



Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 19-Apr-2021 | Report No: PIDC28717

**BASIC INFORMATION****A. Basic Project Data**

Country Lebanon	Project ID P172770	Parent Project ID (if any)	Project Name Reduction of Unintentional POPs through Waste Management in a Circular Economy (P172770)
Region MIDDLE EAST AND NORTH AFRICA	Estimated Appraisal Date Apr 13, 2022	Estimated Board Date Jun 16, 2022	Practice Area (Lead) Environment, Natural Resources & the Blue Economy
Financing Instrument Investment Project Financing	Borrower(s) Ministry of Finance	Implementing Agency Ministry of Environment	GEF Focal Area Persistent Organic Pollutants

Proposed Development Objective(s)

17. The project development objective is to assist Lebanon in reducing UPOPs emission through promoting circular economy and improving management of waste disposal sites in the waste sector.

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	70.86
Total Financing	70.86
of which IBRD/IDA	0.00
Financing Gap	0.00

DETAILS**Non-World Bank Group Financing**

Counterpart Funding	62.00
Borrower/Recipient	62.00
Trust Funds	8.86



Global Environment Facility (GEF)	8.86
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Environmental and Social Risk Classification

High

Concept Review Decision

Track II-The review did authorize the preparation to continue

Other Decision (as needed)

B. Introduction and Context

Country Context

1. **Lebanon has substantial development potential, yet also faces significant challenges.** Lebanon is a small open country—culturally, politically and economically—of high middle-income status with a population of about 6.8 million people and an area of 10452 km², including the approximate 1.5 million Syrian refugees residing in the country. Services and trade are the most important sectors, with tourism and financial services forming the backbone of the national economy. Lebanon is well known for its high level of human development, as well as its large educated and successful diaspora. The country benefits from a large and resilient remittance base, a dynamic private sector, and a large and profitable banking sector. Lebanon has in the past benefitted from international community support when the country faced difficult times. Fragility and vulnerability, however, are a product of decades of recurrent conflict, political instability, and social and economic inequalities, exacerbated by regional conflicts. Within this challenging environment, the Lebanese economy has grown at a moderate pace over the past decades, but growth has been uneven due to large, frequent, and mostly “political” shocks, to which the economy has shown remarkable resilience. Poverty in Lebanon has remained widespread and progress on inequality has been limited over the post-civil war period. Lebanon also faces a considerable unemployment challenge as economic growth has not translated into sufficient job creation and quality jobs. Unemployment deteriorates due to the COVID-19 pandemic and the August 2020 Beirut Blast.

2. **The degradation of the environment is posing significant risk to Lebanon’s development.** Every year, environmental degradation costs about US\$700 million to the Lebanese economy (or 3.2 percent of GDP) with water pollution being the largest issue¹. The Litani River is the principal artery of Lebanon, and its water is mostly used for irrigation. The past few years have witnessed the severe degradation of water quality along the Litani River. Municipal solid waste disposal has been a persistent and critical issue in Lebanon. About 48 percent of municipal solid waste is disposed of in four main sanitary landfills (Tripoli, Bourj Hammoud, Costa Brava, and Zaahleh), and two smaller sanitary landfills (Jeb Jenine and Bar Elias) in the country. The remainder is disposed in unsanitary landfills and in about 617 open dumps. The industrial and hazardous waste mostly gets mixed with the municipal solid waste thus ending up in open dumps too. Open and uncontrolled dumps are polluting air, water, land and coastal zones. There is little incentive for these growing industries to treat or properly dispose their industrial solid waste, as there is no common national platform to identify and classify the by-products and waste versus inputs cycle among the different types of industries. Climate change also poses risks to Lebanon’s food and water security and threatens to exacerbate the effects of maladaptive practices in agriculture and forestry. Lebanon’s climate change model projections suggest a more rapid warm up than the global average and an annual reduction in precipitation.

¹ The World Bank Country Partnership Framework for FY17-FY22.



3. **Following the National Sustainable Development Strategy launched in 2015, the Ministry of Environment (MOE) is developing its Environmental Strategy upto 2030 aspiring towards a sustainable environment enabled by the right legal, financial and institutional capabilities.** The Environmental Strategy aims to rationalize and regulate the use of chemicals in industrial and agricultural activities, to catalyze efforts to meet climate change nationally determined contributions, to rationalize waste generation, drive economic and responsible recovery, to ensure safe disposal and to enhance and protect ambient air quality. MOE is also making efforts to establish green finance instruments (such as a Green Fund) to scale up green projects and programs following the requirement under the Environmental Code Law 444/2002 for establishing a national environmental fund.

B. Sectoral and Institutional Context

4. **The Government of Lebanon is a Party to many international conventions for addressing chemicals and waste of global concerns.** The use of chemicals and the generation of hazardous waste grew over time in Lebanon, particularly in industry and agriculture. Many of them include Persistent Organic Pollutants (POPs) and other toxic chemicals which persist in the environment, bio-accumulate through the food chain, and can cause adverse effects to human health and the environment. Recognizing the importance of the issue, the GOL signed and became a Party to the following international conventions: the Barcelona Convention for the Protection of the Mediterranean Sea against Pollution (Law 126, 1977); the Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal (Law 387, 1994); the Stockholm Convention on POPs (Law 432, 2002); the Rotterdam Convention on the Prior Informed Consent for Certain Hazardous Chemicals and Pesticides in International Trade (Law 728, 2006); and the Minamata Convention on Mercury (Law 2, 2017).

5. **In 2017, the GOL updated its POPs National Implementation Plan (NIP) and identified priorities for actions.** The NIP articulated the national main strategic priorities on POPs which include (a) strengthening the legal and institutional framework for POPs chemicals management in Lebanon, (b) managing the import and export, production, use, recycling and disposal of Industrial POPs, (c) controlling and gradually reducing unintentional POPs (UPOPs), and (d) managing the import, trade, use, and disposal of POPs pesticides. The NIP identified the estimated UPOPs emission during 2004-2014 in the country²: the total Polychlorinated dibenzo-p-dioxins (PCDD)/ Polychlorinated dibenzofurans (PCDF)³ emissions to air was 469 g TEQ, to residues was 929 g TEQ, and to water was 23 g TEQ, and to land was 10 g TEQ. The main PCDD/PCDF emission source in Lebanon is the waste disposal and open burning processes caused by poor waste management (400 g TEQ or 85% of the total emissions to air during 2004 – 2014), and the emissions to air in 2014 was 44 g TEQ/year.

6. **In Lebanon, as in much of the developing world, per-capita waste generation has been increasing.** The World Bank's *What a Waste 2.0* report of 2018 has estimated that Lebanon has one of the highest rates of waste generation per capita in the region – 0.98 kg/person/day – second only to Iraq. The total generation of municipal solid waste (MSW) in Lebanon is approximated at 2.7 million tons/year in 2018, with the highest generation (at the governorate level) being in Beirut and Mount Lebanon (50%), followed by North Lebanon and Akkar (20%) (see figure 1). The main waste streams as show in Figure 2 below include organic waste (50%), paper and cardboard (17%), plastic (10%), glass (9%) and construction/demolition (5%).

²based on the UNEP Toolkit for Identification and Quantification of Releases of Dioxins, Furans and Other Unintentional POPs, January 2013. The “toolkit” provides emission factors that together with “activity rate” allow for estimates of emissions. Based on the design of the toolkit, the result is a discrete value rather than a range, that should be considered an estimate only.

³These chemicals as listed in Annex C of the Stockholm Convention are produced unintentionally due to incomplete combustion, as well during the manufacture of pesticides and other chlorinated substances. They are emitted mostly from the burning of hospital waste, municipal waste, and hazardous waste, as well as automobile emissions, peat, coal, and wood.



Figure 1: MSW distribution in Lebanon (2018 data) (Source: MOE) Figure 2: 2018 MSW categories (Source: MOE)

7. **Open dumping and open burning of MSW is a common practice in Lebanon.** Currently, the solid waste in Lebanon is around 79% disposed in landfills and open dumps⁴. In 2020, MOE conducted a country-level Material Flow Analysis (MFA) of municipal solid waste (MSW) using limited and estimated data, which shows that about 36% of the total MSW ends in open dumpsites, which is about 969,750 tons/year exposed to open burning⁵. In 2011 a national survey was carried out to identify all MSW dumpsites. As a result, 504 MSW dumpsites were identified across Lebanon, out of which 76% (382) were operational and 24% (122) were non-operational. The volume of MSW in operational dumpsites was 2,675,548 m³ while that in non-operational dumpsites was 774,523 m³. In the 2016, there had been an updated survey, 617 MSW dumpsites were identified. About 55% (341) of the MSW dumpsites were identified as operational and 43% (263) as non-operational MSW dumpsites, and 2% (13) were inaccessible. Similar to the findings of the 2011 survey, the highest number of operational dumpsites in the 2016 survey is present in ‘Nabatieh and South Lebanon area’ which had around 37% (127) of the operational dumpsites, followed by ‘Beqaa and Baalback/Hermel area’ with 28% (96). Industrial solid waste is dumped with MSW since no industrial waste treatment facilities exist in the country.

8. **Currently only about 7% of MSW is recycled and 14% composted⁶.** There are about 110 enterprises in the country using recyclable materials⁷, most of them are SMEs and some of them are NGOs. There are about 80 sorting and composting facilities among 92 MSW management facilities that were identified in the 2016 survey⁸, which are in various stages: operational, non-operational, under construction or planned in progress. The cost of recovering and recycling waste in Lebanon is very high due to lack of economy of scale, making waste an unprofitable resource. A vast majority of the facilities collect the waste directly from households or buy waste from other collectors and sell recyclables abroad. The key problems that Municipalities highlighted⁹ are a lack of awareness among households, or their refusal to sort waste at source; households not opting into municipal waste collection programs (and dumping their waste instead); lack of resources for waste collection, including trucks, staff, infrastructure and facilities.

⁴ Draft Final Report – Integrated Solid Waste Management, Lebanon National Strategy, February 2019

⁵ Waste open burning involves the spontaneous or intentional fires occurring in municipal waste repositories. Current research indicates that open burning is a more serious threat to public health and the environment than previously thought. The low temperature burning and smoldering conditions promote the formation of many toxic and potentially harmful chemicals, including chemicals listed in Annex C of the Stockholm Convention (. These compounds may form during open burning regardless of the composition of the material being burnt. The compounds produced from sources of open burning can travel long distances and deposit on soil, plants, and in water. Additionally, smoke and particulates from open burning sources can trigger respiratory health problems.

⁶ Draft Final Report – Integrated Solid Waste Management, Lebanon National Strategy, February 2019

⁷ Circular No. 7/1, Nov. 2017, Amending Circular No. 8/1 2015 on Guidelines Concerning the Integrated Management of Domestic Solid Waste to the Attention of Municipalities, Unions of Municipalities, Caimacams and Governors.

⁸ As per the “2017-Updated Master Plan for the closure and rehabilitation of uncontrolled dumpsites”.

⁹ Interviewed by Agency for Technical Cooperation and Development (ACTED) Lebanon in 2020



9. **The mismanagement of waste and wastewater in Lebanon is responsible for emitting 10.7% (2,829.89 Gg CO₂eq in 2012) of national greenhouse gas (GHG) emissions, and 90.5% of national methane emissions¹⁰.** Methane (CH₄) is the main greenhouse gas emitted and is mainly caused by the decomposition of the organic component of waste in waste disposal sites. Although some of this methane is recovered and flared in Lebanon's controlled landfills, a significant amount is still being emitted from the MSW dumpsites spread around the country. Under the BAU scenario¹¹, GHG emissions will reach around 4,967 Gg in 2040, despite the increase in recycling rates.

10. **In October 2018, the Government of Lebanon (GOL) ratified its first Integrated Solid Waste Management (ISWM) Law.** In September 2019, it also approved a Framework Decree for the "Fundamentals of Hazardous Waste Management". This Decree is to minimize and prevent hazardous waste from its source (generator) and well manage transport, storage to treatment and disposal. Following up on the Decree, the related instructions, deadlines, administrative procedures, licensing procedures, etc. are through ministerial decisions. Three decisions related to HW generators, transporters and storage facilities have been issued so far, more are yet to be developed to guide implementation of both the Law and Decree. As per the draft National Solid Waste Management Strategy (2019), Lebanon is to move toward a 'circular economy' to realize resource recovery opportunities and to grow recycling sector investment and jobs. Thus, around 50% increase in reuse and recycling rates of products had been set to be achieved within 10 years from the strategy adoption.

11. **The circular economy that promotes designing out waste and pollution, keeping products and materials in use, and regenerating natural systems¹², offers an important and sustainable resolution to Lebanon's waste crisis.** Historically, companies, governments and customers have consumed and discarded resources and products in ever greater quantities, while low-cost debt financing has supercharged expansion of the economy. A linear model has supported this trajectory, described as "take, make, waste." A growing group of companies built around a 'circular economy' mindset is exploring innovation in the area, with a focus on sustainable production, minimal waste and pollution, and extensive recycling and reuse to 'close the loop' between manufacturing and consumption. It addresses mounting resource-related challenges for business and economies and could generate economic growth and substantial net material cost savings, create jobs, and reduce environmental impacts, including carbon emissions¹³.

12. **In Lebanon, most UPOPs emissions can be reduced by improving waste management in a circular economy.** Circular economy principles offer Lebanon major opportunities for improving resource productivity, stimulating job-creation, and improving competitiveness in the global market. This can only be achieved through investments in technology and legislative change. 3Rs (reduce, reuse, and recycle) of waste management play the major role in the circular economy. Implementing 3R practices in industry value chains supported by improved regulation and economic instruments, investments, and technical assistance will reduce waste entering the economy and valorize waste collected and sorted in the market therefore avoiding entering dumpsites and open burning. Rehabilitating existing dumpsites can also control open burning.

13. **One of the key barriers to boosting 3R practices is the presence of toxic substances in waste streams.** In a rapid assessment in 2019 supported by EBRD, the total quantity of industrial hazardous waste generated in 2019 was estimated

¹⁰ Lebanon Third National Communication to the UNFCCC, Ministry of Environment, 2016

¹¹ The BAU scenario is based on the current waste management practices and assumes that new sanitary landfills with gas recovery will be built and open dumpsites will be closed simultaneously. It is estimated that this scenario should achieve 80% of disposal in Solid Waste Disposal Sites by 2020 and 70% by 2040, while the remaining proportion of waste is reused/composted/recycled.

¹² Ellen Macarthur Foundation

¹³ The benefits of the circular economy include US\$ 700 billion annual material cost savings in the fast-moving consumer goods industry only at a global level (about 20% of the materials input costs incurred by the industry) [Towards the Circular Economy – Opportunities for the Consumer Goods Sector. Ellen Macarthur Foundation. 2013], eliminating the remaining 45% of global GHG emissions from the production of goods (in five key areas: cement, aluminum, steel, plastics and food) in 2050 to achieve the UN climate goal [Completing the Picture – How the Circular Economy Tackles Climate Change. Ellen Macarthur Foundation. 2019].



at about 71,800 tons/year, distributed in key sectors including chemicals, petroleum/coal/gas, transport, and textile/clothing/footwear. Currently, the country lacks the adequate infrastructure for collection, treatment, and disposal of hazardous waste. Industrial hazardous waste is rarely sorted; it usually ends up in the MSW streams or is directly discharged into the environment by open dumping, open burning and disposal in water streams and the sea. Improving hazardous waste management including POPs waste is, therefore, critical to reduce the exposure risk and establish a ground for sustainable material loop in the country.

14. **The Government of Lebanon (GoL) made significant efforts to regulate the chemical and waste sector, but barriers remain.** *Information and monitoring barriers.* There is a lack of systematic national-level data (waste characterization data, pricing data and sector production and consumption data) on waste, which is one of the major constraints for promoting circular economy in waste management in Lebanon. There is also a lack of effective and quantitative compiled database of toxic chemicals releases from industries; there is no exhaustive air, water and soil monitoring and reporting on emissions. There is no national monitoring for the water and sediments quality of rivers, lakes, and sea to track the pollution and depollution trends. The existing laboratories are able to carry out the needed analysis of air emission and wastewater discharge, however most of them are not fully accredited for certain parameters (especially for POPs). *Policy and institutional barriers.* The Government issued a Decree on Sorting at Source in September 2019, but due to revolution, the financial crisis and the COVID-19 pandemic this decree could not be enforced. There is a lack of regulations on the environmental permits for hazardous chemical emissions and releases. There is no strong institutional framework for effective operational coordination among key stakeholders involved in chemical and waste management. *Technical and infrastructure barriers.* Landfills are full already in Lebanon and going beyond their capacity. Open dumpsites are neither sanitary nor legal. There is no infrastructure for hazardous waste management(HWM) in Lebanon. Hazardous waste and industrial waste are mixed with MSW without proper sorting at source, thus more quantities of solid waste are being landfilled/open dumped and leading to significant public health and environmental risks. *Financing barriers.* There is no sustainable financing mechanism to support chemical and waste management in Lebanon. The GoL is exploring PPP models for solid waste collection, recovery, treatment, and final disposal, but it hasn't achieved the desired results.

Relationship to CPF

15. **The proposed project aligns well with the World Bank's Country Partnership Framework (CPF) FY17-22 for Lebanon.** The proposed GEF project directly supports the CPF Focus Area 1 (Expand Access to and Quality of Services), specifically, the objectives to reduce industrial, hazardous, and wastewater pollution, and Focus Area 2 (Expand Economic Opportunities and Increase Human Capital), specifically, the objective to improve access to finance. Additionally, the project is aligned with the CPF's cross-cutting theme of governance; particularly, as it seeks to inform and stimulate debate around policy choices and reform options and building institutional capacity, improving data availability to contribute to evidence-based policy making, and mainstreaming citizen engagement. As noted by the CPF, investment in infrastructure is needed for growth and job creation but must be coupled with structural and institutional reforms to ensure long-term sustainability.

16. The proposed project aligns with the GEF 7 Chemical and Waste Programming objectives for Program 1 Industrial Chemicals Program, to control emissions of the chemicals listed in Annex C of the Stockholm Convention. GEF had financed a few projects¹⁴ related to POPs in the country, this proposed project will build on them and avoid duplication.

¹⁴ Development of National Implementation Plans for the Management of Persistent Organic Pollutants (POPs) through UNDP (US\$ 353,000), completed in 2006; Demonstrating and Promoting Best Techniques and Practices for Reducing Health-Care Waste to Avoid Environmental Releases of Dioxins and Mercury project through UNDP (US\$ 600,000), completed in 2012; Review and Update of the National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (POPs) in Lebanon through UNEP (US\$ 177,589), completed in 2017; PCB management in the power sector project through the World Bank (US\$ 2.5 million), ongoing and to be completed by end of March 2021, and UNEP MedProgramme (US\$ 14.25 million) – Lebanon



This project will also complement the short-and medium-term interventions proposed by the Beirut Rapid Damage and Needs Assessment after the August 4, 2020 massive explosion of a chemicals storage facility and align with the WBG COVID-19 response approach – Pillar 3 “Ensuring Sustainable Business Growth and Job Creation” and Pillar 4 “Rebuilding Better for Resilient, Inclusive and Sustainable Recovery” – through supporting long-term planning and action plans on prevention and management of municipal solid waste and hazardous waste, therefore, contributing to the country’s green and resilient recovery in the post-COVID-19 era.

C. Proposed Development Objective(s)

17. The project development objective is to assist Lebanon in reducing unintentionally produced persistent organic pollutants through promoting circular economy and improving open dumpsites in the waste sector.

Key Results (From PCN)

18. The proposed project indicators that reflect and measure success in achieving the PDO are:

- a) UPOPs emission avoided and reduced (estimated 20 g TEQ/a UPOPs emission to air, about 50% over the 2014 level).
- b) Key regulatory and economic instruments and product standards supporting circular economy transition developed and/or adopted by MOE (Yes/No),
- c) 3R practices demonstrated at two or three selected governorate areas (number, with the details and amount of waste avoided entering dumpsites and landfills reported)
- d) Best available techniques and best environmental practices (BATs/BEPs) demonstrated at two or three selected open dumpsites (number, with the details and amount of waste managed reported)
- e) People benefiting from reduced exposure to UPOPs (number) (of which, percentage of women)

D. Concept Description

19. The proposed project is designed to address the identified barriers to sustainable waste management, to reduce UPOPs emitted from the waste disposal and open burning processes in Lebanon. The project will support combined policy actions, capacity building activities, and demonstrations for promoting the circular economy, especially 3Rs (reduce, reuse, and recycle) of waste management and improving open dumpsites, following the best available techniques (BAT)¹⁵ and best environmental practices (BEP)¹⁶ Guidance adopted by the Stockholm Convention (2007; rev 2019)¹⁷, and in line with the World Bank Group Environmental Health and Safety. Climate change-responsive techniques to maximize environment and climate co-benefits will be considered and used.

20. This project will contribute to building the circular economy as a pathway for Lebanon’s green growth and sustainable development in post COVID-19 era, as the project will promote circular solutions to reduce unsustainable resource extraction and environmental degradation, specifically through demonstrations in selected areas to minimize

is one of the 9 participating countries.

¹⁵ "Best available techniques" means the most effective and advanced stage in the development of activities and their methods of operation which indicate the practical suitability of particular techniques for providing in principle the basis for release limitations designed to prevent and, where that is not practicable, generally to reduce releases of chemicals listed in Part I of Annex C and their impact on the environment as a whole.

¹⁶ "Best environmental practices" means the application of the most appropriate combination of environmental control measures and strategies.

¹⁷ <http://chm.pops.int/Implementation/BATBEP/BATBEPGuidelinesArticle5/tabid/187/Default.aspx>



waste and promote sustainable business practices including green chemistry, extended producer responsibility and green public procurement.

21. The proposed project will be largely co-financed by the World Bank lending project: The National Comprehensive Environmental Management Program – Phase I Litani River Basin (LRB)¹⁸. Co-finance from the the Bank’s ProClean Trust Fund Program will also be requested when it is launched likely in mid-2021. Private sectors and beneficiaries involved in Component 2 will be engaged to provide parallel financing or in-kind contribution for the proposed investment activities. Other parallel financing resources include a multi donor funded ‘Lebanon Financing Facility (LFF)’¹⁹ already established to support port-explosion rehabilitation programs/activities. The project will also coordinate with the Med2 project led by UNEP for jointly addressing POPs issues in Lebanon.

22. The PDO will be achieved through the four proposed project components, to be further defined and elaborated during project preparation.

Component 1: Strengthen Regulatory Framework and Capacities for Sustainable Waste Management in the Circular Economy (total cost of US\$ 5.14 million, of which GEF US\$ 2.94 million)

23. This component aims to improve the policy framework, build capacity and long-term planning for applying a circular economy model in waste management and improve HWM through a series of technical assistance (TA) activities. Regulatory reforms including standards for various products and tax incentives and green subsidies for industries to improve their efficiency of material flows and reduce leakages, would be important first steps to catalyze transformative change and open opportunities for production of new eco-friendly products and for creation of waste valorization processes. This component will include three sub-components:

Subcomponent 1.1: Policy framework and capacity building for applying circular economy in waste management

24. In order to apply circular economy model for sustainable waste management, the regulatory and economic instruments including green chemistry, extended producer responsibility (EPR) and green public procurement (GPP) will be explored in Lebanon under this subcomponent. Green Chemistry is the design of chemical products and processes that reduce or eliminate the use and generation of hazardous substances. Green chemistry²⁰, unlike end-of-the-pipe treatment, applies across the life cycle of a chemical product and reduces pollution/waste at its source by minimizing or eliminating the hazards of chemical feedstocks, reagents, solvents and products. EPR²¹ is a policy approach under which producers are given a significant responsibility – financial and/or physical – for the treatment or disposal of post-consumer products. Assigning such responsibility could in principle provide incentives to prevent wastes at the source, promote product design for the environment and support the achievement of public recycling and materials management goals. GPP is a voluntary instrument under which the public authorities use their purchasing power to choose environmentally friendly goods, services and works, making an important contribution to sustainable

¹⁸ This loan project (P167818) is at US\$ 200 million (expected Board approval in September 2021) and will consist of five components: Enhancing governance of the LRB, Scaling-up pollution management in the LRB, Enhancing environment and natural resources management, Communication, awareness raising and technical assistance, and Project management, monitoring and evaluation.

¹⁹ The LFF interventions include activities inside the port for securing the explosion site and the management of critical hazardous materials as well as activities outside the port for managing different critical waste streams resulting from the explosion (such as contaminated rubble, hazardous waste, health care waste and electronic waste). Priority institutional and policy support will also be provided to strengthen the long-term sustainability of the proposed activities and mainstreaming environmental management and the principles of a climate smart and circular economy for “building back better”.

²⁰ Green chemistry has 12 principles: prevent waste, maximize atom economy, design less hazardous chemical syntheses, design safer chemicals and products, use safer solvents and reaction conditions, increase energy efficiency, use renewable feedstocks, avoid chemical derivatives, use catalysts, not stoichiometric reagents, design chemicals and products to degrade after use, analyze in real time to prevent pollution, and minimize the potential for accidents.

²¹ <https://www.oecd.org/env/tools-evaluation/extendedproducerresponsibility.htm>



consumption and production²². To be effective, GPP requires the inclusion of clear and verifiable environmental criteria for products and services in the public procurement process. Many national governments have enacted laws and established institutional structures with a view to reducing the amount of chemicals used and many companies have started to adopt sound chemical management programs in order to reduce the use of hazardous chemicals throughout the industrial life-cycle.

25. The sub-component will support: i) creating the enabling environment – introduction and development of regulatory instruments supporting circular economy transition including green chemistry, EPR and GPP with associated monitoring & reporting and enforcement & compliance requirements; ii) facilitating implementation of economic instruments such as environmental tax and green subsidies for industries to improve resource efficiency regulated by the Decree 167 in 2017²³; iii) updating national product standards for plastics, paper, inks, glass, etc.; iv) establishing a Technical Committee (including members from both governments and the private sectors) for leading initiatives on application of circular economy in waste management and organizing knowledge and learning events and trainings (including oversea training events for government officials and relevant stakeholders in Japan, Korea or EU countries) for decision makers, stakeholders, and practitioners, and public awareness raising activities on consequences of waste open burning, circular economy and other alternative approaches; v) engaging and providing technical assistance to the recycling industry through training to all interested facilities or providing specific TA to selected facilities; and vi) identifying effective green financing options for circular economy transition in waste management.

Subcomponent 1.2: Long-term planning for circular economy in waste management

26. The sub-component will support: i) update of the Lebanon 2017 National Implementation Plan (NIP) for POPs in order to comply with Article 7 under the Stockholm Convention for GoL's endorsement and submission to the Stockholm Convention Secretariat, taking into account applying circular economy, green chemistry, EPR, GPP and economic incentives where feasible and appropriate and integrating the updated NIP in the country's sustainable development strategies where appropriate; and ii) development of a 3R Implementation Framework (IF) for circular consumption in Lebanon following international experience. Consumption is the keystone of the economic growth. Circular consumption²⁴ is an indispensable part of a circular economic system. It is also one of the driving mechanisms to achieve the circular economy transition. The 3R IF may build on five pillars: 3R-based commercial services for households, carbon labeling & carbon credit scheme, partnership program to align production, supply and consumption towards the circular economy, awareness rising to motivate 3R behavior, and community education for sustainable lifestyle.

Subcomponent 1.3: Improvement of hazardous waste management

27. The sub-component will support: i) development and alignment of regulations (including control of import and trade of hazardous chemicals²⁵) and technical standards for prevention and management of POPs and hazardous chemicals and associated waste and contamination; ii) establishment of a national unified database (GIS compatible) for POPs, hazardous chemicals, waste and contaminated sites (including contaminated dumpsites). Industries that have the

²² https://ec.europa.eu/environment/gpp/index_en.htm

²³ For implementing the Article 20 in the Environmental Code: introducing incentive measures for using advanced equipment and technologies to conduct environmental-friendly activities.

²⁴ Circular consumption is considered as a new type of consumption that satisfies basic needs, improves the quality of life, and promotes the transition of consumers' social attitude and consumption behavior towards resource circularity and environment sustainability in order to achieve the goals of a circular economy based on the reduce-reuse-recycle principle. Yang, Q. & Zhou, Jifeng & Xu, Kaihua. (2014). A 3R Implementation Framework to Enable Circular Consumption in Community. *International Journal of Environmental Science and Development*. 217-222. 10.7763/IJESD.2014.V5.481.

²⁵ Through elaborating on certain HS codes to better identify products potentially containing POPs, cooperating with the Customs Authority on the Global Harmonized System implementation for Lebanon, providing training and equipment for customs inspection personnel to identify imported goods and chemicals that have the potential to contain POPs; and disseminating information among relevant product importers on the presence of POPs chemicals in certain products.



potential to release or use POPs will be requested to submit an annual report on all industrial activities including production quantities, industrial processes, chemical inputs, waste generation and discharge rates; iii) a comprehensive national inventory of all types of UPOPs resources²⁶ with sampling and testing, including fire events in vehicles, houses, industrial buildings, warehouses, showrooms, forest fires, grassland fires, and agricultural fires; iv) a national inventory of hazardous chemical and waste hotspots with sampling and testing. The inventory data from iii) and iv) will be entered into the database established under ii); v) assessment of the presence of UPOPs and other hazardous chemicals in sediments at river outlets especially near industries and in the ports and development of a pipeline of sediment dredging operations including removal, disposal and remediation as needed, and vi) development of the National Action Plans for UPOPs reduction and management and remediation of hazardous chemical and waste hotspots including GHG emission reduction potential.

Component 2: Demonstrations on 3R Practices and BATs/BEPs at Open Dumpsite in Selected Geographic Areas (total cost of US\$ 61 million, of which GEF US\$ 5 million)

28. This component aims to provide investments to demonstrate i) 3R practices to reduce waste entering dumpsites/landfills in two or three selected governorate areas²⁷ and ii) BATs/BEPs to control or eliminate open burning at two or three selected dumpsites (expected in the same governorate areas for i)). The geographic governorate areas and dumpsites for the demonstrations will be selected based on i) MSW generation rates and waste composition, ii) the distribution of MSW management facilities including collecting, sorting, recycling and composting companies and dumpsites/landfills (dumpsites located in industrial areas are likely dumped with both industrial waste and MSW), iii) the current situation of sorting, recycling and composting facilities and the characteristics, risks/impacts of open dumpsites and potential for their upgradation/improvement, iv) municipalities' engagement in 3R practices and improvement of dumpsites, v) agribusiness with active organic certification, and/or vi) other factors as needed.

29. Private sector stakeholders will be involved and selectively supported with technology transfer/production change, technical trainings, and networking to improve their overall material flows, profitability, viability and reduce their impacts on the environment and people. During project preparation, the potential public and private investments to be mobilized for this component will be assessed, and the linkages to other Global Practices in the World Bank including Finance, Competitiveness and Innovation (FCI) and Urban will be considered. Experiences learned from these demonstrations are expected to be replicated and scaled up under the Litani River lending project and throughout the country after the project life. This component will include two sub-components.

Subcomponent 2.1: Design and implementation of 3R practices in key waste streams (reducing the amount of waste disposed of via open dumpsites/open burning)

30. This sub-component aims to promote straightforward 3R practices in key waste streams, such as organic (51%), paper and cardboard (10%), plastic (10%), and/or glass (9%) in selected geographic areas to reduce waste entering dumpsites and landfills. This sub-component will support a menu of 3R practice options as proposed below to show how a Circular Economy presents key opportunities for green growth and job creation, while also addressing the critical problems of resource degradation and environmental contamination. This menu will be further scoped during project preparation in collaboration with MOE and relevant stakeholders in the country.

²⁶ Based on the preliminary assessment (without sampling and testing) done in 2017.

²⁷ There are 9 governorates in Lebanon: Mount Lebanon, North Lebanon, Bekaa, Beirut, South Lebanon, Keserwan & Jbeil, Nabatieh, Akkar, Baalbeck & Hermel, in the order of waste generation rate (ton/day) from most to least.



- a) Waste characterization analysis for the selected geographic areas and exploration of industrial symbiosis opportunities
- b) Sorting waste at household level to maximize recyclable recovery rates: a three-bin system could be a suitable solution to start with (recyclable waste, organic waste, and residual waste).
- c) Upgrade of existing sorting and recycling facilities, including trucks for different waste types, use of sensor technology and automation of dismantling and sorting, etc.
- d) Introduction and installation of anaerobic digesters/composting equipment to produce liquid fertilizer and biogas in target agro-business and manufacturing facilities. Cost-recovery is possible if economy of scale can be achieved, and if the fertilizers produced are branded and marketed to compete with imports.
- e) Improvement of waste collection systems and sorting, allowing more efficient extraction of paper products from waste systems and support for making biodegradable or compostable packaging (particularly for use in the agro-food industry), which represents a significant portion of the local economy and has been highlighted as a key sector for growth and job-creation.
- f) Support specialized collection and recycling of glass waste into viable products. Local actors are currently performing this transformation at a small scale and these initiatives have considerable potential for expansion. Economy of scale in this sector would greatly reduce Lebanon's burden of glass waste.
- g) Support to manufacturing in plastic, paper, and glass sectors in improving production processes (combined with national regulatory reforms under Component 1) to improve their efficiency of material flows and reduce leakages/waste generation and make reuse and recycling the intended destination at the end of life. Specific investment and TA activities will be scoped during project preparation.

Sub-component 2.2: Implementation of BAT/BEP at selected open dumpsites

31. This sub-component aims to control or eliminate waste open burning, therefore reducing UPOPs emission at selected open dumpsites. This sub-component will support: i) demonstration of BATs/BEPs at selected open dumps, such as stream lining waste dumping practices at the site, re-shaping the dump, capping (as needed), application of top soil for daily cover, intermediate cover, final cover, grass sowing, gas collection, venting/flaring arrangements, collection and leachate treatment/management, regulating/banning or identifying dedicated cells for the disposal of certain category waste²⁸ where feasible, etc.. These BATs/BEPs will be further scoped during project preparation based on 2017 Master Plan for the Closure and Rehabilitation of Uncontrolled Dumpsites, and the characteristics, the environmental and health risks/impacts of the selected candidate (two or three) open dumps; ii) reducing accidental/unintentional anthropogenic combustion in dumps by providing dedicated area for waste segregation or monitoring the movement of waste pickers at dump sites (in many cases fires are set by waste pickers living and/ or working in these areas), and iii) professionally²⁹ managing intentional anthropogenic combustion, that is, burning dump contents to reduce volume, destroy the food waste that attracts rodents and insects or to enable easy segregation. Occupational health of dumpsite waste pickers and scope for assimilating these waste pickers into the onsite activities during the upgradation of dumps will be considered.

Component 3: Project Monitoring and Evaluation (total cost of US\$ 1.5 million, of which GEF US\$ 500,000)

32. This component will support: i) hiring of international and national technical experts with knowledge and expertise on UPOPs, HW management, circular economy transition in different sectors and industrial symbiosis to provide technical

²⁸ avoid including non-combustible materials, such as glass and bulk metals, wet waste and materials of low combustibility; avoid waste loads containing high chlorine content, whether inorganic chloride such as salt, or chlorinated organics such as PVC; and avoid materials containing catalytic metals such as copper, iron, chromium and aluminum, even in small amounts. Materials to be burned should be dry, homogeneous, or well blended, and of low density, such as non-compacted waste.

²⁹ With respect to the burning process, aims should include: supply sufficient air; maintain steady burning or rate of mass loss; minimize smoldering, possibly with direct extinguishment; and limit burning to small, actively turned, well-ventilated fires, rather than large poorly ventilated dumps or containers.



support to project implementation; ii) monitoring & evaluation of the project outcome indicators and results by collecting evidence-based information and data, and reporting to the World Bank and the GEF, as well as a mid-term and technical evaluations following the World Bank and GEF guidance; and iii) project launch and completion workshops.

Component 4: Project Management (total cost of US\$ 3.22 million, of which GEF US\$ 0.42 million)

33. This component will support operating costs associated with day-to-day project management and implementation including procurement, financial management, and environmental and social management functions to be carried out by the PMU. The Project will also finance incremental costs in relation to coordination and collaboration with other government agencies, non-government agencies, and the industries and private sector.

34. **Project Preparation Grant.** A GEF PPG of US\$ 300,000 (including agency fee) will be requested to support preparation of the proposed project. The PPG will support the following activities: i) stakeholder meetings and studies needed for consultation and determination of the proposed Component 1 and 2 activities, ii) selection of candidate demonstration areas and dumpsites for Component 2 to be confirmed during project implementation, iii) selection/design of 3R practices and BAT/BEP for reducing UPOPs emission, iv) preparation of environmental and social documents for meeting the Bank's ESF requirements, and v) support incremental operating cost of the Project Management Unit (PMU) for project preparation.

35. **Climate Co-benefits and Risks.** The proposed project will lead to important climate change mitigation and adaptation co-benefits, i.e. GHG emission reduced from the improved SWM practices aimed for UPOPs emission reduction (about 50% over the 2014 level). The project also intends to reduce the risk of accidental release of UPOPs from self-combustion of open dumpsites during heat waves and/or from seepage of leachate during intense rainfall events. This will be achieved through activities in all project components: policies, capacity building, and awareness raising for sustainable waste management in a circular economy and demonstrations on 3Rs of waste management and BATs/BEPs at open dumpsites. These activities will reduce net GHG emissions and generate climate change mitigation co-benefits.

36. Climate change is expected to influence the levels of POPs found in the environment, their long-range transport, and toxic effects³⁰. In a changing climate, several factors could result in an increase in the releases of POPs into the environment. For example, it is expected that many areas will experience less rainfall; a dryer climate could lead to an increase of wildfires and thus higher emissions of UPOPs (dioxins and furans). Mean annual temperature in Lebanon is forecasted to increase by 1.95°C in 2040-2059, while annual precipitation will decrease by 30.73mm. Highest temperature increase is expected to be observed in August, and winter months are expected to have increased variability in precipitation. Higher temperature in summer months would increase likelihood of self-combustion or accidental combustion in sites with accumulated organic matter such as uncontrolled dumpsites. Increased volatility in precipitation during winter months could result in seeping of landfill leachate. Moreover, sea level rise could result in coastal zone pollution from submersed dumpsites and/or landfills. The objective of the Stockholm Convention is to protect human health and the environment from POPs. For this to be achieved under a changed climate, it will be important that knowledge of the potential impacts of climate change on the releases, transport, distribution and toxicity of POPs is incorporated into the decision-making process. Therefore, when selecting 3Rs practices and BATs/BEPs to be applied for demonstrating UPOPs emission reduction, climate responsive techniques will be reviewed and considered to maximize environment and climate co-benefits under the project.

³⁰ Climate change and POPs, UNEP.



37. Climate and disaster risk are considered as moderate, assessed by the World Bank's climate & disaster risk screening tools. This rating is derived from hazard information, subject matter expertise, contextual understanding of the project, and modulated on the basis of the project's soft components and broader development context. The potential risks to the solid waste sector and other sectors covered by the project due to flooding and high temperatures will be greatly reduced by the project design and soft components, which takes these risks into account. However, the needed timelines to take all required measures and to initiate adequate operations and maintenance of activities in case of extreme weather events moderately increases such risks. Demonstrations under the project will consider climate and disaster risks and mitigation and climate resilient measures.

38. **Citizen Engagement.** Citizens Engagement (CE) activities and engagement with government and private sector stakeholders will be carried out during both project preparation and implementation. Specifically, the Technical Committee to be established will include experts on CE from think tanks, academic institutions, and civil society organizations (CSOs) as appropriate to adopt a truly multi-stakeholder approach to inform policymaking. The PMU will help MOE to coordinate proactive and inclusive consultations on draft policies and regulations to be developed and inputs provided by community members, waste pickers and CSOs will be considered before their finalization. Outreach programs and options such as a waste-focused behavior change program, RecycleBank, establishment and collaboration with community advisory groups (CAGs) will be considered and applied as appropriate. Citizens will be engaged as part of the efforts for the national inventory of hazardous chemical and waste hotspots with sampling and testing (e.g. qualified citizen science monitors to be deployed). To promote green chemistry, EPR, GPP and 3R practices under the circular economy, the Technical Committee may provide scientists, engineers, and other professionals to review and explain information to communities. This assistance will support community efforts to get more involved and work productively with MOE to address waste management issues. The project will also explore setting up an online feedback channel through which citizens without any technical know-how can document/report on open dumping sites by sharing photos and geo-tagged locations. In addition, a grievance redressal mechanism (GRM) will also be designed during the preparation phase and established during the implementation phase of the project.

39. **Gender.** In Lebanon, there is more limited access for women to economic opportunities in the waste sector, lower involvement of women compared to men in decision-making, etc.³¹ The project will provide opportunities to address gender gaps in the waste sector in Lebanon. During project preparation a gender assessment will be carried out as part of social assessment to identify project-relevant gender gaps and actions needed to address these gaps. The assessment will build on existing data from Lebanon and may also draw on documented evidence from other countries as relevant to inform the identification of gender gaps related to specific outcomes on issues such as employment in the waste sector and related topics (gender norms and roles, skills, etc.). The assessment will further identify any gender-differentiated needs and concerns related to project activities. Based on the assessment, the project document will incorporate specific actions and indicators, and a Gender Action Plan will be developed to further guide the implementation of these actions, also referring to women's participation and engagement, as well as any specific health and safety rules for female employees - pregnant and/or lactating women, in the waste collection and recycling industries.

40. **COVID-19 Risk.** According to the *"GEF Project Design and Review Considerations in Response to the COVID-19 Crisis and the Mitigation of Future Pandemics"*, the COVID-19 risks of availability of technical expertise and capacity and change in timeline and enabling environment are considered low, as MOE is fully committed to the proposed project which is fully in line with the country's priorities on SWM and has strong technical staff to work with the Bank team.

³¹This is in line with the Lebanon's prioritization of the waste sector (along with the energy and water sectors) to undertake gender mainstreaming. According to UNDP (2021), the waste sector in Lebanon offers great opportunities to address gender gaps in the sector and has a high potential impact, while the current status and capacity of the sector to seize such opportunities are still limited.



41. The COVID-19 risks of stakeholder engagement process and co-financing are considered moderate, as MOE has good data and information that are needed to shape the PCN and the Litani River lending project which is the main co-financing source to the GEF project is still being considered by the care-taking government though with delays.

42. After the project concept is approved in June 2021, the project will prepare a COVID-19 risk mitigation plan for project preparation to manage a possible re-instatement of COVID-19 containment measures, including approaches for managing change in capacity, personnel shifts, limited capacity and experience for remote work and online interactions, change in project preparation timelines, mobility and stakeholder engagement process, financing needs, and price increase in procurement for PPG activities. This plan will be updated during project appraisal to serve for project implementation.

Incremental reasoning

43. *Global benefits.* POPs travel long distances, affecting human health and ecosystems even at locations far away from the site where they were initially released into the environment. The project therefore will contribute to the global environment.

44. The project is expected to lead to reduction of annual emissions to air of PCDD/Fs of approximately 20 g TEQ from the waste disposal and open burning processes, which implies that about 500,000 tons of MSW need to be managed not to enter open dumps and/or at open dumps. Any GHG reductions from improved waste management will be quantified through the analysis and documentation of the demonstrations and presented with estimates of their economic benefits.

45. *Baseline.* As described under the Sectoral Context session, In October 2018, the Government of Lebanon (GOL) ratified its first Integrated Solid Waste Management (ISWM) Law and has prepared a draft National Solid Waste Management Strategy which promotes to move toward a circular economy. However, there are barriers in various areas as mentioned earlier: information, monitoring, policy and institutions, technology and infrastructure and financing to prevent effective implementation. Without the project, the country will continue to focus on end-of-pipeline solutions for waste management (building more landfills), 3Rs of waste management would not be a priority, and there would likely be no systematic effort to consider addressing the waste crisis through life-cycling thinking - the circular economy.

46. *GEF Alternative.* The GEF incremental intervention takes opportunity of “build back better” and the GOL’s strong commitment to addressing its waste crisis, to seek to maximize the UPOPs reduction through policy instruments and demonstrations to avoid, reduce and divert waste. In the short term, where there are not realistic means to eliminate all open burning, BATs/BETs should be applied to control open burning. The provision with GEF support of enabling incentives is critical to overcome existing barriers and capacity deficit to monitor, measure, control and manage UPOPs in the waste sector in Lebanon.

47. *Innovation.* The innovativeness of this project mainly relies on the promotion of least-cost, applicable 3R techniques and practices in key waste streams under the concept of circular economy, which are yet to be well understood and made economically viable in Lebanon, and require multiple stakeholders to work together.

48. *Sustainability and potential for scaling up.* The project is specifically designed to promote sustainability and scaling up during implementation and after project closure throughout the country, with specific activities to promote and disseminate results and lessons learned, with national and local government, institutes and enterprises involved to ensure the dissemination of relevant information. The following elements offer a framework that will be in place so that the potential for scaling up of project-supported activities is high: (i) the project will demonstrate 3R practices and BAT/BEP in the waste sector for reduction and control of UPOPs emission, offering detailed guidance and information on



costs and expected emission reduction to others, (ii) the project outcomes will include policies, guidelines and standards for the manufacturing of plastics, paper and glass and UPOPs emissions reduction in the waste sector, which will promote the widespread utilization of new technologies and practices; (iii) the project will help design national action plans for UPOPs reduction to catalyze further investments in UPOPs reduction; (iv) the project will support capacity building; and (v) the project ensures the participation and co-operation of all key stakeholders, the industries, multiple levels of government, and the public, including local participation, from the beginning of project formulation and throughout its implementation.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

Environmental risk rating: High

49. The main Environmental Risks/impacts that could be associated with the project are linked to the activities to be funded under components 2 during sampling and demonstration activities described above. The facilities to be constructed under the LRB lending project are considered as associated facilities to the present project. Associated facilities will be identified once the component 2 activities are further fine-tuned during project preparation based on the identified participating governorates and open dumpsites.

50. Occupational Health and Safety Risks/impacts will be present during the environmental sampling process, laboratory analysis, and waste disposal of contaminated materials in samples collected. Indeed, the laboratory workers will be exposed to chemical contamination if they are not protected by adequate equipment and if they are not trained correctly to handle this kind of Hazardous materials and wastes. The specialized personnel who is going to implement the demonstration activities of UPOPs samples collection, transport, treatment, and disposal of POPs, Mercury, and other Hazardous wastes is also exposed to health and safety risks/impacts if these demonstrations are not done according to adequate health and safety procedures.

51. Community Health and Safety Risks/impacts are also foreseen during transport, disposal of samples, and during demonstration activities of samples collection, transport, treatment, and disposal of wastes. The community can be exposed to chemicals and/or hazardous emissions, solid or liquid wastes if these materials are not handled, transported, and disposed of correctly. In addition, a large number of industries in Lebanon are situated in urban centers and villages hence demonstration activities taking place in such areas could be a source of pollution. Therefore, there are potential risks/impacts linked to Environmental pollution (air, soil, water) during sampling, transport, laboratory analysis, disposal, and demonstration activities if the chemicals/Hazardous wastes are not managed correctly or following accidental spills of these materials or fire events. Finally, other risks/impacts are related to resource efficiency and GHG emissions if demonstration activities do not take into account Good International Industry Practices (GIIP).

52. Industry Practices (GIIP) especially related to Environmental pollution management (that may be caused by accidental release/spill of UPOPs in air, water, and soil), resource efficiency (use of EHSs) and GHG emissions. Given (i) the uncertainties regarding the adverse risks and impacts on human populations or the environment (including the possibility that some might be long term, permanent, and/or irreversible) (ii) the unknown sensitivity of the locations of



the subprojects (iii) the probability of serious adverse effects to human health and/or the environment (e.g., due to accidents or toxic waste disposal, etc.) (iv) the potential use of mitigation measures that could require complex technology (v) the fact that the project is being developed in a regulatory environment where enforcement is weak (vi) the uncertainties regarding the capacity, commitment and track record of the MOE and private sector entities to implement the WB E&S Standards, the proposed Environmental risk rating is “high”.

Social Risk Rating: Moderate

53. As the project aims to assist the country in reducing UPOPs emission through promoting circular economy and improving open dumpsites in the waste sector, the project will overall has positive social impacts on citizens due to the reduction of serious human health impacts associated with these materials including cancer, neurological damage, birth defects, and immune system defects. It is also to be noted that the project activities do not include any land acquisition or expropriation.

54. However, the project implementation will have some social risks and impacts. Enforcement of waste management improvement measures may require some business to change their current business practices.

55. The main potential social risks could include the following: i) Local people’s resistance. If local people are not well informed, there are potential misperceptions that citizens may have regarding the health and safety concerns associated with the sampling and demonstration activities; ii) community health and safety. As previously mentioned and in general, a large number of industries in Lebanon are situated in urban centers and villages hence demonstration activities taking place in such areas could be a source of alarm and concern for citizens; iii) Potential risks related to labor-induced sexual abuse and exploitation. The sampling and demonstration activities of the project will be associated with the influx of skilled laborers and this number is expected to be low. These skilled laborers will be temporarily housed in rental apartments and there will therefore be no labor camps. However, there is potential for labor-induced sexual abuse and exploitation to occur especially if the extraction activities are taking place in remote areas of the country where there is minimal or limited oversight. This needs to be mitigated and managed at a minimum through the signing of codes of conduct by all project workers; and, iv) potential exclusion of informal waste pickers from the waste management formalization process under component 2. The Borrower will assess the level of impact to this group of affected people under ESS1, will engage in consultations with these vulnerable groups and make efforts to mitigate adverse impacts. Based on the above, the social risk rating is therefore rated as moderate.

56. To manage these potential social risks, the inventory of UPOPs, under component 1 of this project will identify their precise locations and where demonstration activities as per component 2 of the project will be carried out. Accordingly, the implementing agency is recommended to conduct active, inclusive and meaningful stakeholder engagement activities throughout project implementation with a robust grievance redress mechanism in place for the project and dedicated PMU staff following up on these aspects. Due to the ongoing COVID19 pandemic, the MoE’s PMU will need to ensure implementation of COVID19 preventive measures such as wearing of masks and social distancing and as per the WHO and national guidelines in this regard. In the event of national general mobility restrictions, the PMU can adopt virtual means of consultations following the guidelines of the World Bank’s technical note on conducting consultations during times of constraints.



CONTACT POINT

World Bank

Qing Wang
Senior Environmental Specialist

Borrower/Client/Recipient

Ministry of Finance

Implementing Agencies

Ministry of Environment
Samar Malek
Director
S.Malek@moe.gov.lb

FOR MORE INFORMATION CONTACT

The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 473-1000
Web: <http://www.worldbank.org/projects>

APPROVAL

Task Team Leader(s):	Qing Wang
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Approved By

Country Director:		
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