

REPUBLIC OF LEBANON

MINISTRY OF PUBLIC HEALTH

PRIMARY HEALTHCARE DEPARTMENT

**LEBANON HEALTH RESILIENCE
PROJECT**

**SOCIAL AND ENVIRONMENTAL
SAFEGUARDS FRAMEWORK**

BEIRUT

MAY 2018

Abbreviations and Acronyms

AEC	Arcenciel
CDR	Council for Development and Reconstruction
COM	Council of Ministers
EHS	Environmental, Health and Safety
EPHRP	Emergency Primary Healthcare Restoration Project
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
ESM	Environmental and Social Management
ESMF	Environmental and Social Management Framework
GCFF	Global Concessional Financing Facility
HC	Health care
HIS	Health Information System
IBRD	International Bank for Reconstruction and Development
ICU	Intensive care Unit
IEE	Initial Environmental Examination
IFC	International Finance Corporation
IFP	Investment Project Financing
IHCW	Infectious Healthcare Waste
IsDB	Islamic Development Bank
ISWM	Integrated Solid Waste Management
IT	Information Technology
LHRP	Lebanon Health Resilience Project
MoE	Ministry of Environment
MoPH	Ministry of Public Health
NCD	Non Communicable Diseases
NGO	Non-Governmental Organization
OECD	Organization for Economic Co-operation and Development
OHS	Occupational Health and Safety
OP	Operational Policy
PDO	Project Development Objective
PHCC	Primary Health Care Centers
PMU	Project Management Unit
POPs	Persistent Organic Pollutants
SORT	Systematic Operation Risk-Rating Tool
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
WB	World Bank
WHO	World Health Organization

Contents

1.	General Description of the Project.....	5
1.1	Context.....	5
1.2	Project Cost.....	6
1.3	Project Components.....	7
2.	Presentation of the ESMF.....	8
2.1	Project background.....	8
2.2	Objectives.....	8
2.3	Methodology.....	8
3.	Baseline Information.....	9
3.1	Primary Health Care Centers.....	9
3.2	Public Hospitals.....	9
4.	Policy Framework for Environmental Management.....	9
4.1	The Health Strategic Plan (2016 – 2020).....	9
4.2	Environment Policy.....	9
4.3	The solid waste policy.....	9
5.	Legal and Institutional Framework for ESM.....	11
5.1	National Legislation.....	11
5.2	International Agreements and Principles.....	12
5.3	World Bank Policies.....	12
6.	Institutional Framework for ESM in Lebanon.....	17
6.1	The Ministry of Public Health.....	17
6.2	The Ministry of Environment.....	17
6.3	The Council for Development and Reconstruction.....	17
6.4	Arcenciel.....	17
6.5	The Ministry of Justice.....	18
7.	Stakeholders Consultations and Social Mobilization.....	18
8.	Environmental and Social Analysis of the proposed Project.....	19
9.	Implementation of the ESMF.....	24
9.1	Verifying the full or partial implementation of a Health Care Waste Management Plan.....	24
9.2	Screening.....	24
10.	Waste Management Plan for Medical Activities.....	25
10.1	Rational for the WMP.....	25

10.2	Introduction.....	25
10.3	Allocation of responsibilities and resources	25
10.4	Survey and Evaluation of the waste management practices	27
11.	Monitoring and Evaluation System	30
12.	Institutional Arrangements	30
13.	Annexes	32
	Annex A: General Outline of an ESMP.....	33
	Annex B: List of people met and minutes of meetings	36
	Annex C: Report of the Public Consultation	49

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Executive Summary

This report analyses the environmental and Social impacts associated with activities undertaken by Lebanon Health Resilient Project.

(will be filled later)

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1. General Description of the Project

1.1 Context

The Project Development Objective (PDO) is to increase access to quality healthcare services to poor Lebanese and displaced Syrians in Lebanon.

The Syrian crisis and the consequent influx of Syrian refugees lead to a sudden increase in the Lebanese population by about 40%. This sudden increase has had weighty economic and social impacts. Support by relevant agencies was primarily directed towards the refugees. The quality of life and the socio-economic conditions of the hosting populations were adversely affected by the influx.

Access to health services was provided to the refugees falling short of meeting the needs of Lebanese citizens. They suffered from reduced access to primary healthcare and hospital services. This has resulted in tensions between the refugees and the hosting communities. Cost of medical care for refugees was mostly covered by United Nations (UN) agencies and international donors while the Lebanese bore their own costs. Maintaining and promoting greater social cohesion is essential to reducing the negative social and economic impacts of this crisis, especially on the poor Lebanese.

The goal of the Ministry of Public Health (MoPH) as articulated in the Health Strategic Plan 2016-2020 is to achieve Universal Health Coverage. It is based on the principles of justice, equity, poverty reduction and the rational use of resources. It requires providing quality health care for all, satisfying individual needs while alleviating the financial burden, on households, especially the poor

The Emergency Primary Healthcare Restoration Project (EPHRP) was initiated in 2015 with the support of the World Bank (WB). The project responds to the emergency needs of the MoPH engendered by the Syrian crisis as well as to the medium term goal of the ministry to provide Universal Health Care. The project helps in providing coverage for a package of essential healthcare services comprising of preventive, primary, and ambulatory care to the poor. It also contributes to strengthening government systems namely, providing primary and ambulatory care coverage to the uninsured and poor.

The main components of the project are the following:

Component 1, provision of essential healthcare packages:

- 1 Three age specific and gender wellness packages;
- 2 Two care packages for the two common non-communicable diseases (NCD) in Lebanon, diabetes and hypertension; and
- 3 A reproductive health package focusing on pre and post-natal care.

Component 2, readiness and capacity building of 75 out of the 204 MoPH network primary health care centers (PHCC).

Component 3, project outreach, management, and monitoring:

- 1 Ensure an effective and efficient, administration, regulation, and implementation of the project
- 2 Improve the effectiveness of the MoPH in contracting with PHCCs;
- 3 Rigorous monitoring and performance assessment of the project outputs and objectives.

Lebanon Health Resilience Project (LHRP) complements and adds to the objectives of EPHRP. It has a total budget of 120 M \$US and a duration of 6 years (from 23 June 2017 to 30 June 2023).

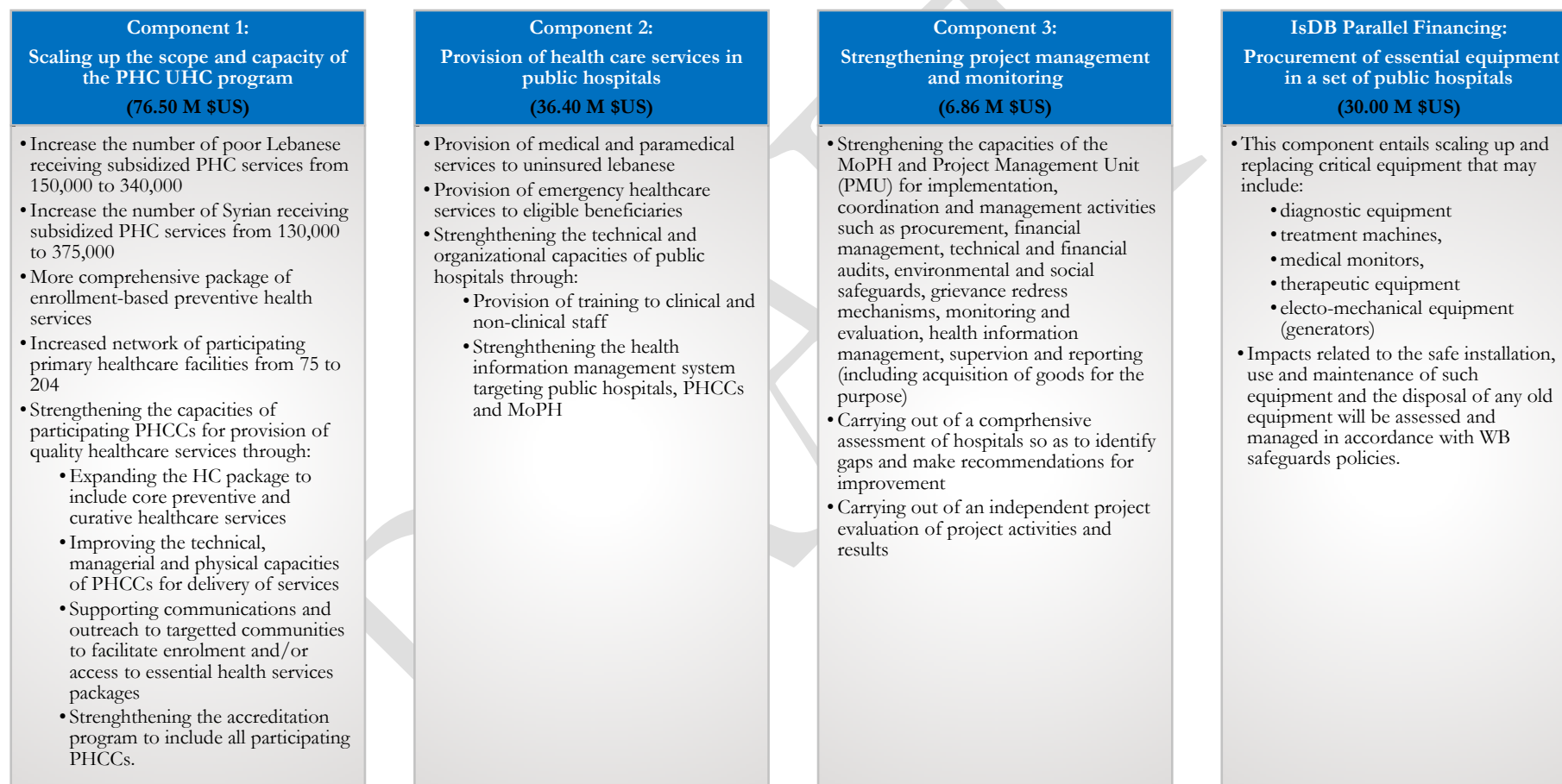
1.2 Project Cost

This Project builds and scales up the ongoing EPHRP. The total LHRP cost is 120 M \$US provided by International Bank for Reconstruction and Development (IBRD) including a concessional part of the loan to be financed by the Global Concessional Financing Facility (GCF). The Islamic Development Bank (IsDB) will provide parallel financing in the amount of 30 M \$US.

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1.3 Project Components

The following table presents the different components of LHRP.¹



¹ Project Appraisal Document

2. Presentation of the ESMF

2.1 Project background

LHRP has been prepared and will be implemented under paragraph 12 of the WB Operational Policy (OP) 10.00, Investment Project financing (IPF). The justification for the project comes from the urgent need to address the capacity needs of both primary and hospital-level institutions to respond to growing health demands due to the refugee crisis. As a result, the environmental and social requirements set out in OP/BP 4.01 (Environmental Assessment), and the IPF Directive, that are applicable during the project preparation stage, were deferred to the project implementation stage.

2.2 Objectives

The purpose of the Environmental and Social Management Framework (ESMF) is to ensure that works carried out under LHRP, address and identify measures to avoid and minimize environmental and social impacts, as much as possible, and where they cannot be avoided, the impacts are adequately identified/assessed and necessary mitigation measures designed and implemented.

Relevant Lebanese environmental and social legislation (EIA decree 8633/2012) and the World Bank's safeguards policies must be followed.

The detailed objectives of the ESMF:

- Describe the policy, legal and institutional framework for environmental management related to the health sector
- Evaluate the potential environmental and social impacts of the Project and identify mitigation measures;
- Present guidelines for screening Project activities from environmental and social aspects;
- Develop a monitoring program for compliance of project activities to ESMF

The implementation of actions in different health care institutions receiving LHRP funding will be subject to the processes defined in this ESMF, regardless of funding source.

2.3 Methodology

The development of this ESMF was based on a desk review of policies, legal texts, strategies, and technical documents related to the environment and health sector in Lebanon especially to hazardous waste generation and management.

The literature review was followed by meetings with stakeholders and site visits to selected PHCCs and hospitals in order to field assess their hazardous waste management capacities, challenges and needs for implementing the ESMF for LHRP.

3. Baseline Information

MoPH conducted a quick assessment of the waste management in 213 PHCCs and 31 public hospitals in an attempt to assess the situation of infectious waste.

3.1 Primary Health Care Centers

The national network of primary healthcare centers in Lebanon comprises 213 centers. The quick assessment conducted by the MoPH in 2017, revealed that 80.5% of surveyed centers (169 out of 210) sort their medical waste. However, only 39% (82 out of 210) have a contract with specialized companies (Arc en Ciel, Mirage and Safe) for proper disposal of their infectious waste and 27.6% (58 out of 210) hand them over to hospitals. 1.5 % (3 out of 210) have incinerators and the rest (32% or 67 out of 210) have their infectious waste dumped in landfills directly or through municipalities.

3.2 Public Hospitals

LHRP will tackle 30 to 33 public hospitals. Thirty-one (31) public hospitals were contacted to check on the disposal of their infectious wastes. Results revealed that 70% (21 out of 31) of the contacted hospitals hand them to specialized companies (Arcenciel or Safe), 9.7% (3 out of 31) dispose them in municipal dump sites or simply burn them. The remainder 20.3% (7 out of 31) did not answer, have an autoclave or are in transitory phase and are looking for a solution.

The quick assessment of the survey reveals that proper measures of segregation and disposal are not always followed by the PHCCs and Hospitals that will benefit from LHRP.

4. Policy Framework for Environmental Management

4.1 The Health Strategic Plan (2016 – 2020)

The Ministry of Public Health has prepared, in 2016, a Strategic Plan for the medium term along with an Operational Plan. The plan revolves around four strategic goals.

- Strategic Goal 1: Modernize and strengthen Sector Governance
- Strategic Goal 2: Improve collective health and promotion across the life-cycle
- Strategic Goal 3: Continue progress to Universal Health Coverage:
- Strategic Goal 4: Develop and maintain emergency preparedness and health security

The MoPH requires hospitals to apply for accreditation based on a system developed by the Ministry. Accreditation includes environmental management. Hospitals however, can be accredited without complying to the environmental requirements.

4.2 Environment Policy

The environmental policy of the Ministry of Environment (MoE) is based on five major pillars: Sustainable Ecological Development, Protection through Prevention, Polluter Pays Principle, National Equitable Development, and Mainstreaming of Environmental Policy into other sectors of the economy.

4.3 The solid waste policy

The Ministry of Environment has launched in 2018 a Policy for the Integrated Solid Waste Management (ISWM). The policy was approved by the Council of Ministers.

The Policy is founded on the following eight principles: ²

- 1 Respect for the principles stipulated in the Environmental Protection Law No. 444/2002, especially its environmental principles (precaution, and protection and preservation of biodiversity; avoidance of depletion of natural resources; pollution control; and environmental impact assessment), economic principles (the polluter pays principle and adoption of economic incentives), social principles (the importance of customary norms in the rural milieu in the absence of statutes), and governance principles (cooperation and partnership), with a view to protecting the environment and thus preserving public health.
- 2 Recovery of as much waste as possible (material recovery and energy recovery) by adopting the integrated solid waste management hierarchy¹ towards a circular economy.
- 3 Respect for the jurisdictions of the Ministry of Environment in solid waste management, while reinforcing the policy of cooperation with the other relevant ministries and public departments, and cooperation with municipalities and local communities.
- 4 Adoption of administrative decentralization in waste management, in accordance with the conditions set by the laws and regulations, by devolving to the municipalities the first stages of the waste management hierarchy (reduction, re-use, sorting at source), in addition to sweeping and collection.
- 5 Reaffirming the Government's duty to ensure efficient resource allocation by assigning to the central authorities the final steps of the hierarchy of management of waste from municipalities that are not capable of carrying them out on their own (i.e. the stages of treatment preceded by necessary additional sorting and final disposal), in-line with the regions divisions (service areas) laid out in principle six below.
- 6 Balanced development by including all governorates in the proposed policy. With the aim of proper implementation of principle five above in relation to the last stages of the waste management hierarchy, and the adoption of the service areas specified in Council of Ministers Decision 1 of June 28, 2006.
- 7 Ensuring competitiveness, innovation and the spirit of enterprise by adopting various internationally proven technologies, selecting sites based on specified environmental conditions and adopting degraded as a preference.
- 8 Disseminating a culture of shared responsibility for integrated solid waste management.

In the policy, MoE set the procedural aspect relating to Hazardous and Other Wastes:

The Ministry of Environment shall prepare a prompt feasibility study based on the available studies in the sector of hazardous and other wastes. Based on the findings and in accordance with Law 48/2017 and the environmental laws and regulations in effect, it shall take the necessary steps to:

- Build three interim storage plants (two on the coast and one inland; the sites shall be proposed by the bidders as per the standards set in terms of reference) for hazardous industrial waste, electronic waste, expired drugs, healthcare waste (hazardous and non-infectious, and those requiring special management), persistent organic pollutants, etc.
- Build treatment plants, on sites proposed by the bidders as per the standards set in the terms of references, for used oil, tires, and batteries.
- Build special incinerators for other types of wastes (such as slaughterhouse wastes, dead animals, etc.).
- Allocating an abandoned quarry in each district for the treatment of rubble waste and final disposal of bulky refuse/waste.

² Policy Summary on Integrated Solid Waste Management as approved by the Council of Ministers in its meeting of January 11, 2018. MoE

5. Legal and Institutional Framework for ESM

5.1 National Legislation

Lebanese law 444/2002 and decree 167

The Code of the Environment forms the legal basis for environmental management in Lebanon, for the principles mentioned below and the Environmental Impact Assessment (EIA) system.

Lebanese decree 8633/2012

Decree 8633/2012 “The EIA decree”, requires projects mentioned in its annexes to either undergo an EIA or an IEE. It describes the process required for preparing an EIA or an Initial Environmental Examination (IEE) and the timeline for responses and approvals from MoE.

Lebanese decrees 8006-2002 and 13389-2004

Decree 13389/2004, amends decree 8006/2002. 13389 regulates healthcare waste. It defines the type of healthcare wastes. It requires proper waste segregation and minimization. It sets guidelines for the collection and storage of waste. Finally, it requires an EIA for healthcare waste treatment facilities in order to get a license from MoE.

Decision 1/1294-2018 and 1/1295-2018

These decisions regulate the transport of infectious healthcare waste (1/1294) and the construction and operation of facilities (1/1295) for the disinfection of hazardous and infectious waste. 1/1295 specifies the process for the acquisition of an environmental license to operate such facilities.

Decree 167/2017

This decree provides tax exemptions on income and customs for individuals or legal entities are engaged in environmental activities or importing goods to be used to avoid, reduce or eliminate pollution or to treat recycle and or reuses waste.

Law 48/2017

This recent law regulates Public Private Partnerships (PPP). The law is important in the context of LHRP since private operators such as Arcenciel, Safe and Mirage and not the state, manage the collection and treatment of healthcare waste in Lebanon.

Circular 7/1

This recent decision provides a list of institutions for the disposal of material and equipment for potential recycling.

Hospital Accreditation

In the context of the health sector reform, the Ministry of Public Health has developed, in 2000, standards for hospitals in Lebanon. These standards were updated since then. They are divided in 40 chapters. One chapter concerns only waste management. It includes 8 standards.

Healthcare waste collection and disposal companies' accreditation and authorization

Companies are requested to apply for a license from the Ministry of Industry (MoE) and are required to submit an EIA to the MoE to get an environmental license. The MoPH plays an indirect role as a member of licensing committees.

5.2 International Agreements and Principles

The Basel Convention (Ratified by law 387/1994, 29/2015)

The Basel Convention on the control of transboundary movements of hazardous wastes and their disposal. The Basel Convention's main objectives are:

- to reduce the production of hazardous waste
- to treat and dispose of hazardous waste at the nearest possible place from the source and
- to reduce transboundary movements of hazardous waste.

In 2015 hazardous waste export to and from OECD countries has been banned

The Stockholm Convention (Ratified by law 432/2002)

The Stockholm Convention on persistent organic pollutants is “a global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of human and wildlife and have harmful impacts in human health or on the environment”.

Minamata Convention on mercury (Acceded by law 2/2017)

The Minamata Convention on Mercury is “a global treaty to protect human health and the environment from the adverse effects of mercury”.

The Polluter Pays Principle

The polluter pays principle was adopted by the Organization for Economic Co-operation and Development (OECD) in 1972. It stipulated that every waste producer is legally and financially responsible for the elimination of their waste in a safe way for both the environment and humans (even if certain jobs are outsourced).

Precautionary principle

The precaution principle was formulated for the first time in 1972, in the principle 15 of the Rio Declaration on Environment and Development. It stipulated that when there is a possibility of serious or irreversible damages on the environment, the lack of scientific proofs doesn't have to be considered as a reason to delay economic measures which help to prevent the environmental degradation

Proximity principle

The proximity principle recommended that the treatment and the elimination of hazardous waste are required to happen at the nearest place from their production location, in order to minimize risks related to the transportation.

Diligence principle

This principle stipulates that every individual who is involved in waste management has to take necessary measures which help to maintain an appropriate waste management from the production's point to the final elimination. The main responsibilities of the waste producer, in the context of the diligence principle are: To identify precisely the waste which is produced To complete and sign monitoring sheets for hazardous waste before transferring it to another part To condition the packaging in a safe way in appropriate packages To insure a safe storing of the waste To select an appropriate treatment and elimination method

5.3 World Bank Policies

The project is expected to trigger only **OP/BP 4.01: Environmental Assessment**, as some of the subprojects could impact the physical environment. As per the PAD, category A subproject will not be eligible for

funding only category B subprojects will be funded. Consequently, only an Initial Environmental Examination (IEE) and Social Management and Monitoring Plan (ESMP) will be required.

5.4 Environmental, Health, and Safety (EHS) General Guidelines

The Environmental, Health, and Safety (EHS) Guidelines are technical reference documents with general and industry-specific. The Health care facilities follow also industry special EHS guidelines. It covers waste management, emissions to air and wastewater discharges.

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Lebanese EIA Procedures

The table below describes the procedures for IEEs (in bold) and EIAs in Lebanon.

Stage	Activity
Initial Filing and Screening	<p>The PMU of the project completes a Project Screening Form (PSF) of the intended project in accordance to Annex 4 of the EIA Decree 8633/2012 for submission to the MoE for screening.</p> <p>Screening is made through the Service of Environmental Technology based on lists of projects in Annexes I and II, as well as Annex III of the EIA decree (which takes into account the sensitivity of the project's location). The service determines if the project is among:</p> <ul style="list-style-type: none"> • Annex I projects for which an EIA report, based on Annex VIII, is required; • Annex II projects for which only an Initial Environment Examination (IEE) based on Annex VI, is required -an Annex II project located in an Annex III location would require an EIA; and, • If not listed in Annex I or Annex II, no further Environment Analysis is required, unless located in an Annex III area, in which case an IEE would be required. • The Minister of Environment has the right, and based on a reasonable justification, to request an IEE or an EIA regardless of the classification of the project. • Further to an IEE, the MoE can request the MoPH to prepare an EIA if the IEE shows the need for an EIA due to an important environmental impact. • Duration of the MoE response is 15 days; if no response within this period is issued by MoE, the project may proceed on the basis of the above screening rules.
Scoping	<ul style="list-style-type: none"> • Scoping (report as per Annex VII) is required for projects subject to an EIA study; no scoping is required for projects requiring an IEE. • The MoPH is required to inform the stakeholders, concerned ministries and NGOs of the preparation of an EIA report and the municipality (Kaem Makam or Mohafez in the absence of a municipality) should post on its bulletin board and on the premises of the project, an announcement to that effect during 15 days and requesting comments from the public. MoE could also receive comments from the public or stakeholders for a duration of one month from the publication of the announcement. • The MoPH is required to submit a report on any EIA consultations and meetings with stakeholders. • The scoping report is available for consultation at the MoE by the public or by the concerned institutions. • MoE should provide its official comments on the scoping report within 15 days from its registration at the Ministry; if no answer is obtained within this period, the MoPH can proceed with the preparation of the ESIA report on the basis of the scoping report.

Stage	Activity
Technical Evaluation	<ul style="list-style-type: none"> • A technical committee comprising 3 to 5 members of various background and expertise from the different services of the MoE is responsible for the review of the EIA and IEE studies. If need be, experts not available at the MoE can be subcontracted to assist with the review of the EIA studies. • The technical committee uses the methodology set in the MoE's Decisions 229/1-230/1 of 2012 (similar to the "MNA Guide for the Preparation and Review of EA reports of the World Bank" under section 4-part B "reviewing EA reports."). The methodology is based on 'Review Checklists' with corresponding scores (A-F). A total score of C is considered to be satisfactory despite omissions and/or inadequacies.
Decision and Approval	<ul style="list-style-type: none"> • The MoE reviews the Committee's report and notifies its decision to the MoPH and publishes it within two months for an ESIA report and within 30 days for an IEE report. This decision is transmitted to the concerned institutions and should be published on the municipality bulletin board during 15 days. The decision could be acceptance of the ESIA report, conditional acceptance or rejection. • In case no response is obtained from MoE within the stipulated review periods; than the MoPH can consider the EIA or IEE reports, whichever applicable, approved, and can proceed with the project on the basis of the Environmental and Social Management Plans (ESMPs) included in the reports. PMU shall closely monitor the review process to ensure that review deadlines are not exceeded. • In case of conditional acceptance or rejection, objections and complaints from the MoPH can be submitted to the MoE within 15 days from the announcement of its decision and a reply should be provided within 15 days from receiving the complaints.
Appeal	The MoPH can appeal the decision of the MoE articles 6, 7 10 and 15, the objections will be sent to the Council of Ministers.
Integration of Results	ESMPs of approved EIA/IEE studies should be integrated in project design. Notably, costs of the EMSP should be taken into consideration in the project's feasibility study and mitigation and monitoring measures should be integral parts of the project design.
Disclosure of EIA and IEE	Article12 of the EIA Decree states that the EIA and IEE are to be available for examination at the MoE.
Monitoring and Reporting	The MoE will monitor the implementation of subproject specific ESMP and the PMU of the Project should report implementation of ESMP regularly to MoE.
Enforcement	MoE shall be responsible for enforcement and will exercise site inspections as needed to ensure projects follow EMSP requirements and meet relevant standards.
Validity	The EIA and IEE reports are considered valid for a period of 2 years from the date of the decision of the MoE

Stage	Activity
Penalties	Article 58 of the Environment Protection Law no. 444 states that shall be punishable by imprisonment from one month to a year and to a fine ranging between LP 50.0 million (US\$ 34,000) and LP 200.0 million (US\$ 134,000) or either of these two sanctions, every person who (a) did not prepare an EIA or IEE; (b) implemented a project contrary to the EIA or IEE approved by the MoE; (c) executed a project for which EIA/IEE is not required but is not conformed to the national standards; and/or (d) opposes or obstructs the measures of control, inspection and analysis provided in the Environment Protection Law.

Analysis and Comparison

The Lebanese EIA system was analyzed in the Country Environment Analysis of Lebanon³ to determine the equivalence with that of the World Bank. The analysis showed that the World Bank's EA policy and the Lebanese EIA system have many common features and are comparable in many aspects. There are, however, two gaps, namely the lack of standard TORs and guidelines as well as the screening process.

The Lebanese EIA Decree no. 8633/2012 and its annexes provide a list of projects that will require either an Environment Impact Assessment Report, Annex 1 projects or an Initial Environmental Examination (IEE) Annex 2 projects; Annex 3 projects are projects that are re-categorized as Annex 1 or 2 because they fall in a sensitive area and would have an impact on that area. Annex 1 projects are similar to Category A projects of the World Bank and Annex 2 Projects are similar to Category B projects of the World Bank.

There are differences in the screening process between the Lebanese EIA system as stated in the Decree no. 8633/2012 which relies on positive check lists as the sole basis of classifying projects, and the one included in the World Bank OP 4.01 which relies on screening criteria related to magnitude, severity, reversibility, site location, setting of the project and its scale and only illustrative examples of projects are included as part of the classification. The national Decree requesting the use of positive checklists is simple to apply, at least for the category of projects that require a full and comprehensive ESIA. Furthermore, the above lists do not distinguish between construction, rehabilitation and simple maintenance of these infrastructures.

³ The World Bank: Country Environment Analysis of Lebanon, <www.moe.gov.lb>.

6. Institutional Framework for ESM in Lebanon

6.1 The Ministry of Public Health

The Ministry of Public Health (MoPH) (Decree 8377/1961) is mandated with the drafting of laws and regulations related to the management of the health sector. The MoPH supervises and monitors healthcare facilities. It has recently launched an accreditation system for hospitals which includes a section on environmental management. The goal of the MoPH, in its recent strategy, is to provide Universal Health Coverage.

6.2 The Ministry of Environment

The Ministry of Environment (MoE) (Law 690/2005) elaborates policies, strategies, plans and projects in all that relates to the safety of the environment and the sustainability of natural resources. It also prepares laws, standards and norms.

The MoE also requires, reviews and approves or not Environmental Impact Assessment (EIA) and Initial Environmental Examinations (IEE) studies for specified types of projects (Law 444/2002 Code of the Environment and EIA decree 8633/2012 and MoE decision MoE Decision no. 7/1/ 2003). The Service of Environmental Technology at MoE is in charge of the EIA and IEE processes

The MoE specifies environmental conditions for the permitting of classified facilities including healthcare waste treatment. It also sets and monitors through inspection, the implementation of strategies related to the management of hazardous waste (Decree 8006/2002 amended by decree 13389/2004).

6.3 The Ministry of Industry

The Ministry of Industry (MoI) licenses the waste treatment facilities as per Decree No. 13173 dated 8/10/1999.

6.4 The Council for Development and Reconstruction

The Council for Development and Reconstruction (CDR) (Decree 117/1991 last amendment) is a public institution under the tutelage of the Council of Ministers (COM). The objective of CDR is the preparation, financing and execution for development and reconstruction projects. The CDR plays an advisory role to the COM and can even propose laws related to development and reconstruction.

CDR will be fully responsible for the application of the World Bank's safeguards policies. IsDB and WB will independently review safeguards documents related to the Project, however, the safeguards teams will aim to coordinate comments to the Borrower.

6.5 Arcenciel

Arcenciel (AEC) is a Lebanese based non-profit organization established in 1985 during the Lebanese civil war. It was recognized as a public interest NGO in 1995 by Presidential Decree No. 7541.

The NGO has taken over the management of around 85% of the medical waste in Lebanon in close collaboration with the MoE, the MoPH, the Syndicate of Hospitals and Healthcare Institutions, and municipalities. The waste is treated by autoclaving in one of the 5 centers of AEC in Jisr el Wati, Zahlé, Hotel-Dieu, Saida, and Zgharta. The collection fee is between 0.64 \$/kg for large hospitals to 1.72 \$/kg for labs and PHHC.

6.6 The Ministry of Justice

The Ministry of Justice (decree 151/83) is in charge of appointing environmental prosecutors.

7. Stakeholders Consultations and Social Mobilization

To be completed later after public consultation

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8. Environmental and Social Analysis of the proposed Project

Referring to the Systematic Operations Risk-Rating Tool (SORT)⁴, the rating of the Environmental and Social risk is Moderate. Given its scale and nature, the Project is classified as environmental category B, in accordance with OP 4.01.

The following positive impacts will be caused by the Project:

- The Project will contribute to saving unnecessary HC costs and social care costs by preventing disease and supporting a healthy population.
- Increase the productive labor force. The overall impact on economy is positive.
- Improve HC service by building its capacities and procurement of needed equipment
- Reduce tension between refugees and local population
- The Project is expected to have positive impacts as it will improve access to health services for vulnerable individuals living in Lebanon. If a good grievance redress mechanism is put in place and a strong communication and outreach activities would inform vulnerable populations on the services and benefit available.

The following negative environmental impacts can be caused by the project:

- Increase in HC and municipal waste generation due to increased volumes of patients covered by the project
- Increased exposure of personnel and patients to Infectious Healthcare Waste (IHCW) leading to OHS risks.
- Increase in air emissions from power generators and ventilation equipment
- Increase in water consumption
- Increase in wastewater generation
- Slight disruptions due to minor civil works to accommodate increased patient volumes and waste generation.
- Increase in traffic due to patients and healthcare professionals

The Table below provides a summary of the positive and negative impacts, their severity and proposes relevant mitigation measures.

⁴ Project Appraisal Document

Impact	Type of Impact	Severity	Mitigation Measures	Responsibility	Cost (\$US)
The Project will contribute to saving unnecessary HC costs and social care costs by preventing disease and supporting a healthy population.	Positive		None		
Increase the productive labor force. The overall impact on economy is positive.	Positive		None		
Improve HC service by building its capacities and procurement of needed equipment	Positive		None		
Reduce tension between refugees and local population	Positive		None		
The Project is expected to have positive impacts as it will improve access to health services for vulnerable individuals living in Lebanon. If a good grievance redress mechanism is put in place and a strong communication and outreach activities would inform vulnerable populations on the services and benefit available.	Positive		None		
The Project will contribute to saving unnecessary HC costs and social care costs by preventing disease and supporting a healthy population.	Positive		None		
Increase the productive labor force. The overall impact on economy is positive.	Positive		None		
Reduce tension between refugees and local population	Positive		None		
Reduce diseases	Positive		None		
Increase in HC and municipal waste generation due to increased volumes of patients covered by the project	Negative	Moderate	-Verify HCW handling capacity of institution -Implement HCW management plan	-PMU Environmental Specialist -HC facility	Cost will be determined later

Impact	Type of Impact	Severity	Mitigation Measures	Responsibility	Cost (\$US)
Increased exposure of personnel and patients to infectious HCW leading to OHS risks.	Negative	Moderate	Implement OHS plan and HCW management	-PMU Environmental Specialist -HC facility	Cost will be determined later
Increase in air emissions from power generators and ventilation equipment	Negative	Low	Install proper air emissions filters in case missing	-PMU Environmental Specialist -HC facility	Cost will be determined later
Increase in wastewater generation	Negative	Moderate	Ensure connection to wastewater network or local treatment plant	-PMU Environmental Specialist -HC facility	Cost will be determined later
Increase water consumption	Negative	Low			
Slight disruptions due to minor civil works to install new equipment, accommodate increased patient volumes and dispose waste generation.	Negative	Low	Investigate the use of alternative roads for the services	-PMU Environmental Specialist -HC facility	Cost will be determined later
Increase in traffic due to patients and healthcare professionals	Negative	Minor	None		
Handling Complains			<ul style="list-style-type: none"> Provide the proper GRM for handling complaints A complaints register will be kept on site and this will feed into the GRM. Details of complaints received will be incorporated into the audits as part of the monitoring process 	-PMU Environmental Specialist/MoPH	Already included
Impact of Minor Civil Works and scaling up the facility				-Contractor -PMU Environmental Specialist -HC facility	No additional costs; the cost is imbedded in mandatory HSE measures and in Contract
<ul style="list-style-type: none"> Hazardous waste pollution due to oil, grease, fuel & paint 			<ul style="list-style-type: none"> Collect and recycle lubricants in closed bins to avoid leakage and 		

Impact	Type of Impact	Severity	Mitigation Measures	Responsibility	Cost (\$US)
			<p>transferred to the refinery for processing</p> <ul style="list-style-type: none"> Keeping the site clean and tidy Paints with toxic ingredients or solvents or lead-based paints will not be used 		
<ul style="list-style-type: none"> Local generation of dust 			<ul style="list-style-type: none"> Periodically water down Use dust barriers Minimize dust from materials (such as sand, cement) and construction activities (such as excavation) by using covers, storage, control equipment, and increasing moisture content. 		
<ul style="list-style-type: none"> Noise from machinery 			<p>Use maintained equipment and silencers where possible</p> <p>Place noise sources in a concealed area with respect to acoustic receptors</p>		
<ul style="list-style-type: none"> Poor sanitation & solid waste disposal in work area 			<p>All staff will avoid littering in the open. Workers to use bins to throw garbage</p> <p>Provide adequately located & maintained containers and latrines (mentioned in HSE)</p> <p>Timely disposal of wastes</p>		
<ul style="list-style-type: none"> Access and traffic 			<ul style="list-style-type: none"> Set up warning signs in the workplace. All safe footpaths are marked; construction materials are not blocking pathways Site entrances and exits are clearly marked for visitors and delivery drivers to see; Avoid or minimize transport through hospital patients' areas. public warned of all potential hazards by signposting and barriers / fencing Ensuring safe and continuous access to all hospital departments during construction 		

Impact	Type of Impact	Severity	Mitigation Measures	Responsibility	Cost (\$US)
<ul style="list-style-type: none"> Health and Safety 			<ul style="list-style-type: none"> Providing site boundaries by installing suitable physical boundaries (barriers, tape or fence) Marking work area physical boundaries (barriers, tape or fence) Store building materials (such as pipes, manhole rings, and cement bags) so that they cannot topple or roll over. Contractor to ensure PPE (personal protective equipment) is used by all workers on site. Materials and equipment are tidily stacked, protected and covered where necessary. Additionally, there is adequate space for new materials to be stored in secured covered areas to avoid damage, theft, and to protect these items from weather conditions. Scaffolding for work in elevated areas such as ceiling painting should comply with the OSHA “General Requirements for Scaffolds 		
Disposal of old equipment	Negative	Minor	Send the old equipment to recycling companies	-PMU Environmental Specialist -HC facility	To be determined later

9. Implementation of the ESMF

9.1 Verifying the full or partial implementation of a Health Care Waste Management Plan.

The HCWM Plan is the basis for the ESMF. Funded facilities will have a full or partial WMPs in place. The PMU will need to make sure that a full HCWM Plan is being implemented prior to financing the facility. The MU will need to develop and implement a compliance action plan to instate a WMP or upgrade the existing one. The waste management plan described in this ESMF can be used for compliance verification and needs assessment.

Where for compliance reasons, there is a need for the construction or upgrading of waste storage facilities or containers than and according to local legislation there is a need for an IEE as per decree 8063. If in order to comply to the WMP, there is a need to construct waste storage facilities or containers, the MoE will require the preparation of an Initial Environmental Examination (IEE). The later will also have an EMP. The IEE is a simplified EIA that does not require public consultation. However, and according to WB requirements for category B projects, public consultation and disclosure will be required. Same applies to the need for construction wastewater networks caused by increase of wastewater flows due to increase of service.

9.2 Screening

The following four screening categories are proposed under the EIA decree and the World Bank Safeguards Policies.

- **Category A Subprojects:** Projects under Annex I of EIA decree. These projects require an EIA. These projects are not eligible for funding by LHRP
- **Category B subprojects:** These projects include hazardous waste storage facilities and containers and include as well wastewater networks. These are projects under Annex II of EIA decree. These projects require an IEE and ESMP. Although Annex 2 projects do not require public consultation and disclosure under the EIA decree, it remains a requirement for Cat B projects under World Bank guidelines. The IEE, ESMMP will be submitted for consultation and disclosure on both the MoE and MoPH websites.
- **Category C subprojects:** These are projects, which regardless of their nature but since they fall close to a sensitive location, would reclassified by MoE under either Annex I or Annex II projects. If reclassified under Annex I (Cat A projects), these projects would require an EIA and accordingly will not be funded by LHRP. If the project is reclassified under Annex II (Cat. B projects), it will require an IEE and an ESMMP.
- **Category D subprojects:** Projects for which no environmental assessment is required.

The PMU will hire an expert from the MoE/CDR list of prequalified experts to prepare a screening file based on Annex 4 of the EIA decree. The MoPH will submit a request to the MoE to classify the submitted project.

The MoE will respond within a period of 15 days from date of registration at MoE of the request for clarification. The MoE can approve the IEE or request modifications. Ultimately the MoE can request an EIA and accordingly the project will not be eligible for funding by the LHRP.

The IEE must be accompanied by an ESMMP to fulfill both Bank and MoE requirements.

A graphic will be added later to explain the screening mechanism and develop the type of instrument for each activity.

10. Waste Management Plan for Medical Activities

10.1 Rational for the WMP

A complete waste management plan has been included in this ESMF in order to identify requirements for the safe management of HCW and comply with national health and environmental regulations. Facilities selected for support by LHRP will need to have a complete waste management plan in place or take necessary actions to be able to implement a waste management plan. This plan will support the PMU in identifying gaps and needed mitigation measures.

10.2 Introduction

In spite of weak and inappropriate regulations and lack of enforcement, HC facilities should have and implement an effective waste management plan (WMP) since health-care waste can cause health and environmental hazards. The WMP should consider the waste from production, handling and treatment of wastes. It should be implemented at hospitals and PHCCs

Adequate financial and human resources should be allocated to the WMP plan in addition to the comprehensive training of relevant staff on its implementation.

10.3 Allocation of responsibilities and resources

In PHCC, a senior staff member should be assigned to oversee the implementation of the WMP. In hospitals, a waste-management committee shall be formed. Suggestively, it can comprise the following key personnel. In small hospitals, one person can fulfill more than one set of responsibilities.⁵

- The Head of the Hospital
- Heads of Departments
- Chief Pharmacist
- Senior Nursing Officer
- Hospital Manager
- Hospital Bio-Medical Engineer
- Financial Manager
- Environmental and Health Officer or Waste Management Officer (if not assigned, then assign)

The following Table summarizes the responsibilities of each key personnel.

⁵ Safe management of wastes from health-care activities, edited by Y. Chartier et al., 2nd edition, WHO 2014

Head of the Hospital	<ul style="list-style-type: none"> ▪ Assigns the waste management committee and define responsibilities of each member of the team ▪ Steers and approves the WMP ▪ Calls for recurrent meetings to evaluate and improve the WMP ▪ Allocates funds and resources as necessary ▪ Supervises the implementation of the WMP ▪ Ensures staff are trained regularly
Heads of Departments	<ul style="list-style-type: none"> ▪ Ensures all staff in the department are aware of the waste handling procedures and implement them. ▪ Responds to requests and claims made by the E&H / Waste officer ▪ Ensure staff in the department are well trained in waste handling procedures
Chief Pharmacist	<ul style="list-style-type: none"> ▪ Safe management of pharmaceutical store in order to minimize waste ▪ Advise and monitor the appropriate treatment and disposal of Pharmaceutical waste ▪ ensure personnel involved in waste handling, treatment and disposal is well trained
Senior Nursing Officer and Hospital Manager	<ul style="list-style-type: none"> ▪ Responsible for training (induction, training and refresher training), nursing staff (medical assistants, hospital attendants and ancillary staff) in the correct procedures for segregation, sealing, storage, transport and disposal of waste. ▪ Advise on and monitor high standards of infection control
Hospital Bio-medical Engineer	<ul style="list-style-type: none"> ▪ Responsible for installing and maintaining waste-storage facilities and handling equipment that comply with the national laws and regulations ▪ Ensure adequate operation and maintenance on waste treatment equipment ▪ Train staff operating the waste treatment facilities
Financial Manager	<ul style="list-style-type: none"> ▪ Make sure funds are available for the continuous supply of items needed in the waste management.
Waste Management Officer	<ul style="list-style-type: none"> ▪ Responsible for the daily operation and monitoring of the waste-management system ▪ Has direct access to all members of the hospital staff, reporting to the head of the hospital ▪ Controls and supervises collection, transport, storage of the waste on daily basis ▪ Make sure supplies of bags, containers for HC solid waste, protective clothing and trolleys are convenient and available ▪ Ensure that staff replace bags and HC containers when $\frac{3}{4}$ full, adequately ▪ Coordinate waste disposal operations ▪ Ensure that waste is not stored for longer time than acceptable and collected at required frequency ▪ Organize staff training and refresher trainings for nursing staff, medical assistant, hospital attendants, ancillary staff, doctors, clinical staff, waste handlers to make sure each member is aware of his own responsibilities ▪ Ensure compliance with occupational health and safety measures ▪ Prepare emergency plan and procedures for HC waste management ▪ Investigate and report incidents concerning HC waste

10.4 Survey and Evaluation of the waste management practices

The first step in the development of a Waste Management Plan is to survey the existing waste-management arrangements and evaluate them vis-a-vis the national legislations. The survey should include site observations and interviews at all the levels from front-line workers, support staff, physicians and managers.

The following information should be gathered:

- General Information: medical services provided, number of patients treated.
- Waste management practices in HC premises:
 - o Type of waste generated
 - Infectious waste: waste contaminated with blood, bodily fluids, cultures and stocks of infectious agents from laboratory work, waste from patients with infections;
 - Pathological waste: human tissues, organs or fluids and body parts;
 - Sharps waste: syringes, needles, disposable cutting instruments, etc.;
 - Chemical waste: solvents and reagents used for laboratory preparations, disinfectants, sterilants and heavy metals contained in medical devices (e.g. mercury in broken thermometers) and batteries;
 - Pharmaceutical waste: expired, unused and contaminated drugs and vaccines;
 - Cytotoxic waste: waste containing substances with genotoxic properties (i.e. highly hazardous substances that are, mutagenic, teratogenic or carcinogenic), such as cytotoxic drugs used in cancer treatment; and
 - Non-hazardous or general waste: waste that does not pose any particular hazard.
 - o Separation of wastes
- Personnel involved
 - o Number and qualifications (physicians, nurses, cleaning staff, etc)
 - o Skills
- Waste related equipment available and needed
- Quantities of waste generated per department (or practice in case of PHCC) per category and per day (in volume and weight), any available documentation that could help tracking the wastes.
- Practices of reuse
- Practice of transportation within the HC premises
- Storage practices and location of the storage room
- Evaluation of the waste disposal onsite or offsite (sterilizer, contract with waste management companies,)
- Availability of Training of staff at MoPH and at HC premises
- Level of health protection of staff during segregation, collection, transportation, storage and disposal.
- Evaluation of the cost of waste management (capital, operation and maintenance costs)
- Monitoring practices

The results of the waste management survey and recommendations of each member of the Health committee will be evaluated by the waste management officer in the light of existing legislations. A draft waste management plan will then be prepared by the waste management officer and discussed with the Health Committee members.

The key elements of an efficient health-care management plan are:

- Promote the reduction of the wastes generated
- Ensure proper waste segregation;
- Secure an environmentally safe treatment of hazardous health care wastes;
- Allocate resources and assign responsibilities;
- Raise awareness of the risks related to health-care waste and of safe practices; and

- Select safe and environmentally-friendly management options, to protect people from hazards when collecting, handling, storing, transporting, treating or disposing of waste.

The waste management plan shall comprise the following information:

- Summary of the present situation (practices, personnel, equipment, deficiencies, segregation, storage, transport and disposal)
- Quantities of waste generated from each department and their categorization
- Possibilities of waste separation, reuse and recycling, collection, transportation, storage, treatment and disposal (onsite or offsite)
- Identification of the need for record keeping and tracking
- Identification of the need for training
- Identification of the need for monitoring
- Cost estimate for the implementation of the waste management Plan
- Strategy and responsibility of each member in implementing the Plan.
- Diagrams of the waste management structure and the connection between different managers and staff include their names and their telephone numbers.
- Schedule for the implementation of the tasks showing dates and resources and the date when the waste management plan is officially put into practice.

When full agreement is reached between all members of the waste management committee, the revised document is signed and designated as the hospital waste management Plan. The waste management committee should review the waste management plan annually and modify it or upgrade it as necessary.

Box 1: Details to include in the waste-management plan

(Ref: Safe management of wastes from health-care activities, edited by Y. Chartier et al., 2nd edition, WHO 2014)

Location and organization of collection and storage facilities

1. Drawings of the establishment showing designated bag or disposal container for every ward and department in the hospital; disposal container shall be appropriately designated for health-care waste or other waste.
2. Drawings showing the central storage site for health-care waste and the separate site for other waste. Details of the type of containers, security equipment, and arrangements for washing and disinfecting waste-collection trolleys (or other transport devices) should be specified. The document should also address eventual needs for refrigerated storage facilities.
3. Drawings showing the paths of waste-collection trolleys through the hospital, with clearly marked individual collection routes.
4. A collection timetable for each trolley route, the type of waste to be collected, and the number of wards and departments to be visited on one round. The central storage point in the facility for that particular waste should be identified.

Design specifications

1. Drawings showing the type of bag holder to be used in the wards and departments.
2. Drawings showing the type of trolley or wheeled container to be used for bag collection.
3. Drawings of sharps containers, with their specification.

Required material and human resources

1. An estimate of the number and cost of bag holders and collection trolleys.
2. An estimate of the number of sharps containers and health-care waste drum containers required annually, categorized into different sizes, if appropriate.
3. An estimate of the number and cost of colour-coded bags or bins to be used annually.
4. An estimate of the number of personnel required for waste collection.

Responsibilities

1. Definitions of responsibilities, duties and codes of practice for each of the different categories of personnel of the hospital who, through their daily work, will generate waste and be involved in the segregation, storage and handling of the waste.
2. A definition of the responsibilities of hospital attendants and ancillary staff in collecting and handling wastes, for each ward and department; where special practices are required (e.g. for radioactive waste or hazardous chemical waste), the stage at which attendants or ancillary staff become involved in waste handling shall be clearly defined.

Procedures and practices

1. Simple diagram (flowchart) showing procedure for waste segregation.
2. The procedures for segregation, storage and handling of wastes requiring special arrangements, such as autoclaving.
3. Outline of monitoring procedures for waste categories and their destination.
4. Contingency plans, containing instructions on storage or evacuation of health-care waste in case of breakdown of the treatment unit or during closure for planned maintenance.
5. Emergency procedures.

Training

Description of the training courses and programs to be set up and the personnel who should participate in each.

11. Monitoring and Evaluation System

A monitoring system must be in set in place to make sure the ESMF and ESMP are being implemented.

The PMU should check that the Healthcare Waste Management Plans are being fully implemented by the Hospitals and PHCCs.

Mitigation measures to eliminate or reduce the potential impacts of project activities need to be monitored by the PMU.

12. Institutional Arrangements

The Institutions involved in the implementation of the Project include:

The Council for Development and Reconstruction manages the World Bank and IsDB funds and verifies the implementation of safeguards.

MoPH Steering Committee which was established under EPHRP and would be expanded to include a representative from MoPH hospital sector and CDR. Its role is to oversight the Project, coordinate interagency policies and programs and resolve any strategic and implementation issue. The steering Committee meets quarterly and is headed by the MoPH Director General with representatives from: the PMU (PHCC Coordinator), the PMU Hospital Coordinator), CDR, Civil Society, public hospitals, and academia.

The PMU manages the implementation of the Project. The PMU includes two project coordinators - a PHCC Coordinator and a Hospital Coordinator, a financial and accounting manager, and a procurement officer. The PHCC Coordinator is currently responsible for the implementation of the EPHRP and will continue in the same role under the proposed operation. Specifically, the PHCC Coordinator will ensure the implementation of Component 1 and relevant parts of Component 3. The Hospital Coordinator will be a new appointment by the MoPH, to manage the implementation of Component 2. PMU Environmental specialist will be in charge of Environmental and Social implementation, following up and reporting at the PMU level.

The MoPH developed a monitoring and evaluation plan for the ongoing EPHRP project supported by the upgraded Health Information System (HIS). The current Project will build on the EPHRP M&E System and will consist of the following:

- Internal oversight by MoPH on PHCCs and Hospitals including continuous monitoring of the activities
- Independent project evaluation including ongoing and planned project activities
- Beneficiary assessment and grievance redress mechanisms at the central and facility levels.
- External medical auditing (will be conducted as post-review)
- Project's final evaluation

A paragraph developing a capacity building program for all stakeholders to implement ESMF will be developed later.

13. Cost Estimate

In progress

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14. Annexes

Annex A: General Outline of an Environmental and Social Management Plan (ESMP)

Annex B: List of people met and minutes of meetings

Annex C: Report of the Public Consultation

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Annex A: General Outline of an ESMP

- **Executive summary**
- **Table of content**
- **Introduction.** Includes a project description, name of owner, name of expert or firm, doing the IEE and a brief description of the project toe, location and size
- **Policy and legal framework** relevant to the project
- **Description of the proposed HC establishment.** The description should include drawings, maps and pictures. It should also include the size, operations schedule, services and period of operation of the project.
- **Description of the surrounding physical, chemical, biological, social and economic environment** and expected changes before the beginning of the project and in the future.
- **Environmental impacts** of the project positive or negative, direct and indirect, short or long term.
- **Environmental and social management plan** to include mitigation measures, monitoring tools, institutional measures to be undertaken all over the different phases of the project to remove or reduce environmental impacts to acceptable levels and finally the cost of the ESMP
- **Summary of impacts:** Predicted adverse environmental impacts and their relationship to social impacts (and any uncertainties about their effects) for which mitigation is necessary should be identified and summarized.
- **Description of mitigation measures:** Each measure should be briefly described in relation to the impact(s) and conditions under which it is required. These should be accompanied by, or referenced to, designs, development activities (including equipment descriptions) and operating procedures and implementation responsibilities. Public consultation should be clearly described and justified.
- **Description of monitoring program:** The ESMP identifies monitoring objectives and specifies the type of monitoring required; it also describes environmental performance indicators which provide linkages between impacts and mitigation measures identified in the ESIA report - parameters to be measured, methods to be used, sampling location and frequency of measurements, detection limits (as appropriate) and definition of thresholds to signal the need for corrective actions. Monitoring and supervision arrangements should ensure timely detection of conditions requiring remedial measures in keeping with good practice; furnish information and the progress and results of mitigation and institutional strengthening measures; and, assess compliance with national and Bank safeguard policies. Such

arrangements should be clearly specified in the project implementation/operations manual to reinforce project supervision.

- For projects involving rehabilitation, upgrading, expansion, or privatization of existing facilities, remediation of existing environmental problems may be more important than mitigation and monitoring of expected impacts. For such projects, the management plan focuses on cost-effective measures to remediate and manage these problems.
- **Legal requirements and bidding and contract documents:** The incorporation of detailed mitigation, monitoring and supervision arrangements into legal conditions and covenants is essential. It is good practice to ensure that implementation of major environmental requirements is linked to disbursement conditions. It is important to translate ESMP requirements into bidding and contract documents to ensure that obligations are clearly communicated to contractors.
- **Institutional arrangements:** Responsibilities for mitigation and monitoring should be defined along with arrangements for information flow, especially for coordination between agencies responsible for mitigation. In particular, the ESMP specifies who is responsible for undertaking the mitigating and monitoring measures, e.g., for enforcement of remedial actions, monitoring of implementation, training, financing, and reporting. Institutional arrangements should also be crafted to maintain support for agreed enforcement measures for environmental protection. Where necessary, the ESMP should propose strengthening the relevant agencies through such actions as: establishment of appropriate organizational arrangements; training; appointment of key staff and consultants; and, arrangements for counterpart funding and on-lending. For projects having significant environmental implications, it is particularly important that there be in the implementing ministry or agency an in-house environmental unit with adequate budget and professional staffing strong in expertise relevant to the project.
- **Implementation schedule:** The timing, frequency and duration of mitigation measures and monitoring should be included in an implementation schedule, showing phasing and coordination with procedures in the overall project implementation/operations manual. Linkages should be specified where implementation of mitigation measures is tied to institutional strengthening and to the project legal agreements, e.g., as conditions for loan effectiveness or disbursement.
- **Reporting:** Procedures for providing information on the progress and results of mitigation and monitoring measures should also be clearly stated. Recipients of such information should include those with responsibility for ensuring timely implementation of mitigation measures and for undertaking remedial actions. In addition, the structure, content and timing of reporting to the Bank should be designed to facilitate supervision and should establish arrangements for the timely receipt of monitoring reports and their forwarding to the Bank's environment specialists for review and comment.
- **Cost estimates:** These should be specified for both the initial investment and recurring expenses for implementing all measures defined in the ESMP, integrated into the total project costs and factored into financing negotiations. As mitigating costs may occur at points during project implementation or operations, indications of cash flow should be provided. It is important to capture all costs – including

administrative, consultancy, and operational and maintenance costs – resulting from meeting required standards or modifying project design.

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Annex B: List of people met and minutes of meetings

Following is a list of relevant institutions met before the public consultations. The minutes of these meetings are also attached below.

- Ministry of Public Health-Bir Hassan
- Ministry of Environment-Beirut Downtown
- Al Azm wal Saada PHCC
- Iman PHCC - Mina
- Tripoli Governmental Hospital (TGH)
- Arcenciel

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MINUTES OF MEETING

Location	Ministry of Public Health-Bir Hassan
Subject	First Meeting with Environmental Safeguards for Lebanese Health Resilience Project
Date	April 23, 2018
Starting time	9:00
Ending time	10:15
Reporter	Linda Khalil

Attendee	Title	Organization	Contact Details
Sizar Akkoun	Focal Point	MoPH	sizarak@gmail.com
Ola Kdouh	Monitoring, Evaluation & Technical Officer	MoPH	olakdouh@gmail.com
Lama Abdel Khalek		MoPH	
Rima Shaya	PHC Coordinator	MoPH	rgs066@gmail.com
Mohamed Bezzaouia	Environmental Specialist	World Bank	mbazzaouia@worldbank.org
Linda Khalil	Environmental Consultant	Consultant for MoPH	lindaslim@hotmail.com

Summary of Meeting and Action Items:

No.	Action/Issue	Responsibility	Status
1	The main aim of the project in terms of primary care is to finance the provision of a basic benefit package of health services (consultations, lab tests etc) to needy Lebanese. The drugs and vaccines are part of the basic benefit package but this is the contribution of the ministry as part of its ongoing programs rather than a project activity,	Mrs. Kdouh	For Information
2	Mrs. Khalil asked how do public hospitals disposing their HC wastes. MoPH answered that they usually have contracts with the NGO Arcenciel.	Mrs. Akkoun	For Information
3	MoPH confirmed that hospitals can fail the waste management chapter and yet get the accreditation. MoPH will share the accreditation files with the Consultant.	Mrs. Akkoun	For Action
4	MoPH will share documentations about the Previous Projects and new documentation about this Project.	Mrs. Kdouh	For Action
5	MoPH prepared a draft ESF for the Project and will share it with the Consultant.	Mrs Akkoun and Kdouh	For Action
6	Mrs. Khalil asked about the status of the Steering Committee for the Project. MoPH replied that it was not established yet.		For Information
7	Mrs. Khalil asked about the Project Operation Manual. MoPH replied that it was not ready yet.		For Information
8	Mrs. Khalil asked about the structure of MoPH. MoPH will share the old MoPH organization chart and a new proposed chart (not yet approved).	Mrs. Akoun	For Action
9	Mrs. Khalil asked if all the public hospitals will benefit from HCRP. MoPH confirmed that they are 30 to 33. MoPH will send a list of all concerned hospitals to the Consultant.	Mrs. Akkoun	For Action

10	Mrs. Khalil asked for a list of all the PHCC that will benefit from HCR Project. MoPH will send it to the Consultant.	Mrs. Kdouh	For Action
11	Mrs. Khalil inquired about the rules that governs the relation between MoPH and Public Hospitals. MoPH explained that before 1996, the public hospitals were under the direction of MOPH. After 1996 (date of issuance of a law) the hospitals became under the tutelage of MoPH. MoPH checks their budgets and their medical plans. A unit in MoPH is assigned for Public Hospitals. However, there is a need to confirm if it is active.	Mrs. Akkoum	For Information
12	MoPH explained that there are some basic criteria that differentiate between the dispensaries and the PHCC. Those criteria are related to HR, Quality of Service, Structure, ... A field coordinator visits the PHCC, checks the compliance with the criteria, put some recommendations and if HCC complies, then it will be part of MoPH PHCC Network.	Mrs. Kdouh	For Information
13	MoPH explained that Public Hospitals are contracting Safe or Arcenciel to dispose their HC wastes. MoPH advises dispensaries to have an agreement with hospitals located in their vicinity to dispose their HC wastes. The disposal of expired drugs is a major issue. Usually, drugs that will expire in 3 months can be given back to Karantina Public Hospital or to YMCA for a quick use. MoPH is working on helping PHCC have effective medication management and predict their needs through the Health Information System.	Mrs. Shaya	For Information
14	As the World Bank is not financing vaccines and drugs, dispensaries shall not be included in the ESF.	All attendees	Agreed
15	Mrs. Khalil asked if the works will include any infrastructure or construction. MoPH replied that they were limited to minor rehabilitation and upgrading to ensure proper connections of the new equipment.	Mrs. Akkoum	For Information
16	Mrs. Khalil asked about the types of the equipment that will be replaced. MoPH explained that they include all types of machines but not radioactive ones. MoPH will provide the Consultant with files listing all the works and equipment to be provided to each hospital under HCR Project.	Mrs. Akkoum	For Action
17	Mrs. Khalil asked if any Grievance Redress Mechanism is in place. MoPH confirmed that the GRM was very active and efficient at the PHCC but was not very sure about its efficiency at the hospitals. Every quarter, 300 beneficiaries, chosen randomly, are called and asked about the quality of the service and informed about the GRM. There is a coordinator at the Ministry taking care of the GRM. The hotline 1214 is managed by the company teleperformance that will help proceed the grievance in MoPH. A copy of the grievance redress log sheet will be sent to the Consultant.	Mrs. Kdouh	For Action
18	Mrs. Khalil expressed her interest in visiting selected hospitals and PHCC preferably with a representative from the Ministry. As Mrs. Akkoum will not be available before May 11, 2018 she will ask MoPH to assign a representative and will issue an introduction letter for the Consultant in case she needs to go alone. As per the visits to selected PHCC, they will need coordination only as the staff is ready to go on site.	Mrs. Akkoum	For Action
19	It was agreed that the lines of communication will be by email to Mrs. Akkoum copying Mrs. Kdouh and Dr Hamadeh.		For Information

MINUTES OF MEETING

Location	Al Azm wal Saada PHCC – Beib El Raml- Haddadin – Phone No. 06-432100
Subject	Site visit and assessment of waste management
Date	May 14, 2018
Starting time	12:00
Ending time	12:45
Reporter	Linda Khalil

Attendee	Title	Organization	Contact Details
Mohamad Ayoubi	Head of Pharmacy department / Assistant director	Al Azm Wal Saada	06-432100
Jalal Juneid	Waste and services Manager	Al Azm Wal Saada	06-432100
Sandy Laham	Field Coordinator in North Lebanon	MoPH	sandylaham@gmail.com
Linda Khalil	Environmental Consultant	Consultant (MoPH)	lindaslim@hotmail.com

Summary of Meeting:

No.	Question/Issue	Answer/Observation
	At date of visit, PHCC was under maintenance and not receiving patients	
1	No. of patients/day	3000 monthly average
3	Number of personnel	11
4	Number of staff for cleaning	1
6	Type of services	Primary healthcare services: general practitioner, pediatrics, OBGYN, dentistry, cardiology, essential medications, vaccination, phlebotomy (blood withdrawal) and other medical specialties.
7	Existence of written waste management procedures	Yes, prepared by Abdallah Mikati, Quality Assurance Consultant. The policy needs update to fit the procedures done in collaboration with Tripoli's MoPH office and the municipality concerning the disposal of sharp containers. Usually, the procedures are updated yearly.
8	Were PHHC staff trained on waste management?	Yes, they are, monthly. In addition to the training, they are monitored and tested by the quality assurance consultant

9	<p>What are the main types of wastes?</p> <ul style="list-style-type: none"> • Domestic wastes • Infectious wastes • Sharp materials • Expired drugs • Broken Thermometers 	<p>color of bag/container, estimated quantities, disposal</p> <p>Black, 8-10 kg/day, thrown in collective containers daily</p> <p>Yellow, < 3 kg daily, collected separately but when accumulated had to throw them in municipal containers</p> <p>Special containers, 3 containers monthly, disposed through new agreement with Municipality of Tripoli, local hospitals and Arcenciel</p> <p>Given back to provider. Stock is very well managed through a software.</p> <p>Usually, drugs are out of stock and rarely expire</p> <p>Only digital thermometers are used</p>
10	Cleaning personnel is wearing protection	Yes
11	Frequency of collection	Domestic waste twice daily
12	Temporary storage of the waste	In a room without refrigerator, in the same floor. Was not able to get the key as the PHCC was under maintenance.

MINUTES OF MEETING

Location	Iman PHCC - Mina – Phone No. 06-211770
Subject	Site visit and assessment of waste management
Date	May 14, 2018
Starting time	13:00
Ending time	14:00
Reporter	Linda Khalil

Attendee	Title	Organization	Contact Details
Jihad Fahmi	Director	Iman PHCC	06-211770
Mary Nasbe	Quality Coordinator	Iman PHCC	06-211770
Sandy Laham	Field Coordinator in North Lebanon	MoPH	sandylaham@gmail.com
Linda Khalil	Environmental Consultant	Consultant (MoPH)	lindaslim@hotmail.com

Summary of Meeting:

No.	Question/Issue	Answer/Observation
1	No. of patients/day	50 consultations, plus 30 patients that visit the PHCC for the procurement of medicaments
3	Number of personnel	10
4	Number of staff for cleaning	1 (not very literate, as concerns the handling of infectious waste, she has to take direct orders from waste manager as it is difficult for her to follow the procedures)
6	Type of services	Primary healthcare services including: general practitioner, pediatrics, OBGYN, dentistry, cardiology, essential medication, vaccination, phlebotomy (blood withdrawal) and other medical specialties.
7	Existence of written waste management procedures	Yes, they were updated 2 months ago.
8	Were PHHC staff trained on waste management?	Yes, a year and a half ago by International Medical Corps (IMC) and by PHC department through the Order of nurses
9	What are the main types of wastes? <ul style="list-style-type: none"> • Domestic wastes • Infectious wastes • Sharp materials • Expired drugs • Broken Thermometers 	color of bag/container, estimated quantities, disposal Black, 40l/day, thrown in collective containers daily Yellow, 2 kg daily, weekly to Dar Al Shifa Hospital (entity affiliated to same NGO) Special containers, 2 containers weekly, Dar Al Shifa Hospital Given to Dar Al Shifa. They are clearly marked. Pharmacy stock looks quite well managed. Mercury is collected and thrown in the infectious waste container but they usually use digital thermometers
10	Cleaning personnel is wearing protection	Yes
11	Frequency of collection	Domestic waste twice daily, however some bins were observed more than $\frac{3}{4}$ full with some waste on the floor Infectious waste and sharp materials, when ordered only and

	under the supervision of the waste manager.
12 Temporary storage of the waste	In a refrigerator located at the first floor in a locked room. However, when visited, the refrigerator was empty and the waste manager stated that infectious waste is collected on Saturday. Next to this room, it is planned to furnish a conference room.

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MINUTES OF MEETING

Location	Tripoli Governmental Hospital (TGH) – Phone No. 06-385300
Subject	Site visit and assessment of waste management
Date	May 14, 2018
Starting time	10:00
Ending time	11:15
Reporter	Linda Khalil

Attendee	Title	Organization	Contact Details
Roula El Hajj	Head Nurse	TGH	03-967014
Moustapha Karhani	Cleaning and Waste Manager	TGH	70-138176
Sandy Laham	North Field Coordinator	MoPH	sandylaham@gmail.com
Linda Khalil	Environmental Consultant	Consultant (MoPH)	lindaslim@hotmail.com

Summary of Meeting:

No.	Question/Issue	Answer/Observation
1	No. of beds	165, an additional floor was constructed but remains unopen due to budget limitations. Will reach 230 when the additional floor is opened
2	Occupation rate	100%
3	Number of personnel	300 to 320
4	Number of staff for cleaning	21 (10 employee and 11 provided by a contractor)
5	Number of management staff	10: 6 in the board and 4 heads of departments
6	Type of services	Radiotherapy, pet scan, kinesitherapy, maternal delivery, 1-day surgery, neonate, chirurgic, pediatric, maternity, intensive care and reanimation, emergency, operations, laboratory, blood bank, radiology, pharmacy, oncology, dentistry. In addition to having a primary healthcare center including: general practitioner, pediatrics, OBGYN, dentistry, cardiology, essential medication, vaccination and other medical specialties.
7	Existence of written waste management procedures	Yes, they were elaborated in 2011 and they are checked yearly. Procedures were changed on the ground but not in the text.
8	Were hospital staff trained on waste management?	Yes, and there are continuously trained. There is a department in the hospital responsible for the continuous formation of the staff

9	<p>What are the main types of wastes?</p> <ul style="list-style-type: none"> • Domestic wastes • Recyclables (paper, carton, metals, plastics, glasses) • Infectious wastes • Anatomic organs • Sharp materials • Expired drugs • Chemical solvents • Plasma • Broken Thermometers • Chemotherapy waste 	<p>color of bag/container, estimated quantities, disposal</p> <p>Black, 5 barrels daily, Lavajet collect them daily directly from the hospital</p> <p>They go into domestic wastes,-, They used to be segregated and collected by Mimosa but then Mimosa refrained.</p> <p>Yellow, 120 kg daily, Arc-en-Ciel daily or every other day</p> <p>-, -, Given back to relatives</p> <p>Special containers, -, Arcenciel daily or every other day</p> <p>Thrown in wastewater</p> <p>Thrown in wastewater</p> <p>Collected separately, around 70 kg daily, collected by Arcenciel daily</p> <p>Mercury is sprayed by a neutralizer and then collected in container of the cutting</p> <p>In a special room without light, 0.5 to 1kg daily, stay in stock</p>
10	Cleaning personnel is wearing protection	Yes
11	Frequency of collection	4 times/24 hours, a special elevator is dedicated for infectious waste, however, it is not locked. It is cleaned 4 times daily, after each collection.
12	Temporary storage of the waste	In a separate room located outside, not refrigerated but equipped with an AC. However, it is not locked. It does not have a dedicated water source and sink. It is relatively small.
13	Price paid to Arcenciel for infected wastes	0.55 \$US/kg

MINUTES OF MEETING

Location	Arcenciel (AEC)
Subject	Disposal of Infectious Healthcare Waste
Date	May 18, 2018
Starting time	3:15
Ending time	4:30
Reporter	Linda Khalil

Attendee	Title	Organization	Contact Details
Romaric Kazarian	Production Manager- Infectious Healthcare Waste Treatment	Arcenciel	Kazarian.romaric@gmail.com 01-495565 70-605962
Linda Khalil	Environmental Consultant	Consultant (MoPH)	lindaslim@hotmail.com

Summary of Meeting and Action Items:

No.	Action/Issue
1	<p>Where do you collect waste from (Yes/No)?</p> <ul style="list-style-type: none"> • North Lebanon including Akkar: Yes • Mount-Lebanon and Beirut: Yes • Bekaa including Hermel: Yes • South Lebanon including Nabatiyeh: Yes
2	<p>How many hospitals and PHCCs have contract with you, (mentioned 307 in the annual report 2017)?</p> <ul style="list-style-type: none"> • In North Lebanon including Akkar: No data was provided • In Mount-Lebanon and Beirut: No data was provided • In Bekaa including Hermel: No data was provided • In South Lebanon including Nabatiyeh: No data was provided
3	<p>What are the quantities that you collect and treat? According to your annual 2017 report, the total is 4000t/year around 11t/day how are they distributed?</p> <p>The quantity handled is around 12 t daily (or 4,380t/year) distributed as follow:</p> <ul style="list-style-type: none"> • North Lebanon including Akkar: around 2t • Mount-Lebanon and Beirut: around 6-7t • Bekaa including Hermel: around 2t • South Lebanon including Nabatiyeh: 2t
4	<p>What is the percentage of coverage in terms of quantities generated at the national level? As per the information on the website, 80% is handled by AEC what will happen to the remaining 20%?</p> <p>Currently, AEC covers 85% of the infectious waste.</p> <ul style="list-style-type: none"> • Some hospitals have their own autoclaves, • Mirage (another company) handle 2-3t daily mainly in South Lebanon, and • unfortunately, there are still some illegal disposal, although limited.
5	<p>Why don't you collect Infectious Health care waste from some locations example in the North?</p> <p>All the regions are covered by AEC. Due to political reasons, Zgharta treatment site was closed. The number of trucks in AEC procession is low (8) and there are in acceptable condition. (Their yearly</p>

	<p>maintenance cost 40% of their total price). Although the sterilization units can handle the waste, there is no possibility to transport the infectious waste from the North to Beirut. The trucks are running on average 200km/day including Saturdays and Sundays</p>
6	<p>How do you treat infectious waste? By sterilization (autoclave)</p>
7	<p>Where are the treatment facilities located?</p> <ul style="list-style-type: none"> • Jisr el Wati (the largest) • Zahleh, • Hotel-Dieu de France (land owned by HDF, it is operated and maintained by AEC) • Saida (new equipment was installed recently to double its capacity) • Zgharta (has been closed for a year now, for political reasons)
8	<p>Where are the disposal sites located? Treated infectious waste is filled in black bags labeled sterilized healthcare waste (in Arabic). They are disposed of in the same stream as household waste.</p>
9	<p>You treated 4000 t of infectious waste in 2017, what is your maximal capacity, and where do you stand vis-a-vis this maximal capacity? The treatment equipment is at 60% to 70% of its capacity. A new autoclave is being manufactured and will be sent to AEC in 6 months. The capacity will increase.</p>
10	<p>What do you think are the solution to make sure the infectious health care wastes follow the adequate stream?</p> <ul style="list-style-type: none"> • Proper training of the personnel in the healthcare institution • Stringent monitoring and enforcement of the regulations by the MoPH or MoE • For the accreditation put more weight on the solid waste chapter or make the waste chapter mandatorily
11	<p>What are the challenges that you are facing and what are their potential solutions? The closure of Zgharta Plant and the limited number of trucks we have, made it very difficult for us to collect healthcare infectious waste from North Lebanon. As we are a non-lucrative NGO, we are seeking donors to grant us 1 to 2 trucks for the transportation of infectious healthcare waste. As the waste reaches the treatment plant in less than 3 hours, there is no need for refrigeration. We usually use Toyota Dyna 250. It costs around 25,000 US\$ and the box cost around 6,000 US\$. We can provide the personnel and cover the fuel cost.</p>
12	<p>What is the number of staff dedicated to the Infectious Healthcare Waste, and what is their occupation? 55 to 60 (1 head, 3 managers, 4 assistants and the rest are drivers)</p>
13	<p>How much do you charge the HC institution per kg? It depends on many factors for instance: the quantities of wastes (economy of scale), the frequency of collection, who will provide the containers? The range is between 0.64 \$/kg for large hospitals to 1.72 \$/kg for labs and PHHC.</p>
14	<p>What is the procedure for a HC institution to have a contract with Arcenciel? When an institution contacts AEC, it is conveyed to the quality manager at AEC. The institution is asked to do a self-assessment and fill-in a template including the generated quantities and the frequency of collection. Based on this assessment, a contract is prepared mentioning a proposed cost and a mandatory training for the personnel handling infectious healthcare waste in the hospital. Then, it signed. The storage room should be refrigerated and the temperature kept between 3-8 degree C. Some hospitals use an AC in the storage room, this is used to be acceptable as long as the waste is collected on daily basis.</p>
15	<p>What do you know about other operators like Mirage/Safe? The purpose from the questions is to complete the waste stream process to understand the impacts when it stops. Safe is the infectious waste collector for Mirage. Basically they are under the same entity. Mirage covers IHCW treatment mainly in South Lebanon. It has a proper equipment because to import any</p>

	<p>equipment relevant to infectious waste a whole procedure is followed. For instance, Industrial Research Institute (IRI) checks the equipment and asks for catalogues. They contact the supplier to make sure the equipment is compliant with the regulations.</p>
16	<p>Does Arcenciel has a specific waste management plan that they give to hospitals? Yes, a red booklet entitled “(booklet of AEC Guide of the Healthcare Waste Management will be provided) available also on AEC website (in 3 languages).</p>
17	<p>Is AEC process without environmental impacts? Disinfected trucks, charged with disinfected containers leave the treatment plants. When they reach the healthcare institution, they discharge the containers and take the full ones. When they reach the treatment plant, the waste is loaded into the autoclave or sent into the refrigerators. Waste can be kept without refrigeration for less than 6 hours and in the refrigerator for a maximum of 48 hours. When charged into the autoclave, bags are not opened. Staff handling waste are fully protected with special gloves, safety shoes, masks and uniform. A boiler sends vapor to the autoclave that should be kept at constant temperature of 124 degrees Celsius for 30 minutes. The whole process of sterilization cycle will take 2 hours. When finished, sterilized waste is filled in labeled black bags and disposed in landfill and it follows the same stream as household waste. Then the whole plant is disinfected, the containers and the trucks also. The personnel handling the waste follow strict rules and is fully protected. Condensed water from autoclave is collected and treated before disposal in the sewage system. Every 3 months as report of the quantities treated from each institution and waste water treatment plant water quality effluent is sent to the Ministry of Environment.</p>

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MINUTES OF MEETING

Location	Ministry of Environment-Downtown Beirut
Subject	Overview of national legal framework and potential MoE intervention - Lebanon Health Resilience Project
Date	May 21, 2018
Starting time	10:00
Ending time	12:00
Reporter	Linda Khalil

Attendee	Title	Organization	Contact Details
Samar Malek	Acting Head of the Service of Environmental Technology	MoE	samar@moe.gov.lb
Linda Khalil	Environmental Consultant	Consultant for MoPH	lindaslim@hotmail.com

Summary of Meeting and Action Items:

No.	Action/Issue
1	Mrs. Khalil presented LHRP and its main components. Then a list of national legislations relevant to the Project was provided to Mrs. Malek to check for any missing legal document
2	Mrs. Malek pointed out 2 relevant decisions: 64/88 (sanction to the responsible of illegal disposal of infectious wastes) and 71/1 (import of waste). Legal texts were sent to Mrs. Khalil by email.
3	When asked about the disposal of expired medical products. Mrs. Malek explained that MoE is the focal point of Basel convention. If any company has expired drugs, it should collect them and inform MoE of the need to export these hazardous wastes. MoE will inform the receiving country in addition to all the transit countries. The procedure is clear and all the route and the means of transportation (boat, trucks,...) are investigated and set.
4	Mrs. Malek explained that an experimentation on the disposal of expired drugs through incineration at Sibline took place. The results were very satisfactory. A zero emission of Dioxine was registered. Unfortunately, the Mohafez did not approve the process as he wanted to prevent a potential public grievance.
5	When asked about the interventions of MoE with the Healthcare providers. Mrs. Malek explained that in 2015, an audit on 80 hospitals (including 18 public hospitals) took place with the help of YMCA. It tackled mainly the waste stream. As a result, MoE filed several law cases. The file is still confidential and cannot be dispatched. It is in the hands of the Ministry of Justice. Since that date, no efficient monitoring is taking place mainly because of the lack of personnel at the MoE.
6	When asked about the use of the reports submitted by AEC. Mrs. Malek explained that they are cross checked for accuracy with reports submitted by the hospitals.
7	Mrs. Malek provided Mrs. Khalil with references and booklets published by the MOE.

Annex C: Report of the Public Consultation

To be filled in after the public consultation

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