E-Waste Recycling			
19	Eng. Ahmed Khaled	Green Star Programme			
20	Eng. Nada Negad	WasteMarche Company			
21	Dr. Fatheya Soliman	EnviGlobe			
22	Dr. Tarek Genena	EcoConServ for medical waste management			
23	Mr. Magdy Hebeshy Saber	Al Reda Company for waste management			
24	Mr. Mohamed Mansour	The Arabian Company for shredded medical waste removal			
25	Mr. Ahmed Salah	EERC			
26	Hala Abuelheund	WB			
27	Hanssens Serouk Amina	VUB university of Bruss			
28	mostafa hemdan	Greenflacc			
29	Prof. Dr. Samia Galal	Senior Consultant & President of WMRA			

[illegible]

Annex (2): Infection Prevention and Control and Waste Management Plan (IPC&WMP)Template

1. Objective
 - state the objective of the plan
2. Scope and Boundaries:
 - State the physical boundaries and include a site layout.
 - Indicate the types and expected amounts of the different waste streams.
3. Regulatory Framework and Technical Standards
4. Interim Waste Storage
 - Design the waste storage points for the different waste streams
 - Design the collection route and collection frequency
 - Design the segregation approach in terms of different coloured bins and bags
 - Identify the number, types and capacities of equipment (containers, bags, trolleys , etc)
 - Design the central storage room in terms of geometry; types of equipment (i.e. autoclaves, shredders , etc); ventilation requirements and temperature control.
5. Final Waste Storage
 - Design the central storage room in terms of geometry; types of equipment (i.e. autoclaves, shredders , etc); ventilation requirements and temperature control.
6. Waste Disposal
 - Record the amount of treated waste to be disposed
 - Contract a licensed service provider
 - Collect all necessary evidence which ensure that waste has been disposed in controlled sites.
7. Occupational health & safety
 - Identify all the OHS requirements according to the WBG EHS Guidelines and international best practices
 - Identify all the measures that should be adopted to prevent/control exposure to infections/diseases
8. Roles and Responsivities
 - Identify all the roles and responsibilities of the different staff involved.
9. Contingency plans
 - Describe the procedures to follow in case of equipment breakdown and/or electricity shortage/cut-off.
10. Capacity building
 - Record the number of training sessions provided
 - Record the number of trainees
11. Monitoring
 - Identify monitoring objectives
 - Identify monitoring arrangements
 - Identify monitoring indicators
 - Roles and responsibilities
12. Annexes
 - Major Categories of Medical Waste
 - Treatment and Disposal Methods For Categories Of Health Care Waste
 - Waste Management System Review (Amount of medical Waste expected from the HCF.

Annex (3): E- Waste Management Plan Template

1. Objective
 - state the objective of the plan
2. Scope and Boundaries:
 - State the physical boundaries and include a site layout.
 - Indicate the types and expected amounts of the different waste streams.
3. Regulatory Framework and Technical Standards
4. Interim Waste Storage
 - Design the waste storage points for the different waste streams
 - Design the collection route and collection frequency
 - Design the segregation approach in terms of different coloured bins and bags
 - Identify the number, types and capacities of equipment (containers, bags, trolleys , etc)
 - Design the central storage room in terms of geometry; types of equipment (i.e. autoclaves, shredders , etc); ventilation requirements and temperature control.
5. Final Waste Storage

Design the central storage room in terms of geometry; types of equipment (i.e. autoclaves, shredders , etc); ventilation requirements and temperature control.
6. Waste Disposal
 - Record the amount of treated waste to be disposed
 - Contract a licensed service provider
 - Collect all necessary evidence which ensure that waste has been disposed in controlled sites.
7. Occupational health & safety
 - Identify all the OHS requirements according to the WBG EHS Guidelines and international best practices
 - Identify all the measures that should be adopted to prevent/control exposure to infections/diseases
8. Roles and Responsivities
 - Identify all the roles and responsibilities of the different staff involved.
9. Contingency plans
 - Describe the procedures to follow in case of equipment breakdown and/or electricity shortage/cut-off.
10. Capacity building
 - Record the number of training sessions provided
 - Record the number of trainees
11. Monitoring
 - Identify monitoring objectives
 - Identify monitoring arrangements
 - Identify monitoring indicators
 - Roles and responsibilities
12. Annexes