

COUNCIL FOR DEVELOPMENT AND
RECONSTRUCTION (CDR)

**LEBANON GREEN AGRI-
FOOD
TRANSFORMATION FOR
ECONOMIC RECOVERY
(GATE)**

**ENVIRONMENTAL AND SOCIAL
MANAGEMENT FRAMEWORK
(ESMF)**

April 29, 2023

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LIST OF ACRONYMS

ACAPS	Assessment Capacities Project
AUB	American University of Beirut
BAT	Best Available Techniques
BEP	Best Environmental Practices
BMLWE	Beirut and Mount Lebanon Water Establishment
BWE	Bekaa Water Establishment
CAS	Central Administration of Statistics
CBA	Cost-Benefit Analysis
CDR	Council for Development and Reconstruction
CDW	Construction and Demolition Waste
CERC	Contingency Emergency Response Component
CNRS-L	Conseil National de la Recherche Scientifique – Liban (National Council for Scientific Research – Lebanon)
CO	Carbon Oxide
CoM	Council of Ministers
COVID	Corona Virus Disease
CPF	Country Partnership Framework
CSA	Climate Smart Agriculture
ECC	Environmental Compliance Certificate
E&S	Environmental & Social
EHS	Environment, Health, and Safety
EIA	Environmental Impact Assessment
EPC	Environmental Protection Contract
ESCP	Environmental and Social Commitment Plan
ESCWA	Economic and Social Commission for Western Asia
ESF	Environmental and Social Framework
ESFD	Economic and Social Fund for Development
ESHS	Environment, Social, Health, and Safety
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards
ESSN	Emergency Social Safety Net
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FCV	Fragile, Conflict, and Violence
FX	Foreign Exchange
GATE	Green Agri-food Transformation for Economic Recovery Project
GAP	Good Agricultural Practices
GBV	Gender-based Violence
GBVIMS	Gender-based Violence Information Management System
GCC	Gulf Cooperation Council
GCRF	Global Crisis Response Framework
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gases
GIS	Geographic Information Systems
GOL	Government of Lebanon
GM	Grievance Mechanism

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GMP	Good Manufacturing Practices
HACCP	Hazard Analysis and Critical Control Points
IBA	Important Bird Area
IBRD	International Bank for Reconstruction and Development
IDAL	Investment Development Authority of Lebanon
IEE	Initial Environmental Examination
IFC	International Finance Corporation
ILO	International Labor Organization
IP	Indigenous Peoples
IPF	Investment Project Financing
IRI	Industrial Research Institute
ISWM	Integrated Solid Waste Management
KBA	Key Biodiversity Area
LARI	Lebanese Agriculture Research Institute
LBP	Lebanese Pounds
LC	Labor Code
LDN	Land Degradation Neutrality
LEPAP	Lebanon Environmental Pollution Abatement Project
LFP	Labor Force Participation
LMP	Labor Management Procedures
LPD	Land Productivity Dynamics
LRA	Litani River Authority
LRF	Livelihood Restoration Framework
LRP	Livelihood Restoration Plan
MCM	Million Cubic Meters
M&E	Monitoring & Evaluation
MENA	Middle East and North Africa
MOA	Ministry of Agriculture
MOE	Ministry of Environment
MOET	Ministry of Economy and Trade
MOEW	Ministry of Energy and Water
MOF	Ministry of Finance
MOI	Ministry of Industry
MOIM	Ministry of Interior and Municipalities
MOL	Ministry of Labor
MOPH	Ministry of Public Health
MOSA	Ministry of Social Affairs
MSW	Municipal Solid Waste
NGO	Non-governmental Organization
NLWE	North Lebanon Water Establishment
NOx	Nitrogen Oxides
NPTP	National Poverty Targeting Program
NSDSL	National Social Development Strategy of Lebanon
NSEQ	National Standards for Environmental Quality
OHS	Occupational Health and Safety
OMSAR	Office of the Minister of State for Administrative Reform
PAPs	Project Affected Parties
PCU	Project Coordination Unit
PDO	Project Development Objective
PIA	Project Implementing Agency
PM	Particulate Matter
PMU	Project Management Unit
POM	Project Operational Manual
PPE	Personal Protective Equipment
REP	Roads and Employment Project
SC	Steering Committee
SDATL	Schéma Directeur d'Aménagement du Territoire Libanais
SDG	Sustainable Development Goal
SEA	Sexual Exploitation Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SME	Small and Medium sized Enterprises
SOER	State of the Environment Report

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SOP	Standard Operating Procedures
SOx	Sulfur Oxides
SW	Solid Waste
SWM	Solid Waste Management
SWMF	Solid Waste Management Facility
TA	Technical Assistance
TPM	Third-Party monitoring
TSP	Target Setting Process
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFPA	United Nations Population Fund
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHRC	United Nations High Commissioner for Refugees
UNICEF	United Nations International Children's Emergency Fund
UPOPs	Unintentionally released Persistent Organic Pollutants
US EPA	United States Environmental Protection Agency
USAID	United States Agency for International Development
USD	US Dollars
WB	World Bank
WBG	World Bank Group
WE	Water Establishment
WFP	World Food Program
WHO	World Health Organization
WWTP	Wastewater Treatment Plant

EXECUTIVE SUMMARY

This Environmental and Social Management Framework (ESMF) is prepared for the Green Agriculture Transformation for Economic Recovery Project (GATE). The Project will be implemented by the Council for Development and Reconstruction (CDR) and funded by the World Bank. The purpose of the Environmental and Social Management Framework is to outline expected environmental and social risks and impacts of the project and to provide a system for monitoring and managing such impacts during project implementation. Additionally, this framework describes institutional roles and responsibilities for managing environmental and social risks under the project, and the feedback and grievance mechanisms by which affected and other interested parties can interact with the project implementation agency.

Project Background

To meet Lebanon's developmental needs in the agriculture sector while also stimulating the economy and creating jobs, The Lebanese Government has requested the World Bank's approval of the Green Agriculture Transformation for Economic Recovery Project (GATE).

The GATE project would have national coverage with a focus on lagging rural regions following a cluster approach. The overall Project implementation shall be led by the Council for Development and Reconstruction (CDR) as project Implementing Agency (PIA), through a Project Coordination Unit (PCU).

Project Scope

The Project consists of four (4) components plus a Contingent Emergency Response Component (CERC). The project will be implemented over a period of 5 years.

Component 1: Climate Smart Investments in Agri-food Value Chains

The objective of this component is to provide access to finance to strengthen the resilience and improve the competitiveness of agri-food value chains. The component would promote climate smart practices, creating higher value addition, improving links between farmers, agribusinesses and markets, and unlocking diversification opportunities through agri-tourism. The project would finance activities specifically designed to benefit women and will seek to contribute in reducing some of the gender gaps identified in terms of access to finance, inputs, markets, technical capacity building activities, improved confidence and negotiation skills as well as addressing social norms through carefully designed behaviorally-informed outreach campaign, also targeting men.

This component will consist of two subcomponents:

- Sub-component 1.1: Development of climate smart value chains through improved aggregations and
- Sub-component 1.2: Support to Agrifood and Agritourism MSMEs

Component 2: Climate-Smart Infrastructure and Services for Agri-food Development

The objective of this component is to restore service delivery, build operational capacity and ensure the sustainability of public infrastructure underpinning the agri-food sector across necessary scales. The component would finance resilient investment in public rural

infrastructure development and public services, deemed essential to enhancing competitiveness and sustainability of the agri-food sector. It will also generate large indirect benefits for host communities and displaced populations through several channels.

Component 2 will be structured across two sub-components:

- Sub-component 2.1 Strengthening Rural Community Infrastructure;
- Sub-component, and 2.2 Restoring Access to Improved Services and Infrastructure Assets Underpinning Agriculture

Component 3: Improving the Enabling Environment and Restoring Support Services for Agri-food Development

The objective of this component is to restore and strengthen the capacity of sector institutions to support the agri-food sector transformation.

Component 3 consists of three sub-components:

- Sub-component 3.1: Improving access to climate-smart agriculture practices, data, and knowledge
- Subcomponent 3.2: Strengthening food safety and security
- Sub-component 3.3. Improving agri-food export promotion and marketing systems

Component 4: Project and Knowledge Management

This component would support the coordination and management of the implementation of the project.

Component 5:

This component will have zero funding allocation at the onset and will only be triggered in emergency circumstances; the project will support the preparation of a procedure manual governing the CERC operations.

Environmental and Social Impacts of the Project

Overall, the project is expected to be beneficial to the country and the people by reducing pollution and protecting the environment, incurring significant positive environmental and social benefits. The successful implementation of the project will create job opportunities and improve the agri-food business by promoting green, climate resilient productive and inclusive agri-food development in the project designated areas.

Nevertheless, it is possible that potential environmental and social impacts and risks may still come out with varying degrees from the specific activities of the project.

Table I Environmental Risks– Construction/Rehabilitation Phase

Impact	Description
Air quality	Civil works will be required for construction and rehabilitation activities, which can cause temporary ambient air pollution, dust emissions, and may cause additional uncontrolled release of gas (under sub-component 1.1, 1.2, 2.2 and 3.2).
Noise	Construction and rehabilitation activities can cause temporary noise pollution. (under sub-component 1.1, 1.2, 2.2 and 3.2).
Soil and water quality	Soil erosion from exposed land surfaces caused by vegetation clearing Site Levelling, Excavation and Soil Compaction Activities (under sub-component 1.1, 1.2, 2.2 and 3.2).
Biodiversity	Loss or destruction of habitat; Possible impacts on ecosystems if the new WWTFs are constructed on Greenfields

Impact	Description
	Potential for forest fires from construction or workers' activities (under sub-component 1.1, 1.2, 2.2 and 3.2).
Waste management	Construction and rehabilitation activities will lead to the generation of wastes
Cultural Heritage	The project activities are not likely to impact any known tangible cultural heritage sites or intangible cultural heritage practices or knowledge; however, chance finds might be encountered (under sub-component 1.1, 1.2, 2.2 and 3.2).
Occupational Health and Safety	Potential accidents Exposure of workers and community to potential health and safety hazards (under sub-component 1.1, 1.2, 2.2 and 3.2).

Table II Environmental Risks– Operation Phase

Impact	Description
Air Quality	<ul style="list-style-type: none"> ✓ Odor emissions from WWTP and generated sludge, and from SWM treatment facilities (including composting operations) (under subcomponent 2.2) ✓ Air emissions from agro-food processing establishments (under subcomponent 1.2) ✓ Risk of wild fires due to agricultural waste burning (under subcomponent 1.1 and 1.2)
Soil and water quality	<ul style="list-style-type: none"> ✓ Unregulated abstraction of irrigation water leading to water depletion (under subcomponent 1.1 and 1.2) ✓ Improper disposal of drainage water, contributing to the contamination of water courses (under subcomponent 1.1 and 1.2) ✓ Improper storage and/or disposal of sludge from WWTP (under subcomponent 2.2) ✓ Improper waste and effluent disposal from SMEs, laboratories and testing facilities' operation activities, and agri-tourism activities/ establishments (under subcomponent 3.2) ✓ Uncontrolled operation of SWM facilities leading to contamination of soil and groundwater with leachate (under subcomponent 2.2); ✓ Uncontrolled operation of WWTPs leading to contamination of soil and groundwater (under subcomponent 2.2); ✓ Soil and water contamination from fertilizers and pesticides overuse (under subcomponent 1.1 and 1.2) ✓ Soil and water contamination from inadequate disposal of electronic waste(under subcomponent 3.1);
Biodiversity	<ul style="list-style-type: none"> ✓ Population decline and mortality in fauna species, especially reptiles Reducing environmental flows necessary for aquatic biodiversity

Table III Social Risks– Construction/Rehabilitation Phase

Impact	Description
Loss of land (mainly expected under sub-components 1.1, 1.2 and 2.2)	The loss of land and assets on land (crops, trees and structures) due to construction works is anticipated during sub-components 1.1, 1.2 and 2.2 implementation, hence resulting in people's potential displacement and/or assets loss
Nuisance from construction and rehabilitation works,	Construction and rehabilitation works lead to nuisances to nearby communities from air pollutants and dust emissions, noise, traffic, etc. under sub-component 1.1, 1.2 and 2.2..
Restricted access to property	In specific cases, it might lead to temporarily restricting access to certain lands and resources, and risk on ecosystem services from the construction and rehabilitation of infrastructure under sub-component 1.1, 1.2 and 2.2.
SEA/SH, child labor and forced labor	<ul style="list-style-type: none"> ✓ Influx of workers may induce risks of SEA/SH/ GBV. under subcomponents 1.1 1.2 and 2; ✓ Risk of child labour and forced labour under subcomponents 1.1, 1.2 and 2.2.
Inadequate stakeholder engagement	Risk of weak and inadequate stakeholder engagement and resulting exclusion of certain vulnerable groups
Improper/Inadequate GM dissemination	Risk of weak and ineffective communication and dissemination of the project grievance mechanism, thus resulting in the perception of exclusion and therefore rising social tensions

Table IV Social Risks - Operation Phase

Impact	Description
Weak consultation and exclusion of vulnerable groups	<ul style="list-style-type: none"> ✓ Risk of exclusion of potential smallholder farmer beneficiaries, SMEs, vulnerable women led farmers and women rural entrepreneurs, youth and workers/labour under subcomponent 1.1. ✓ Potentially weak overall consultations and outreach on project information dissemination.
Community health and safety	<ul style="list-style-type: none"> ✓ Possible use of polluted irrigation water affecting food safety, community health and safety under component 1.1 and 1.2.2 ✓ Unsustainable use of water resources that could limit access of communities to such resources
SEA/SH, OHS risks	<ul style="list-style-type: none"> ✓ Influx of workers may induce risks of SEA/SH under subcomponent 1.1, 1.2 and 2.2. ✓ Daily activities in the agri-food value chain are associated with OHS risks under subcomponent 1.2 ✓ Risk of child labour, especially in the agriculture sector under subcomponent 1.1, 1.2 and 2.2 ✓

Risk Classification And Impact Management for The Sub-Projects

The anticipated subprojects are screened to determine the significance of associated environmental and social risks. The screening is undertaken in line with WB ESF Environmental and Social Risk Classification rating risks as High, Substantial, Moderate and Low Risks.

As per the analysis, mitigation measures and environmental and social risks of sub-projects envisaged under the Project, Table V describes the risk ratings given for the different types of project activities and the environmental and social management tools to be developed and implemented within the project. However it must be noted that the risk ratings of expected project activities suggested in Table V are preliminary and will be determined during the preparation of site-specific E&S documentation.

Table V Sub-projects Environmental and Social (E&S) Risk Classification and E&S Management Tools

Risk Rating	Definition	Project Activity	Applicable E&S Tools
High	The project will possibly cause a wide range of significant environmental and social risks and adverse impacts on the population and environment. Some of the impacts cannot be mitigated by now, or with special situations such as requiring complex and / or unproven mitigation and/or compensation measures or techniques.	None identified.	Not Applicable
Substantial	Some of the E&S impacts of the project are possibly significant, but with reliable mitigation and/or compensation measures will be designed.	Construction and rehabilitation of wastewater infrastructure Operation of large waste management facilities, wastewater treatment plants, major water	ESIA, ESMP LRP (if triggered)

Risk Rating	Definition	Project Activity	Applicable E&S Tools
	negligible.	under components 2.1 and 3	part of the procurement documents

The site-specific ESIA or ESMP will be prepared as per the ESCP in accordance with national legislation and World Bank ESS1, incorporating requirements of other relevant ESSs, and applicable national regulations. The ESIA/ESMP report, strengthened by the standards of ESS1 of the World Bank as the primary means of documenting the environmental and social sustainability of a project, provides guidance to project decision makers on the environment, as well as social acceptability of the project activities, and permits planning and investment decisions to be made on a comprehensive understanding of the anticipated project impacts.

The site-specific environmental and social assessment of these activities, or subprojects, will be carried out after the sites have been selected and the specific details, including the location, conceptual design, and detailed engineering design, will be determined during the first year of the project implementation. The preliminary risk rating will also be reconsidered at this stage.

Stakeholder Identification and Consultation

The main objectives of stakeholder consultation meetings were to introduce the GATE project, its objectives, beneficiaries and components, as well as presenting the ESMF and GM.

For the purposes of effective and tailored engagement, stakeholders of the proposed project were divided into the following 3 categories, as detailed in the SEP document:

Affected Parties – persons, groups and other entities within the Project Area of Influence that are directly influenced (actually or potentially) by the project and/or have been identified as most susceptible to change associated with the project, and who need to be closely engaged in identifying impacts and their significance, as well as in decision-making on mitigation and management measures.

Interested Parties – individuals/groups/entities that may not experience direct impacts from the Project but who consider or perceive their interests as being affected by the project and/or who could affect the project and the process of implementation in some way.

Vulnerable Groups – persons who may be disproportionately impacted or further disadvantaged by the project(s) as compared with any other groups due to their vulnerable status and that may require special engagement efforts to ensure their equal representation in the consultation and decision-making process associated with the project.

Stakeholder engagement has been important in the project development and preparation of this ESMF. Three consultation meetings were conducted in Baalbeck- Hermel, Akkar, and South- Nabatiyeh, on 15, 16 and 17 February 2023 respectively.

The meetings participants were mainly from governmental institutions, municipalities, farmers, women, NGOs, cooperative unions, heads of syndicates, private sector and SMEs.

During the consultations, the project details (background, objectives, and components), its potential environmental and social impacts, and the grievance mechanism were presented by the ESFD who then presented each component in detail, followed by 30 minutes of open discussions with the attendees to solicit suggestions following each component's presentation, in each of the locations. Based on suggestions received during the consultation workshop the ESMF, LMP, SEP and RPF documents have been updated.

Institutional Arrangements

The overall Project implementation would be led by the CDR as Project Implementing Agency (PIA), through a PCU.

The main governmental agencies involved in the project's components implementation are as follows:

- Kafalaat;
- Ministry of Agriculture;
- Ministry of Industry;
- Lebanese Agricultural Research Institute;
- Green Plan;
- Ministry of Economy and Trade;
- Ministry of Energy and Water;
- Litani River Authority;
- Water Establishments;
- Ministry of Environment;
- Governorates;
- Municipalities; and
- Union of Municipalities.

Grievance Mechanism (GM)

Grievance mechanisms (GMs) refer to the formal institutions and channels that capture beneficiary complaints or grievances related to targeting, service delivery, or other program functions, and provide redress. GMs are not just developed for complaints but for two-way communication where feedback, concerns and questions can all be raised.

The GM aims to provide individuals and communities who feel aggrieved by Project activities with accessible, timely, effective and culturally appropriate opportunities to raise their complaints, feedback, concerns and questions about the Project. It also aims to identify, propose and implement fair and appropriate solutions in response to the complaints and concerns raised. The GM will be widely disseminated to be accessible to all relevant stakeholders including vulnerable groups who can use this mechanism to send their suggestions, concerns and complaints related to the project. The complaints, suggestions and concerns can be sent by e-mail, SMS or phone to the CDR PCU Grievance Mechanism Officer and Environmental & Social specialist.

1. PROJECT DESCRIPTION

1.1 PROJECT BACKGROUND

Lebanon is three years into multiple unprecedented crises that have erased 15 years of economic growth. The crisis started with the acute economic and financial collapse and was compounded by the Corona Virus Disease COVID-19 pandemic, the Port of Beirut explosion, and the spillover effects of the war in Ukraine. The collapse of the local currency and ensuing economy-wide shortages in foreign exchange (FX) have resulted in sharply increasing costs across sectors. The adverse shocks have driven an overwhelming share of the population into poverty and vulnerability to food insecurity.

The crisis is disproportionately affecting lagging and under-served rural areas. Existing disparities across urban and rural areas as well as between rural areas have been accentuated by the crisis. The poorest areas - Baalbek-Hermel, Akkar, the North and the South/ Nabadieh (IPC, Lebanon 2022) have seen disproportionate declines across a range of socioeconomic indicators.

Despite the dire situation in Lebanon, the agri-food sector has demonstrated resilience and continues to generate livelihoods and income for a large share of the poor (IDAL, 2020). Nevertheless, it is facing several barriers that are limiting its productivity growth, such as:

- i. the global rise in fertilizers and fuel prices, compounded by the foreign exchange crisis;
- ii. Lack of financial means to invest in sustainable, climate smart and modern modes of production;
- iii. Lack of access to basic infrastructure and services such as electricity, municipal water services or water treatment plants and solid waste management and roads, and more so in rural areas; as well as lack of efficient irrigation schemes; and
- iv. Climate change effects and threats to the agricultural sector.

The multiple challenges facing the sector are putting its resilience and sustainability at risk and posing threats to food security and rural livelihoods.

The 2019 Lebanon Economic Vision (known as the McKinsey Plan), has identified agriculture among five key sectors to induce growth, reduce the country's balance of payment deficit, and create jobs. Lebanon's National Agriculture Strategy (NAS 2020-2025) aims to transform the Lebanese agrifood system to be more resilient, inclusive, competitive, and sustainable. However, the financial crisis limits the operations of key government actors involved in the governance of the sector and paralyzes their ability to implement sector strategies and initiatives.

To meet Lebanon's developmental needs in the agriculture sector while also stimulating the economy and creating jobs, The Lebanese Government has requested the World Bank's approval of the Green Agri-food Transformation for Economic Recovery Project (GATE) through a US\$200 million Loan from the International Bank for Reconstruction and Development (IBRD).

The GATE project would have national coverage with a focus on lagging rural regions following a cluster approach. The overall Project implementation shall be led by the Council for Development and Reconstruction (CDR) as project Implementing Agency (PIA), through a Project Coordination Unit (PCU).

1.2 PROJECT OBJECTIVES

The Project Development Objective (PDO) is to strengthen the resilience and competitiveness of the Lebanese agri-food sector. Resilience refers to the capacity of the agrifood-sector stakeholders (i.e., farm producers and processing businesses) to respond to shocks and adapt to changing political, social, environmental and climatic constraints. Resilience of farm households, will be promoted by strengthening the adaptive capacity in choosing and applying climate smart on-farm technologies that enable them to move toward more resource efficient and environmentally sustainable production practices, leading to increased incomes, yields and more effective participation in climate-smart agri-food value chains. Resilience of agri-food businesses will be promoted by addressing constraints to value-addition, product quality, and exports that thus strengthens SME's adaptive capacity to better manage business risks, understand new business opportunities, leverage comparative advantages, and hence continue to be profitable.

- 1.3** THE PROJECT WILL BENEFIT A BROAD RANGE OF STAKEHOLDERS IN RURAL AREAS, THROUGH ACTIVITIES AIMED AT PROMOTING THE INCLUSION OF SMALL FARMERS IN AGRICULTURE-RELATED ENTREPRENEURIAL ACTIVITIES AND MEDIUM-SIZE PRODUCERS AND ENTERPRISES WITH MODERN VALUE-CHAINS. **DIRECT PROJECT BENEFICIARIES WILL INCLUDE WOMEN, YOUNG PEOPLE AND DISPLACED POPULATIONS, SMALL AND MEDIUM-SIZE FARMS, MICRO, SMALL AND MEDIUM ENTERPRISES (MSMEs) AND OTHER ECOSYSTEM STAKEHOLDERS ENGAGED IN THE AGRI-FOOD SECTOR. THE PROJECT WILL DIRECTLY BENEFIT APPROXIMATELY 15,000 FARMING HOUSEHOLDS, 315 SMEs AND 2,000 MICROENTERPRISES AND FARMERS THROUGH ACCESS TO FINANCE, AND 353 MUNICIPALITIES THROUGH IMPROVED SERVICES AND INFRASTRUCTURE. A BROADER RANGE OF STAKEHOLDERS, SUCH AS AGGREGATORS, TRADERS AND EXPORTERS AND OTHER ECOSYSTEM STAKEHOLDERS, WILL ALSO BENEFIT FROM THE INCREASED EFFICIENCY OF MARKETING, THE DEVELOPMENT OF INNOVATIONS IN DIGITAL AGRICULTURE, IMPROVED FOOD SAFETY AND QUALITY AND EXPORT OPPORTUNITIES. LEBANESE CONSUMERS WILL BENEFIT FROM SAFER AND BETTER-QUALITY PRODUCTS. FINALLY, THE GOVERNMENT AGENCIES INVOLVED IN THE PROJECT WILL BENEFIT FROM INCREASED CAPACITY TO IMPLEMENT THEIR MANDATES AND TO MONITOR AND EVALUATE THE RESULTS OF THEIR RESPECTIVE PROGRAMS. PROJECT SCOPE**

The Project consists of four (4) components plus a Contingent Emergency Response Component (CERC). The project will be implemented over a period of 5 years.

The project components will support the (i) provision of capacity building and financial support to farmers and agribusinesses to sustainably restore agricultural productivity and competitiveness in agri-food value chains and agri-tourism in support of diversified livelihoods and jobs creation, (ii) greening and improving access to services such as irrigation, community-scale water and wastewater facilities, and solid waste management through rehabilitation and introduction of renewable energy sources, (iii) enhancing the institutional enabling environment, building capacity to accelerate the use of climate smart innovation and digital technologies, and improving the enabling environment for food safety and exports, and (iv) project management.

Component 1: Climate Smart Investments in Agri-food Value Chains (US\$74million)

The objective of this component is to provide access to finance to strengthen the resilience and improve the competitiveness of farmers and MSMEs involved in agri-food value chains³⁹. The component will promote climate smart practices, create higher value addition, improve links between farmers, agribusinesses and markets, and unlock diversification opportunities. The project will finance activities specifically designed to benefit women and seek to contribute in reducing some of the gender gaps identified in terms of access to finance, inputs, markets, technical capacity building activities, improved confidence and negotiation skills as well as addressing social norms through a carefully designed behaviorally informed outreach campaign, also targeting men.

Sub-component 1.1: Development of climate smart value chains through improved aggregation (US\$20 million). The objective of this subcomponent is to strengthen farmers' organizations (cooperatives and associations) by boosting climate smart agricultural production and promoting farmers horizontal linkages with other smallholders and vertical linkages with buyers/off-takers⁴⁰, thus enhancing their participation in value addition. Support to farmers' organizations will include technical assistance, training and matching grants.

Specifically, the component would finance: (i) a gender-sensitive communication campaign, to encourage existing organizations of small- and medium-size agricultural producers of crop and livestock products to engage in collective action to generate aggregation potential such (ii) competitively selected service provider/s to administer the matching grants, assist producers with the preparation and implementation of climate-informed business plans, and provide training to farmers' organizations members on business and financial management, governance, and when relevant, technical assistance to link formalized producer groups to off-takers; (iii) matching grants to finance the climate-informed business plans of eligible farmers' organizations. (ii) The training of the group members to enable them to adopt the specifications and standards of the off-taker or target market would be provided through Component 3.1.

Climate Smart Matching Grants. The objective of the matching grants is to finance climate-informed business plans to strengthen the resilience and competitiveness of farmers' organizations. Existing farmers' organizations (cooperatives and associations) will be supported to identify common user assets, infrastructure or services, develop joint climate informed-business plans, and apply for Climate Smart Matching Grants (MG) of up to US\$25,000 per business plan. Specifically, the MGs would be available for cooperatives and other established groups of farmers, including formalized water users' associations, to meet the market requirements of off-takers and for the adoption of climate smart agricultural practices. The eligible investments for the matching grants would include, inter alia: greenhouses, solar panels, small scale processing units, improved irrigation systems, improved onfarm wastewater and solid waste (e.g. composting) management, energy-efficient processing equipment, greenhouses, storage and cold storage, agricultural machinery, food quality and safety equipment, certification and other investments for value addition and market access. The groups will be expected to cover their input needs (such as seeds, fertilizer and other inputs) from their own financial resources or through micro loans under sub-component 1.2. Contributions from applicants will also be requested, representing a minimum of 20 percent of the total investment, which can be provided in-kind or in cash. Such contribution will be lower for women's groups, at 10 percent minimum, due to lack of assets ownership. To improve resilience to shocks of smallholder farmers, applicants will be incentivized to contribute to a health insurance plan. The MGs would be awarded following a transparent mechanism to ensure compliance with technical, financial, social, and environmental parameters detailed in the Project Operational Manual (POM) together with the eligibility criteria. The selection process will be carefully developed to ensure equal access to opportunities for vulnerable groups, including women and youth. The component will be technically led by MoA and implemented by the Project Coordinating Unit (PCU) under the CDR. A service provider will be recruited competitively as a grant administrator.

Sub-component 1.2: Support to Agrifood MSMEs (US\$54 million). The objective of this sub-component is to support viable agri-food Micro, Small and Medium Enterprises (MSMEs) and farmers with access to finance. It aims to provide urgent liquidity in the form of loans for investment and working capital financing to eligible SMEs currently credit constrained and struggling to finance their needs due to the multiple crises hitting Lebanon and the paralysis of the banking system. It will also allow access to micro financing solutions for farmers and microenterprises operating in agrifood value chains through selected Microfinance Institutions (MFIs). The sub-component will be implemented by Kafalat S.A.L, 41 the national credit guarantee agency. Kafalat will act as an intermediary channeling financial resources through two implementation approaches: (i) Retail as direct lending to eligible SMEs, and (ii) Wholesale via selected Microfinance Institutions (MFIs) who will onlend to farmers and microenterprises operating in the agrifood sector. Channeling funds through Kafalat is an emergency measure, in the absence of a functioning banking sector. Three sets of activities will be financed under this subcomponent: (i) Loans to eligible SMEs, (ii) Financing to eligible MFIs for further onlending, and (iii) Technical assistance (TA) and IT systems to strengthen

Kafalat's lending capacity. The preliminary design features of the line of credit (LOC) can be found in Annex 2.

Loans to eligible SMEs (US\$47.6 million). The loans will address the investment and working capital needs of eligible agrifood businesses. Loans will allow for investments in climate-responsive energy provision and resource-efficient production infrastructure and systems, modern machinery and equipment, quality- and certification-related investments that will increase productivity, enable meeting market requirements and improve resilience and environmental compliance, and support expansion and export. Eligible SMEs refer to (i) viable agri-food businesses that have growth potential (in terms of sales, and/or export and/or jobs), (ii) employ fewer than 50 registered employees, (iii) are legally registered and licensed, and (iv) fully operational. Businesses that are women owned or led for export, or have pre-agreed sales contracts, or have contract farming arrangements, are encouraged to participate in the program. A maximum loan amount of US\$400,000 is envisioned, with a maximum maturity of three years. Further details on the terms and conditions, including pricing, will be detailed in the POM and will be subject to the Bank's no objection. It is expected that around 315 SMEs will benefit from loans by the closing date of the project. Beneficiaries SMEs can also benefit from the export promotion support under Component 3.3.

Financing to eligible MFIs (US\$3 million). The financing will allow selected MFIs to offer new lending products focused on low-income farmers and micro-businesses operating in the agrifood value chain, based on market needs and demand. The funds will allow the deployment of around 2,000 new microloans by the project closing date, with an estimated average of US\$5,000 (revolving, with an estimated average loan maturity of 18 months). The microloans will support small-scale farmers and micro-businesses to use energy efficiency solutions, improve their production capacity and sustain their livelihoods. Moreover, the funds will help sustain the capacity of MFIs by helping them generate revenues during the project life. At project completion, MFIs will return the funds to Kafalat. MFIs will be subject to an institutional and credit assessment to confirm their compliance with eligibility criteria to become and remain participating financial institutions (PFIs) under the project. Eligibility criteria include: i) compliance with applicable laws and regulations and/or good standing with its supervisory authority; ii) qualified and experienced management, adequate governance and institutional capacity for its specific risk profile; iii) well defined policies and written procedures for management of all types of financial risks; iv) adequate internal audits and controls; v) adequate management information systems; and vi) acceptable financial performance. The above criteria will be assessed taking into consideration unique economic context in Lebanon. The assessment will be conducted prior to the first disbursement and annually thereafter, including monthly monitoring of portfolio quality.

To further strengthen the capacity of Kafalat, given that it does not have prior lending experience, the project will support the following: (i) Hiring of experienced loan officers; (ii) Training and capacity building to engage in lending to SMEs, particularly in the agrifood and tourism sectors, and to MFIs; (iii) Development of lending manuals with lending procedures (appraisal, problem loan recovery, etc.); (iv) Strengthening IT systems; (v) Monthly monitoring and reporting on the portfolio quality; and (vi) Support for adherence to the POM. Loan disbursement will commence only upon full operationalization of Kafalat's credit function, including after hiring and training of key experienced staff, when the first phase of TA is completed, lending manuals are developed and adopted, and IT systems are in place. A performance assessment will be conducted in the project's initial phases. Moreover, the first five SME loans will be subject to no-objection by the Bank.

The GoL will delegate through a subsidiary agreement the implementation and management of the sub-component to Kafalat. Given the insolvency of the banking sector and the delay in restructuring the banking sector, channeling funds through Kafalat was identified as the optimal solution to ensure targeted beneficiaries, who currently have no access to finance, including their own resources, get the financial support needed to sustain and expand their operations. A financial intermediary assessment was undertaken according to Financial Intermediary Financing (FIF) guidelines to confirm that Kafalat is capable of playing this intermediary role and justifying the rationale for concessional debt financing through a non-bank financial institution. The proposed implementation arrangement under this subcomponent is a temporary emergency measure. It is

time-bound and will be phased out with the banking sector restructuring and financial intermediation recovery.

By stabilizing and improving agri-food systems through supporting farmers groups and MSMEs operating across the agrifood value chains, Component 1 will sustain and create livelihood opportunities for Lebanese host communities, youth, women and displaced population.

Component 2. Climate-Smart Infrastructure and Services for Agri-Food Sector Development (US\$100 million)

The objective of this component is to restore service delivery, build operational capacity and ensure the sustainability and climate-resilience of public infrastructure underpinning the agri-food sector. It will be structured across two sub-components: Sub-component 2.1: Strengthening Rural Community Infrastructure; and Sub-component 2.2: Restoring Access to Improved Services and Infrastructure Assets Underpinning Agriculture.

The component will finance investment in selected public rural infrastructure and services deemed essential to enhancing competitiveness and sustainability of the agri-food sector and to making it more climate-responsive. These will include the following types of investment: (i) rehabilitation and modernization of public irrigation infrastructure including small community-/farmer-led irrigation developments (FLID) as well as larger agency-managed public irrigation infrastructure; (ii) rehabilitation of rural feeder roads; (iii) rehabilitation local agricultural markets; (iv) optimizing the operation of existing wastewater (WW) treatment systems (including sludge management and WW re-use for agriculture); (v) optimizing the operation of existing solid waste (SW) management systems.

The component will generate large benefits for host communities and displaced populations through several channels. First, food production will likely increase, leading to greater availability and accessibility of food for host communities and displaced populations alike. Second, enhanced agricultural infrastructure will contribute to economic growth, leading to employment opportunities for both skilled and unskilled workers. Third, restoring basic infrastructure will also ensure that host communities and displaced population have access to clean water and sanitation, critical for well-being and public health. Finally, investments in local infrastructure can help foster social cohesion between host communities and displaced populations by working together on shared objectives and benefiting from improved infrastructure, reducing tensions and promoting social integration.

Sub-component 2.1. Improving Rural Community Infrastructure for Agriculture (US\$31 million)

The objective of this sub-component is to improve rural community infrastructure to support agri-food development. It will focus on financing of water storage, small community-/farmer-led irrigation networks, rural roads, as well as farmer markets, and other demand-driven agricultural sub-projects. The sub-component will be implemented by the Green Plan in close coordination with respective unions of municipalities or individual municipalities and MoA. Operation and Maintenance (O&M) will be the responsibility of the unions of municipalities or individual municipalities.

Unions of Municipalities or individual municipalities and associated stakeholders⁴³ will develop and promote investment proposals (Community Infrastructure Sub-projects) for project support. Fund allocations will be regionally balanced, identified and prioritized through an inclusive participatory process, with sub-projects evaluated against a set of eligibility and selection criteria, which will be defined in the POM. Indicative criteria will include the following: (i) the degree of food insecurity and poverty impact; (ii) the level of agricultural activity; (iii) synergies with Component 1; (iv) climate co-benefits and environmental sustainability; (v) commitment to sustainable operation and maintenance arrangements; and (vi) local ownership as expressed through co-financing commitments by unions of municipalities or individual municipalities.

Yearly calls for proposals from unions of municipalities and individual municipalities will be issued at governorate level in the first three years of project implementation, supported by an extensive communication campaign. Pre-screening of proposals will be conducted by the Green Plan and

validated with local communities. A technical evaluation committee, consisting of representatives from the Ministry of Agriculture, governorates, farmers, civil society and the private sector, will review and approve the final list of projects.

This sub-component will finance: (i) consultancy services, including feasibility studies, engineering designs, as well as the preparation of Environmental and Social Impact Assessments (ESIAs); (ii) communication campaigns, information and consultations; (iii) the selected Community Infrastructure Sub-projects; and (iv) institution strengthening of relevant institutions, such as irrigation and water user associations, which assume system operation, maintenance and management responsibility for hill lakes and associated irrigation distribution network.

Strengthening rural infrastructure is expected to generate substantial co-benefits for climate change adaptation and mitigation. By enhancing local agricultural infrastructure, the project will improve the resilience of rural communities to climate-related shocks, such as extreme weather events and water scarcity. Hill lakes, for instance, add a source of irrigation water that can be used to supplement rainfed production – thereby making it more resilient. Moreover, the prioritization of environmentally sustainable interventions will reduce the sector's carbon footprint and promote low-carbon development, producing climate change mitigation co-benefits.

Sub-component 2.2. Restoring Access and Protecting Agency-managed Infrastructure and Services Underpinning Agriculture (US\$69 million).

The objective of this sub-component is to restore access to essential services and protect infrastructure underpinning the resilience and competitiveness of agri-food systems. Adopting a systems perspective, interventions will aim to ensure basic system functionality through investments in the rehabilitation of existing public infrastructure and the lowest possible level of complexity of interventions in the underpinning systems. This approach will allow to balance the risk of ineffective isolated investments with implementation risks linked to complexity. It also maximizes the use of available resources and avoid investments in new infrastructure in the current context.

The sub-component's scope will include infrastructure rehabilitation in the following sectors identified as critical to the continued viability of the agri-food sector: agency-managed irrigation schemes, and wastewater management (WWM), and solid waste management (SWM). The scope of investments will commensurate with the effectiveness of restoring the functionality of the smallest viable service area applicable to the specific service or infrastructure, such as irrigation perimeters and wastewater management networks.

The Sub-component will adopt a framework approach by which a list of pre-identified investments will undergo an assessment to validate the technical, economic, social and environmental performance of each sub-project. Eligible investments will have to meet the following criteria: (i) investments focus on rural areas and directly benefit the agri-food sector providing a service; (ii) interventions targeting the rehabilitation, reactivation, and protection of existing infrastructure assets, preventing further deterioration and loss of public assets from neglect; (iii) priority investments supported by national sectoral strategies and masterplans; (iv) resilient system design supported by sustainable operation and maintenance (O&M) plans; (v) complexity of investment is aligned to institutional capacity to reduce implementation risk; and (vi) sub-projects are validated through inclusive stakeholder consultations.

This Sub-component will finance: (i) consultant services for feasibility studies, engineering designs and supervision, Environmental and Social Impact Assessments (ESIA), and O&M action-plans related to selected sub-projects; (ii) communications and community consultations; (iii) technical assistance and capacity building of relevant agencies; and (iv) the selected Public Infrastructure Sub-projects.

Irrigation. Irrigation sub-projects supported under the project will be fully aligned with the National Water Sector Strategy 2020–2035 (NWSS 2035). NWSS projects in the water, wastewater and irrigation sectors were pre-selected as part of the prioritization process applied by the MOEW. A list of pre-selected sub-projects proposed for inclusion in this project includes the following: (i)

rehabilitation and completion of the construction of the 45 km irrigation network serving the Saida-Jezzine irrigation scheme under the Litani River Authority (LRA); (ii) rehabilitation of Qasmieh-Ras El Ain irrigation scheme under LRA, and (iii) filtration and treatment of the irrigation water quality of Canal 900 under LRA. In addition, there are six smaller irrigation projects prioritized for inclusion in Akkar, managed by the North Lebanon Water Establishment (NLWE), and another five schemes prioritized for the Northern Bekaa region managed by the Bekaa Water Establishment (BQWE).

Wastewater management: Interventions in wastewater management will include the rehabilitation and expansion of existing wastewater networks and WWTPs which are not operational due to lack of operational budget and which have significant impact on surrounding agricultural lands as well as investments for the reuse of treated wastewater in agriculture in existing secondary or tertiary WWTP to reduce the impact on water resources in agricultural areas.. Investments in wastewater will be in line with MoEW's update of the "National Water Sector Strategy of 2020" and in line with the "Recovery Roadmap of the Water Sector of 2022".

Solid waste management: Interventions in solid waste could include the rehabilitation of existing solid waste management infrastructure which will (i) reduce the impact of illegal open dumping on agricultural lands and water resources (groundwater and surface water pollution, as well as clogging of irrigation canals); and (ii) increase the supply of compost as an alternative to imported synthetic fertilizers.

The sub-component will provide dedicated technical assistance and capacity building to implementing entities. Support will be demand-based and flexibly tailored to (i) pre-identified needs as listed below, as well as (ii) needs revealed during implementation. Pre-identified needs per type of intervention are:

- a. **Irrigation and Water Waste Management:** Irrigation investments will be accompanied by technical assistance to prevent the risks of water resource deterioration either in the form of depletion (overdraft) and pollution (from non-point agricultural sources): (i) groundwater information system to monitor saline intrusion along the Southern Lebanon coastline; (ii) preparation of drought risk management plans in the Litani river basin; (iii) preparation of groundwater management plans for the extended Canal 900 scheme.
- b. Furthermore, and in accordance with Law 221 192, the Sub-component will build the capacity of Water Establishments in providing support to water user associations their establishment and development into legally recognized, member-based organizations, which are open to municipal membership or partnership. Their main responsibilities will include the operation, maintenance, and management of secondary and tertiary irrigation infrastructure. WUOs will also have a role in allocation and coordinated management of water resources at the system levels.
- c. Capacity building to the Green Plan, Water Establishments (WEs), LRA and local authorities will be provided, as needed, for meeting their responsibilities in the operation and maintenance of irrigation and WW investments as well as their financial sustainability. Strengthening the legal and institutional capacities of the irrigation sector would include the finalization and adoption of wastewater and sludge reuse standards.
- d. **Solid Waste Management:** Promoting the adoption of an integrated approach at the level of solid waste service zone by complementing the on-going efforts for the development of local solid waste Masterplans. This will include support to awareness and communication campaigns, engagement of local communities in the design and implementation of the proposed SWM systems and strengthening the financial sustainability of the SW investments. Needed capacity building will be provided to local authorities to meet their roles and responsibilities in the operation of the investments and to MoE in monitoring the implementation of the SW Masterplans.
- e. Technical assistance will also be provided to concerned stakeholders to strengthen environmental governance of the Litani River Basin to prevent further degradation of water and land resources in this basin which are significantly affecting agricultural development.

The sub-component will be implemented by CDR, in close coordination with respective municipalities, union of municipalities and sectoral ministries. These include the Ministry of Environment (MoE), the Ministry of Energy and Water (MoEW), the Ministry of Agriculture (MoA), Litani River Authority (LRA), and concerned Water Establishments (WEs). The roles and responsibilities (including O&M) of the different institutions responsible for the public investments which will be implemented under the project are indicated in Annex 2.

The sub-component will yield significant climate co-benefits for both adaptation and mitigation. By improving the resilience and efficiency of infrastructure systems, such as irrigation and wastewater management, the project will enable rural agricultural communities to better adapt to the impacts of climate change. Enhanced water management practices will contribute to more effective use of water resources in the face of increased water scarcity due to climate change. Moreover, the integration of renewable energy across all interventions will reduce greenhouse gas emissions and promote low-carbon development. Improved solid waste management systems will also minimize the release of methane, a potent greenhouse gas, from landfills and waste disposal sites.

Component 3: Improving the Enabling Environment and Restoring Support Services for Agri-food Development (US\$20 million)

The objective of this component is to restore and strengthen the capacity of sector institutions to support the recovery and transformation of the agri-food sector. The component will be implemented by the PCU under the technical leadership of the Ministry of Agriculture (Sub-component 3.1 and 3.2) and the Ministry of Economy and Trade (Sub-component 3.3).

Sub-component 3.1: Improving access to climate-smart agriculture practices, data, and knowledge (US\$5 million). This sub-component aims to improve the knowledge base for decision-making in the agri-food sector, including for policy makers, farmers, and agribusinesses, and to accelerate the use of digital innovations and tools in areas such as land use monitoring and agricultural extension system. It will finance: (i) a food system diagnostic, including agricultural and industrial censuses;⁴⁴ (ii) a land productivity map and a land use decision tool; (iii) digitizing the MoA's agricultural services, process and communication, including digitalization of extension services and support for the farmers registry and building the capacity of MoA on the use of remote sensing tools; (iv) the delivery of improved extension services. Training on climate smart practices will be provided to 15,000 smallholders with a farm size of 1 to 50 dunums (10 dunums = 1 hectare); (v) coordination by MoA of agri-food related projects; and (vi) technical assistance for the revision of the social fund law (governing the national social security fund, NSSF) to include agricultural workers.

The improved and digital extension services will include sustainable farming practices and CSA technologies that help improve productivity over the long term, reduce input costs, and build climate resilience and reduce GHG emissions intensity (Annex 4)⁴⁵. The sub-component will also include the analysis of climate impacts, opportunities and constraints in selected value chains.

Sub-component 3.2: Strengthening Food Safety (US\$10 million). This sub-component aims to enhance Lebanon's capacity to ensure food safety and increase export opportunities for Lebanese food products. It will be implemented by the PCU under the technical leadership of MoA. It will finance: (a) technical assistance for (i) the harmonization of national food safety requirements with Codex Alimentarius and the requirements of target markets in case of export, (ii) upgrading the food safety policy and regulatory framework for implementation of the National Food Safety Law (2015), (iii) the establishment of the framework required for the implementation of good agricultural practices (GAP), good manufacturing practices (GMP), food safety management systems based on the Hazard Analysis and Critical Control Points (HACCP), (iv) the preparation of draft harmonizing national legislation to ensure its correspondence to provisions of the National Food Safety Law; (b) the digitization of agri-food related certificates and licenses, including the establishment of an SPS e-Certification system and integration into the ePHYTO system; (ii) establishment of the registration and administration system for food business operators including food exporters; (c) upgrade of the operational capacities of the public sector involved in food safety management including: (i) development of frameworks aimed to strengthen national food safety management; (ii) creation of frameworks required to ensure efficient laboratory testing of

food safety including testing for pesticide residues other contaminants and substances by investments in upgrading quality infrastructure and supporting maintenance and operation of existing laboratories⁴⁶ at MoA, LARI and Industrial Research Institute (IRI); and (iii) supporting and improving seeds multiplication capacity of LARI.

Additionally, this subcomponent will finance livestock vaccination campaigns and surveillance mechanisms for selected, priority pests and diseases and support awareness-raising campaigns about the potential spread of new pests and diseases due to climate change. The surveillance will include the management of quarantine pests and Fruit fly in Lebanon, and strengthening quarantine measures to detect, control and monitor the spread of *Xylella fastidiosa*. This activity will directly build climate resilience to increased frequency of pest infestation and diseases due to climate change, and indirectly lead to GHG emissions reduction, as farmers aim to comply with regulatory standards such as reduced fertilizer usage (see Annex 5 for more details).

Sub-component 3.3. Improving agri-food export promotion and marketing systems (US\$5 million): The sub-component aims to improve agri-food export performance and access to new markets. It would finance the following: (i) co-financing of trade missions and participation in international fairs identified by the private sector, and (ii) technical assistance for facilitating access to information including information on export processes, quality requirements, trial shipments, maritime, land, and air transportation options including upgrading MoET's LEBTRADE platform, and informing the network of Economic Attachés under the Ministry of Foreign Affairs in key export destinations to facilitate export opportunities. Specific emphasis would be placed on strengthening women's access to local and international markets. The sub-component would be implemented by the PCU under the technical leadership of MoET.

Component 4: Project and Knowledge Management (US\$6 million)

This component will support the coordination and management of the implementation of the project. It will finance the overall project management, including: (i) coordination among different stakeholders; (ii) monitoring and evaluation; (iii) project environmental and social standards; (iv) hiring of a gender specialist; (v) project fiduciary administration, internal controls, and audits; (vi) communication and information activities, and (vii) the establishment and maintenance of a grievance mechanism (GM) and a citizen's engagement mechanism. This component will also finance timely communication of results. This component will finance a third-party monitoring (TPM) mechanism. The project will also recruit a Service Provider (NGO) specialized in child labor prevention and response and who will be responsible for supporting the project in preventing, mitigating, monitoring, and responding to such risks during implementation (See Annex 5 on Child labor). It will finance the development of an action plan to combat child labor and a roadmap to improve social protection for farmers.

Component 5: CERC

This component will have zero funding allocation at the onset and will only be triggered in emergency circumstances; the project will support the preparation of a procedure manual governing the CERC operations.

1.4 PROJECT ALIGNMENT WITH OTHER ON-GOING INTERNATIONAL PROJECTS

The proposed project is aligned with the Country Partnership Framework FY17–FY22 (CPF Report Number 94768). The proposed operation would address both CPF's areas of focus. Specifically, it would contribute to Focus Area 1 ("Expand Access to and Quality of Service Delivery") by improving the services that mainly the MOA, but other institutions as well deliver to rural and lagging areas, both for poverty alleviation and growth; and by addressing environmental priorities, including the adoption of Climate-Smart Agricultural practices across priority value chains. The proposed operation would also contribute to Focus Area 2 ("Expand Economic Opportunities and

Increase Human Capital") by enhancing the production potential in agriculture and improving its quality both for internal and external markets. The proposed project is also aligned with the new CPF under preparation.

The proposed project aligns with the World Bank's Global Crisis Response Framework (GCRF) by maintaining a focus on longer-term priorities, which is critical to avoid setbacks on development objectives and to achieve the World Bank's Twin Goals of eliminating extreme poverty and promoting shared prosperity in Lebanon. The project is part of the GCRF and supports all four pillars. Under GCRF Pillar 1 (Responding to Food Insecurity), the project would support sustainable food and nutrition security, through safeguarding local production and strengthening food systems to make them more resilient to climatic risks and ongoing financial crises. The project would contribute to Pillar 2 (Protecting People and Preserving Jobs) by creating new job opportunities in rural areas, revising social protection for the agricultural sector and supporting displaced populations. In alignment with GCRF Pillar 3 (Strengthening Resilience), the project would support climate-smart and resilient agri-food value chains and community-based small-scale infrastructure.

In addition, the proposed project aligns with the World Bank's Fragile, Conflict, and Violence (FCV) strategy, and the World Bank's climate commitments, as set out by the Climate Change Action Plan and the MENA Climate Roadmap (FY21-25). Building resilience and preventing and mitigating FCV challenges are key to progress on the Sustainable Development Goals (SDGs) and promoting peace and prosperity. Focusing on building resilient and inclusive rural communities, the project contributes to Pillar 1 ("Preventing violent conflict and interpersonal violence"). The project also relates to Pillar 3 ("Helping countries transition out of fragility") by providing access to economic opportunities and access to basic services in rural and lagging areas, stabilizing the situation and renewing the social contract between citizens and the state. Finally, by focusing on the agricultural sector, it also contributes to Pillar 4 ("Mitigating the spillovers effects of FCV") as the sector employs a high share of the Syrian displaced population and rural poor. Through its focus on agriculture, agri-businesses and agri-tourism, this Project contributes directly to the first pillar of the WBG's MENA Climate Change Roadmap ("Food Systems, water security and resilient natural capital"). Leveraging climate-smart investments including renewable energy for energy and water access as well as the use of energy-efficient systems (e.g., for irrigation), contributes to the second pillar ("Energy transition and low-carbon mobility").

Furthermore, the GATE project shall complement the WB on-going project "Reduction of UPOPs through Waste Management in a Circular Economy (P172770)" which will partially rehabilitate the solid waste infrastructure in Akkar and the South/ Nabatieh.

The project will also complement the WB Roads and Employment project (REP) - Component 4: Support to farmers engaged in crop and livestock production, which is providing financial support to smaller crop and animal producers in Lebanon.

1.5 PROJECT IMPLEMENTATION ARRANGEMENTS

The proposed implementation arrangements are designed to ensure efficient implementation and disburse in a reliable, transparent, and timely manner through specialized non-governmental and governmental institutions with the necessary technical expertise.

The overall Project implementation would be led by the CDR as PIA, through the Project Coordination Unit (PCU).

The Borrower is represented by the CDR which will implement the project through the PCU. CDR PCU would lead the overall project management and coordination, including by: (i) ensuring strategic oversight of overall project implementation; (ii) ensuring coordination and cooperation among all participating agencies and institutions, (iii) providing overall guidance during project implementation; and (v) endorsing financial, programmatic, and monitoring reports to be presented to the World Bank and other national stakeholders to ensure transparency and accountability. The project is to be implemented over a five-year period. CDR PCU will be responsible for the procurement, financial management, safeguards, and monitoring aspects of all components except component 1.2 which would be led by Kafalat through a subsidiary agreement. Components 2, 3 and 4 will be by CDR PCU, as well as sub-component 1.1.

The proposed implementation arrangements are shown in **Error! Reference source not found.**

Table 1-1 Project Implementation Arrangements

Component	Responsible Parties	Estimated Budget
Component 1 Climate Smart Investments in Agri-food Value Chains		USD 74 million
Sub-component 1.1: Development of Climate Smart value chains through improved aggregations	Technical leadership of MOA and support from the Directorate of Studies and Coordination and LARI. Fiduciary, procurement & safeguards CDR/PCU.	USD 20 million
Sub-component 1.2: Support to Agrifood and Agritourism SMEs and producer associations	Kafalaat	USD 54 million
Component 2. Climate-Smart Infrastructure and Services for Agri-food Development		USD 100 million
Sub-component 2.1. Planning, design and monitoring through a participatory approach	Green Plan in close coordination with respective municipalities & Union of municipalities, MOE, MOEW, LRA, concerned WEs.	31 million
Sub-component 2.2. Investments in public infrastructure to support agricultural productivity	CDR PCU	69 million
Component 3: Improving the Enabling Environment and Restoring Support Services for Agri-food Development	MOA, MOET, IDAL, MOE	USD 30 million
Sub-component 3.1 (US\$ 10 million): Improving access to climate-smart agriculture practices, data, and knowledge.	CDR PCU	USD 10 million
Subcomponent 3.2: Strengthening food safety (US\$ 7 million)	CDR PCU with the technical support of MOA & MOI.	USD 15 million

Component	Responsible Parties	Estimated Budget
Sub-component 3.3. Improving agri-food export promotion and marketing systems (US\$ 3 million)	CDR/ PCU under technical oversight of MOET	USD 5 million
Component 4: Project and Knowledge Management	CDR PCU	USD 8 million

A Project Steering Committee (PSC), chaired by both Ministers of Agriculture and Economy and Trade, will be established to oversee the implementation of Project activities and resolve issues of a policy nature that might arise during project execution. The PSC will be responsible for approving the project's annual budget and approving the recommended sub-projects for implementation and shall consult and coordinate between its members to overcome any obstacles that hinder the implementation of the project. In addition to its chairs, it will include the Ministry of Finance, Ministry of Industry, Ministry of Environment, Ministry of Energy and Water, and Ministry of Tourism.

1.6 GOALS AND SCOPE OF ESMF

This Environmental and Social Management Framework (ESMF) is a management tool whose format is in line with the requirements of the World Bank's Environmental and Social Framework (ESF), notably ESS1 "Assessment and Management of Environmental and Social Risks and Impacts" and the laws and regulations in Lebanon, to frame the management of potential environmental and social risks associated with the programme implementation.

The World Bank's (WB) ESF, which came into effect in October 2018, is applied to the proposed project, along with the general World Bank Group (WBG) [Environmental, Health, and Safety \(EHS\) Guidelines](#) (April 2007) and other industry sector related guidelines on:

- [Annual crop production](#) (March 2016);
- [Waste management facilities](#) (December 2007) and
- [Water and sanitation](#) (December 2007)

The ESMF, in line with ESS1, contains measures and plans to reduce, mitigate and/or offset adverse risks and impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project risks and impacts, including its capacity to manage environmental and social risks and impacts. It includes adequate information on the area in which sub-projects are expected to be sited, including any potential environmental and social vulnerabilities of the area; and on the potential impacts that may occur and mitigation measures that might be expected to be used.

The ESMF also requires that an emergency preparedness and response process and Resource Efficiency and Pollution Prevention and Management measures be included in ESIA/ESMPs studies for sub-projects.

The ESMF clearly identifies any impacts, whether beneficial or adverse, to any Project Affected Parties (PAPs), other interested parties, and vulnerable groups, and outlines the respective mitigation measures accordingly. It outlines mitigation measures to mitigate SEA/SH risks.

The ESMF also ensures that proper, meaningful, and inclusive consultation is carried out with project beneficiaries and any identified vulnerable groups during project preparation and throughout project implementation with an adequately functioning Grievance Mechanism (GM) including separate referral pathways for complaints related to sexual exploitation and abuse/sexual harassment (SEA/SH). Additional/separate consultations may also be undertaken as part of the ESMF with identified vulnerable groups to help inform project design. The list of participants, with gender disaggregation, is documented as part of the ESMF.

To tackle all relevant ESS and World Bank requirements, the following instruments were prepared in addition to the ESMF report:

- Environmental, Social and Commitment Plan (ESCP);
- Labor-Management Procedures (LMP) prepared for the project;
- Resettlement Framework (RF);
- Grievance Mechanism; and
- Stakeholder Engagement Plan (SEP).

2. ENVIRONMENTAL AND SOCIAL BACKGROUND

This chapter presents a summary of the environmental and social baseline and settings related to the GATE project. The full environmental and Social Baseline document is presented as Annex H. This Chapter will present general background information about Lebanon.

2.1 ENVIRONMENTAL OVERVIEW

2.1.1 Geographical Location

Lebanon is a Middle Eastern country located in Western Asia and bordered by the Syrian Arab Republic from north and east, Palestinian territories from the south, and the Mediterranean Sea from the west. The country extends over an area of 10,452 square kilometers only. Despite the small area of Lebanon, the country has been a host of civilizations and cultures throughout history, similarly to many other Mediterranean countries.

2.1.2 Climate and Meteorology

Lebanon has a typical Mediterranean climate characterized by a long, hot, and dry summer, and cool, rainy winter. Temperatures gradually decrease during winter season and precipitations either accumulate in groundwater reservoirs through infiltration, or run-off. When springs and water courses are revived again, the spring season begins.

The topography of the country, with an elevation gain that extends only about 40 kilometers, affects the climatic patterns. Along the coast, summers are hot and humid, with little or no rain.

Temperatures may vary from one area to the other, depending on the time during the day and the altitude. Temperatures may reach above 38° C in the daytime and below 16° C at night. The proximity of the sea to the coastal area acts as a buffer effect on the climate, making the range of temperatures narrower than it is inland.

Precipitation records vary from one year to the other, with major rainfalls occurring during the month of December and January. The influence of the Mediterranean Sea is abated by the altitude and, although the precipitation is even higher than it is along the coast, the range of temperatures is wider, and the winters are more severe. The Beqaa Valley and the Anti-Lebanon Mountains witness less precipitation and humidity levels than other parts of the country, as the Mount Lebanon Mountains Chain creates a microclimate for the former areas.

The average annual precipitation in Lebanon is reported to be between 8.6 billion m³ and 9.7 billion m³, of which 1 billion m³ is due to snow (MoEW/UNDP, 2014; Fayad et al., 2017).

Figures referenced by Ziad Hajjar (1997) and recorded at 105 stations spread throughout the different governorates registered average yearly precipitation ranging from 700 mm in the Beqaa to 1,210 mm over Mount Lebanon (Table 2-1). Measurements were taken over several years ranging from 3 years in Terbol and Mayfouq stations to 51 years in the Tripoli station. The lowest level recorded for the country was 80 mm while the maximum observation reached 3,010 mm.

Table 2-1 Precipitation levels recorded by region

	NUMBER OF STATIONS	STATION ALTITUDE		PRECIPITATION (MM/YEAR)		
		LOW	HIGH	YEARLY AVERAGE	MIN	MAX
Beirut	4	15	34	891.75	393	1600
North	25	2	1925	1055	425	1890
Mount-Lebanon	36	45	1840	1210.16	421	3010
South	26	5	1150	933.27	342	2139
Beqaa	36	650	1510	705.42	80	2374
Lebanon	105	5	1840	787	80	3010

Source: Hajjar, 1997

The dominant wind direction is westerly from sea to land during the day, while it reverses at night (from land to sea).

Monthly and long term mean wind speed data at 10 m above ground level from the Météo Liban meteorological stations measurements showed wind velocities in the range of 1.6 to 9.1 m/s throughout the country (MOEW/UNDP, 2011).

2.1.3 Topography

The landscape of Lebanon is influenced by natural systems that extend outside the country. Thus, the Beqaa valley is part of the Great Rift system which stretches from Southern Turkey to Mozambique in Africa.

A major feature of Lebanese topography is the alternation of low lands and high land running in a parallel manner with a north-to-south orientation. There are four longitudinal strips between the Mediterranean Sea and Syria, which are from west to east as follows:

- A flat and narrow coastal strip (maritime plain) parallel to the Mediterranean Sea
- The Mount-Lebanon chain
- The Beqaa Valley (Central plateau)
- The Anti-Lebanon Mountains Chain

The steepness in Lebanese mountains highly affects the climate and weather in the Beqaa Valley, and at high altitudes.

2.1.4 Geology

The current geomorphological matrix of Lebanon is highly influenced by the historical geological events that occurred. The main tectonic events that happened are uplift, collision and changes in sea level, which have shaped the structural features and depositional environments of the country.

2.1.5 Hydrogeology

The hydro-stratigraphic units of the country are classified into three (3) main groups: aquifers, semi-aquifers and aquicludes.

A total of three (3) hydro-stratigraphic units are considered as karstic aquifers in Lebanon, two (2) of which are considered the main aquifers of the country (the Kesrouane aquifer J4 aquifer) and

the Sannine-Maameltain aquifer (C4-C5 aquifer). They are the two (2) water towers (Chateau-D'eau) of Lebanon and cover about 5590 km², which is about 54% of the country's surface area. The third aquifer is the Upper Eocene Formation (e2b). Given their highly karstified nature and extent that favor a high storage and recharge capacity, all three aquifers were considered to be karstic. The recharge of the aquifers in Lebanon mainly occurs through rainfall, snow and sometimes through losing streams. Infiltration in karstic aquifers is usually highest along high altitudes where precipitation increases. Groundwater tends to flow along preferential pathways enhanced by fractures and cavities in karstic limestone such as the e2b, C4-C5 and J4 aquifers making them highly vulnerable to groundwater pollution. Moreover, the presence of the Yammouneh Fault System and Roum Fault System along with other fault systems in Lebanon, helps in enhancing the fractures and cavities in karstic aquifers (MOEW/UNDP, 2014).

Besides aquifers, several semi-aquifers are present in Lebanon. The semi-aquifers usually have medium vulnerability to surface water pollution. This is because some semi-aquifers such as the Chouf Sandstone (C1) and Quaternary/Neogene (Q/n including mcg and mL) have the tendency to filter the percolating water. However, some semi-aquifers (mainly Mdairej C2b) are considered as highly karstified, especially in the presence of nearby faults (MOEW/UNDP, 2014).

Aquicludes are considered to have very low vulnerability to surface water pollution. This is mainly due to the lithostratigraphic characteristics of an aquiclude that limits the groundwater interaction between the overlying and underlying geological formations (MOEW/UNDP, 2014).

Springs and Wells

Springs

A total of about 5,050 springs are depicted in the 1:20,000 topographic maps of Lebanon. The major springs in Lebanon are fed by either the Sannine-Maameltain (C4-C5) Aquifer such as Afqa Spring, Keserouane Aquifer (J4) such as Ain El Delbi, or both, which is the case in the Wazzani Spring (MOEW/UNDP, 2014).

Wells

The UNDP 2014 study revealed the presence of 841 public wells in Lebanon. The survey showed that the operational public wells are exploiting the various aquifers at an estimated rate of about 248.7 million m³/year. The water of the wells is mainly used for domestic purposes. As for private licensed wells, the UNDP, 2014 study revealed the presence of 20,537 wells. More than 50% of the private licensed wells are located in Beirut and Mount Lebanon areas. The estimated number of unlicensed private wells is almost three (3) times higher than the number of licensed private wells (about 55,000 to 60,000 wells). The water extracted from private wells is being used for agricultural, domestic, industrial and commercial purposes (MOEW/UNDP, 2014).

It should be mentioned that the Water Law 192/2020 that amends the Water Code (Law 77/2018), article 37, urges citizens who have an unlicensed well to settle their violation and legitimize their status within a period of two years, the consequence of not doing so being the closing of the well. A committee or unit should be established at MoEW to support the practical execution of this article that includes, at least, a hydrogeologist, a legal counsel, a representative from the concerned WE and evaluates the applications put forth by the public, the well's effect on aquifers and other sources, and the WE's capacity to supply water (MOEW, 2022).

2.1.6 Surface Hydrology

More than thirteen (13) rivers cut through Lebanon. The main rivers with recognizable flow rates are the Litani River, Orontes (Assi) River, El Kebir River and Hasbani River. With the exception of the Litani River, which flows entirely within the country's borders, all other main rivers are Transboundary Rivers (MOEW/UNDP, 2014).

Besides the main rivers, several small-scale rivers (such as Damour River, El Bared River, Ibrahim River, Nahr el Kalb, etc.) are present in Lebanon. All those rivers tend to flow towards the west, eventually discharging into the Mediterranean Sea (MOEW/UNDP, 2014).

It is worth noting that inland wetlands are also present in Lebanon. The wetlands are located in Ammiq and Kfarzabad villages and are considered as Himas (protected areas) with high ecological value.

According to the Updated Water Sector Strategy 2020-2035, there are six operational dams/hill lakes in the country: Chabrouh Dam (Mount Lebanon), Ballout Lake (Mount Lebanon), Qaysamani Lake (Mount Lebanon), Kouachra Lake (Akkar), Yammouneh Lake (Baalbek-Hermel) and Qaraoun Dam (Beqaa) with a total dynamic capacity of around 314 MCM/year, mainly concentrated in Qaraoun and Chabrouh dams (MoEW, 2022).

According to the Green Plan report of 2016, since 2012, Green Plan has been implementing Hill lakes for farmer groups. The Hill lakes designated for groups of farmers are shown in Map 1 and either have been completed or are being studied.

There are 33 lakes in total, with a 1,465,000 m³ capacity. The following assumptions should be noted:

- All hill lakes that were supposed to be built in 2016 were finished on schedule (funds are available and reserved)
- Each lake is efficiently exploited to 70% of its capacity (the rest is lost by evaporation and other factors)
- As supplemental irrigation from the lake, each beneficiary from the common Hill lake will irrigate 2.5 dunums (0.25 ha).
- 3000 m³/ha is the projected average water need.

The total irrigated area every year will be 342 ha, and there will be 1,367 beneficiary farms overall.

2.1.7 Overview on irrigation

There are currently about 100,000 hectares of irrigated land in the country, according to an inventory of irrigation schemes (MOEW, 2022).

Irrigation efficiency is between 50 and 60% under the current irrigation conditions, taking network losses and irrigation practices into account. At the national level, a representative hectare's (ha) average annual irrigation water need is presently 8,400 m³/ha. Current irrigation water demand is illustrated in

Table 2-2.

Table 2-2 Present irrigation water demands

WE	Irrigated area (ha)	Commonly used rates in Lebanon (m ³ /ha/year)	Total needs Mm ³ /year
NLWE	23,600	7,500 (most of the area is coastal)	177
BMLWE	5,835	6,500 (most of the irrigated area is at high altitude)	38
BWE	66,115	9,000 (most of the irrigated area is inland/dry weather)	595
SLWE	4,210	7,500 (most of the area is coastal)	32
TOTAL	~100,000	8,435 (Average irrigation water requirement for one representative ha at the country level)	842

Source: MOEW, 2022

According to the Agricultural National Census (MoA, 2010), only 50% of the area that is irrigated is supplied by natural surface water, with the remaining 50% coming from either "expensive" subsurface water or hill lakes. Additionally, 35% of the irrigated areas are only partially irrigated, while 65% of the irrigated areas are permanently irrigated. It is therefore estimated that approximately 75% of the current irrigation water requirement, or about 630 Mm³, are currently supported by available water for irrigation and reflect the actual irrigation water consumption figure throughout the nation. Out of these 630 Mm³, 315 Mm³ are thought to be covered in surface water and the remaining by groundwater.

According to calculations of the water balance at the distribution system level, the dynamic seasonal variation of the population and the irrigable land assumptions, the total annual demand for the year 2020 is estimated to be 1,505 Mm³ (1,837 Mm³ for a network efficiency of 50%).

A rough estimate of the water demand for irrigation is 842 Mm³ per year, or around 55% of the overall water demand (MOEW, 2022).

Future irrigation development is dependent on:

- Executing new projects
- Securing new sources of water (storage structures & water wells).

At the national level, the development of the proposed projects would enable the irrigation of an additional 38,000 acres (

Table 2-3).

Table 2-3 Irrigable land in Lebanon

	Presently irrigated area (ha)	Proposed irrigation projects (ha)	Total (ha)
NLWE (18 schemes)	28 600	Noura el Tahta & Dar Baachtar dam 4 200 Hill lakes 730 4 930	33 530
BMLWE (15 schemes)	5 835	Hill lakes 540	6 375
BWE (36 schemes)	66 115	Aassi dams 6 000 Massa dam 1 600 Younine dam 1 200 8 800	74 915
SLWE	Qasmieh Ras El Ain 3 200 Saida Jezzine 430 Small local projects 580 4 210	Conveyor 800 13 250 Khardale dam 1 300 Choumaryeh dam 4 000 Ibl es Saki dam 3 800 Hill lakes 1 235 23 585	27 795
Total	104 760	37 855	142 615

Source: MOEW, 2022

2.1.8 Total Water Supply

The yearly renewable accessible water volumes are projected to be around 2,050 Mm³ from springs, 1,475 Mm³ from rivers, and 700 Mm³ from wells (public and private). Regarding supply, they vary depending on the types of sources and the extracted resources. It is important to note that groundwater is overexploited by about 300 Mm³ annually and that dams are typically topped off with surface water, primarily from rivers. These numbers are summarized in Table 2-4.

Table 2-4 Available and exploited water resources for 2020

Source	Available Resources (Mm ³ /year)	Exploited Resources (Mm ³ /year)
Rivers	1,475	14
Springs	2,050	594
Public and Private wells	700	990
Dams (Static)	-	314 (232)
Total Water Supply	4,225	1,912

Source: MOEW, 2022

2.1.9 Soil

Based on the soil map of Lebanon, there are twelve (12) soil types in Lebanon. Leptosols tend to cover the largest surface area out of the twelve soil types. Land Resources

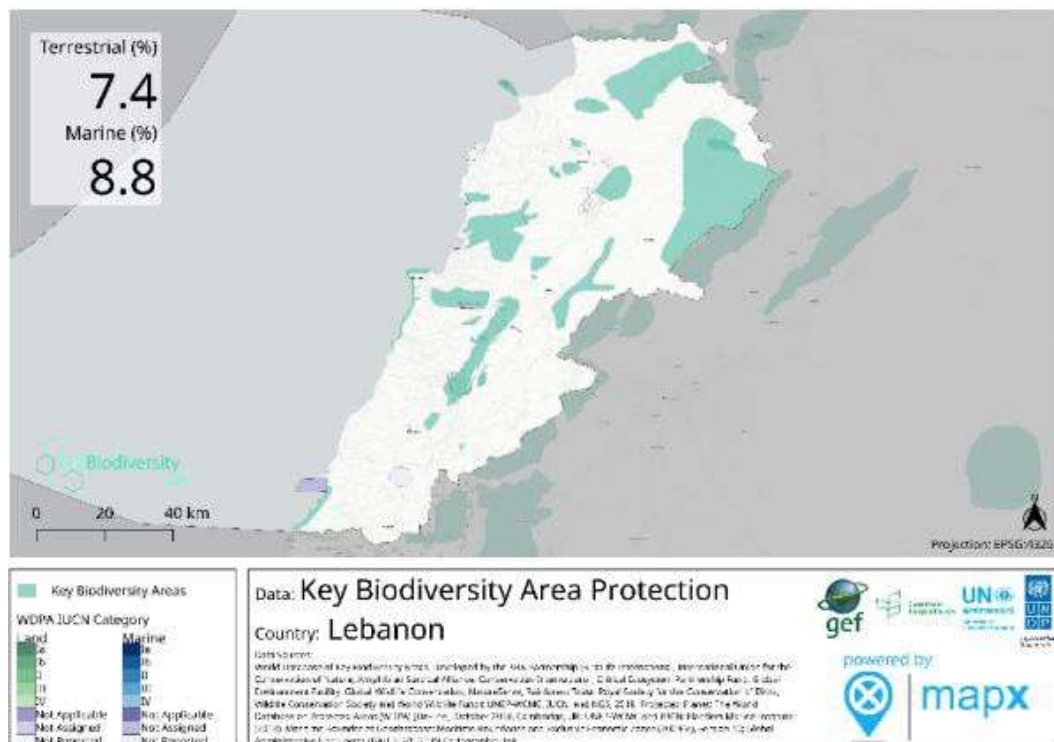
Land usage in Lebanon can be classified into four main categories: agricultural areas, urban areas, natural areas, and mixed rural areas. Natural and agricultural areas, with the latter expanding

mostly over the Beqaa Valley, the South, Nabatiyeh, Akkar, Zgharta, Koura, and Minieh-Dannieh are the most prominent land use/cover in Lebanon. The main agricultural crops comprise fruit trees, vineyards, olives, bananas, citrus fruits, and field crops. Most of the agriculture in Lebanon is subject to fertilizers and pesticides (agrochemicals). It is generally known that many farmers do not abide by the correct dosage of fertilizers and pesticides usage, which find their way into the soil and into groundwater by leaching down due to irrigation, and into surface water through runoff. On the other hand, the highest concentrations of urban areas are found in Tripoli, Beirut and the coastal line of Mount Lebanon to the North of Beirut, Saida, Nabatiyeh, Tyre, as well as Zahle and Baalbek (CDR, 2005). Soil nutrition and plant protection are mismanaged with Lebanon showing some of the highest per hectare use of fertilizers (331 Kg/ha) and pesticides (7 Kg/ha) in the world (MOA, 2020).

2.1.10 Ecological Environment Status

2.1.10.1 Overview of the Ecological Context

Due to its location in the Mediterranean Basin, Lebanon has a rich biodiversity and is a biodiversity “hotspot”. The country hosts around 9,116 known species distributed over its different geomorphologies. Given its diversity and significant ecological profile, 4 Ramsar sites, 15 Important Bird Areas (IBAs) (under Birdlife International), 24 Important Plant Areas (IPAs), and 20 Key Biodiversity Areas (KBAs) have been designated in Lebanon so far (Figure 2-1) (MOE/UNEP/GEF, 2016).



as a nature reserve in December 2020; and the Abbassiyeh coast, South Lebanon nature reserve in May 2020. Table 2-5 presents the nature reserves and Himas located in the targeted project areas. These are two categories of protected areas (PAs) as per the latest PAs Law, Law 130/2019. The other two categories are 1) natural sites or monuments, and 2) natural parks. These four categories were created in order to meet Lebanon's commitments arising from the relevant international conventions ratified by Lebanon (the United Nations Framework Convention on Biological Diversity - Rio de Janeiro 1992, the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, the Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat, and the Euro-Asian/African Migratory Waterbird Agreement), and to make sure all categories of natural and cultural heritage are covered and protected.

Table 2-5 List of Nature Reserves and Himas in Targeted Project Areas (adapted from SOER, 2020)

Governorate	Nature reserve	Hima
Akkar	Karm Chbat	Qammouaa forests, Bazbina zone, Andket, Menjez, Rouaime, Al Maabour Al Abyad
North	Horsh Ehden and Tannourine Cedars Forest designated as IBA Hamat/Deir El Nouoriyeh Cliffs of Ras Shaqaa as Ramsar site	Anfeh
Baalbeck-El Hermel	Yammouneh	Hima of West Baalbek, Charbine and Fakiha
Bekaa	The communal lands of Niha, Jbeih, Mrousti, Khraibe, Maasser, Barouk, Bmohreh, Ain Dara, Ain Zhalta villages, Shouf Biosphere Reserve and Mount Hermon Nature Reserve.	Hima Anjar, Hima Kfar Zabad (Zahle district) Hima Kherbet Kanafar, Hima Ain Zebde, Hima Qaraoun, and Hima Aitanit.
South and Nabatieh	Tyre Coast Ebel Es Saqi area designated as an Important Bird Area (IBA) Wadi Al Houjeir, Kafra, Ramya, Beit Leef, Debel, Abbassiyeh Coast, Mount Hermon, Nmayrieh Abbassiyeh, Jabal el Rihan Biosphere reserve	Ebel El Saqui; Arnoun, Qaytoui, Roum, Qoleileh and Mansouri

Moreover, Lebanon hosts a variety of unprotected natural important ecological areas such as grottos, mountain tops, natural bridges, forests, valleys, rivers, and holes. These areas are however threatened by anthropogenic and natural threats such as fragmentation, unsustainable exploitation of natural resources, pollution, and climate change.

Local communities in Lebanon have also implemented initiatives for community-based approaches for the protection and conservation of ecologically important sites across the country, such as those established in Anjar-Kfar Zabad (Beqaa) and Jdeidet el Fekha (Baalbek) (UNDP/MOE, 2019).

2.2 SOCIAL BASELINE

2.2.1 Socioeconomic Profile

2.2.1.1 Demography

With a population density of 669 inhabitants/km², Lebanon ranks in the top 20 list of the most densely populated countries (World Bank Group, 2021). With the start of the Syrian war, millions of Syrians fled their home country and settled in different regions in Lebanon, which led to an increase in the total number of population (Table 2-6). The growth of the population led to an over-exploitation of natural resources, and resource depletion intensified to cater for a larger population. Mismanagement of natural resources has led to exacerbated environmental degradation, and pressure was added on an already resource-strapped management infrastructure.

Table 2-6 Population Number and Density (2011-2018) (Source: World Bank, 2021)

Year	Total Population (including Refugees and displaced)	Total Population Density in Lebanon (inhabitants/km ²)	World Population Average Density (inhabitants/km ²)
2018	6,848,925	669	60
2017	6,811,873	665	59
2016	6,711,121	656	58
2015	6,532,678	638	58
2014	6,262,410	612	57
2013	5,914,621	578	56
2012	5,538,634	541	56
2011	5,202,343	508	55

Roughly, 65% of the population in Lebanon is between 15 and 64 years old (Figure 2-2). 51.6% of the total population are women, and 48.4% are men (EU/CAS/ILO, 2019).

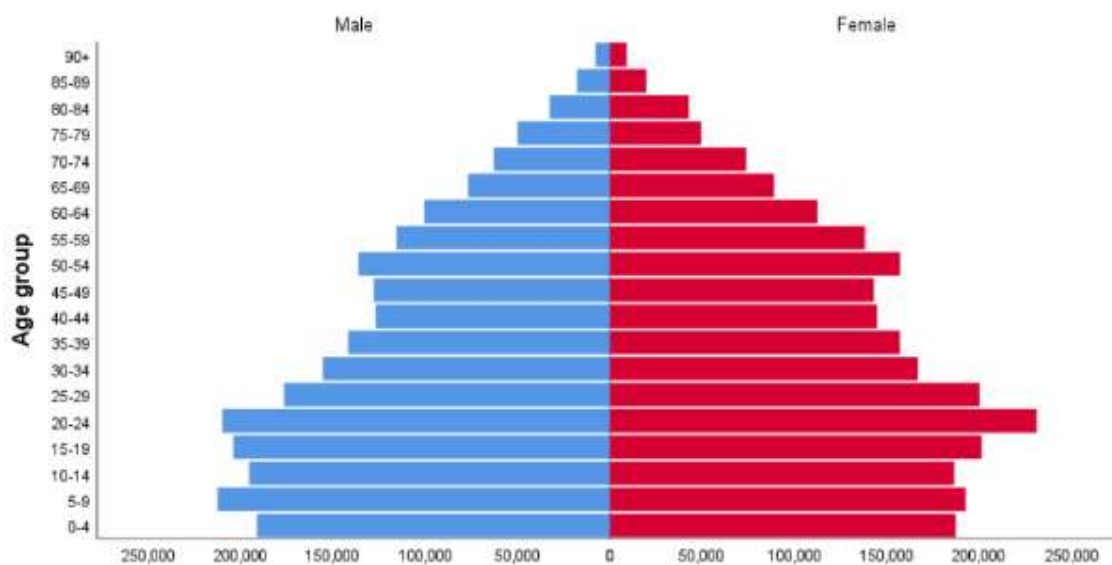


Figure 2-2 Age Pyramid of the Lebanese Residing Population (Source: EU/CAS/ILO, 2019)

The segregation of the Lebanese population located in the targeted project areas is shown in Table 2-7.

Table 2-7 Population Distribution by Governorate and Caza (Source: EU/CAS/ILO, 2019)

Governorate	Caza	Population per Caza	Percentage from Total Lebanese Population
Akkar	Akkar	324,000	6.7
Baalbek-Hermel	Baabek	214,600	4.4
	Hermel	30,500	0.6
Bekaa	Rachaya	33,800	0.7
	West Beqaa	86,400	1.8
	Zahle	177,400	3.7
Nabatieh	Bint Jbeil	96,200	2.0
	Hasbaya	28,700	0.6
	Marjaaoun	74,000	1.5
	Nabatieh	180,200	3.7
North Lebanon	Batroun	58,900	1.2

Governorate	Caza	Population per Caza	Percentage from Total Lebanese Population
	Bcharre	22,100	0.5
	Koura	84,600	1.7
	Minieh-Dannieh	140,800	2.9
	Tripoli	243,800	5.0
	Zgharta	87,700	1.8
South Lebanon	Jezzine	32,100	0.7
	Sidon	296,600	6.1
	Tyre	255,700	5.3
TOTAL		4,842,500	50.9

Note: Excludes people living in non-residential units, such as army barracks, refugee camps and adjacent gatherings, and informal settlements.

2.2.1.2 *Persons with Disability*

Based on the guidelines of the Washington Group on Disability Statistics, about 4 per cent of Lebanese residents suffer from a disability, or have difficulty functioning, which restricts their participation because of difficulties in one or more of the following six core functional domains: seeing; hearing; walking or climbing steps; remembering or concentrating; self-care; and communicating (EU/CAS/ILO, 2019). Table 2-8 provides details about people with disabilities based on their gender.

Table 2-8 Disability status of the Lebanese population based on their gender (Source: EU/CAS/ILO, 2019)

Disability status	Percentages		
	Women	Men	Total
Person with a disability	4.1	3.9	4.0
Person without a disability	94.4	94.5	94.5
Not applicable (infants and newborns)	1.4	1.5	1.5
Total	100.0	100.0	100.0

The total percentage (4%) of Lebanese residents with a disability can be divided into two groups:

- Persons with only one disability (2.5%); and
- Persons with more than one disability (1.5%).

Several types of disabilities are reported in Lebanon, as shown in Figure 2-3.

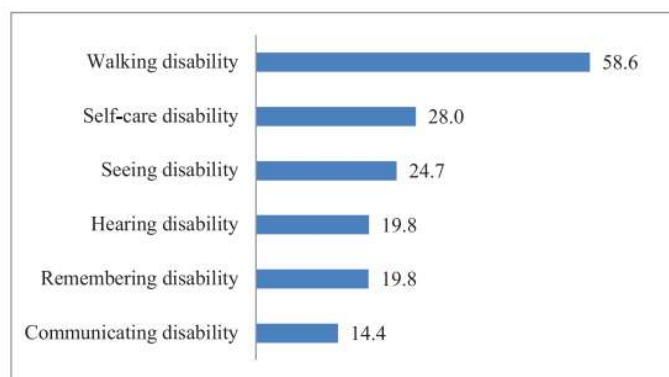


Figure 2-3 Percentage of Each Type of Disability in Lebanon (Source: CAS/EU/ILO, 2019)

Table 2-9 presents the percentage of persons with disabilities in the targeted project areas.

Table 2-9 Persons with Disabilities in the targeted project areas (Source: CAS/EU/ILO, 2019)

Governorate	Persons with Disability (%)
Akkar	6.1%
North	6%
Baalbek-El Hermel	4.9%
Bekaa	4.7%
South	4.4%
Nabatieh	3.7%

2.2.1.3 *Female-headed Households*

Lebanese heads of households represent 85 per cent, while non-Lebanese heads of households made up the remaining 15 per cent before the economic crisis. Around 18 per cent of households were headed by women and 82 per cent by men (EU/CAS/ILO, 2019). Figure 2-4 presents the percentage of heads of households by age group and sex.

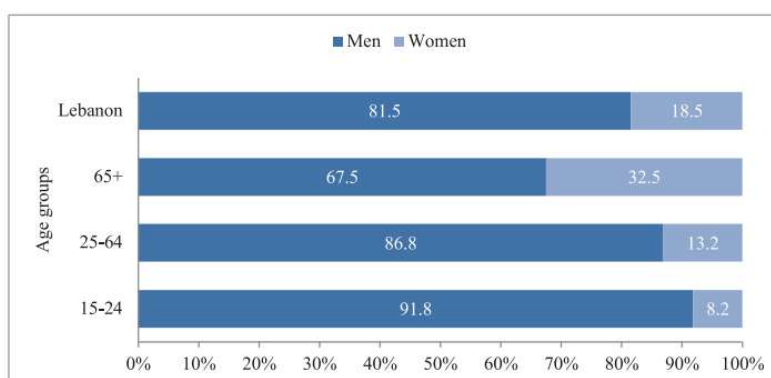


Figure 2-4 Distribution of Heads of household by age group and sex

(Source: CAS/EU/ILO, 2019)

While the information relating to elderly is limited, it is worth noting that single-person households make up to 10.2 per cent of total households; half of them older adults, mostly elderly women who

are generally widows (CAS/EU/ILO, 2019). People aged 65 years-old and above make up to 12.5% of the total Lebanese population, and half of those reported with a disability in Lebanon. Roughly one third of elderly people do not benefit from any health insurance coverage.

Table 2-10 presents the percentage of elderly in the project targeted areas.

Table 2-10 Percentage of Elderly in targeted areas)

Governorate	Percentage of Elderly
Akkar	5.4%
North	5.8%
Baalbeck el Hermel	8.8%
Bekaa	N.A.
South and Nabatieh	13.5%

(Source: CAS/EU/ILO, 2019)

2.2.1.4 Sexual Exploitation and Abuse / Sexual Harassment

69% of gender-based violence (GBV) incidents reported through the GBV information management system (GBVIMS) in 2020 were incidents of domestic violence. The GBVIMS is an inter-agency partnership between the United Nations Population Fund (UNFPA), the International Rescue Committee (IRC), and the United Nations High Commissioner for Refugees (UNHCR), in consultation with the Inter-Agency Standing Committee Sub-Working Group on Gender and Humanitarian Action and the Gender-Based Violence Area of Responsibility Working Group of the Protection Cluster. The system enables those providing services to GBV survivors to effectively and safely collect, store, analyze and share data related to the reported incidents of GBV.

Numbers were reportedly increasing due to the cumulative effect of both lockdown and economic collapse (UNFPA, 2020).

Women and girls with intellectual disabilities are particularly vulnerable to sexual violence and are often prevented from accessing a range of services and face un-adapted facilities, poverty, inadequate behavior of service providers. Elderly women are the most at risk due to their suffering from disparities that they experience throughout their lifetime (UNFPA, 2020).

In 2021, UNICEF reported that one in two children in Lebanon is at serious risk of physical, emotional, or sexual violence, as families struggle to cope in the country's deepening economic crisis.

2.2.1.5 Poverty

Due to the financial crisis facing the country, the poverty rate increased exponentially with time starting in 2019. According to a study prepared by the UN-ESCWA titled Poverty in Lebanon: Solidarity is vital to address the impact of multiple overlapping shocks (UN, 2020), the portion of Lebanese households living in multidimensional poverty was estimated at 82% of the total population, out of which 40% live in extreme multidimensional poverty. Only 18% of the population is not poor. Roughly 1.8 million children (more than 80 per cent) are now experiencing multidimensional poverty – up from around 900,000 in 2019 (UNICEF, 2021).

The financial crisis is disproportionately affecting lagging and under-served rural areas. According to the Lebanon Multidimensional Poverty Index (MPI) for Lebanon (CAS & World Bank, 2019), the

governorates of Akkar (69.6%) and Bekaa (67.0%) have the highest levels of MPI and incidence of poverty. Out of a total population of 1.1 million people in Northern Lebanon, 708,000 live under the poverty line. Vulnerable Lebanese households face challenges accessing food, healthcare, education, and other basic services. The unemployment rate reached 30% in 2022 – up from 11% in 2019 (ACAPS, 2022) and as a result demand for employment opportunities across the country is high. The highest concentration of displaced populations is found in the Bekaa region (UNHCR, 2022). This has put strains on already fragile services in the Bekaa and increased the vulnerability of host communities, as they compete over employment, accommodation, access to public services, and infrastructure.

2.2.1.6 Displaced Populations

Lebanon, a small country of 5.2 million people (July 2021 estimate), hosts the highest per capita concentration of refugees/displaced populations in the world.

Roughly 1.5 million Syrians had fled their country since 2011 and resettled in Lebanon. Only 879,529 displaced Syrian populations are registered as of 2020. The highest concentration of displaced Syrian populations is found in the Bekaa region (UNHCR, 2022).

The Bekaa valley and Akkar have been most heavily affected by the Syrian crisis. In fact, the agri-food sector is one of the three sectors where Syrian displaced populations are legally allowed to work, and agriculture is the second-highest employer of displaced Syrians. Child labor among Syrian displaced populations is the highest in agriculture in rural areas; a 2019 UNICEF survey in the Bekaa Valley, where migrants are concentrated, showed that around 75 percent of children from displaced populations engaged in labor worked in agriculture.

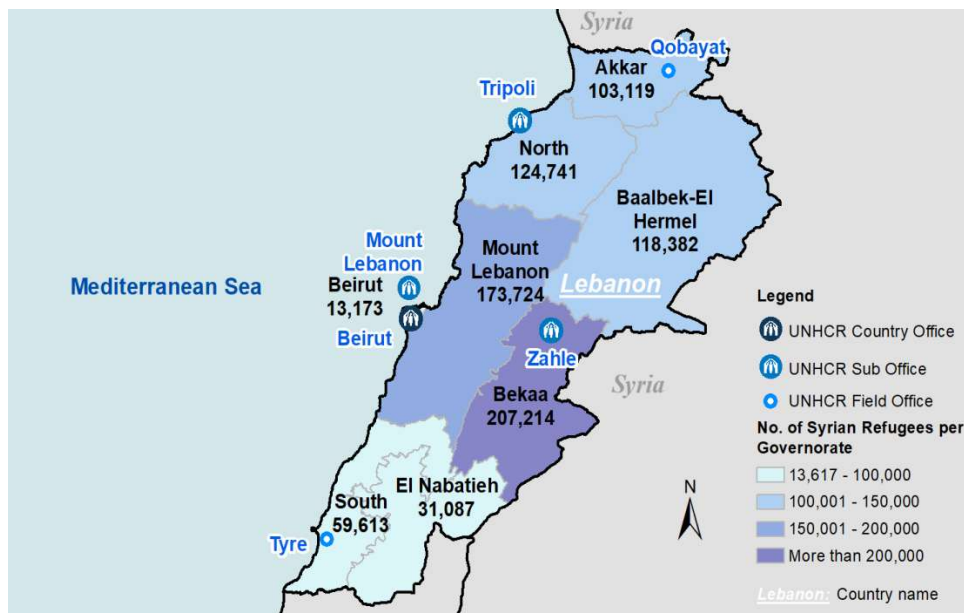


Figure 2-5 Number of Syrian refugees per Governorate

Source: UNHCR, 2022

2.2.1.7 Basic Services and Utilities

2.2.1.7.1 Access to Solid Waste Management Services

Municipalities are responsible for collecting and transporting solid waste from collection points to designated facilities in a manner that does not harm the environment, in accordance with the standards and conditions set by and subject to approval of MoE, as per Decree No. 118 of 1977 and Law 80 of 2018.

Small-scale facilities in remote areas of the North, South and Bekaa regions provide those areas with Solid Waste Management (SWM) services. These facilities are managed by the Office of the Minister of State for administrative Reform (OMSAR) in coordination with local authorities.

Community-run systems in some regions consist of basic sorting, composting, and final disposal of MSW.

Approximately 2 million tons/year of Municipal Solid Waste (MSW) are generated in Lebanon. Daily MSW generation is estimated at 1.05 kg/capita/day (CDR, 2019). MSW is mainly composed of 51% of organic waste, while the remaining is comprised of recyclables like paper and cardboard, plastic, glass, textiles, metals; demolition/construction waste and others (CDR, 2019). Most of this waste is collected and disposed of by landfilling/ dumping, while some of the waste is being treated at Solid Waste Management Facilities (SWMF) which are distributed all over the country.

Many of the remaining rural areas that are unserved by SWM facilities collect municipal solid waste and dispose of it by open dumping and burning.

Dumpsites and open dumping and burning are frequent in Lebanon. Two types of dumpsites are identified in Lebanon: 1) MSW dumpsites and 2) Construction and Demolition Waste (CDW) dumpsites.

Table 2-11 presents the number of operational MSW dumpsites by governorate according to the Updated Masterplan for Closure and Rehabilitation of Uncontrolled Dumpsites (UNDP, 2017).

Table 2-11 Operational MSW Dumpsites by Governorate

Governorate	Operational Dumpsites
Akkar	19
North	19
Baalbeck	39
Hermel	3
Bekaa	54
South and Nabatieh	127

Source: UNDP, 2017

2.2.1.7.2 Access to Water Supply

The water sector in Lebanon is facing detrimental challenges, hindering the ability of the government to supply adequate and reliable water services while conserving Lebanon's water resources. Although the national coverage of water networks is around 80%, the quality of the supplied public water is questionable due to the lack of protection of water resources, insufficient

water treatment at the supply level, deteriorated distribution networks, and the absence of continuous monitoring. Untreated wastewater, which accounts for around 70% of the total generated wastewater, is being directly discharged into the environment, thus polluting the groundwater and surface water resources that supply a significant portion of Lebanon's potable water. The pollution of water resources, in addition to the poorly managed water supply networks, have impacted the quality of water at the household level. An estimated 65% of the population does not have access to safely managed drinking water services (MoEW, 2022).

Lebanon's available renewable water resources have dropped below the 1,000 m³/capita/year threshold that defines water stress: in 2010, the MoEW estimated that the total renewable resources per capita per year were 926 m³ and predicted that it will continue to fall reaching 839 m³ by 2015 (MoEW, 2012). Since then, population growth, climate change, and the influx of displaced populations have further strained the available resources and as a result, the total renewable resources per capita have reached 700 m³/capita/year (IFI, 2014). In addition to the challenges associated with ensuring that the water sources are effectively managed to meet the demands of the different sectors, pollution levels in many of these freshwater systems have made them either unable to meet their designated uses, or requiring expensive treatment prior to use (SOER, 2020).

With the ongoing multiple crises since 2019, water supply and access to water has become challenging to most of the Lebanese population. In addition to the decrease in available water resources per capita, the infrastructure of the sector has become very vulnerable lately, which has increased the risk of water shortage in many regions of the country, notably Baalbek-Hermel Governorate and West Beqaa district (UNICEF, 2021), as shown in Figure 2-6 below.

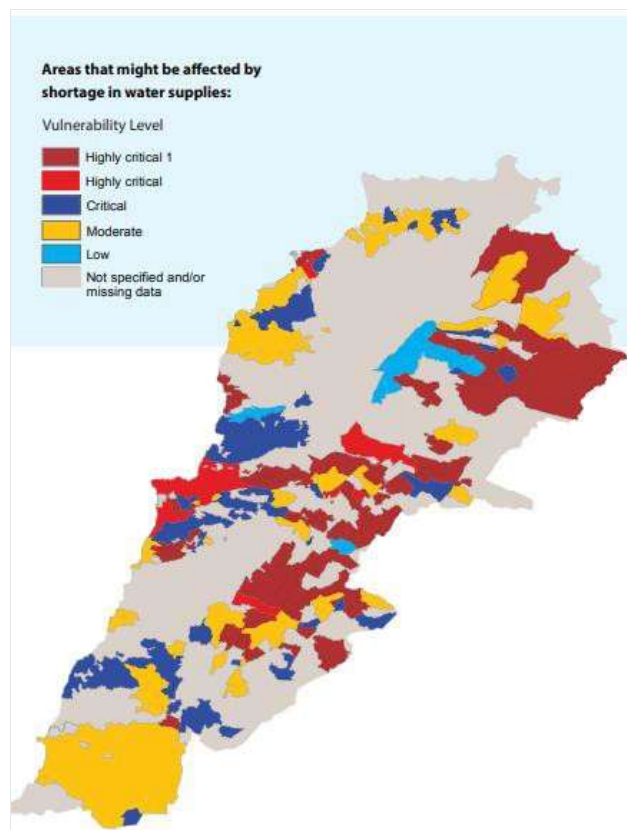


Figure 2-6 Vulnerability Level to water shortage in Lebanon

Source: UNICEF, 2021

2.2.1.7.3 Access to Sanitation

In 2015, 81% of the total Lebanese population had access to improved sanitation facilities, and 19% relied on unimproved facilities other than open defecation and shared facilities (WHO/UNICEF JMP, 2015). As of 2017, residents that have access to safe sanitation facilities were reported at 98% of the total population (WHO/UNICEF JMP, 2019). However, it must be noted that although access to proper sanitation is high, wastewater treatment remains very low and surface water contamination remains high.

2.2.1.8 Economy, Livelihood and Employment

The on-going financial crisis in Lebanon has led to an increase in poverty and highly impacted the country's economy. By the end of 2021, Lebanon's real GDP index had contracted by 34.6 percent since 2018, comparable to Lebanon's real GDP index in 2007. In July 2022, the World Bank downgraded Lebanon's economic standing to a low-middle income country (WB, 2022).

The adverse shocks have driven an overwhelming share of the population into poverty and vulnerability to food insecurity. Food price inflation was further exacerbated by the removal of subsidies, particularly impacting the poor and vulnerable.

At the governorate level, the unemployment rate has increased in all governorates without exception. The largest increase in unemployment was observed in Baalbek-Hermel (40.7 percent), followed by South Lebanon (36.5 percent) in 2022. Employment in the informal sector (in terms of the characteristics of the establishment in which the person works) has increased by 13.1 percentage points, from 35.2 percent in 2018-2019 to 48.3 percent in January 2022 (ILO, 2022). The sector with the highest share of informal employment is Agriculture, Fishing and Forestry with 98.1 percent (ILO, 2022).

The gender gap in labor force participation (LFP) stands at 44 percent, with female LFP at 22.2 percent versus a male LFP at 66.2 percent.

2.2.2 Overview of the Agriculture Sector

The agro-food industry is the largest industrial sector in Lebanon, accounting for 18% of all industrial companies," claims IDAL, since it contributes around 4.7% of Lebanon's GDP" (IDAL, 2017). This makes the Bekaa governorate's agricultural, agro-pastoral, and tourism industries vital. Wineries-focused tourism and farming activities connected to wine production are two examples of rural tourist activities in West Bekaa, Rachaya, and Zahle.

Lebanon offers a range of agroecological zones well suited to the production of diverse agricultural products and with potential for exports. Five distinct agro-climatic zones are present in the coastal strip, low and middle altitudes of Mount Lebanon, West, Central and North Bekaa. The most fertile and productive lands are located in the Bekaa Valley, the Plain of Akkar and the thin strip of coastal plains. Crop production represents about 60 percent of agricultural output, while livestock production accounts for 40 percent and contributes a critical year-round source of livelihoods. Mountain agriculture is characterized by small holdings sustaining poor farmers and many households for whom agriculture is a secondary source of income. Agriculture in the coastal plains is dominated by permanent crops (e.g., citrus and banana), while the plains of Akkar and Bekaa Valley are dominated by cash crops (potatoes and vegetables). Lebanon's domestic agribusiness

market has potential for steady growth. Lebanon has a revealed comparative advantage for vegetable, fruit, nuts and other high-value agriculture products with fruit and vegetable production also representing an important segment of Lebanon's agribusiness sector. It also has a significant comparative advantage for exporting high-value agri-food to premium markets thanks to agricultural conditions, favorable trade agreements with Europe and the GCC and the recent defacto devaluation of the currency. According to the International Trade Centre, the untapped agricultural and agri-food export potential exceeds US\$450 million, with 65 percent coming from fruits, food products and vegetables. Expanding agri-food exports can increase foreign currency inflows, which are much needed given the current context. Increasing local production offers opportunities for import substitution. This can be achieved by supporting small producers and SMEs to comply with stringent food safety, quality, traceability, labeling and environmental sustainability requirements imposed by high-value export markets.

The primary agricultural production's contribution to GDP increased from 3.2 percent (USD 1.77 billion) in 2018 to 8.9 percent (USD 2.32 billion) in 2020. It is estimated that approximately 20 percent of Lebanese households generate primary or secondary income from the broader agri-food sector, with agribusiness as the largest industrial sub-sector of the economy (World Bank, 2021). The agri-food sector accounted for over 17 percent of total exports in 2020 (or USD 0.7 billion on average between 2014 and 2020 (International Trade Center, 2020). Lebanon's top five categories of agricultural and food exports by value were preparations of vegetables, fruit, or nuts; edible fruits and nuts; beverages, spirits, and vinegar; miscellaneous edible preparations; and animal or vegetable fats and oils. Although domestic agri-food production satisfies only 20 percent of local demand, it contributes the largest share to livelihood generation for poor segments of society and is concentrated in the poorest areas, the Bekaa valley and Akkar in particular, which have been most heavily affected by the Syrian crisis. In fact, the agri-food sector is one of the three sectors (other than construction and cleaning) where Syrian displaced populations are legally allowed to work, and agriculture is the second-highest employer of displaced Syrians. The multiple challenges facing the sector are putting its resilience and sustainability at risk and posing threats to food security and rural livelihoods.

Increasing global fertilizer prices and energy costs compounded by the foreign exchange crisis are undermining the viability of agriculture and threaten to diminish the contribution of local production to food security. According to a survey of agricultural households carried out in July and August 2022 by FAO, over 80 percent of crop producers faced production difficulties, with the most frequent being access to fertilizers (72 percent) and pesticides (59 percent).

Lebanese farmers and agri-food SMEs lack the necessary access to finance to invest in sustainable, climate smart and modern modes of production. Small and medium-sized farmers relying only on farming income have been particularly affected by the high input prices, reducing input application, or substituting with lower quality, leading to lower marketable production and incomes (MoA, 2020).

2.2.3 Child Labor

Children in Lebanon are subjected to the worst forms of child labor, including use in the production and trafficking of drugs, sometimes as a result of human trafficking, and in forced labor in agriculture (US Department of Labour, 2022). In Lebanon, food insecurity and child labour have increased in 2020 and both are correlated in vulnerable communities. In addition, 60% of child labor

is in agriculture. In the Bekaa region in 2019, 30% of working children reported injuries at work and 42% were insulted at work. Children have also reported physical abuse as 24% of boys and 16% of girls have been threatened (IRC & LPC, 2021).

The NGOs that are working on preventing child labor in Lebanon are Himaya, Lebanese Union of Child Welfare (LUCW), Lebanese Organization of studies and Training (LOST) in addition to the international NGO Humanium.

ILO, Lebanon's Ministry of Labour and Beyond Association launched in 2016 a joint initiative to establish and support a series of community centers to provide a range of services aimed at combatting child labor across the country. The centers that are currently operational are in the Bekaa, Nabatieh and Ouzai (Beirut suburbs) (ILO, no date).

There is no recent data on child labor in Lebanon with reliable information. A large number of children work in the following sectors: auto repair (e.g. Mechanical work, car painting), construction and metalworking including aluminum and forged iron, and sanitary installations. In addition, there are many children working in the agricultural sector in Akkar, Hermel and Baalbek districts.

As for the Syrian displaced populations, a survey conducted in 2019 by the AUB for the Bekaa region showed that most working children (≥ 4 to ≤ 18 years) in this study worked in the agricultural sector (about 75%). Many of these children were subject to harsh working conditions. Workplace injuries were quite common (30%). When children experienced an accident or injury at work, they or their families usually had to pay for the cost of treatment (86%) (AUB, 2019).

Only 18.3% of working children attended some form of schooling at the time of the study. Working children in compulsory school age (≥ 6 to ≤ 15 years) constituted 72.6% (3,178 children) of the total population of working children. Half of the working children did not go to school because they had to work as a consequence of dire familial financial circumstances (AUB, 2019).

2.2.4 Overview of the National Social Protection Strategy

In Lebanon, the social protection system is scattered and non-unified. Several schemes exist, including social insurance programmes for public servants and for military and private sector workers, syndicate pension plans, and small social assistance programmes.

Vulnerable people including those with disabilities, elderly, women, and children rely on unsustainable sources of income including informal employment and family support. The country lacks a coherent national social protection system, which has led so far to fragmentation and duplication of assistance while coverage and provision of protection to the poorest and most vulnerable remain inadequate.

The GOL adopted two national plans in an attempt to alleviate poverty in the country: National Social Action Plan Toward Strengthening Social Safety Nets and Access to Basic Social Services (2007), and National Social Development Strategy (NSDSL) in 2010 (Bastagli et al., 2019). A decade later, the GOL launched the Roads and Employment Project (REP) to rehabilitate roads in different regions of the country and create employment opportunities. The REP followed the population growth and the increase in unemployment rates in the country. In 2021, an amount of US\$ 10 million was reallocated to create a new component to support small farmers in rural

areas. In addition, GOL developed and launched in 2011 the Emergency National Poverty Targeting Program (NPTP) Project to alleviate poverty rates in the country. Lately, MOSA launched the Daem Network for Social Protection. The DAEM platform has initiated the development of an integrated National Social Registry that will enable Lebanon to address future shocks rapidly, transparently, and equitably. The network comprises two programmes: safety programme, and an e-finance card programme (MOSA, 2022). Managed by IMPACT under the supervision of the Central Inspection, the platform has allowed the registration and screening of household applications along the highest standards of transparency and efficiency.

Despite the consecutive attempts of GOL represented by MOSA in those programmes, as of September 2021, the UN estimates that roughly 75% of the total population lives in poverty (UN, 2021).

The lack of social security basics and the cumulative effects of the consecutive crises have drowned most of the Lebanese population into poverty, leading them to have limited to no access to proper services, including medical, educational, and transportation among others. The following sections provide an overview of the main programs aiming at alleviating poverty.

2.2.4.1 National Poverty Targeting Program

The National Poverty Targeting Program (NPTP) in Lebanon, launched in 2011, is managed by the Ministry of Social Affairs (MOSA) and the Presidency of the Council of Ministers (PCM). The rationale behind this program is to "provide social assistance to the poorest and most vulnerable Lebanese households based on transparent criteria that assess each household's eligibility to receive assistance, given available public resources" in Lebanon and improve the lives of 237,958 beneficiaries, or 42,935 households (PCM, no date).

NPTP is supported and funded by international organizations including the World Bank (WB), The World Food Programme of the United Nations (WFP), the UNHCR and the German Cooperation.

Based on the "Implementation Completion Result" report issued by the World Bank in 2021, while it was not possible to measure the Project's impact on poverty rates, it is likely to have had a significant impact on both monetary and non-monetary poverty. The certification of NPTP beneficiaries is expected to reduce monetary poverty of 261,000 individuals from extremely poor households that had access to health and school subsidies, while the e-card Food Vouchers improved food security of over 105,500 individuals. It is also expected to have decreased non-monetary poverty by improving access of poor and vulnerable people to education and health services, diversified dietary intake, and reduced negative coping strategies. The NPTP platform was used to target over 225,000 beneficiaries for restoring their access to essential healthcare services at MOHP Primary Health Care Clinics, and for the provision of UNICEF's ATM cash cards to support children through its winterization program during 2016 (US\$3 million) and 2020 (US\$3.5 million). These benefits helped to alleviate monetary poverty and free up household resources for other essentials.

2.2.4.2 Roads and Employment Project

As part of the efforts to create job opportunities for residents in Lebanon as well as Syrian displaced populations, and to improve the economic situation of households, the Roads and Employment Project (REP) was launched in 2017 with the financial support of a loan accredited from the WB to the GOL. The components of the project were amended in 2021, following the economic collapse and the devaluation of the Lebanese Pound, and the COVID-19 pandemic.

Both crises severely affected the living conditions of the Lebanese population, bringing roughly 75% of the total population to live below the poverty line, with 36% of them living in extreme poverty.

An additional component (component 4- Support to farmers engaged in crop and livestock production) was added to the project based on the request of MOA. The project would provide support to approximately 26,700 smaller crop and animal producers in Lebanon (whereby at least 10% of the beneficiaries shall be women) by providing them with vouchers for the procurement of essential inputs to enable continued agricultural production following COVID-19-related planting and harvesting delays. Two types of paper-based vouchers would be offered: one for crop production inputs, and another for animal production inputs, mostly feed. On the other hand, the vouchers would not finance the purchase of pesticides. The component would also support the annual animal vaccination program of the Directorate of Animal Resources under the MOA by procuring vaccines for animal diseases.

2.2.4.3 *Emergency Social Safety Network (ESSN)*

The ESSN also known as AMAN is a US\$246 million 3-year project launched in March 2022, that provided cash transfers and access to social services to extremely poor and vulnerable Lebanese populations affected by the economic and COVID-19 crises. The ESSN's purpose is to arrest the increase in extreme poverty and to preserve the human capital of 13 – 18 year-old children enrolled in public schools. It also aims to scale-up and enhance the National Poverty Targeting Program (NPTP): Lebanon's main poverty-targeting social assistance program launched in 2011 with financial and technical assistance from the World Bank.

2.2.5 *Overview of Cultural Heritage Areas*

Lebanon is a host country to many archaeological and cultural sites. Five properties are inscribed on the World Heritage List of UNESCO: Anjar, Baalbek, Byblos, Ouadi Qadisha and the Forest of the Cedars of God, and Tyre (UNESCO, no date).

Many other sites are on the tentative list of UNESCO. These sites are:

- The historical center of Batroun (Le Centre Historique de la Ville de Batroun);
- Echemoun Temple;
- Set of Historical Monuments and Natural Sites of the Village of Menjez;
- Sacred Mount Hermon and its associated cultural monuments;
- Nahr el-Kalb Archaeological Site;
- Saida Historical Center;
- The castles of Mount Amel: Qalaat Al Chakif (Beaufort Castle), Qalaat Tibnin (Toron Castle), Qalaat Chakra (Dubieh Castle), Qalaat Deir Kifa (Maron Castle), Burj Al Naoqoura (Naqoura Tower);
- The Ancient City of Tripoli;
- Ras al-Qalaat promontory / Ras Al Natour promontory / Ras el-Mlelih Promontory; and
- The Rachid Karamah International Fair in Tripoli-Lebanon;

Laws, Regulations, And Institutional Framework

2.3 RELEVANT NATIONAL ENVIRONMENTAL LAWS, REGULATIONS AND POLICIES

2.3.1 Overview of the Legal Framework in Lebanon

The Lebanese Constitution represents the strongest legislative text in Lebanon and when in contradiction with the Constitution, a proposed legislation(s) cannot be issued. International treaties/agreements ratified by Lebanon have the second priority in the Lebanese legislative framework. The legal structure in Lebanon is shown in Figure 2-7.

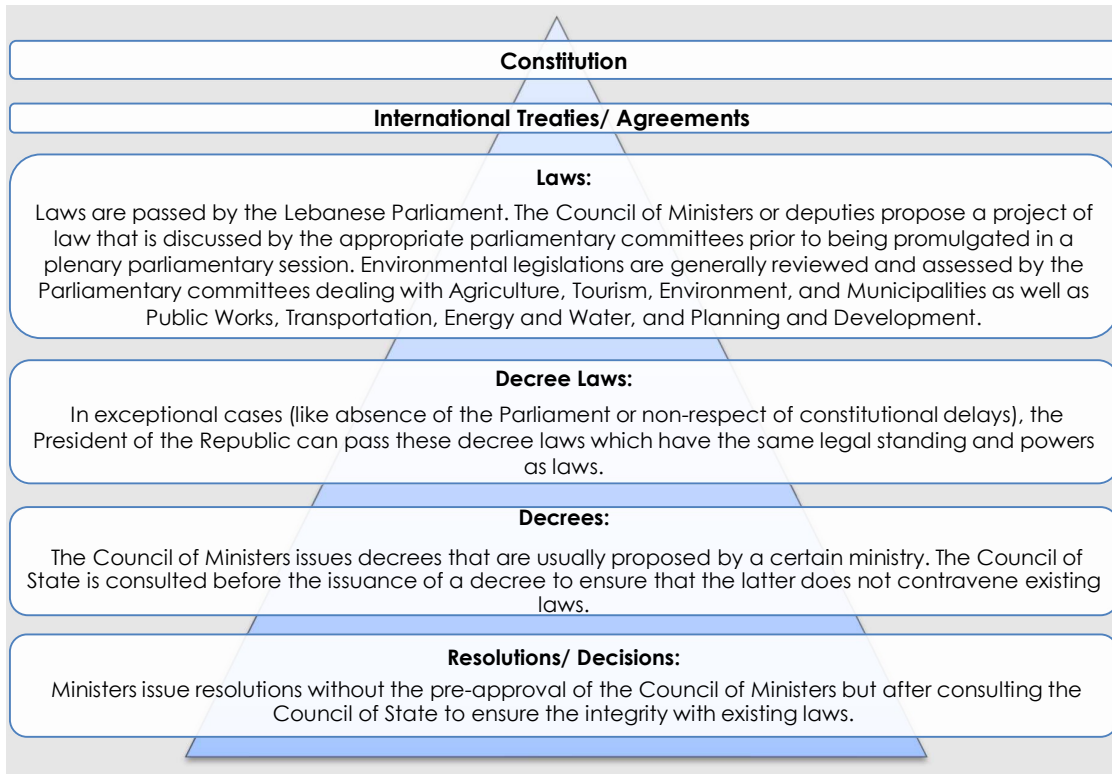


Figure 2-7 Hierarchy of Legislation in Lebanon

2.3.2 Relevant National Legislation for Environmental Protection

This section describes the most relevant and pertinent national legislative texts related to the Environment and to the project. Table 2-12 and Table 2-13 present an overview of the main environmental and agricultural legislations found in Lebanon.

Table 2-12 Summary of Relevant Environmental Legislations

Year	Law/Decree	Reference Entity	Relevant Provisions
2022	Decision 16/1	MoE	<p>The decision specifies the Environmental Limit Values of air pollutants and came into force as of February 10, 2023 over two phases. The first phase ends in December 2026, and the second phase begins as of January 2027. The decision sets standards and requirements covering the following topics:</p> <ul style="list-style-type: none"> • List of air pollutants that have to be measured and monitored based on the nature and type of the facility • Environmental Limit Values of air pollutants • Environmental Limit Values of air pollutants emitted from particular sectors and industries;
2020	Decree 6212	CoM	Approval of the national strategy for managing ambient air quality
2020	Decision 998/1	MoE	<p>Specifying the measures and principles of application of the section of Decree 5606/ 2019 relating to hazardous waste generators and their duties (procedure for declaring hazardous waste generation/ suspension of generation, withdrawal of generated hazardous waste, and periodic reporting.</p> <ul style="list-style-type: none"> ○ Article 1: Hazardous waste generation reporting mechanism ○ Article 2: Electronic database for hazardous waste generators ○ Article 3: Permanent cessation of hazardous waste generation from facilities ○ Article 4: Recall of hazardous waste from allocated storage facilities and/or treatment facility. <p>Article 5: Reporting to the Ministry of Environment</p>
2019	Law 130	Parliament	<p>Protected areas law:</p> <ul style="list-style-type: none"> ○ Chapter 1: Classification of protected areas in Lebanon ○ Chapter 2: Nature Reserves located on a public property ○ Chapter 3: Nature Reserves located on a private property ○ Chapter 4: Common provisions for Nature Reserves located on public properties and/or private properties
2019	Circular 7/1	MoE	Regulates the construction and operation of wastewater treatment plants for private establishments.
2019	Decree 5605	CoM	<p>The decree specifies the principles for sorting domestic solid waste at the source into three categories: organic waste, recyclables, and inert waste.</p> <p>Section 2:</p> <ul style="list-style-type: none"> ○ Article 3: Sources of Domestic Solid Waste ○ Article 4: Composition of Domestic Solid Waste ○ Article 5: Responsibility for waste sorting ○ Article 6: Separation of waste according to the suitable color ○ Article 8: Sorting mechanism and its stages
2019	Decree 5606	CoM	The decree specifies the principles of management (sorting, storage, transport, and disposal) of hazardous waste.

Year	Law/Decree	Reference Entity	Relevant Provisions
2019	Letter 5515/B	MoE	<p>Letter addressed from the Ministry of Environment to the Ministry of Interior and Municipalities to monitor the compliance with the environmental guidelines and the proper operation and utilization of electric generators.</p> <p>The letter includes the technical specifications for the operation and monitoring of electrical generators as follows:</p> <ul style="list-style-type: none"> • Air Emissions management: <ul style="list-style-type: none"> ○ Equip generators with catalytic converters and cyclones ○ Regular maintenance of the generators ○ Regular monitoring of air emissions (NO_x, SO_x, and CO) in case the generator's capacity is > 250 kVA ○ Equip generators with an adequate stack height in accordance with the height of the nearest residential building within a 50 m radius ○ Air emissions quality compliance with MoE Decision 8/1 • Wastewater management: <ul style="list-style-type: none"> ○ Avoid spillage or leakages of oil, fuel, or grease ○ Proper storage and containment of used oil resulting from generator's maintenance ○ Placement of oil/fuel tanks over metal drip trays to contain any leakage or spillage • Solid waste management: <ul style="list-style-type: none"> ○ Solid waste collection (oil containers) and delivery to relevant licensed parties by MoE to be reused or recycled ○ Empty particulate matter from cyclones in sealed bags to be disposed of using an environmentally compliant method • Noise management: <ul style="list-style-type: none"> ○ Ensure that generators are fitted with noise mufflers and soundproof casing compliant with MoE Decision 52/1 of 1996 ○ Estimate the noise level (through the manufacturing company or any company specialized in conduction noise monitoring) of the generator equipped with the mufflers and proper isolation ○ Equip generators with a rubber base to decrease vibration impact ○ Ensure proper isolation of the technical room housing the generator • General Environmental Guidelines <ul style="list-style-type: none"> ○ Ensure good housekeeping measures are implemented near the generators ○ Install and provide automatic and manual fire extinguishers near the generators ○ Plant trees nearby the generator's location <p>Additionally, the letter's appendices include standards relevant to air emissions and noise levels based on MoE Decisions 52/1 and 8/1.</p>
2018	Law 80	Parliament	<p>Integrated Solid Waste Management (ISWM) Law - sets the framework for Integrated Solid Waste Management based on the principles of Law 444/2002. It combines the ISWM draft law of 2006 with thermal treatment waste to energy plants to be constructed in big cities (Tripoli, Beirut, Saida and Jiyeh). The ISWM law includes the below:</p> <ul style="list-style-type: none"> • Article 4: Priorities of integrated solid waste management (considers the principle of preventive action and minimizing solid waste generation as a priority) • Article 7: Preventing random disposal, open dumping and burning of solid waste • Article 8: The "Polluter Pays Principle" • Article 10: National Strategy for SWM • Article 11: Local SWM programs • Articles 14 to 16: Responsibilities resulting from SWM

Year	Law/Decree	Reference Entity	Relevant Provisions
			<ul style="list-style-type: none"> Article 20: Solid waste collection and transfer Article 21: Sorting at source Article 22: Solid waste treatment: reuse, recycling, composting, digestion, and energy recovery Article 24: Final Disposal Articles 25 to 27: Hazardous waste management Article 28: Financing sources for ISWM Article 29: non-monetary incentives Articles 30 to 33: Responsibilities Articles 34 to 37: Enforcement and penalties
2018	Decision 45	MoE	<p>Sets a new Integrated Solid Waste Management (ISWM) policy for Lebanon having the following targets:</p> <ul style="list-style-type: none"> Achieving 35% material recovery, 50% energy recovery and 15% sanitary landfilling by 2035; Devolving to the municipalities the responsibilities of reduction, re-use, sorting at source in addition to sweeping and waste collection. Municipalities will also be responsible for treatment and final disposal in part or in whole based on environmentally and economically viable projects. Creating sanitary landfills in Beirut, Mount Lebanon, North and South Governorates Building three interim storage plants for different types of waste including expired drugs, healthcare waste (hazardous and non-infectious and those requiring special management)
2018	Law 78	Parliament	The law for the protection of air quality - aims to protect ambient air quality by identifying, monitoring and assessing, preventing and controlling air pollution resulting from anthropogenic activities. This excludes air pollution caused by physical hazards, natural disasters, and occupational and indoor air pollution
2018	Law 77	Parliament	This law aims at organizing, developing, rationalizing and exploiting water resources and protecting them from depletion and pollution, raising the efficiency of transmission and distribution systems, and maintaining and operating water facilities in order to ensure the sustainable management of the natural water resources of the Lebanese State
2017	Circular 7/1	MoE	<p>Updates Circular 8/1 (2015) - Guidelines on the Integrated Management of Solid Waste to the attention of Municipalities, Union of Municipalities and Quarries:</p> <ul style="list-style-type: none"> Sorting at source List of establishments accepting recyclables
2017	Memo 9/1	MoE	Preventing wastewater discharge into artesian wells. The MoE requests the MoIM to ask all concerned parties, especially municipalities and water establishments, to strictly prevent wastewater discharge into artesian wells and to oblige all owners of bottomless artesian wells (ذات العور المفقود) to close them within one month from the date of issuing the circular; to avoid serious environmental and health damage caused by groundwater pollution.
2016	Decision 189/1	MoE	Defines the mechanism for environmental compliance audit report review at the Ministry, which covers the submission process and report content.
2016	Decree 3989	CoM	Designation of an Environmental Police Department within the Ministry of Environment to regulate environmental crimes and enforce penalties; and specification of their organization and mandates.
2016	Decree 167	CoM	Determination of the procedures and principles of implementing Article 20 of Law 444 on the protection of the environment dated 29/07/2002. Aims at establishing the percentage of tax reduction for a number of activities aimed at protecting the environment. In detail it explains (i) tax cuts for environmental industry activities that meet all standards and conditions; (ii) tax cuts for spending aimed at environmental protection and sustainable conservation; (iii) reduction of custom tariffs on environmentally friendly goods.

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Year	Law/Decree	Reference Entity	Relevant Provisions
2015	Decisions 261/1 and 262/1	MoE	Ministerial decisions related to the preparation and review procedure of EIAs.
2015	Circular 6/1	MoE	Defining EIA and IEE review fees and bank guarantees
2015	Decision 590/1	MoE	Environmental Clearance Mechanism of all permits related to industrial establishments.
2015	Circular 8/1	MoE	Sets guidelines concerning the Integrated Management of Domestic Solid Waste to the Attention of Municipalities, Unions of Municipalities, Sub-Governors (Qa'em maqams) and Governors (Mohafez). Includes guidelines on sorting at source and composting. Includes a list of recycling centers throughout Lebanon.
2014	Circular 9/1	MoE	Specifying documents to be submitted with IEE and EIA Reports
2014	Law 251	Parliament	Establishing an Environmental Prosecutor to handle environmental crimes associated with the violation of regulations
2013	Decision 202/1	MoE	Specification of the procedures and the mechanism of implementation of the Environmental Compliance of Establishments Decree (Decree 8471/2012). <ul style="list-style-type: none"> o Article 1: Procedures and mechanism to be followed by industrial establishments to apply for an Environmental Compliance Certificate o Article 2: Publication and implementation of the decision
2013	Decision 271/1	MoE	Correction of a mistake that occurred in Article 1 of Decision 202/1. <ul style="list-style-type: none"> o Article 1: Adjust paragraph 2 of Article 1 in Decision 202/1 o Article 2: Publication and implementation of the decision
2013	Decision 203/1	MoE	Establishment of a permanent committee to manage the environmental compliance system at the Ministry of Environment. <ul style="list-style-type: none"> o Article 1: Establishing the permanent committee o Article 2: Committee roles o Article 3: Date of implementation of the decision
2013	Decision 99/1		Guiding principles to industrial and commercial establishments and companies on how to report on a voluntary basis their GHG emissions and related activity data to the Ministry of Environment. Provides an incentive to the private sector (commercial, institutional and industrial enterprises) to report on a voluntary basis their GHG emissions and related activity data to the Ministry of Environment. As a quality assurance measure, the reported data is verified and certified by an auditor or accountant (from the submitter's side) prior to its submission and is further checked for completeness and consistency by the Ministry of Environment.
2012	Decree 8157	CoM	Establishing the National Council for the Environment and specifying its mandates and organization.
2012	EIA Decree 8633	MoE	Defining the scope and stages of the national EIA process

Year	Law/Decree	Reference Entity	Relevant Provisions
2012	Decree 8471	CoM	Environmental Compliance of Establishments. The Environmental Compliance Certificate (ECC) is a three-year renewable certificate proving the adherence of the industry to environmental standards and application of an environmental management system. According to this decree, industrial enterprises are required to carry out an EA including an Environmental Management Plan (EMP) at the facility level and to execute the required mitigation measures in order to be eligible to apply for the Environmental Compliance Certificate (ECC).
2012	Decision 14/1	Mol	General conditions for the permitting of industrial establishments. Provides general requirements for industrial permitting Section 1: specifies all the general requirements (including solid waste and wastewater management, storage conditions, adoption of water conservation measures in industrial processes, machines and generators' maintenance, ventilation, firefighting system and occupational health and safety requirements)
2012	Decision 6/1	Mol	Procedures and documents required for obtaining an operation permit for industrial facilities of all categories Specifies the measures and documents required for obtaining an operation permit for industrial facilities of all categories.
2009	Decree 2275	Parliament	Application Decree on the Organization and mandates of the Ministry of Environment, its divisions and departments.
2008	Law 37	Parliament	Defines and regulates the protection and management of cultural properties.
2005	Decision 3/1	MoE	Environmental Guidelines for the establishment and operation of small-scale wastewater treatment plants
2004	Law 646	Parliament	Amended Legislative Decree No. 148 dated 09/16/1983 (Building Law) Article 12 Limits of buildings: While following the imposed setback limits and land-use regulations which can be enforced later on based on regulations based on decree issued by the Council of Ministers, all buildings should be constructed according to the following stipulations: <ul style="list-style-type: none"> • <u>Next to international roads</u>, main roads, secondary roads, and local roads: The distance of the building should be in accordance with the distance that is imposed by the land's own setback decree. • <u>Next to inner roads</u>: The distance between the building and the road should follow the land's setback decree on the condition that the distance should be no less than 4.5 m if the width of the road is less than 6 m and 3 m in unregulated areas. • <u>Next to train tracks</u>: The building should be at least 3 m away from the borders of the rail property. • <u>Next to "limited" water streams</u>: the building should be built according to the imposed setback limits set by the area's urban planning regulations, on the condition that the distance should be no less than 2 m away from the borders of the property. • <u>Next to winter seasonal water streams</u>: The building should be at least 4.5 m away from the borders of the water stream. • <u>Next to rivers</u>: The building should be at least 10 m away from the boundaries of the river unless the area's urban planning regulations say otherwise. • <u>Next to the limits of other public properties</u>: Outside of the boundaries of Beirut, the building should be at least 3 m away from the boundaries of the public domain, while inside of the building should be at least 2 m away from the boundaries of the public domain.

Year	Law/Decree	Reference Entity	Relevant Provisions
2004	Decree 11802	CoM	Regulating occupational prevention, safety and health in all enterprises subject to the code of labor.
2003	Decree 9765	CoM	<p>Inspection, measures, and sanctions applied to industrial establishments. Provides information on the inspection, measures, and sanctions applied to industrial establishments.</p> <ul style="list-style-type: none"> • Describes the protocol for monitoring environmental performance of industries, as well as the penalties for violating industrial guidelines. Section 1 (General Provisions) • Specifies that the authorities in charge of industrial pollution control are the Ministry of Industry- Control Department, the Municipalities and the competent authorities of MoE and MoPH. Section 2 (Monitoring of Industrial Facilities) • States that an industrial establishment that repeatedly fails to comply with applicable regulations and standards can be closed following a decision taken by the Council of Ministers, following the Minister's recommendation. Section 3 (Measures and Sanctions) • Section 4 (Transitional and Final Provisions)
2002	Law 444	Parliament	<p>Framework Law for Environmental Protection. Provides the principles and rules for protecting different environmental matrices (air, water, soil...) from pollution with wastewater, hazardous wastes, chemicals, and noise, etc.; and specifies the penalties for violating environmental laws.</p> <ul style="list-style-type: none"> • Section 1 (Basic Principles and General Provision) • Section 2 (Organization of Environmental Protection), paragraph 4 (Environmental Monitoring Mechanisms) • Section 3 (Environmental Information System and Participation in Environmental Management and Protection) • Section 4 (Environmental Impact Assessment) • Section 5 (Environmental Protection) • Section 6 (Responsibilities and Sanctions)
2002	Decree 8018	CoM	<p>Determination of the procedures and guidelines for the establishment and operation of industrial facilities Establishes procedures and guidelines for the establishment and operation of industrial institutions/facilities. Specifies the rules, regulations and requirements for obtaining an industrial permit, renewing industrial permits, and updating industrial permits. It also categorizes industries into 5 categories, depending on their impacts on the environment.</p> <p>Section 1 (General Provisions) Section 2 (Procedures and Licensing Requirements) Section 3 (Provision for Licensing) Section 4 (Provisions of rules for publishing, advertising, and follow-up methods) Section 5 (Final Provisions)</p>
2002	Decree 7945	Mol	Determines the principles and procedures to be followed in the permitting committee meetings and tasks
2001	Decree 5243	CoM	Classification of Industrial Establishments (Amending Decree 4917 of 1994). Categorizes industries depending on the different types of production using ISIC classification.
1997	Law 623	Parliament	Implements penalties for vandalism of water, telephone and electricity infrastructure
1996	Decision 40/1	MoE	Enforcement of environmental guidelines among industries (Amendment of Decision 22/1)

Year	Law/Decree	Reference Entity	Relevant Provisions
1994	Decree 4917	CoM	Sets new amendments to categorize classified establishments that may cause nuisance to public health and/or the environment.
1994	Law 387	CoM	Permitting the Lebanese Government to join the Basel Convention on the transboundary movement of hazardous wastes. This regulates the transfer of potentially hazardous wastes across national boundaries and their means of disposal.
1990	Law 21	Parliament	Ratification of the UNESCO Convention for the Protection of Antiquities.
1988	Law 64/88	Parliament	Environmental protection against hazardous waste that could harm air, water, biodiversity, soil, and people.
1974	Decree 8735	CoM	Protection against pollution from solid and liquid waste (prohibiting the digging of wells for the disposal of raw sewage, banning sewage infiltration from septic tanks and the use of untreated sewage for the irrigation of vegetables and some fruit trees), and assigning solid waste management to municipalities.
1951	Decree 6341	CoM	Sets the principles of health protection and prevention in all establishments that are subject to the Labor Law
1943	Legislative Decree	CoM	Penal code
1936	Decree 1119	CoM	Implementation of the provisions of Legislative Decree 21 of 1932 relating to categorizing and permitting procedures of classified establishments that may cause nuisance to public health and/or the environment.
1936	Decision 6	-	Specifies the general health requirements for industrial establishments in order to protect the air quality, nearby sensitive receptors, and public health.
1933	Decree 2761	CoM	Provides guidelines related to Wastewater Management and Disposal
1932	Legislative Decree 21	CoM	Specifies the categorization and procedures for the permitting of classified establishments that may cause nuisance to public health and/or the environment.
1932	Decree law 16 L	CoM	The decree law based on Decision 320/1926 mandates the establishment of buffer zones for the protection of all surface and groundwater resources from any type of activity/potential source of pollution. Requirements for buffering are found in Decision 320/26
1926	Decision 320/1	Higher Commissioner	Decision relating to the conservation of public water and its use. It prohibits blocking the free flow of public water or the performance of some works such as drilling for underground or artesian water without obtaining the proper permit from the proper administration.
1925	Decision 144	Higher Commissioner	Decision relating to identifying public properties (terrestrial or maritime), their boundaries, and the specifications for their use and exploitation.

Table 2-13 Summary of Relevant Agricultural Legislations

Year	Law / Decree	Reference Entity	Relevant Provisions
2020	Law 158	Parliament	Organization of the Organic Farming Sector.
2019	Decree 5706	COM	Grants a legally binding status to the LIBNOR standards related to fertilizers and soil conditioners.
2016	Decision 469	MOA	Conditions for licensing the profession of importing fertilizers and soil conditioners.
2016	Decision 468	MOA	Conditions for registering fertilizers traded in Lebanon.
2013	Decision 1042/1	MOA	Organization and control of the import of fertilizers and soil conditioners to Lebanon.
2012	Decision 542/1	MOA	Establishment and Organization of the National Register of Organic Farming to have efficient inspection over this sector.
2012	Decision 767/1	MOA	Mechanism for joining the list of national experts in organic production.
2012	Decision 1102/1	MOA	Amendment of MOA Decision 507/1 with respect to the allowed concentration chemicals in the fertilizers, as well as to the labelling requirements of the fertilizers.
2012	Decision 507/1	MOA	Classification and registration of fertilizers and soil conditioners.
2012	Decision 48/1	MOA	Control of the use of raw materials from antibiotics (joint decision with the Ministry of Public Health).
2011	Decision 791/1	MOA	Classification of fertilizers and soil conditioners.
2011	Decision 790/1	MOA	Conditions for pre-licensing the profession of selling fertilizers and soil conditioners.
2011	Decision 789	MOA	Conditions for pre-licensing the profession of importing fertilizers and soil conditioners.
2011	Decision 1033/1	MOA	Organization of the Organic Farming Sector.
2011	Decision 294/1	MOA	Bans the import and registration of some growth regulators 4-Chlorophenoxyacetic acid (4-CPA), Naphtyl oxyacetic acid (NOA), Naphtylacetic acid hydrazide (NAA), N-Phenyl Phthalamic acid, β -Naphtyl oxyacetic acid (β NOA).
2010	Decision 496/1	MOA	Regulating sampling methods and transportation of the samples for imports.
2009	Decision 49/1	MOA	Amendment of the Decision No. 326/1 dated 15/10/2004 (Reactivation of the MOA Laboratory in Kfarchima for the analysis of agricultural chemicals).
1968	Law 68/6	Parliament	Regulating the trade of fertilizers, agricultural medicines and fodder.
1946	Decision 2351	Ministry of Economy	Subjecting chemical fertilizers to a controlled distribution system.

2.3.3 National and International Standards for Environmental Quality

The main legislative texts that stipulate environmental standards in Lebanon are listed in Table 2-14.

Table 2-14 Relevant National & International Environmental Standards

Environmental Media	National Standard	International Standard
Ambient air quality		World Health Organization (WHO) Air Quality Guidelines, global update 2005
Noise		WHO Guidelines for Community Noise, 1999
Groundwater quality for drinking)	MoE Decision 8/1 of 30 January 2001	WHO Guidelines for Drinking-water Quality, Fourth Edition, 2011
Groundwater (ambient)	MoE Decision 52/1 of 29 July 1996	EU Groundwater Directive 2006/118/EC
Surface water quality	MoE Decision 7/1 of 16 November 2016	US EPA National Recommended Water Quality Criteria
	MoE Decision 16/1 of 10 February 2022 (new air emissions standards)	Mekong River Commission: Technical Guidelines for the Protection of Aquatic Life Mekong River Commission Technical Guidelines for the Protection of Human Health
Effluent quality		International Finance Corporation-World Bank Group (IFC-WBG) EHS General Guidelines
Leachate management	No specific leachate standards	IFC-WBG EHS Guidelines for Waste Management Facilities

The Council of Ministers issued Decree 5706 in 2019 which endorsed the standards for fertilizers and soil conditioners issued by LIBNOR by granting them a legally binding status. The standards are available if purchased from LIBNOR only.

2.4 RELEVANT NATIONAL SOCIAL LAWS, REGULATIONS, AND POLICIES

2.4.1 Social Risk Assessment as part of ESIA process

When developing an Environmental Impact Assessment (EIA) report, it is requested to also consider the social impact that the project may have on the surrounding community, including affected people, beneficiaries, and others according to the World Bank requirements (ESS1). Decisions Nos. 260/1 and 261/1 of 2015 regulate the structure and content of IEE and EIA reports¹, respectively², but with nominal requirements from a social perspective. A summary of all relevant legislation mentioned throughout this section is provided in Table 2-15.

Key social legislation is discussed below, and all legislative texts regulating labor conditions are further elaborated in the Labor Management Plan (LMP).

¹ IEE; Initial Environmental Examination; EIA: Environmental Impact Assessment. An EIA consists of a scoping report followed by an EIA report that covers the same sections as an IEE report, in addition to public consultation and analysis of project alternatives. Annexes 1 and 2 of the EIA Decree list the projects requiring an EIA and those requiring an IEE, respectively.

² The World Bank ESS1 emphasizes the social impacts of the project in addition to the environmental impacts; while the Decree 8633*2012 and Lebanese decisions 260/1 and 261/1 of 2015 focus more on the environmental impacts than the social ones.

Table 2-15 Summary Table of all Relevant In-Force Social Legislation in Lebanon

Legislation Type and No.	Year of Issuance	Reference Entity	Brief Description
Decree 10598	2022	CoM	Raises the salaries of all employees and workers (in the private and public sectors) subject to the Labor Law by an amount of LBP 600,000 unless they are benefiting from social assistance.
Decree 9129	2022	CoM	Raises the salaries of employees and workers (as set by Decree 7426/2012) by the following amounts: <ul style="list-style-type: none"> For salaries below LBP 4,000,000/month: an increase of LBP 1,325,000/month For salaries exceeding LBP 4,000,000: the amount specified in agreements and collective negotiations in line with the ILO Convention number 131 as specified in Legislative Decree 70/1977. For daily remunerations not exceeding LBP 182,000LBP: an increase of LBP 61,000/day For salaries exceeding LBP 4,000,000: the amount specified in agreements and collective negotiations in line with the ILO Convention number 131 as specified in Legislative Decree 70/1977.
Law 205	2020	Parliament	Criminalizes sexual harassment at any location.
Decision 291/	2018	MoL	Restricts a substantive number of jobs to Lebanese citizens in order to protect the workforce and reduce unemployment. These consist of all jobs practiced by Lebanese citizens include tiling, plastering, gypsum board, iron, wood and aluminum profile installation and other decorative tasks. Engineering is also restricted to Lebanese citizens. On March 21, 2018, a clarification letter was issued by MoL regarding Decision 29/1, which states that Syrians are allowed to occupy jobs in the construction sector that are not restricted to the Lebanese as per Decision 29/1 of 2018.
Law 28	2017	Parliament	Stipulates the right for any natural or legal person to have access to public information in Lebanon from any governmental institution. This law also obligates governmental administrations to publish and make available all financial and administrative data for the citizens.
Law 340 – Penal Code	2016	Parliament	Abolishment of Article 522 of the Penal Code that exempts a rapist from punishment if he marries his victim.
Decree 3791 (amending Decree 7426 of 2012)	2016	CoM	Set and apply the official minimum wage for employees and workers subject to the labor law and the cost of living ratio. Raises the minimum daily wage to 26,000 LBP.
Law 293	2014	Parliament	Law on the Protection of Women and Family Members from Domestic Violence. Advances women's rights and safety. Establishes important protection measures and related policing and court reforms.
Decree 8987	2012	MoL	Forbids the employment of adolescents and children under 18 years of age in jobs that pose a risk to their health, safety and behaviour.
Decree No. 7426	2012	MoL	Sets the minimum wage at 675,000 LBP.
Law 28	2007	Parliament	All public institutions are instructed to activate administrative self-monitoring and to enhance transparency and positivity in the communication between the administration and the citizens, within one month from the date of the circular.
Decree 11802	2004	CoM	Organizes occupational safety, safety and health in all

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Legislation Type and No.	Year of Issuance	Reference Entity	Brief Description
			institutions subject to labor law, and provides the general regulations for the occupational health and safety
Law 400	2002	Parliament	Ratification of ILO Convention No. 138: Minimum age of employment on tasks and works that pose risks or hazards to health and safety
Law 335	2001	Parliament	Ratification of ILO Convention No. 128: Does not allow the employment of children and protects them from engaging in any work activities that could harm their health and safety.
Law 220	2000	Parliament	Stipulates the civil rights of people with a disability.
Law 207	2000	Parliament	Prohibits all forms of discrimination between men and women in the workplace concerning employment type, remuneration, employment, promotions and raises, vocational training and attire.
Decision 49/1	1997	MoL	Forbids the employment of adolescents and children under 18 years of age in non-industrial settings, unless a medical examination proves them apt to perform such work.
Law No. 58 (amended on 8/12/2006)	1991	Parliament	Lebanese expropriation law authorizes the expropriation of private property in the public interest, but only after fair compensation has been made.
Tenancy Law	1991	Parliament	Gives the land owner the right to retrieve the property at the end of the contract. Where expropriation causes loss of tenancy, expropriation commissions divide their awards between landlords and tenants according to the economic value of the tenancy, enabling tenants to secure alternative housing by rental or down-payment for the purchase of a housing alternative.
Labor Code and its amendments	1946	MoL	Sets the framework for the terms and conditions of Employment, and rules governing the relationship between employers and employees. The law includes but is not limited to: <ul style="list-style-type: none"> • Terms and conditions of employment • Maternity and family leave • International labour standards The Labor law is further detailed in the LMP report.

2.4.2 Occupational Health and Safety (OHS)

The Council of Ministers issued Decree 11802 in 2004 to organize occupational prevention, safety and health in all institutions subject to the Labor Law.

The Decree provides the general regulations for the prevention of occupational hazards and accidents, and the promotion of health and safety in all industrial establishments subject to the Labor Law. These cover prevention and safety, occupational health, the safe use of chemicals at work, as well as occupational noise standards.

2.4.3 Vulnerable Groups Regulatory Framework and Baseline

Vulnerable groups in Lebanon include women, children, people with disability, elderly, and displaced persons. Displaced persons are considered among vulnerable communities as they do not benefit from governmental services. Relevant clauses from legislative texts are elaborated in Section 2.3.

Additionally, specific legislation relating to the topics below is currently in force.

2.4.3.1 Gender and Sexual Exploitation and Abuse / Sexual Harassment

Law No. 205 issued in 2020 criminalizes sexual harassment which is defined as follows: any bad and repetitive behavior that is unordinary, unwelcome by the victim, carries a sexual connotation, and that constitutes a violation of the body, privacy, or feelings. Sexual harassment might take place at any location and through sexual words, acts, signs, allusions, and through any means including electronic means.

The Labor Code prohibits discrimination between workers based on their gender, with respect to type of work, amount of wage or salary, employment, promotion, professional qualification, and apparel (LC, art. 26). Equal rights shall be given to all employees.

However, Labor Code defines a set of prohibitions for women in specific fields and sectors (mining, production and use of explosives, and production of alcohol).

2.4.3.2 Child Labor

The Labor Code clearly stipulates that engaging children in jobs, especially those that may put their health and safety at risk, is prohibited. LC sets the norms to be followed as mentioned in Section **Error! Reference source not found.**

2.4.3.3 Disability

Act No. 220 (2000) provides that a certain number of jobs in the public sector are allocated to persons with disabilities (Act No. 220 of 2000, art. 73). Quotas are also applicable to private sector employers, depending on their size (Act No. 220 of 2000, art. 74).

2.5 ENVIRONMENTAL AND SOCIAL FRAMEWORK OF THE WORLD BANK

The environmental and social policy for World Bank financed projects is required to be applied under the Environmental and Social Framework (ESF). This is to ensure that the WB supported projects are environmentally and socially sound and sustainable. Likewise, this will inform the design of the projects and identify mitigation measures and actions to improve decision making. The ESF enables the financing recipient to better assess the environmental and social risks of projects and to improve development outcomes. Consistent with the Bank's environmental and social policy, the Project is expected to meet the requirements set forth in the Environmental and Social Standards (ESS) (World Bank, 2017); the applicable ESSs for this project are listed below:

- ESS1: Assessment and Management of Environmental and Social Risks and Impacts
- ESS2: Labor and Working Conditions
- ESS3: Resource Efficiency and Pollution Prevention and Management
- ESS4: Community Health and Safety
- ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- ESS9: Financial intermediaries
- ESS10: Stakeholder Engagement and Information Disclosure

Additionally, the project is expected to meet Environmental, Health, and Safety (EHS) Guidelines (April 2007) and other industry sector related guidelines on:

- [Guidelines for Agri-Business/ Food Production](#);
- [Waste management facilities](#) (December 2007); and
- [Water and sanitation](#) (December 2007)

2.6 INSTITUTIONAL FRAMEWORK RELEVANT TO THE PROJECT

The overall Project implementation would be led by the Council for Development and Reconstruction (CDR) as Project Implementing Agency (PIA), through a Project Coordination Unit (PCU). The Borrower is represented by the Council for Development and Reconstruction (CDR) which will establish a PCU to implement the Project. The PCU would lead the overall project management and coordination, by: (i) ensuring strategic oversight of overall project implementation; (ii) ensuring coordination and cooperation among all participating agencies and institutions; (iii) providing overall guidance during project implementation; and (v) endorsing financial, programmatic, and monitoring reports to be presented to the World Bank and other national stakeholders to ensure transparency and accountability. The project is to be implemented over a five-year period. CDR will be responsible for the procurement, financial management, safeguards, and monitoring aspects of all components except component 1.2 which would be implemented by Kafalat and Component 2.1 which would be implemented by the Green Plan.

The national government authorities with their corresponding functions and responsibilities with respect to the project are detailed in Table 2-16.

Table 2-16 Governmental Authorities and their Main Functions and Responsibilities

Authority	Main functions	Main Responsibilities in the project
CDR as Project Implementing Agency (PIA) through the PCU	was established through Decree No. 5 dated 31 January 1977. The responsibilities of the CDR were specified to three main tasks: complying with a plan and a time schedule for the resumption of reconstruction and of development, guaranteeing the funding of projects presented, supervising their execution and utilization by contributing to the process of rehabilitation of public institutions, thus enabling it to assume responsibility for the execution of several projects under the supervision of the Council of Ministers.	<ul style="list-style-type: none"> ○ Representing the borrower ○ Implementation of the project through the PCU ○ General oversight over the project implementation (all components) ○ Delegation of the implementation of component 1.2 to Kafalat through a subsidiary agreement
Kafalat	Is the national credit guarantee agency, a financial company with a public concern that assists small and medium-sized enterprises (SMEs)	Will lead Component 1 (sub-component 1.2) ; through a subsidiary agreement to be signed between the GOL and Kafalat.
MOA	Ministry of Agriculture is the main governmental body responsible for Lebanon's agricultural development and the regulation of fertilizers, pesticides, and animal feed. Also responsible for improving the value chains and increasing the value-added for products of plant origin by strengthening the management of agricultural inputs including pesticides and fertilizers; promoting good agricultural practices, thus aiming to achieve sustainable food security, agriculture and rural development.	Will be part of the PSC. Will lead Subcomponent 1.1 ; Provide support in the implementation of subcomponent 2.1 and 2.2 . Provide technical oversight in subcomponent 3.1 and 3.2 .
Mol	The Ministry of Industry contributes to the development of industrial sector, supervising the application of laws and regulations related to industrial affairs and taking the necessary measures to prepare, coordinate and implement to improve the local industry through a general policy that preserves the economic balance. The Mol also issues permits for the construction and operation of industrial establishments of all classes, monitors their compliance with the guidelines and conditions stipulated in the permit, and coordinates with the members of the industrial licensing committee to mandate the compliance of non-compliant establishments within a specific deadline. Mol has the prerogative of closing a non-compliant establishment after the specified compliance deadline has elapsed, following consultation with the	Will be part of the PSC. Will provide technical oversight on the implementation of Sub-component 3.1 and 3.2 .

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Authority	Main functions	Main Responsibilities in the project
	licensing committee and the concerned municipality.	
Lebanese Agriculture Research Institute (LARI)	Is to support agriculture research and provide public services such as lab analyses and early warning about pests, diseases, and climatic events	Will be supporting MOA) mainly in the implementation of subcomponent 1.1 ,
Green Plan (GP)	for investments in land reclamation, and agriculture development (water harvesting through hill lakes; irrigation infrastructure)	Will implement subcomponent 2.1
MOET	is responsible for trade agreements, leading participation and organization of trade exhibitions, retail price controls, and consumer protection, and securing national food security through import facilitation of grain and strategic commodity imports; also oversees the four Chambers of Commerce, Industry and Agriculture (CCIA) that represent the private sector	Will be part of the PSC. Will provide technical leadership of subcomponent 3.3 .
Ministry of Energy and Water (MOEW)	regulates the management of the energy and water sectors and resources	Will be part of the PSC. Will provide support in the implementation of Subcomponent 2.2
Litani River Authority (LRA)	overall responsibility for the management of the Litani River and the Qaraoun lake. Manage and exploit irrigation water within its field of exploitation (South Bekaa and South Lebanon). Therefore, it is responsible for irrigation management of Qasmiyeh-Ras el Ain scheme. In addition to water distribution in these schemes, LRA plays an important role in monitoring water quality through its Environmental Unit that also has an objective of building capacities to be able to detect pollutants and their sources at an early stage, by finding a legal framework to monitor factories, agricultural activities, crushers and liquid and solid wastes.	Will provide support in the implementation of Subcomponent 2.2
Water Establishments	Responsible for wastewater and domestic water management and infrastructure	Will provide support in the implementation of Subcomponent 2.2
Ministry of Environment (MOE)	Responsible for the implementation of the Law on Environmental Protection. At the regional level (Governorates and Cazas), public authorities in addition to municipalities are responsible for the enforcement of the environmental legislation	Will be part of the PSC. Will provide support in the implementation of Subcomponent 2.2

ESMF

Authority	Main functions	Main Responsibilities in the project
MOPH	Protection of public health and prevention of the spread of diseases; Formulation of laws & regulations pertaining to all fields of public health	is responsible for checking the compliance of the industries conditions with necessary health related conditions, especially those related to food safety; Contributes to setting allowable levels for contaminants in water and inspecting and protecting water resources. The MoPH also checks that all workers operating in the food industry undergo medical health checks every three months at a public hospital.
Governorates	The governor directly represents the central authority. He is the mediator between the central administration and the people residing in his area. The governor is concerned with improving living conditions in villages, and he exercises the powers given to the Minister of Agriculture with regard to appointing communal committees and their employees and approving their decisions, as well as with regard to appointing watchmen and powers related to public health rules and classified establishments of the first and second categories. In this context, he is the one who issues licenses for poultry and livestock farms and warehouses related to any agricultural activity. He replaces the MOPH in providing licenses to manufacture and sell green cheese, to acquire and raise pigs, and to ensure that the buildings are provided with sanitary appliances. The governor authorizes the right to supervise water user associations and other irrigation committees for projects of public interest, ratify their regulations, budgets and decisions, and appoint their bodies and employees in accordance with the laws and regulations in force. All administrative departments in the governorate are under the direct supervision of the governor.	Will be involved in the implementation of Subcomponent 2.1 , they will be part of the technical evaluation committee reviewing the proposals received and approve final list of projects.
Unions of Municipalities (UoM)	The UoM undertakes the preparation of the required technical studies and consultations for the benefit of the member municipalities. UoMs prepare reports to the head of the concerned municipality related to health violations and other violations that are within the jurisdiction of this staff and which fall within the scope of the municipality.	Will be involved in the implementation of Subcomponent 2.1 .

Authority	Main functions	Main Responsibilities in the project
	The UoM Council deliberates and decides on public projects that benefit all or some of the member municipalities, or that cover more than one federation, whether these projects are existing or planned, such as roads, sewers, waste management, slaughterhouses, firefighting, organizing transportation, cooperatives, popular markets, etc., and managing commons located within the jurisdiction of the UoM's municipalities, whose management does not belong to a specific municipality, and the approval of the development plan within the scope and powers of the union.	

A Project Steering Committee (PSC), chaired by both Ministers of Agriculture and Economy and Trade, will be established to oversee the implementation of Project activities and resolve issues of a policy nature that might arise during project execution. The PSC will be responsible for approving the project's annual budget and approving the recommended sub-projects for implementation and shall consult and coordinate between its members to overcome any obstacles that hinder the implementation of the project. In addition to its chairs, it will include the Ministry of Finance, Ministry of Industry, Ministry of Environment, Ministry of Energy and Water, and Ministry of Tourism.

2.7 GAP ANALYSIS

The policies of the World Bank and the related Lebanese legislation were reviewed and analyzed to identify gaps and measures to bridge them, as detailed in Table 2-17.

Table 2-17 Gap Analysis of Existing World Bank and Lebanon Policies

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
Environmental and Social Impact Assessment	<p>ESS1: The conduct of an assessment of the environmental and social risks and impacts (i.e., direct, indirect, cumulative) is required for proposed World Bank-financed and associated facilities across its project phases (i.e., preconstruction, construction, operation, decommissioning, closure, and reinstatement/restoration phases, whichever are relevant). Borrowers are required to undertake the following:</p> <p><u>Environmental and Social Assessment</u>, identification and evaluation of potential environmental and social risks and impacts;</p> <p><u>Stakeholder Engagement</u>, preparation of stakeholder engagement plans (SEP), information disclosure, and meaningful consultation as provided by ESS-10;</p> <p><u>Environmental and Social Commitment Plan</u></p>	<p>Law 444 (Protection of the Environment) Sets the framework for environmental protection. It provides the principles and rules for protecting different environmental matrices (air, water, soil...) from pollution with wastewater, hazardous wastes, chemicals, and noise, etc.; and specifies the penalties for violating environmental laws.</p> <p>Decree 8633 (28 March 2012) "Environmental impact assessment" sets principles and measures necessary to assess the environmental impact of development Projects. The EIA decree addresses the objectives of the regulation, definitions, as well as various stages of the national EIA process such as screening, scoping, implementation, and review of the EIA report, in addition to the period of validity, and the appeal process. The EIA Decree also lists all the activities for which EIA or permit conditions are mandatory, and those that require an IEE.</p>	<p>WB ESS and Lebanon policies on EIA are aligned in terms of assessing environmental impacts of projects as a whole, focusing on the natural environment as well as on the socio-economic impacts that the project may have on the surrounding community, including affected people, beneficiaries, and others. If the proposed project falls in the domain of Annex 1, it will be subjected to an "EIA" study according to information contained in Annex 8. If the proposed project falls in the domain of Annex 2, it will be subjected to an "initial environmental examination" as per information contained in Annex 6. If the proposed project falls under Annex 2 and is located in an area listed in Annex 3 (sensitive areas), or it may have a significant environmental impact on that area, the project will be subjected to an EIA study. If the project does not fall in the domain of Annex 1 or Annex 2 but is located in an area listed in Annex 3 where it may have a significant environmental impact, it will be subjected to an "Initial Environmental Examination". The inclusion of public participation in the EIA process is required, while it is not in the IEE (Initial Environmental Examination) process.</p> <p>The ESIA and ESMPs that will be developed for the sub-projects will specifically include focus on social assessment and management plus vulnerable groups and will include specific stakeholder engagement plans. Where a project would be classified as requiring an IEE according to the EIA decree, but it requires an ESMP in line with WB ESF, a public consultation has to be</p>	MoE, CDRPCU, WB

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>(ESCP), time bound planning of actions and measures for identified potential risks and impacts; and, <u>Monitoring and Reporting</u>, performance tracking and evaluation of actions identified in the ESCP.</p> <p>For projects that include existing facilities for rehabilitation, a review and audit must be conducted to identify corrective actions to align the existing facility with the requirements of the ESS and must be indicated in the ESCP. All high-risk projects and sub-projects must be in accordance with ESS, while substantial-risk to low-risk projects must be in accordance with national laws and the ESS deemed relevant by the WB.</p> <p>A CBA or other analyses will be required for instances wherein selected option in site, design or technology poses higher environmental and social risks compared to</p>	<p>The EIA Decree lists the content of the assessment that is similar to WB ESS1 requirements (including environmental and social impact assessment, stakeholder engagement, monitoring and reporting...).</p> <p>-MoE Decision 260/1 (12 June 2015), "Procedure for the review of IEE reports"</p> <p>-MoE Decision 261/1 (12 June 2015) "Procedure for the review of scoping and EIA reports"</p> <p>-MoE Decision 262/1 (12 June 2015): Procedure for the review of objections on MoE's decisions relating to submitted EIA reports</p> <p>Decree 8471/2012 and its application decisions specify the need to audit existing and operational establishments, as well as the outline of the Environmental Audit report.</p>	<p>carried out to satisfy the WB requirements.</p> <p>Additional reports required in line with WB standards and that are not required as per Lebanese legislation shall be prepared for the sub-projects and submitted for review and approval by WB.</p>	

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>other options.</p> <p>The necessary capacity and training related to the implementation and monitoring of the ESCP must be included as part of its measures. The application of this ESS is contingent to ensuring the compliance to ESS10, and the other ESS as necessary within the context of the project.</p>			
Labor Conditions and Occupational Safety	<p>ESS2: Environmental and social assessment must include relevant risks and impacts including implications to health, safety and wellbeing of workers of the facility (ESS-1 Par 28)</p>	<p>The Labor Code of Lebanon dated 1946 sets the framework for the terms and conditions of Employment, and rules governing the relationship between employers and employees. It regulates key issues such as Minimum age of employment, Wages, Rest, Leave, and Overtime, Maternity and Family Leave, and Severance Pay among other issues.</p> <p>Decree 11802 in 2004 organizes occupational prevention, safety, and health in all institutions subject to labor law.</p> <p>The Decree provides the general regulations for the prevention of occupational hazards and</p>	<p>The WB ESS prohibits the employment of children under the age of 18 in hazardous work; and Decree 8982 as well. However, national laws only cover children employed in the formal sector. Most child labor, especially the ones with poor labor conditions, are in the informal sector mainly in agricultural production.</p> <p>The LMP will be developed to require the contractors to comply with ESS2 for labor conditions as ESS2 is more stringent; as well as monitor their compliance.</p>	MoL, MoE, CDRPCU

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
		<p>accidents, and the promotion of health and safety in all industrial establishments subject to the Labor Law. These cover prevention and safety, occupational health, the safe use of chemicals at work, as well as occupational noise standards.</p> <p>Decree 8987 of 2012 forbids the employment of adolescents and children under 18 years of age in jobs that pose a risk to their health, safety, and behavior</p>		
	<p>ESS2: Labor management procedures for all types of workers to be employed or engaged by the project must include minimum benefits, termination agreements, principle of non-discrimination and equal opportunity, minimum age of workers, occupational health and safety, and grievance mechanism to establish labor standards in the workplace.</p> <p>ESS 2 para 19, and footnote 13, notes that a child under the age of 18 may be</p>	<p>Applicable relevant social legislation presented (Section 2.4). Additional laws relevant to ESS 2 are developed below.</p> <p>The Labor Code prohibits discrimination between men and women</p> <p>Law No. 205 of 2020 criminalizes any act of sexual harassment, especially in the workplace.</p>	<p>Recruitment is not expressly covered in the Labor Code.</p> <p>Law No. 205 of 2020 still needs enforcement at the level of implementation and the sequence of procedures to be followed in order to protect victims from sexual harassment.</p> <p>The Labor Management Procedures (LMP) will cover these gaps and all the aspects of labor management; the Project will follow the ESS2 in terms of minimum age and specially GM. A Code of Conduct shall also be developed in line with Lebanese legislation and the WB policies.</p>	CDRPCU

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>employed or engaged in connection with the project if there is no hazardous work, an appropriate risk assessment is conducted prior to the work commencing, and the recipient conducts regular monitoring of health, working conditions, hours of work.</p> <p>Occupational Health and Safety guidelines related to perennial crop production (WB, 2016).</p> <p>Occupational health and safety measures for water and sanitation projects (WB, 2007).</p>			
Pollution (air, noise, water)	<p>ESS3: Policies related to requirements and standards related to the sustainable use of resources in the various stages of the project must be laid out. Additionally, measures for prevention and mitigation of short and long-term pollution (i.e., air, water, noise) and waste (i.e., hazardous, non-hazardous, and chemical) must also be provided.</p>	<p>Law 444 (Protection of the Environment) mandates the formulation of sub-decrees on Air Pollution Monitoring and Noise Disturbance, Water Pollution Control, and Environmental Impact Assessment Process.</p>	<p>Given that Lebanese legislation is still loose with respect to resource efficiency, sustainable exploitation, and pollution prevention, management measures shall be developed under the ESMPs and ESIs in line with ESS3 to be prepared, submitted, and implemented. Emissions will be monitored to ensure abidance by the applicable regulations.</p>	MOE, CDRPCU

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>General EHS Guidelines: International Standards on Air Quality and Noise Level was included in the guidelines: <u>Ambient Air Quality</u>: WHO Ambient Air Quality Standards set in 2005 were adopted.</p> <p><u>Noise Level</u>: WHO Guidelines on Community Noise set in 1999 was adopted. (p.4, 53)</p>	<p>Law No. 78 of 2018: Ambient Air Protection defines the basic principles and provisions for the protection of ambient air quality.</p> <p>The National Standards for Environmental Quality (NSEQ) are defined in Decision 52/1 issued in 1996. The Decision specifies the Environmental Limit Values (ELVs) for each of the following relevant resources:</p> <p>Drinking water standards; Surface water for human use standards; Standards for water bodies supporting aquatic life; Discharge or dumping of liquid and solid wastes in surface water bodies, groundwater or seawater within international borders; Limit values for air pollutant emissions from municipal solid waste incinerators; and Ambient air quality standards; Ambient noise standards and occupational Noise Exposure.</p> <p>MoE Decision 16/1 issued in 2022 has updated air emissions standards.</p>	<p>Given that there are Lebanese standards but that some of these might be outdated, where international standards are more stringent than Lebanese ones (or where Lebanese standards are absent), they will be adopted.</p>	<p>MOE, CDRPCU</p>

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>EHS Guidelines for Waste Management Facilities on emission and noise management: Additional guidelines on emission management specific for Waste Management Facilities include: (1) inclusion of landfill gas collection system and its use if practical, (2) use of gas blowers, and (3) installation and regular sampling of boreholes.</p> <p>Additional guidelines on noise management specific for Waste Management Facilities include: (1) construction of a buffer zone, (2) road quality maintenance (3) use of equipment with low-noise emission levels, (4) use of sound-insulating materials, acoustic screens and silencing equipment, (5) enclose inherently noisy equipment in a fixed structure, and (6) inclusion of noise considerations in the design process.</p>	<p>Decision 52/1 issued in 1996 specifies ambient noise standards and occupational Noise Exposure standards. No legal text regulates SWMFs particularly.</p> <p>Decision 5/1 issued in 2001: specifies the Environmental Guidelines for the Establishment and/or Operation of Vegetables and Fruits preservation.</p> <p>Decision 29/1 issued in 2001 defines the Environmental Guidelines for the Establishment and/or Operation of industries producing cheese, yogurt, butter and all dairy products.</p>	<p>Given that Lebanese legislation governing the operation of SWM facilities is still incomplete and that WB EHS Guidelines are more comprehensive and stringent, WB EHS Guidelines for Waste Management Facilities shall be enforced</p>	<p>MOE, CDRPCU, Consultant/ Engineering firms</p>

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
Sector-Specific Guidelines	<p>Environmental Health and Safety guidelines for Annual Crop Production on (1) Soil Conservation and Management; (2) Nutrient Management; (3) Crop Residue and Solid Waste Management; (4) Water Management; (5) Pest Management; (6) Use and Management of Pesticides; (7) Fertilizers; (8) Biodiversity and Ecosystems; (9) Genetically Modified crops; (10) Energy Use; (11) Air Quality and (12) Green House Gas (GHG) emissions.</p> <p>Environmental Health and Safety guidelines for Water and Sanitation on (1) Water withdrawal; (2) treatment; (3) distribution; Sanitation (4) Fecal sludge and septage collection; (5) sewerage discharge & leaks/overflows; (6) wastewater & sludge treatment and discharge.</p> <p>Environmental, Health, and Safety Guidelines for Food and Beverage Processing: 1) Industry-specific impacts and Management: Environment (Solid</p>	<p>Decision 3/1 issued in 2005 by MOE provides Environmental Guidelines for the establishment and operation of small-scale wastewater treatment plants</p> <p>Law 77/2018 (Water Code)</p> <p>Law 80/2018 (ISWM)</p> <p>Law 130/2019 (Protected Areas)</p> <p>MOE Decision 16/1 of 2022 (updated air emissions standards)</p> <p>MOE Decision 8/1 (2001) relating to standards for wastewater emission into receiving media</p> <p>Decree 11802/2004 (Regulating Occupational Prevention, Safety and Health in all Enterprises subject to the Code of Labor)</p> <p>MOE Decision 5/1 (2018) (Guidelines for the establishment and operation of fruit and vegetable preservation facilities)</p> <p>MOE Decision 29/1 (2018) (Guidelines for the establishment and operation of Dairy Products)</p>	<p>Given that Lebanese regulations, guidelines, and standards are less stringent and less comprehensive than WB sector-specific guidelines, WB guidelines shall apply wherever applicable,</p>	<p>MOE, CDRPCU, Consultant/ Engineering firms</p>

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>Waste, Wastewater, Energy Consumption, Emissions to Air, Odor), Occupational Health and Safety (Physical hazards, Biological hazards, Chemical hazards, Heat and Cold), Community Health and Safety (Process, Equipment, and Staff Hygiene; Food Safety Impacts and Management); 2) Performance Indicators and Monitoring: Environment (Emissions and Effluent Guidelines; Resource Use and Waste Generation; Environmental Monitoring); Occupational Health and Safety (Occupational Health and Safety Guidelines; Accident and Fatality Rates; Occupational Health and Safety Monitoring).</p>			
Community Health and Safety	<p>ESS1: Environmental social assessment must include relevant risks and impacts on the health, safety and well-being of project affected communities, along with the community safety provisions of the EHS Guidelines.</p>	<p>Law 444 and Decree 8633 (EIA); The Labor Code and Decree 11802</p>	<p>WB ESS are more comprehensive and stringent than Lebanese legislation that does not tackle all ESS.</p> <p>Assess and manage specific risks and impacts to the community arising from Project activities by preparing all relevant instruments in line with WB ESF.</p> <p>The ESMPs/ ESIA for the sub-projects to be prepared in accordance with the ESMF, as well as all other relevant instruments (LMP,</p>	<p>MoE, CDRPCU, Municipalities, contractors, Consultant/ Engineering firms</p>

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
			RF...).	
	<p>ESS4: The risks and impacts to the health, safety, and security of the identified project-affected persons and community must be identified and minimized. All potential risks across all phases of the projects must be identified and evaluated while taking into consideration the circumstances of disadvantaged and vulnerable groups.</p>	Decree 8633 (EIA)	<p>WB ESS are more comprehensive and stringent than Lebanese legislation that does not tackle all ESS. For instance, Lebanese legislation does not tackle disadvantaged and vulnerable groups.</p> <p>Assess and manage specific risks and impacts to the PAPs and community arising from Project activities by preparing all relevant instruments in line with WB ESF.</p> <p>The ESMPs/ ESIA for the sub-projects to be prepared in accordance with the ESMF, as well as all other relevant instruments (LMP, RF...).</p>	MoE, CDRPCU, Municipalities, contractors, Consultant/ Engineering firms
	<p>EHS Guidelines for Waste Management Facilities: <u>Long-term Operation, Decommissioning or Closure:</u> Specific procedures on closure must emphasize preservation of long-term integrity and security of the site. The closure and post-closure plan must include mitigating impacts to human health and environment after the closure. All plans must</p>	<p>In 2018, Law No. 80 came into force to draw up the integrated solid waste management framework based on the principles of Law No. 444 of 2002. It combines the ISWM draft law of 2006 with thermal treatment waste to energy plants to be constructed in big cities (Tripoli, Beirut, Saida and Jieh). The ISWM law includes the following: Article 4: Priorities of integrated solid waste management (considers the principle of preventive</p>	<p>Lebanese regulations do not cover many of the aspects covered by WB EHS guidelines for Waste Management Facilities. Thus, ESMPs and ESIA for projects shall address decommissioning and closure impacts and relevant mitigation measures.</p> <p>EHS Guidelines that are not covered in Lebanese legislation shall be recommended and implemented (e.g., EHS Guidelines for Waste Management Facilities; landfill siting; etc.).</p>	CDRPCU, MoE, Municipalities, contractors, Consultant/ Engineering firms

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>be aligned with the defined post-closure use.</p> <p><u>Landfill Siting:</u> In the identification of landfill sites, the nearest residential developments must be over 250 meters from the site option.</p> <p><u>Community Health and Safety:</u> The following impacts likely to occur during the operation and decommissioning phases must be looked into:</p> <p><i>Waste scavenging:</i> should not be allowed under any circumstances in hazardous and non-hazardous industrial waste management facilities. Only facilities handling municipal solid waste may consider incorporating the employment of scavengers.</p> <p><i>Physical, chemical, and biological hazards:</i> access to facilities, especially for areas that hold toxic waste, must be restricted and security procedures must be implemented.</p> <p><i>Litter:</i> garbage outside the facility must be</p>	<p>action and minimizing solid waste generation as a priority);</p> <p>Article 7: Preventing random disposal, open dumping and burning of solid waste;</p> <p>Article 8: The "Polluter Pays Principle"; Article 10: National Strategy for SWM; Article 11: Local SWM programs;</p> <p>Articles 14 to 16: Responsibilities resulting from SWM;</p> <p>Article 20: Solid waste collection and transfer;</p> <p>Article 21: Sorting at source;</p> <p>Article 22: Solid waste treatment: reuse, recycling, composting, digestion, and energy recovery;</p> <p>Article 24: Final Disposal;</p> <p>Articles 25 to 27: Hazardous waste management;</p> <p>Article 28: Financing sources for ISWM; Article 29: non-monetary incentives; Articles 30 to 33: Responsibilities;</p> <p>Articles 34 to 37: Enforcement and penalties.</p>		

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>managed to avoid the exposure of the adjacent community to hazardous substances and potential spread of disease.</p> <p><i>Noise:</i> measures to manage noise should be taken to avoid causing nuisance to the adjacent areas.</p> <p><i>Dust and odors:</i> Buffer areas must be included in the design, especially between processing areas and potential receptors, especially residences, hospitals and schools. Processing areas must be located in areas at the downwind from these areas to manage and control exposure of community to dust and odors.</p>			
Land Acquisition and Livelihood Restoration	<p>ESS5</p> <p>Objectives of ESS5 are:</p> <p>To avoid involuntary resettlement or when unavoidable, minimize involuntary resettlement by exploring project design alternatives.</p> <p>To avoid forced eviction.</p> <p>To mitigate unavoidable adverse social and economic impacts from land acquisition or</p>	<p>The Constitution of Lebanon establishes the right to land ownership, and the right of the State to eminent domain.</p> <p>Lebanese Expropriation Law (Law 58/1991 and its amendments)</p>	<p>There is potential for land acquisition for the execution of sub-projects, and for land use restrictions to happen with impact on livelihoods. An RF has been prepared to guide RAPs, LAPs and LRPs as needed.</p> <p>The Lebanese Expropriation Law does not tackle many of the aspects covered in ESS5 (cut-off date, 'census', socio-economic survey, consultation with project affected people, monitoring and reporting, eligibility of those who do not have formal legal rights to land, resettlement assistance, compensation for loss of income, in-kind compensation, grievance mechanism ...). Therefore,</p>	CDR PCU

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>restrictions on land use by: (a) providing timely compensation for loss of assets at replacement cost and (b) assisting displaced persons in their efforts to improve, or at least restore, their livelihoods and living standards, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.</p> <p>To improve living conditions of poor or vulnerable persons who are physically displaced, through provision of adequate housing, access to services and facilities, and security of tenure.</p> <p>To conceive and execute resettlement activities as sustainable development programs, providing sufficient investment resources to enable displaced persons to benefit directly from the project, as the nature of the project may warrant.</p> <p>To ensure that resettlement activities are planned and</p>		<p>requirements of ESS5 shall apply given that they are more comprehensive and stringent.</p> <p>In cases of land use restrictions, or restriction of access to resources, livelihood restoration plans will be prepared.</p> <p>Detailed gap analysis can be found in the Resettlement Framework prepared for the project.</p>	

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected</p> <p>The risks and impacts related to the permanent or temporary physical and economic displacement of project-affected persons across various tenure arrangements shall be assessed and evaluated. The safeguard upholds the avoidance of involuntary resettlement, and for instances wherein it cannot be avoided, measures to minimize and mitigate the adverse impacts to the displaced shall be established.</p>			
Stakeholder Engagement	ESS1: As part of the information disclosure, the findings of the E&S assessment of high-risk and substantial risk projects shall be provided prior to appraisal.	Decree 8633 (EIA) – Article 12 Public Access to Information Law	Lebanese legislation does not mandate disclosure of IEE and EIA studies as do the WB requirements. The EIA decree requires conducting at least one public consultation meeting during the EIA scoping phase, and possibly a second one to present the outcomes of the EIA. While no public consultation is required for projects requiring	CDRPCU, MOE, Municipalities / Unions of Municipalities

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>ESS10: Meaningful engagement and consultation of stakeholders must be conducted across all stages of the project cycle, thus ensuring that timely, relevant, understandable information is provided to all the identified project-affected parties.</p> <p>Specific measures for the identified PAPs have been identified in a separate Stakeholder Engagement Plan.</p>	<p>Decree 8633 (EIA) – Article 7 EIA Scoping stipulates:</p> <p>(2) On advising the project owner that his project requires an EIA study, the MOE will require that he informs the parties involved, identified by the MOE based on the list contained in Annex 5 of the Decree in coordination with the project owner.</p> <p>(3) Once advised, the municipality (or the governor or commissioner in case there are no municipalities) where the project will be located, should immediately advertise the project to inform the public. The advertisement should be placed on a public bulletin board and at the location of the project for a period of 15 days. The advertisement should include information that the project requires an EIA study and seeking feedback from the public. The municipality will inform the Ministry of Environment of the commencement date of the advertisement. If the municipality is late in publishing the advertisement, the MOE can order placing adhesive advertisements by the</p>	<p>an IEE.</p> <p>WB ESS10 mandates the preparation of a Stakeholder Engagement Plan (SEP) in addition to the ESMF/ ESIA/ ESMP to ensure sustained stakeholder engagement, and appropriate disclosure of information. So for projects requiring an IEE, public consultation shall be conducted to meet ESMP requirements.</p> <p>SEPs for sub-project activities must be developed, disclosed and implemented, consistent with the ESMF and ESS10.</p> <p>E&S instruments shall be prepared in line with relevant ESS, approved by the WB, and disclosed on the websites of relevant authorities and the WB.</p> <p>For the sub-projects involving restriction of access to land or resources, Livelihood Restoration Plans (LRPs), with meaningful consultation with affected persons in accordance with ESS5 shall be prepared, approved and disclosed. Specific attention will be paid to women and children PAPs to develop suitable measures in line with ESF on the basis of social baseline studies for each of the applicable sub-projects.</p> <p>For the sub-projects involving land acquisition, a resettlement plan shall be prepared, approved and disclosed), with meaningful consultation with affected persons as well.</p>	

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
		<p>mayor or other public officials.</p> <p>(4) The Ministry of Environment will give the public a chance to provide feedback to the Ministry or the official department concerned within one month from the date of the advertisement publication. All remarks and feedback will be communicated to the project owner after being sorted out and evaluated during the review of the EIA report, and after the Ministry of Environment declares its position in accordance with Article 10 of the decree.</p> <p>(5) The project owner shall submit to the Ministry of Environment a report pertaining to the EIA scoping of the project including attachments of the remarks communicated to him, all incoming comments, the original minutes of public dialogue meetings or the minutes of bilateral meetings with the parties involved.</p>		

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>ESS1: Environmental and social assessment must include adverse risks and impacts that may disproportionately affect certain groups, especially the disadvantaged and vulnerable.</p> <p>As necessary, separate consultation to identify the risks, impacts, and specific needs of these groups will be arranged. (ESS-1 Par 28-29; ESS-1 Guidance Notes GN 28.3-29.1)</p>	<p>No special provisions for vulnerable groups consideration are made in the EIA Decree.</p>	<p>Since Lebanese legislation does not cover specific requirements for vulnerable groups or consultation with them, WB ESS shall prevail. The ESMP/ESIA of the sub-projects involving vulnerable groups which may be impacted will include livelihood restoration and improvement programs for affected persons. Specific attention will be paid to women, elderly, children and displaced populations to develop suitable measures in line with ESF on the basis of social baseline studies for each of the applicable sub-projects. Customized focus group discussions or consultations to address the needs of each group shall be held as needed.</p>	<p>CDRPCU, MOE</p>
Vulnerable Groups	<p>ESS10: Meaningful engagement and consultation of stakeholders must be conducted across all stages of the project cycle, thus ensuring that timely, relevant, understandable information is provided to all the identified project-affected parties.</p> <p>The Borrower will identify those project-affected parties (individuals or groups) who, because of their particular circumstances, may be disadvantaged or vulnerable. Based on this identification, the</p>	<p>No special provisions for Disadvantaged or Vulnerable Individuals or Groups are made in the EIA Decree.</p>	<p>In the absence of such provisions in Lebanese legislation, all instruments to be prepared shall follow the WB ESS1 and ESS10 that are more stringent.</p>	<p>CDRPCU, MOE</p>

Item	Applicable WB Policy	Lebanon Relevant Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>Borrower will further identify individuals or groups who may have different concerns and priorities about project impacts, mitigation mechanisms, and benefits, and who may require different, or separate, forms of engagement. An adequate level of detail will be included in the stakeholder identification and analysis so as to determine the level of communication that is appropriate for the project.</p> <p>Where applicable, the SEP to be developed will include differentiated measures to allow the effective participation of those identified as disadvantaged or vulnerable. Dedicated approaches and an increased level of resources may be needed for communication with such differently affected groups so that they can obtain the information they need regarding the issues that will potentially affect them.</p>			

3. ENVIRONMENTAL AND SOCIAL MANAGEMENT MECHANISMS AND PROCEDURES

3.1 ENVIRONMENTAL AND SOCIAL IMPACT OF THE PROJECT

Overall, the project is expected to be beneficial to the country and the people by reducing pollution and protecting the environment, incurring significant positive environmental and social benefits. The successful implementation of the project will create job opportunities and improve the agri-food business by promoting green, climate resilient productive and inclusive agri-food development in the project designated areas.

Though the project will reduce pollution and protect and improve the environment, it is possible that potential environmental and social impacts and risks may still come out with varying degrees from the specific activities of the project.

Since the subprojects need to be determined during the implementation process, this framework document only makes a qualitative analysis of environmental and social risks and impacts based on the existing preliminary suggestions of the project. Detailed analysis, assessment and rating of potential adverse environmental and social risks will be undertaken under subcomponent-specific environmental and social due diligence.

3.1.1.1 Environmental Risks and Impacts at the Construction/Rehabilitation phase

The support provided to the agri-food sector of the GATE project components will consist of several activities that entail impacts on the natural and social environment. Component 3 will not have direct negative environmental and social impacts since its activities mainly consist of soft activities such as financing, capacity building and technical assistance activities and they do not involve any physical engineering activities.

The main construction and rehabilitation activities and associated risks per sub-component are listed in Table 3-1.

Table 3-1 Main Construction and Rehabilitation Activities and Associated Risks

Component	Activity	Associated Risks
Sub-component 1.1	<ul style="list-style-type: none"> ✓ Climate smart matching grants for group of farmers and SMEs that include the installation of solar panels, small scale processing units, advanced irrigation systems, energy efficient processing equipment, greenhouses, storage and cold storage, and agricultural machinery, food quality and safety equipment and other investments to improve agro-logistics, marketing, and sales. 	<ul style="list-style-type: none"> ✓ risks to health and safety of workers and community while constructing infrastructure works ✓ risk of limited noise, dust, and air emissions as part of construction of infrastructure works ✓ solid waste and wastewater generation from construction of infrastructure works, and related impacts on soil and water quality ✓ Soil erosion from exposed land surfaces caused by vegetation clearing ✓ Soil compaction and loss of permeability as a result of site leveling, excavation and compaction activities ✓ Loss or destruction of habitat; ✓ Possible impacts on ecosystems if the new facilities are constructed on Greenfields ✓ Potential for forest fires from construction or workers' activities ✓ Risk of encountering chance finds during any excavation works
Sub-component 1.2	<ul style="list-style-type: none"> ✓ The (support to Agrifood and Agritourism MSMEs and producer associations) investments that will be funded under this component are related to climate-responsive energy provision and resource-efficient production infrastructure and systems, modern machinery and equipment, quality and certification related investments that will increase productivity. 	<ul style="list-style-type: none"> ✓ risks to health and safety of workers and community while constructing infrastructure works ✓ risk of limited noise, dust, and air emissions as part of construction of infrastructure works ✓ solid waste and wastewater generation from construction of infrastructure works, and related impacts on soil and water quality

ESMF

Component	Activity	Associated Risks
		<ul style="list-style-type: none"> ✓ Soil erosion from exposed land surfaces caused by vegetation clearing ✓ Soil compaction and loss of permeability as a result of site leveling, excavation and compaction activities ✓ Loss or destruction of habitat; ✓ Possible impacts on ecosystems if the new facilities are constructed on Greenfields ✓ Potential for forest fires from construction or workers' activities ✓ Risk of encountering chance finds during any excavation works
Sub-Component 2.2	<ul style="list-style-type: none"> ✓ Energy efficient upgrading and rehabilitation of public irrigation systems; ✓ Construction of hill lakes and other types of small to medium water supply infrastructure and services ✓ Construction or rehabilitation of retaining walls (as part of terracing); <ul style="list-style-type: none"> ✓ Construction or rehabilitation of Concrete water reservoirs, other types of water supply infrastructure and services (rehabilitation of Al-Qasimia - Ras Al-Ain irrigation project, rehabilitation and completion of the 45 km irrigation network serving the Saida-Jezzine irrigation project, construction of secondary irrigation canals for Canal 800); ✓ Construction or rehabilitation of rural feeder roads; ✓ Development of local agricultural markets; ✓ Optimization of the operation of existing wastewater treatment plants (including sludge management and wastewater re-use) through rehabilitation and expansion activities (rehabilitation and expansion of the laot wastewater treatment plant, Charkieh WWTP, extension of WW systems in the Upper Litani River Basin) 	<ul style="list-style-type: none"> ✓ risk on public safety and ecosystem services from the construction and rehabilitation of infrastructure (substantial) ✓ risks to health and safety of workers and community while constructing infrastructure works ✓ risk of limited noise, dust, and air emissions as part of construction of infrastructure works, and ✓ possible impacts on ecosystems if the new WWTFs are being constructed on Greenfields. ✓ solid waste and wastewater generation from construction of infrastructure works, and related impacts on soil and water quality ✓ Soil erosion from exposed land surfaces caused by vegetation clearing ✓ Soil compaction and loss of permeability as a result of site leveling, excavation and compaction activities

ESMF

Component	Activity	Associated Risks
	<ul style="list-style-type: none">✓ Optimization of the operation of the existing solid waste management systems including composting and biogas production from manure to reduce soil and water pollution (system rehabilitation).	<ul style="list-style-type: none">✓ Loss or destruction of habitat;✓ Potential for forest fires from construction or workers' activities✓ Risk of encountering chance finds during any excavation works

Proposed mitigation measures for the above-mentioned risks and impacts during construction and rehabilitation activities on the sensitive receptors are listed in Table 3-2

Table 3-2 Environmental Risks and Mitigation Measures – Construction/Rehabilitation Phase

Impact	Description	Mitigation Measures
Air quality	Civil works will be required for construction and rehabilitation activities, which can cause temporary ambient air pollution, dust emissions, and may cause additional uncontrolled release of gas (under sub-component 1.1, 1.2, 2.2 and 3.2).	<ul style="list-style-type: none"> ✓ Stabilize the exposed surfaces ✓ Minimize activities that suspend dust particles ✓ Apply water to the areas to be excavated, loading and unloading areas and unpaved roads ✓ Develop a wheel wash at the entrance to public roads or exit of the construction site ✓ Implement speed controls on-site ✓ Maintain enough loading capacity of lorries and barges to avoid spillage ✓ Cover soil stockpiles with erosion control blankets ✓ Use hoarding to avoid wind-blown dust ✓ Apply good construction practices
Noise	Construction and rehabilitation activities can cause temporary noise pollution. (under sub-component 1.1, 1.2, 2.2 and 3.2).	<p>Generally, it is expected that the noise will not be high enough to interrupt sleep or disrupt normal activity. It is anticipated that construction activities will not be operational during the late hours; therefore, the impact on evening averages of ambient noise will not be applicable.</p> <ul style="list-style-type: none"> ✓ Optimize the use of machines and noisy equipment, and ensure their regular maintenance ✓ In case of receiving complaints from neighboring areas regarding noisy operations, acoustic barriers can be placed and noise levels at complaining receptors must be regularly checked for compliance with allowable limits ✓ Construction works should be stopped at night time ✓ Disseminate and properly implement the GM ✓ Limit construction hours (day times)
Soil and water quality	Soil erosion from exposed land surfaces caused by vegetation clearing Site Levelling, Excavation and Soil Compaction Activities (under sub-component 1.1, 1.2, 2.2 and 3.2).	<ul style="list-style-type: none"> ✓ Minimize as much as possible the clearing of vegetation ✓ Undertake soil control measures, i.e. planting of grasses to stabilize embankments ✓ Perform the excavations, compaction and grading activities according to international standards (i.e. ASTM Soil Compaction Standards), in order to minimize expected disturbance during the construction phase. ✓ Manage fixed routes for equipment movement and avoid multiple routes. Upon completion, excavated soil or rock can be used in the backfilling process or transported to another location. ✓ Ensure proper management of domestic and construction and demolition waste (CDW), including reuse of CDW where possible/ feasible ✓ Develop a spill response plan on which staff should be trained
Biodiversity	Loss or destruction of habitat; Possible impacts on ecosystems if the new WWTFs are constructed on Greenfields Potential for forest fires from construction or workers' activities (under sub-component 1.1, 1.2, 2.2 and 3.2).	<ul style="list-style-type: none"> ✓ Avoid adverse impacts on biodiversity where possible; if avoidance is not possible, reduce the impacts to the lowest magnitude possible through mitigation, and compensate for the remaining impacts (e.g., avoid clearance of trees; if not possible, reduce the number of trees to be cleared and replant the same number of native trees as those that have been cleared on site or in another location if not feasible). Mitigation measures include: <ul style="list-style-type: none"> ✓ Consider relocating trees whenever feasible ✓ Replace lost vegetation or trees with native species ✓ Minimize project footprint to control impact on ecosystems,

Impact	Description	Mitigation Measures
		<p>and adopt proper waste and effluent management plans in compliance with applicable legislation, standards and guidelines.</p> <ul style="list-style-type: none"> ✓ Proper management of waste, prohibition of littering and of lighting fires near forests and woodlands
Waste management	Construction and rehabilitation activities will lead to the generation of wastes	<ul style="list-style-type: none"> ✓ Prepare Construction waste management plans as part of ESIA/ESMPs ✓ Segregate construction wastes and reuse it where feasible ✓ Ensure construction wastes that cannot be reused are collected and disposed of in appropriate facilities
Cultural Heritage	The project activities are not likely to impact any known tangible cultural heritage sites or intangible cultural heritage practices or knowledge; however, chance finds might be encountered (under sub-component 1.1, 1.2, 2.2 and 3.2).	<ul style="list-style-type: none"> ✓ In case of chance finds, do not disturb further until an assessment by competent professionals is made and actions are identified; ✓ notify relevant authorities of found objects or sites by cultural heritage experts; ✓ fence-off the area of finds or sites to avoid further disturbance; ✓ conduct an assessment of found objects or sites by cultural heritage experts and Directorate General of Antiquities (DGA) ✓ resume works only following clearance from DGA
Occupational Health and Safety	Potential accidents Exposure of workers and community to potential health and safety hazards (under sub-component 1.1, 1.2, 2.2 and 3.2).	<ul style="list-style-type: none"> ✓ Surround the construction areas with scaffolding nets; ✓ Provide sufficient lighting; ✓ Prohibit keeping trenches unnecessarily open and install barriers to avoid falling and tripping; ✓ Fence off all construction sites to prevent unauthorized access; ✓ Keep machinery and vehicles passages clear; ✓ Implement a speed limit of 20 km/h for vehicles arriving to and leaving the construction sites; ✓ Provide workers with the appropriate PPE (goggles, dust masks, helmets, hearing protection equipment, proper clothing, safety boots, etc.) and enforce their use; ✓ Maintain the PPE (cleaning when dirty and replacement when damaged or worn out); ✓ Ensure the availability of adequate loading and unloading space; ✓ Prohibit smoking and littering; ✓ Ensure that an easily accessible first-aid station is provided on-site; ✓ Post adequate signs at visible locations throughout the construction area indicating type of operation, potential risks, and appropriate medical/emergency action response; ✓ Perform staff training about the fundamentals of occupational health and safety procedures, and about handling hazardous material containers and related wastes; and ✓ Implement the required air emissions and noise mitigation measures listed above.

3.1.1.2 *Environmental Risks and Impacts - Operation Phase*

Table 3-3 and Table 3-4 present the main expected positive impacts, risks and mitigation measures associated with the different project sub-components.

Table 3-3 Positive Impacts and Environmental Risks– Operation Phase

Sub-component	Associated Positive Impacts	Associated Risks
Sub-component 1.1	<ul style="list-style-type: none"> ✓ Use of renewable energy technologies, and associated reduction in energy consumption, air and GHG emissions, and energy costs 	<ul style="list-style-type: none"> ✓ Risk of unsafe farming activities, overuse of pesticides by some farmers leading to food safety risks; ✓ Risk of inadequate management of agriculture waste that could lead to wild fires; ✓ Risk of discharging drainage water, contributing to the contamination of water courses; ✓ Risk of unregulated expansion of agriculture lands by smallholder farmers when they use the matching grants; ✓ Risk of unregulated abstraction of irrigation water leading to water depletion; ✓ Risk of wild fires due to agricultural waste burning; ✓ Risk of loss of biodiversity (species and habitats) as a result of the above risks
Sub-component 1.2	<ul style="list-style-type: none"> ✓ Use of renewable energy technologies, and associated reduction in energy consumption, air and GHG emissions, and energy costs 	<ul style="list-style-type: none"> ✓ Risk of unsafe farming activities, overuse of pesticides by some farmers leading to food safety risks ✓ Risk of unregulated abstraction (through water lifting pumps) of irrigation water, which might affect groundwater aquifers and contribute to water depletion ✓ risks and impacts related to the operation of SMEs, including issues related to waste management, air emissions and workers' health and safety ✓ Risk of wild fires due to agricultural waste burning ✓ Risk of loss of biodiversity (species and habitats) as a result of the above risks
Sub-component 2.2	<ul style="list-style-type: none"> ✓ optimizing agriculture inputs ✓ minimizing the generation of agriculture waste through better management of the value chain; ✓ improving wastewater treatment and waste management; ✓ reuse of treated wastewater in the agriculture sector at the level of existing secondary or tertiary WWTP, leading to water conservation; ✓ Efficient use of available water resources, and increased irrigation water availability as a result of hill 	<ul style="list-style-type: none"> ✓ Risk of unregulated abstraction (water lifting pumps) of irrigation water, which might affect groundwater aquifers and contribute to water depletion ✓ risks to community health and safety from possible use of polluted irrigation water affecting food safety; ✓ Risk of water and soil pollution from effluents and indiscriminate disposal of sludge from WWTPs, and from landfills operation (in case of leachate leakage or uncontrolled operation); and ✓ Risk of odor emissions from the operation of rehabilitated solid waste and wastewater treatment plants and landfills, and improper storage/ disposal of sludge. Risk of

Sub-component	Associated Positive Impacts	Associated Risks
	<p>lakes construction and treated wastewater reuse;</p> <ul style="list-style-type: none"> ✓ The project will have an indirect positive impact on air, soil and water quality since the rehabilitated and improved wastewater and solid waste management facilities operation will lead to decreasing the likelihood of open burning of waste, the release of air emissions and leachate from uncontrolled dumpsites, and sewage disposal into surface water streams. ✓ As the majority of eligible investments are labor-intensive, they would contribute to job creation in rural areas, benefiting local and displaced communities. 	<p>deforestation that might result from the construction/ rehabilitation of feeder roads</p> <ul style="list-style-type: none"> ✓ Risk of biodiversity loss as a result of deforestation, uncontrolled operation of waste and wastewater management facilities, and other forms of pollution.
Sub-component 3.1	<ul style="list-style-type: none"> ✓ improving the use of pesticides through improved digitized extension; ✓ introducing organic farming and Biological Pest Control (BPC), which will minimize the use of agrichemicals and enhance food safety and marketability, thus increasing exports; ✓ Reduced GHG emissions due to improved crops quality and productivity and to renewable energy adoption, ✓ introducing circular economy and green procurement ✓ On the food safety front, the project will improve the monitoring capacity of MOA and MOET and introduce legal-regulatory and policy changes related to harmonization of national standards with international ones 	<p>Risks related to e-waste management and energy consumption</p> <p>Risk of biodiversity loss as a result of unsound e-waste disposal</p>
Sub-component 3.2	<p>positive impact on biodiversity and soil/ groundwater quality due to the usage of clean irrigation water</p>	<p>Risk of improper waste and effluent disposal from laboratories and testing facilities operation activities, and associated negative impacts on soil, water and air quality and biodiversity</p>
Sub-component 3.3	<ul style="list-style-type: none"> ✓ Improving agri-food export opportunities ✓ Improving animal health (and food safety) through vaccination ✓ Improved plant and animal product quality and safety 	<p>risks related to the downstream activities recommended by technical assistance and capacity building activities</p>

Sub-component	Associated Positive Impacts	Associated Risks
	<ul style="list-style-type: none"> ✓ Improved crop resilience and adaptability to climate change, reduced crop losses 	

Table 3-4 Environmental Risks and Mitigation Measures – Operation Phase

Impact	Description	Mitigation Measures
Air Quality	<ul style="list-style-type: none"> ✓ Odor emissions from WWTP and generated sludge, and from SWM treatment facilities (including composting operations) (under subcomponent 2.2) ✓ Air emissions from agro-food processing establishments (under subcomponent 1.2) ✓ Risk of wild fires due to agricultural waste burning (under subcomponent 1.1 and 1.2) 	<ul style="list-style-type: none"> ✓ Enclose leachate drains to reduce the emission of odors. ✓ Minimize the amount of water added to compost (e.g., by covering compost material) to avoid anaerobic conditions that can cause hydrogen sulfide odors if the compost mixture contains sulfur-containing materials. ✓ Equip WWTPs and SWM facilities with biofilters where needed to reduce odor emissions; ✓ Include landfill gas collection system designed and operated in accordance with applicable national requirements and recognized international standards, including recovery and pre-use processing or thermal destruction through an efficient flaring facility; prevent condensation from accumulating in extraction systems by arranging the pipe work to fall to a removal point such as a knock-out pot. ✓ Use landfill gas as fuel if practical, or treat before discharge ✓ Dispose of odorous sludge in covered trenches ✓ Aerate leachate storage areas ✓ Avoid open burning for land preparation, weed control, and post-harvest treatments. Where burning is unavoidable, potential impacts should be identified and weather conditions monitored to schedule burning to minimize impacts. ✓ Prohibit burning of pesticide-treated agricultural wastes and by-products (e.g., pesticide containers) to avoid unintended emissions of persistent organic pollutants (POPs). ✓ Reduce the risk of fire by reducing the build-up of potential groundcover fuel sources and controlling weeds and invasive species. Where controlled burns of residues are necessary, ensure optimal conditions for the low risk of spread and low impact on existing air quality. ✓ Repurposing residues as ground cover, soil amendments (that is, mulch or compost), animal feed, briquettes for heating, construction materials, paper products,

Impact	Description	Mitigation Measures
Soil and water quality	<ul style="list-style-type: none"> ✓ Unregulated abstraction of irrigation water leading to water depletion (under subcomponent 1.1 and 1.2) ✓ Improper disposal of drainage water, contributing to the contamination of water courses (under subcomponent 1.1 and 1.2) ✓ Improper storage and/or disposal of sludge from WWTP(under subcomponent 2.2) ✓ Improper waste and effluent disposal from SMEs, laboratories and testing facilities' operation activities, and agri-tourism activities/ establishments (under subcomponent 3.2) ✓ Uncontrolled operation of SWM facilities leading to contamination of soil and groundwater with leachate (under subcomponent 2.2); ✓ Uncontrolled operation of WWTPs leading to contamination of soil and groundwater (under subcomponent 2.2); ✓ Soil and water contamination from fertilizers and pesticides overuse (under subcomponent 1.1 and 1.2) ✓ Soil and water contamination from inadequate disposal of electronic waste(under subcomponent 3.1); 	<p>bioplastics, and other artifacts in order to reduce as much as possible open burning practices.</p> <ul style="list-style-type: none"> ✓ Ensure availability of water quantities and qualities suitable for new infrastructure projects ✓ Increase irrigation efficiency by employing the best technology available ✓ Promote best agricultural practices to reduce water loss by evaporation ✓ When possible reuse the drainage water for irrigation purposes ✓ Disposal of drainage water in natural depressions or specially designed unlined basins. The impounded water dissipates through evaporation and inadvertent seepage losses, and deposits salts and trace elements. ✓ Minimize leakages of effluent and/or sludge to surface and groundwater through regular inspection of connections between WWTP pipes. ✓ Use water-tight tanks for the transportation of sludge. ✓ Provide impermeable flooring underneath sludge holding tanks with a drain to contain any potential spill/overflow and prevent soil and water contamination; ✓ Provide proper leachate collection, treatment and disposal at SWM facilities, and monitor adequate operation and control of all SWM steps; ✓ Develop a waste and effluent management plan to be followed by lab operators and workers, SMEs and agritourism activities/ establishments, and ensure proper disposal of chemicals. ✓ Proper storage and handling of chemicals ✓ Develop a training and awareness program for farmers on the amounts and conditions for applying fertilizers and pesticides to prevent soil and water pollution; ✓ Promote Integrated Pest Management practices to control pests ✓ Promote and monitor sorting of e-waste and its proper management (e.g., handing it to authorized parties that export it)

Impact	Description	Mitigation Measures
Biodiversity	<ul style="list-style-type: none"> ✓ Population decline and mortality in fauna species, especially reptiles Reducing environmental flows necessary for aquatic biodiversity 	<ul style="list-style-type: none"> ✓ Avoid adverse impacts on biodiversity where possible; if avoidance is not possible, reduce the impacts to the lowest magnitude possible through mitigation, and compensate for the remaining impacts (e.g., avoid clearance of trees; if not possible, reduce the number of trees to be cleared and replant the same number of native trees as those that have been cleared on site or in another location if not feasible). ✓ Avoidance of introduction of invasive/Exotic species and degradation of habitats; ✓ Plant native vegetation species where feasible, especially where vegetation clearance has taken place; ✓ Adequately select and apply pesticides and monitor the weather when applying pesticides and avoid very hot or windy days. ✓ Introduction of measures for proper management of agrichemicals by smallholder farmers, measures for agriculture/agritourism waste management ✓ The Pest Management Plan (PMP) annexed as Annex G will need to be adopted by smallholder farmers ✓ Control the conversion of woodland and forests into agricultural land, and provide incentives for preventing such conversion

3.1.1.3 Social Risks and Impacts during construction/ Rehabilitation phase

During the construction/ rehabilitation phase of the project, the main positive social impact would be rural employment and reciprocated income generation.

Under sub-component 1.1, 1.2 and 2.2 new jobs will be created for the skilled and unskilled labour in the targeted communities. Unskilled labour will be sourced from the local communities. Indirect employment will be generated in the form of suppliers and other forms of sub-contracted works that will be required for the construction/rehabilitation phase of the project components. Women, youth and displaced populations will also have an opportunity to secure employment.

The risks and negative impacts with their respective mitigation measures are listed in **Error! Reference source not found.**

Table 3-5 Social Risks and Mitigation Measures – Construction/Rehabilitation Phase

Impact	Description	Mitigation Measures
Loss of land (mainly expected under sub-components 1.1, 1.2 and 2.2)	The loss of land and assets on land (crops, trees and structures) due to construction works is anticipated during sub-components 1.1, 1.2 and 2.2 implementation, hence resulting in people's displacement and/or assets loss;	The preparation of a resettlement action plan (RAP) with relevant consultations to fully compensate for lost/damaged property/ livelihoods, resettle the displaced persons and restore their livelihoods and in line with ESS5 requirements and the Resettlement Framework
Nuisance from construction and rehabilitation works,	Construction and rehabilitation works lead to nuisances to nearby communities from air pollutants and dust emissions, noise, traffic, etc. under sub-component 1.1, 1.2 and 2.2..	<ul style="list-style-type: none"> ✓ Supervision of construction/ rehabilitation works and clear obligations. ✓ Regular information on progress and Environmental and Social compliance for local communities ✓ Establishing a clear grievance redress mechanism, publicizing it and making it easily accessible ✓ Monitor labor management procedures implementation ✓ Communicate information about the hours of construction with the local population ✓ Implementation of mitigation measures for dust, air emissions and noise (Table 3-2) ✓ Limit speed on the construction sites to 20 km/h unless otherwise advised, and adopt careful logistical and route planning; ✓ Position any necessary traffic diversion signs and devices correctly. Signs and devices should be clearly displayed in the Arabic and English languages. Temporary traffic signals and signs should be employed to warn of hazards and provide directions, especially on narrow one-lane roads; ✓ Coordinate with the concerned municipalities with respect to the planned road blockages, detours or diversion, and the scheduling of the construction works including material delivery, waste transfer, truck movement and other machinery operations in order to limit the disruption to the neighborhood from traffic inconveniences and traffic flow and to minimize noise and dust generation; ✓ Follow a specific schedule for transport to avoid interference with peak traffic hours and minimize disturbance/delay to commuters at rush hours on the roads leading to the Project construction sites; and ✓ Fill up all holes and trenches, and level all mounds and heaps of earth, and exposed surface reinstatement, which have been excavated or made in connection with the works immediately upon completion of any part of the works.
Restricted	In specific cases, it might lead to	✓ Adopt the Resettlement Framework as per

Impact	Description	Mitigation Measures
access to property	temporarily restricting access to certain lands and resources, and risk on ecosystem services from the construction and rehabilitation of infrastructure under sub-component 1.1, 1.2 and 2.2.	<p>the requirements of ESS5, and specify the requirements for preparation of Resettlement Plans for the sub-project investments</p> <ul style="list-style-type: none"> ✓ Once the subproject investments are known, and in the event of any restrictions on land use and land acquisitions, the PCU should ensure the preparation of Resettlement Plans and the implementation of the grievance redress mechanism developed in order to fairly compensate PAPs and address all complaints and grievances within an acceptable period of time and to the satisfaction of the plot owners and in line with ESS5; ✓ Preserve access to ecosystem services during works, or compensate PAPs in case such services cannot be preserved ✓ Ensure continuous engagement with the PAPs in line with ESS5 and ESS10 requirements
SEA/SH, child labor and forced labor	<ul style="list-style-type: none"> ✓ Influx of workers may induce risks of SEA/SH/ GBV. under subcomponents 1.1 , 1.2 and 2; ✓ Risk of child labour and forced labour under subcomponents 1.1, 1.2 and 2.2. 	<ul style="list-style-type: none"> ✓ Supervise application of OHS regulations and code of conduct on SEA/SH (a SEA/SH Prevention and Response plan will be prepared by the PCU as per the provisions of the ESCP) ✓ Contractors should have a Code of Conduct Policy that all hired labors should sign and follow the employee code of conduct policy; ✓ Ensure the code of conduct is understood and signed by all identified project workers with clear communication of zero tolerance to SEA/SH according to the World Bank requirements ✓ Public hearings and meaningful consultations. ✓ Restriction from access to the construction site ✓ Establishing a clear grievance redress system ✓ Put in place separate referral pathways as part of the project GM for GBV, SEA/SH grievances, with confidentiality and survivor centric approach, and ensure that the GM is widely disseminated to reach targeted rural regions of the project. ✓ Ensure application of the World Bank Good Practice Note on ESF for IPF Operations – Addressing Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) in Investment Project Financing involving Major Civil Works ✓ Prepare a SEA/SH action plan before commencement of project activities in line with the provisions of the ESCP ✓ All hired laborers should undergo mandatory training that covers sexual abuse and exploitation/harassment, and Gender-Based Violence.

Impact	Description	Mitigation Measures
		<ul style="list-style-type: none"> ✓ Reporting allegations of sexual abuse and exploitation/harassment and Gender-Base violence through confidential reporting tools. All allegations should be investigated, and if these allegations are proven, strict disciplinary measures should be promptly taken. ✓ Assigned Contactors are bound to comply with laws prohibiting child labor and shall follow all applicable laws that recognize children's rights and minimum age of employment. ✓ Zero tolerance on child labour, maintaining a record of labor registry and age verification, and monitoring compliance with minimum age requirements ✓ Setting up, disseminating and properly implementing a labour specific GM ✓ Informing all workers of the internal GM for reporting any problems or complaints they might have, and ensuring it is properly implemented. ✓ Conducting rigorous pre-employment checks of all candidates to avoid hiring any previous offenders. ✓ Clear criteria for allocation should be adopted accounting for the ratio imposed and monitor adherence to the minimum percentage of women beneficiaries from the project; ✓ Conducting widespread communication and additional consultations where needed with women groups ✓ Consider and support women's equal participation in and benefit from the Project. .
Inadequate stakeholder engagement	Risk of weak and inadequate stakeholder engagement through exclusion of vulnerable groups	<ul style="list-style-type: none"> ✓ A detailed stakeholder mapping, presentation of stakeholder activities, roles, responsibilities, and budget for their implementation are available in the Stakeholder Engagement Plan (SEP) ✓ SEP ensures that these groups are not disproportionately affected and have equal opportunity in partaking in project benefits
Improper/Inadequate GM dissemination	Risk of weak and ineffective communication and dissemination of the project grievance mechanism, thus resulting in the perception of exclusion and therefore rising social tensions	<ul style="list-style-type: none"> ✓ Widely disseminate the GM through various channels (media, social media, through concerned municipalities, during consultations...) to reach targeted rural regions of the project with clear disclosure of contact information and procedures for registering grievances.

3.1.1.4 Social Risks and Impacts during Operation phase

The key positive social impacts of the project operation phase are listed in Table 3-6.

Table 3-6 Positive Social Impacts of the Project Operation Phase

Subcomponent	Positive Social Impact
Sub-component 1.1 and 1.2	<ul style="list-style-type: none"> • The project will improve access to finance for smallholder farmers and high growth producer associations and agribusiness SMEs in the agri-food value chain and agri-tourism. • Increased employment in farms, agri-business and agri-tourism enterprises benefiting from the project support, disaggregated by women, youth and displaced populations. This will in turn result in reduced climate-induced youth out-migration from rural areas by creating income opportunities and providing financial means for adaptation. • Business plans from women and youth or vulnerable citizens will be given priority in the selection process, thus ensuring an inclusive approach. • Under component 1, the project will finance farmers and SMEs in agriculture-related entrepreneurial activities to help them improve their productivity levels and crops safety and quality. This implies that if production is improved, there will be a decrease in prices, hence making it affordable for all the members within the community to have access to food. • Crops quality will also improve through the modernization of processing and packaging facilities, and the Lebanese consumers will benefit from safer and better-quality products. • The project is expected to improve the quality and sustainability of farmers' livelihood by providing financing access and support primarily to poor vulnerable farmers with focus on women, youth and displaced populations in lagging areas. • The improvement in agri-food value chains productivity will raise the income for the rural poor above the poverty line. This is an indirect impact that will be felt after many years. • The project shall finance climate smart and sustainable agri-tourism activities and businesses in the project designated areas to ensure a high growth of this sector. Agri-tourism in rural areas will help revitalize the local economy and preserve agricultural heritage, in addition to reducing out-migration from rural areas.
Sub-component 3.1	<p>The project will improve access to critical services like water and energy that facilitate climate smart agricultural activities in lagging rural areas through financing projects such as installation of solar panels, solar powered pumps, construction or rehabilitation of retaining walls, concrete water reservoirs, rehabilitation and modernization of community-level irrigation canals, rural roads rehabilitation, wastewater treatment installations, and improving waste management to limit contamination of irrigation water and agricultural lands.</p>
Sub-component 3.1 and 3.2	<ul style="list-style-type: none"> • Strengthening food safety and quality shall be achieved through clean irrigation water and proper monitoring of contaminants in food products. • The creation of the digital farmer registry and the digitalization of extension services will improve the access of smallholder farmers and SMEs to data pertaining to sustainable farming practices and climate smart agriculture (CSA) technologies that help improve productivity and over the long term reduce input costs and build climate resilient agri-food value chains.

Subcomponent	Positive Social Impact
	It will also facilitate access to market information on climate smart and organic agri-food value chains. Public services will be digitized in support of food safety in agri-food value chains in lagging rural areas. The digital platform will link producers to consumers.
Sub-component 3.2	<ul style="list-style-type: none"> Enhanced Capacity and Empowerment of beneficiaries in proper application of chemicals (fertilizers, pesticides) and farming practices, resulting in the protection of public health and the environment, reduction of crop vulnerability to invasive pests and diseases
Sub-component 3.3	<ul style="list-style-type: none"> The project will facilitate the access of smallholder farmers to the market by supporting them to promote their horizontal- linkages with other smallholders and vertical linkages with buyers/ offtakers through commercial agreements, thus enhancing their participation in value addition. The project will facilitate access to international exports and improve export and marketing mechanisms.

Table 3-7 presents the social risks and mitigation measures during the operation phase.

Table 3-7 Social Risks and Mitigation Measures - Operation Phase

Impact	Description	Mitigation Measures
Weak consultation and exclusion of vulnerable groups	<ul style="list-style-type: none"> ✓ Risk of exclusion of potential smallholder farmer beneficiaries, SMEs, vulnerable women led farmers and women rural entrepreneurs, youth and workers/labour under subcomponent 1.1. ✓ Potentially weak overall consultations and outreach on project information dissemination. 	<ul style="list-style-type: none"> ✓ Effective and inclusive consultations with stakeholders including the most vulnerable identified groups to communicate the project details and components, to enhance transparency on project related information and selection criteria for job creation opportunities and business plans, ✓ Conducting widespread communication and additional consultations where needed with women groups ✓ Ensure systematic implementation of the SEP. This document must be updated as required to reflect any changes as lessons are learned during implementation ✓ Developing criteria for the selection of beneficiaries and for inclusion of vulnerable groups
Community health and safety	<ul style="list-style-type: none"> ✓ Possible use of polluted irrigation water affecting food safety, community health and safety under component 1.1 and 1.2.2 ✓ Unsustainable use of water resources that could limit access of communities to such resources 	<ul style="list-style-type: none"> ✓ Irrigation water quality to comply with national standards and the general EHS guidelines, as well as WHO Water Guidelines applicable to irrigation water quality Adopt a proper water management plan to ensure water sustainability and availability
SEA/SH, OHS risks	<ul style="list-style-type: none"> ✓ Influx of workers may induce risks of SEA/SH under subcomponent 1.1, 1.2 and 	<ul style="list-style-type: none"> ✓ Supervise application of OHS regulations and code of conduct on SEA/SH

Impact	Description	Mitigation Measures
	<p>2.2.</p> <ul style="list-style-type: none"> ✓ Daily activities in the agri-food value chain are associated with OHS risks under subcomponent 1.2 ✓ Risk of child labour, especially in the agriculture sector under subcomponent 1.1, 1.2 and 2.2 ✓ Forced labour and child labour associated with primary supply workers for solar panels under subcomponent 1.1 	<ul style="list-style-type: none"> ✓ Establishing a clear grievance redress system and monitoring its implementation ✓ Awareness promotion relating to GBV, SEA and SH ✓ Ensure that codes of conduct are signed and understood by all identified project workers with clear communication of zero tolerance to SEA/SH according to the national legislation and World Bank requirements ✓ Put in place referral pathways as part of the project GM for GBV grievances, with confidentiality and survivor centric approach, and ensure that the GM is widely disseminated to reach targeted rural regions of the project. ✓ Zero tolerance on child labour, ensuring age verification upon contracting workers, and monitoring compliance with minimum age requirements ✓ Setting up, disseminating and properly implementing a labour specific GM (ref. LMP) ✓ Based on the requirement for every component, primary supply workers will be recruited by the suppliers as required. It will be ensured (and monitored periodically by the CDR PCU) that no children are recruited and supplied as workers. Furthermore, it will be monitored that workers are not subject to 'forced labour' in any manner. The CDR PCU will be responsible for making sure that these standards are strictly followed. If any deviation is identified, the CDR PCU will take action as prescribed in the contract/ agreement following the LMP.

3.2 RISK CLASSIFICATION AND IMPACT MANAGEMENT FOR THE SUB-PROJECTS

According to the preliminary qualitative analysis, the site activities may cause a range of environmental and social risks and adverse impacts on the population and environment as described in the previous section.

For Components 1 and 2, the activities related to improving basic service delivery and common-user community infrastructure, and modernizing support services to improve the enabling environment for agri-food sector development will support subprojects. These subprojects will need to undergo detailed environmental and social impact analysis.

The anticipated subprojects are screened to determine the significance of associated environmental and social risks (Annex A). The screening is undertaken in line with WB ESF Environmental and Social Risk Classification rating risks as High, Substantial, Moderate and Low Risks, based on a range of relevant factors which may include:

- Type, location, sensitivity, and scale of the project;
- Nature and magnitude of the potential environmental and social risks and impacts;
- Capacity and commitment of the implementing agencies to manage the environmental and social risks and impacts consistent with the ESF;
- Legal and institutional considerations;
- Nature of the mitigation and technology being proposed;
- Governance structures and legislation; and
- Considerations relating to stability, conflict or security.

Moreover, MoE will classify the proposed sub-project as either requiring an “Initial Environmental Examination (IEE)” or an “Environmental Impact Assessment (EIA)” as per the requirements of the National EIA Decree 8633.

The EIA Decree 8633/2012 describes the steps to be undertaken to prepare and approve an EIA (see Annex B). It also provides an outline of the information required to be presented in the EIA report (see Annex C and Annex D). Decision 261/1 of 2015 provides guidelines for the review of EIA scoping reports and EIA reports. Appendices 6 and 8 of the EIA Decree present the content required to be presented in IEE and EIA reports.

After screening the site-specific activities, the corresponding documents will be prepared in accordance with the procedures and requirements specified in this framework during the project implementation process. As per the EIA decree, an IEE study does not require stakeholder consultation. However, if such projects require an ESMP based on screening according to WB ESF, then a public consultation shall be required.

As per the analysis, mitigation measures and environmental and social risks of subprojects envisaged under the Project in the previous chapter, Table 3-8 **Error! Reference source not found.** describes the risk ratings given for the different types of project activities and the environmental and social management tools to be developed and implemented within the project. However it must be noted that the risk ratings of expected project activities suggested in Table 3-8 are preliminary and will be determined during the preparation of site-specific E&S documentation.

Table 3-8 Sub-projects Environmental and Social (E&S) Risk Classification and E&S Management Tools

Risk Rating	Definition	Project Activity	Applicable E&S Tools
High	The project will possibly cause a wide range of significant environmental and social risks and adverse impacts on the population and environment. Some of the impacts cannot be mitigated by now, or with special situations such as requiring complex and / or unproven mitigation and/or compensation measures or techniques.	None identified.	Not Applicable
Substantial	Some of the E&S impacts of the project are possibly significant, but	Construction and rehabilitation of	ESIA, ESMP LRP (if triggered)

Risk Rating	Definition	Project Activity	Applicable E&S Tools
	with reliable mitigation and/or compensation measures will be designed.	wastewater infrastructure Operation of large waste management facilities, wastewater treatment plants, major water abstraction activities, constructing rural roads with new right of way, etc.. Optimization or working capital for existing facilities	Environmental and Social Audit
Moderate	The project has potential E&S risks or adverse impacts which are possibly not significant and can be mitigated in predictable ways.	<ul style="list-style-type: none"> ✓ Rehabilitation of Al-Qasimia - Ras Al-Ain irrigation project; ✓ rehabilitation and completion of the 45 km irrigation network serving the Saida-Jezzine irrigation project ✓ Treatment of the irrigation water quality of Canal 900; ✓ rehabilitation and refurbishment of the sorting and composting facility in Srar and completing the sanitary landfill in Srar which is already excavated; ✓ rehabilitation of the existing sorting and composting facilities of Joub Jannine, Zahle, Baalbeck and Barr Elias and upgrading existing landfills through the provision of leachate and gas extraction systems; ✓ rehabilitation of the mechanical biological treatment facility in Saida and rehabilitation of the non-operational sorting and composting facilities in Ain Baal and Kfour; ✓ upgrading sanitary landfills at the level of <u>all</u> SW service zones to reduce the scale of open dumping in rural areas ✓ Optimizing the operation of existing WWTPs (including sludge management), sewage and solid waste management systems. 	ESMP

Risk Rating	Definition	Project Activity	Applicable E&S Tools
		<ul style="list-style-type: none"> ✓ operation of SMEs (component 1.2), and small holder farming activities 	
		Optimization or working capital for existing facilities	E&S audit
Low	The potential adverse risks and impacts on humans and / or the environment may be small or negligible.	Soft activities (Upgrading the infrastructure of labs and testing facilities) under components 2.1 and 3	E&S screening and inclusion of potential impact as part of the procurement documents

The project will work with municipalities and ministries and help the key agencies in developing and implementing citizen engagement strategies as part of their services. Community and citizen grievance mechanisms will be developed and implemented.

The site-specific ESIA or ESMP will be prepared as per the ESCP in accordance with national legislation and World Bank ESS1, incorporating requirements of other relevant ESSs, and applicable national regulations. The ESIA/ESMP report, strengthened by the standards of ESS1 of the World Bank as the primary means of documenting the environmental and social sustainability of a project, provides guidance to project decision makers on the environment, as well as social acceptability of the project activities, and permits planning and investment decisions to be made on a comprehensive understanding of the anticipated project impacts.

In light of key characteristics of the physical, biological, and socio-economic environment of the potential project sites, which are deemed to be of significance in determining the potential impacts of project activities, the site-specific ESIA/ESMPs will identify and evaluate the following:

- Assessment of the E&S baseline conditions in the target sites;
- Direct and indirect environmental and social impacts likely to arise from project activities;
- Appropriate measures to minimize potential significant environmental and social impacts;
- Analysis of project Alternatives to determine the best way of achieving project objectives while minimizing environmental and social impacts;
- An environmental and social management plan to mitigate environmental and social impacts;
- Cumulative impact assessment, emergency response plans, and risk hazard analysis as applicable;
- Appropriate compensation for impacts that cannot be mitigated;
- Opportunities for stakeholders to register grievances through an adequately functioning GM;
- Feedback from stakeholders to inform project design in inclusive stakeholder engagement opportunities for public benefit throughout the lifetime of the project;

- Institutional arrangements to oversee the proposed project activities including the necessary capacity building program; and,
- A comprehensive monitoring program to evaluate the impacts of project activities.

The site-specific environmental and social assessment of these activities, or subprojects, will be carried out after the sites have been selected and the specific details, including the location, conceptual design, and detailed engineering design, will be determined during the first year of the project implementation. The preliminary risk rating will also be reconsidered at this stage. The depth and scope of subproject site-specific environmental and social due diligence will be defined based on the detailed environmental and social screening, and will generally require the preparation of:

- ✓ "Environmental and Social Impact Assessment (ESIA)": With content of identification and assessing the potential environmental and social risks of the proposed project, analyzing the scheme selection, formulating appropriate reduction measures, putting forward management requirements, and follow-up monitoring and reporting arrangements, this form is generally applicable to the subprojects of 'High' and 'Substantial' risk ratings. The ESIA will analyze the site-specific risks and propose appropriate mitigation measures following the Bank issued guidance notes following the selection of sites. This instrument will be mainly used for the construction activities.
- ✓ Environmental and Social Management Plan (ESMP): By putting forward the detailed measures to avoid, mitigate, handle and compensate for the environmental and social impacts, and formulating action plans for implementing these measures, this form is generally applicable to the subprojects of "High", "Substantial" and "Moderate" risk ratings. ESMPs (Annex E) will be prepared for improvement/rehabilitation of existing projects and other activities classified as moderate activities as well as of existing facilities if any, including an environmental audit of these facilities.
- ✓ E&S Audits (ESA) for projects involving optimization or working capital for existing facilities. E&S Audits are performed to ensure that an existing project and its associated facilities are conforming with the World Bank Environmental and Social Standards (ESSs). As a requirement for the World Bank funded projects they identify adverse environmental and social impacts of the project or facility, and propose measures to mitigate these adverse impacts on communities.
- ✓ Pest Management Plan (PMP) to ensure the reduction and mitigation of potential risks caused by pesticides on human health, the environment, and biodiversity. It also promotes Integrated Pest Management (i.e. Biological Pest Control (BPC), crop varieties, agriculture practices, etc.) and the safe use of agricultural pesticides, encourage good agricultural practices, and promote the adoption of sustainable alternative designs to mitigate environmental and social impacts that pest control may have. The WB requires that any pesticide it finances shall be manufactured, packaged, labeled, handled, stored, disposed of, and applied according to standards acceptable to the Bank.

3.3 PREPARATION OF THE DOCUMENTS OF THE SUBPROJECTS' ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

According to the subproject risk classification and the requirements of the corresponding E&S impact assessment document form confirmed by the World Bank, the CDR PCU shall employ qualified environmental and social consultants to prepare the site-specific environmental studies for the subprojects according to the applicable environmental and social standards (ESS) under the ESF of the World Bank and the applicable national regulations. Appointed consultants should be part of the pre-qualification list of environmental consultants in Lebanon.

During the preparation of sub-projects, the CDR PCU needs to review and approve the corresponding environmental and social assessment documents prepared by a pre-qualified firm for the beneficiaries according to the requirements confirmed by the World Bank. During this period, the Project's Stakeholder Engagement Plan, including its Grievance Mechanism (GM) should be updated if needed and must be implemented. Moreover, the GM must be widely disseminated to be accessible to all stakeholders

The World Bank requires that the depth and breadth of environmental and social assessment should match the risk and impact level of the project, and the measures and information release to stakeholders should also be in line with the SEP and consistent with the risk and impact level of the project.

No matter what types of documents are adopted, the environmental and social assessment of all subprojects shall comply with the requirements of the relevant 'Environmental and Social Standards' of the World Bank ESF and the applicable national regulations.

Environmental and social assessment is required to comprehensively assess the E&S risks and impacts in the whole project cycle, including direct, indirect and cumulative impacts.

Based on the accurate project description and environmental and social status information, environmental and social assessment shall assess potential environmental and social risks and impacts, analyze alternative plans to the project, and determine methods to improve project screening, site selection, planning, design and implementation, so as to formulate management and mitigation measures against the adverse environmental and social impacts in accordance with the sequenced order of management measures. As for the cases of pollutant discharge, it is required to take the remaining environmental capacity, present and future land use, important sites of biodiversity in the surrounding region, potential cumulative impacts and impacts of climate change into consideration. According to ESS10 of the World Bank, environmental and social assessment should include the participation of the stakeholders, which is an integral part of the assessment.

Associated facilities will be covered by the ESIA/ESMP process as per the ESS1 and should be in line with the requirements of the national EIA decree 8633/2012.

According to the World Bank's ESS2, the environmental and social assessment is also required to take the relevant risks of child labor, forced labor and serious safety issues of major primary supply workers into account.

3.4 APPROVAL OF ENVIRONMENTAL AND SOCIAL DOCUMENTS

The CDR PCU will arrange for the disclosure and public consultations on subproject-specific ESIA/ESMPs. Upon completion of the public consultations, the consulted draft will be provided to the WB, enclosing detailed minutes of consultations.

The MOE regulates and monitors the EIA Process. MOE is responsible for the following: (i) review and approval of IEE/EIA reports in collaboration with other relevant ministries and (ii) monitoring the ESMP implementation of Project Proponents/Owners throughout the different project phases.

Decree 8633 requires that an IEE or EIA report be submitted to the MOE for review and approval. The IEE or EIA approval takes 60 working days, counted from the date that the MoE officially receives the IEE or EIA report.

Annex B shows the IEE/EIA preparation and approval process. ESMPs prepared for this project will follow the IEE review procedures and timelines.

The World Bank will conduct a review of the subproject-specific ESIA/ESMPs prepared in accordance with the ESMF and relevant ESSs before giving the clearance for disclosure and implementation.

3.5 COMPLIANCE TO THE REQUIREMENTS OF THE SUB-PROJECTS

The incorporation of relevant measures stated in the site specific ESIA/ESMPs into the bidding documents and the contracts will be ensured by the CDR PCU. This will be done to ensure that the contractors can properly incorporate and provide the cost of the required measures and then are subsequently compliant to the relevant requirements, and conduct proper implementation of the actions and measures during the project construction and implementation phases. Relevant requirements of supporting instruments, including the SEP and the LMP, will also be incorporated in the relevant contracts.

3.6 PROCEDURES FOR BUDGETING IMPLEMENTATION, SUPERVISION, AND REPORTING

After the approval of the demonstration subprojects, the CDR PCU shall continuously monitor the environmental and social management performance of the civil works subprojects as an integral part of subproject supervision. The detailed requirements include:

- ✓ For all subprojects under the project, management shall include the review and assessment of the E&S performance of the subprojects. The site-specific ESIA/ESMPs will include (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the ESMP. This will be for all three (3) aspects (mitigation, monitoring and capacity development).

- ✓ The CDR PCU is required to ensure that the relevant actions of ESCP and the measures coming out of the ESIA and included in the ESMPs are incorporated into the detailed design, costing and bidding documents and construction contracts, and will be realized in the implementation. The good practice is often that the ESIA company works in collaboration with engineering design once site specific instruments are being prepared to ensure incorporation.
- ✓ The CDR PCU shall guarantee that the subproject participants such as contractors and supervision units establish an organizational structure which meets the requirements of E&S management and arrange special personnel to be responsible for of E&S management. The requirements for specific E&S management tasks and staff shall be reflected in respective TORs.
- ✓ The CDR PCU shall assess the performance in accordance with the requirements of the national laws and regulations applicable to the subproject and the ESMF, ESCP and the E&S requirements of the subproject. The CDR PCU ensures ESF compliance, including having contractors implementing instruments for civil work activities. The assessment of performance is to be carried out during implementation support missions at midterm and at Implementation completion stage or under any circumstances which require an audit. The construction supervision consultancy will also comprise specific ES monitoring and oversight functions.
- ✓ The CDR PCU shall inform the World Bank within 48 hours if it is informed of any environmental and social accidents that may have a significant adverse impact on the workers, the affected communities, and the public or open environment. It is required to provide as much detailed information as possible about the accident, including the measures being taken or to be taken as well as the appropriate information provided by the contractors and regulatory agencies. Subsequently, a report will be provided within one week from the accident and will propose targeting measures to prevent it from happening again.

In addition, the CDR PCU shall track and monitor the implementation of the actions specified in the ESCP and report it in the quarterly E&S progress report, as stated in the ESCP.

3.7 SUB-PROJECTS' COMPLETION AND ASSESSMENT

The environmental and social management performance of the whole process must be reviewed after the implementation of all subprojects. This provides a general overview of the experiences and lessons gathered from the process which would be a basis for the preparation of the completion of the report. The results of implementation of ESF instruments for the completion of each sub-project and project completion will be incorporated in the Project Implementation Completion Report/ICR, which elaborates E&S management lessons learned (good and bad practices), ES performance rating, and capacity of institutions (before and after).

4. CONSULTATION OF STAKEHOLDERS AND SOCIAL MOBILIZATION

For the purposes of effective and tailored engagement, stakeholders of the proposed project were divided into the following 3 categories, as detailed in the SEP document:

Affected Parties – persons, groups and other entities within the Project Area of Influence that are directly influenced (actually or potentially) by the project and/or have been identified as most susceptible to change associated with the project, and who need to be closely engaged in identifying impacts and their significance, as well as in decision-making on mitigation and management measures.

Interested Parties – individuals/groups/entities that may not experience direct impacts from the Project but who consider or perceive their interests as being affected by the project and/or who could affect the project and the process of implementation in some way.

Vulnerable Groups – persons who may be disproportionately impacted or further disadvantaged by the project(s) as compared with any other groups due to their vulnerable status and that may require special engagement efforts to ensure their equal representation in the consultation and decision-making process associated with the project.

Stakeholder engagement has been important in the project development and preparation of this ESMF. Three consultation meetings were conducted in Baalbeck- Hermel, Akkar, and South- Nabatiyeh, on 15, 16 and 17 February 2023 respectively. The number of participants in Beqaa-Baalbeck was 89, out of which 27 women (31%); in Akkar 71 participants, out of which 25 women (36%); and in the South 73 participants out of which 21 women (30%). Details are included in Annex F.

The main objectives of stakeholder consultation meetings were to introduce the GATE project, its objectives, beneficiaries and components, as well as presenting the ESMF and GM.

The meetings participants were mainly from governmental institutions, municipalities, farmers, women, NGOs, cooperative unions, heads of syndicates, private sector and SMEs.

During the consultations, the project details (background, objectives, and components), its potential environmental and social impacts, and the grievance mechanism were presented by the ESFD who then presented each component in detail, followed by 30 minutes of open discussions with the attendees to solicit suggestions following each component's presentation, in each of the locations.

The first stakeholder consultation meeting took place on February 15, 2023, for the governorates of Beqaa and Baalbek-Hermel. The main concerns raised were as follows:

- To provide recommendations to encourage organic farming, planting the unused agricultural lands, reducing the use of fertilizers;
- To provide support to the marketing of crops;
- To provide technical assistance on climate-smart agricultural practices;
- To provide support to the agro-industries, constructing hill lakes;
- To identify projects based on participatory approach; and
- To increase awareness among the various stakeholders.

The second stakeholder consultation took place on February 16, 2023 for the governorate of Akkar, and the main issues and comments raised by various stakeholders included the following:

- Marketing of the agricultural production is one of the major concerns for many participants.
- One of the participants proposed encouraging youth to be involved in the agricultural sector, noting that Youth are not motivated towards this promising sector. Moreover, it is advisable to encourage them and relate the sector to modern technology being one of the tools applied in modern Agriculture.
- One participant raised this concern, clarifying that Women do work in Agriculture but do not consider it as work. We should give them incentives and provide them with support during the whole cycle of the project.

As envisaged in the SEP, women are directly targeted along the project planning and implementation phases. Invitations have been sent to this group of residents as individuals and cooperatives, to be part of the focus groups discussions. A special care has been given to this case bearing in mind that women contribute largely in the agricultural sector, but are not appropriately valued in terms of generating income. It was clarified by the expert that Women are part of the beneficiaries to be targeted in the project.

- Participants inquired about the high cost of onions sold in the markets.
- A well-studied earthy berm (ساتر ترابي) is needed to avoid water expansion.
- Knowing the status of beekeeping, we need to promote beekeepers and enhance this sector's production.
- One participant suggested replacing "Green" Agri-food transformation with "Sustainable".
- Available lands in Akkar are suitable for investment. Each region has its specific characteristics producing excellent products in case of affordable materials and capacities of the farmers.
- Production cost is increasing due to cost of seeds which is in USD, in addition to fertilizers, medications, workers' expenses, watering through canals or wells and the cost of fuels. We should seek a better system to enhance capacities for a better production, for example through the installation of solar systems to reduce costs.
- Funds are needed to be allocated for irrigation canals, in addition to providing support for the purchase of fertilizers and medications. In parallel, we should secure markets to sell agricultural production.
- We should focus on milk production, being a weak sector and livestock breeders lack know-how, experience, and green farms for breeding cows.
- It is recommended to focus on specific sectors. People are draining their energies and resources, while agricultural production is decreasing. We should decrease production costs and promote better production. We have small holdings but we should pay attention to what is more convenient environmentally.
- Infrastructure for irrigation canals.
- Overlapping of production.
- Support cooperatives with small and alternative cultivations such as roses.

- Need know-how and awareness campaigns to know how to achieve better production. We need to decrease production costs while upgrading the production.
- Need for Solar energy or alternative energy.
- With the lack of Lebanese workers in agricultural lands, we need Infrastructure for services, linked to human resources.
- Requested licenses from Lebanese official authorities are becoming harder. We need to simplify the procedures in order to encourage Agriculture.
- No laboratory is available for soil testing, or long distances need to be travelled for this purpose, resulting in additional burdens on farmers. No bank for seeds is available.
- We recommend re-opening Al Abdeh laboratory (LARI) to allow employees to resume work, and reduce costs of testing soil and water.
- We do not have wastewater management systems
- Aromatic plants are recommended within the project activities.
- Cutting off trees, especially Juniperus excelsa (الزأب), should be prohibited
- Soil tests and water tests should be secured to ensure the sound production in order to reach foreign markets
- The Agriculture sector must be organized through the establishment of syndicates for farmers, especially those working in the food industry. In Akkar, there is no industry for food processing such as tomato paste like in Beqaa
- Absence of trust in governmental projects

The third stakeholder consultation took place on February 17, 2023, for the South and Nabatiyeh governorates and the main recommendations and suggestions by the various stakeholders were as follows:

- Engagement of public sector in the identification process / reduce import and increase export of agricultural products.
- Enhancing Lebanese products and marketing productions.
- Transparency in the methodology of work / water strategy.
- Linkage between the crops to be supported and the channels of marketing
- Support women working in the agricultural sector to achieve self-sufficiency. Women constitute a large working force in the south, especially in the cultivation of tobaccos. It was suggested by the participants to create a link between agri-food cooperatives and the Lebanese Army in order to market their products.
- Wastewater treatment
- Extension of the nature reserves
- Importance of the existing manpower and resources / factors influencing agriculture
- Water management and rationalization / climate change influence
- Agriculture academy / animal / production marketing
- Coordination and collaboration with Municipalities and local authorities / sectors of intervention
- Harmony between plant and animal farming
- Adopt the agriculture strategy prepared by the Ministry of Agriculture.
- Need for laboratories / incubators for honey queens ...
- Need for laboratories / crops development according to characteristics of regions
- Support of agricultural extension centers

Table 4-1 Photos taken at the Stakeholders meetings

Baalbek	
	
	
Haiba	
	
	
Ansariyeh	



5. ARRANGEMENT AND STRENGTHENING OF INSTITUTION AND TRAINING

5.1 INSTITUTIONAL ARRANGEMENTS

The overall Project implementation would be led by the CDR as Project Implementing Agency (PIA), through a PCU.

The main governmental agencies involved in the project's components implementation are as follows:

- Kafalaat;
- Ministry of Agriculture;
- Ministry of Industry;
- Lebanese Agricultural Research Institute;
- Green Plan;
- Ministry of Economy and Trade;
- Ministry of Energy and Water;
- Litani River Authority;
- Water Establishments;
- Ministry of Environment;
- Governorates;
- Municipalities; and
- Union of Municipalities.

The governmental agencies' main functions and implementation responsibilities have been presented in section 2.6 **Error! Reference source not found.** under Table 2-16.

A PSC shall be established to oversee the implementation of activities and resolve issues of a policy nature that might arise during project execution. It would be chaired by the Ministry of Agriculture and the Ministry of Economy and Trade, and its members would include the Ministry of Finance, Ministry of Industry, Ministry of Environment, Ministry of Energy and Water and Ministry of Tourism.

The CDR PCU shall hire an Environmental and Social Specialist, who will be responsible for the day-to-day implementation of the outcomes of the E&S studies and instruments. The E&S Specialist will assume overall responsibility for coordinating the management of the environmental and social aspects of the project interventions at the respective sites.

CDR has a proven record in implementing projects financed by the World Bank. Performance is, in general, satisfactory. CDR reports to the Council of Ministers. CDR will leverage the experience of the Economic and Social Fund for Development's experience (ESFD) that was established in 2000 as a semi-independent body dedicated to alleviating poverty through the creation of employment opportunities and the improvement of living conditions of vulnerable communities.

ESMF

A training program will be delivered to enhance the E&S management capacity for MOE, Municipalities, UoMs, contractors, sub-contractors, smallholder farmers, SMEs and communities on:

- ESF and ESMF;
- ESIA/ESMP for sub-projects;
- SEP and GM;
- ESCP and Monitoring of the ESHS
- Performance of the Project (and incidents and accidents reporting)
- Community Health and Safety;
- GBV Risk Prevention and Management;
- LMP and Labor GM;
- Codes of Conduct for the contractors' workers and Training on the Requirements of Codes of Conduct including ESHS, OHS, GBV, VAC, SEP and GM.
- Violence Against Children, including awareness campaigns.

The appointed specialist at CDR PCU will prepare and submit to the WB regular monitoring reports on the environmental and social performance of the Project, including but not limited to the implementation of the ESCP, status of preparation and implementation of E&S documents required under the ESCP, stakeholder engagement activities, functioning of the grievance mechanism(s).

5.2 COST ESTIMATE

As the project is still at its conceptual framework phase, it is difficult to provide an accurate budget for the ESMF. Table 5-1 provides an interim budget for environmental management within the GATE project by providing estimates of the price of each instrument that might be required for the sub-projects. Ranges are provided since the cost will depend on each project's size, scope, complexity, whether it is linear or not, etc.

Table 5-1 Cost Estimate of the ESMF Implementation

Item	Responsible Party	Indicative Cost
Subsequent preparation of an E&S Audit study	CDR PCU	USD 8,000 -15,000
Subsequent preparation of an ESIA study	CDR PCU	USD 12,000 – 50,000
Subsequent preparation of an ESMP study	CDR PCU	USD 8,000 – 20,000
Training and capacity building on implementation of ESMPs for	CDR PCU	USD 10,000

Item	Responsible Party	Indicative Cost
contractors, subcontractors and relevant institutions		

6. GRIEVANCE MECHANISM (GM)

The CDR PCU will have the overall responsibility for handling and managing all project related grievances and for coordinating and compiling all grievances with the relevant implementing agencies including the Kafalat and Green Plan. Grievance mechanisms (GMs) refer to the formal institutions and channels that capture beneficiary complaints or grievances related to targeting, service delivery, or other program functions, and provide redress. GMs are not just developed for complaints but for two-way communication where feedback, concerns and questions can all be raised. Effective GM facilitates Project progress by reducing the risk that unaddressed complaints eventually lead to implementation delays, lengthy court procedures, or adverse public attention.

As suggested in section 3.1.1.4, Table 3-7 a labour specific GM has to be established in addition to a GBV specific GM in order to cover risks related to SEA/SH.

The final design of the GMs will be validated and adjusted as needed during the course of Project implementation in consultation with relevant stakeholders, to ensure its relevance and ease of use, and for stakeholders to tap into the GMs channels.

As per section 6 of the Stakeholder Engagement Plan (SEP) report, the GM aims to provide individuals and communities who feel aggrieved by Project activities with accessible, timely, effective and culturally appropriate opportunities to raise their complaints, feedback, concerns and questions about the Project. It also aims to identify, propose and implement fair and appropriate solutions in response to the complaints and concerns raised. The GMs objectives are to:

- Establish a system for receiving, recording and processing complaints and concerns in a timely manner with particular attention to vulnerable groups.
- Provide an effective, transparent, timely, fair and non-discriminatory system that would allow aggrieved persons to complain and avoid litigation.
- Ensure the sustainability of Project interventions and ownership by stakeholders.
- Minimize bad publicity and delays in Project implementation.
- Provide clarification in response to requests for information in a timely manner.
- Encourage the amicable settlement of complaints and avoid, whenever possible, recourse to the courts.

The CDR PCU will establish a centralized database (complaints log or data system), and will require that all grievances received be logged into that database. Centralized logging and tracking is important both for accountability and for enabling continuous learning. As part of the CDR PCU, a GM officer shall be recruited, who will coordinate throughout the project life cycle with the Kafalat and Green Plan implementing agencies and the CDR PCU E&S specialist to ensure:

- adequate functioning of the GM,
- widespread and effective dissemination,
- proper logging and documentation of the grievances in a unified/streamlined GM log across all implementing partners,
- all cases are closed in a timely manner,
- SEA/SH related grievances are referred to the GBV service providers following the consent of the survivor/complainant,

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- inform WB within 48 hours in line with the ESCP in the event of incidents/SEA/SH complaints.

While the GM is not established at this time, it will be operationalized in line with the provisions of the ESCP. The instruments, which are living documents, will be updated as needed to reflect the newly established and operationalized GM which will also be widely disseminated to all stakeholders including vulnerable groups.

The detailed GM for this project is outlined as part of section 6 of the Stakeholder Engagement Plan (SEP) which is publicly disclosed. the GM will be accessible to all relevant stakeholders including vulnerable groups who can use this mechanism to send their suggestions, concerns and complaints related to the project.

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8. ANNEXES

ANNEX A - ENVIRONMENTAL & SOCIAL (E&S) SCREENING OF SUBPROJECT

This screening table is filled by the CDR PCU and submitted to the World Bank for approval.

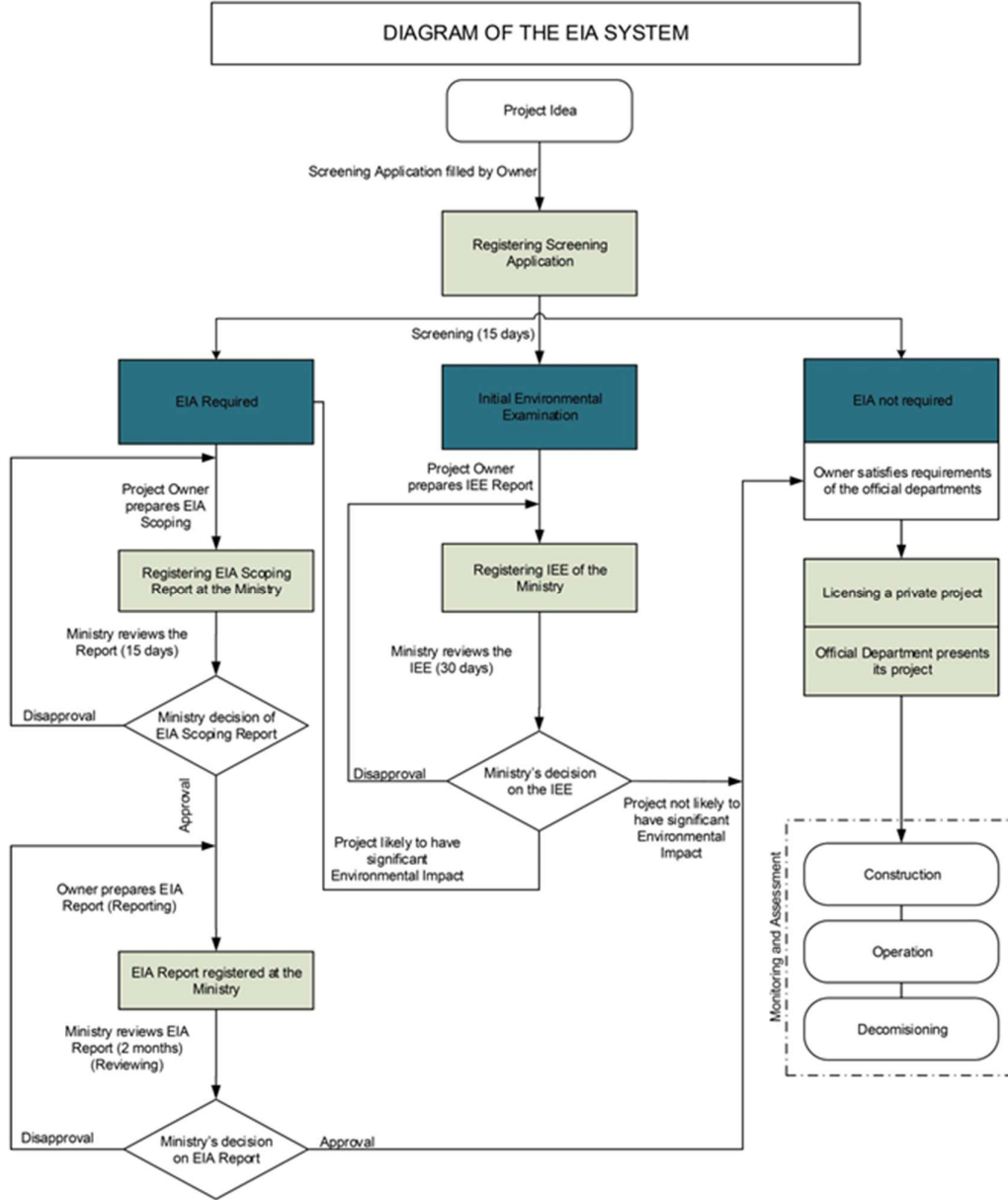
Screening factor	Y	N	Risk rating				Remark / Suggestion
			L	M	S	H	
E&S Risk of the Subproject							
1. Whether the subproject involves 'Associated Facilities'? (The 'Associated Facility' means a facility or activity which is not funded as a part of the project, and judged by the World Bank as: (a) Directly and significantly related to the project; (b) Simultaneously implemented or planned with the project; or (c) Constructed for the project and is necessary for the project.)							If so, then the relevant E&S requirements of the subproject are applicable to the 'Associated Facilities'.
2. Is the subproject located in nature habitats or reserves (existing or planned), scenic areas, forest parks, drinking water conservation areas or areas with high ecological or cultural value?							If so, the project will not be supported.
3. Does the subproject's cause pollution or increased water abstraction from international waterways?							If so, the project will not be supported.
4. Does the subproject's area intersect with important natural habitats? That is, is there any important, vulnerable or endangered species of plants or animals inhabiting in the area?							If so, the project will not be supported.
5. Does the implementation of the subproject affect common natural habitats (such as forest, river or wetland) out of nature reserves?							If so, it is required to provide the relevant impact assessment and mitigation methods in the ESMP.
6. Does the sub-project involve Land Acquisition, resettlement and/or economic displacement? Does the component involve restrictions on the use of land and resources including access to recyclables, so that the community or its internal group loses the traditional or customary right to use resources or recognized right of use? Does the component render any land unusable or any migrant unable to enter?							If yes, an RP and/or LRP should be prepared according to ESS5.
7. Does the sub-project impact (1) waste-pickers, (2) are any of the full or part time waste pickers are under 18 years old but over 14 years old; and (3) are any of the full or part time waste pickers under 14 years old							This age category will not be included in project activities given that Lebanese labor law ESS2 requirements prohibit child

Screening factor	Y	N	Risk rating				Remark / Suggestion
			L	M	S	H	
8. Does the sub-project expect any labor influx for the works and if the case does this labor influx cause potential impacts to Gender Based Violence?							If yes, then mitigation measures need to be defined to mitigate the GBV risks.
9. Is there any indigenous peoples/ethnic minority community in the component area, or is any indigenous peoples / ethnic minority community collectively attached to the component area?							Not applicable to the Project
10. Does the component involve reconstruction or expansion on any existing facility, or otherwise relate to it?							If yes, an environmental and social audit should be conducted according to ESS1-ESS10.
11. Is there any known archaeological, historical or other cultural heritage within the scope of the subproject?							
12. Do the public or non-governmental organizations around the subproject express strong opposition to the construction of the project?							
13. Will the subproject bring great safety and health risks to the surrounding communities?							If so, the risk rating of the subproject is classified as S or H.
14. Does the construction and operation of the subproject pose great health and safety risks to the workers?							If so, the risk rating of the subproject is classified as S or H.
15. Will the subproject cause social conflicts related to the recognition of community hazards or unfulfilled benefits to a certain extent?							If so, the risk rating of the subproject is classified as S or H.
Compliance of Existing Enterprises Related to the Project							
16. Does the subproject enterprise have legal business permission and license?							To review relevant documents and records.
17. Does the sub project enterprise comply with the relevant national environmental laws and regulations and discharge standards of 'the three wastes'?							To review compliance records (monitoring reports, certificates, etc.) and consult with relevant departments.
18. Is the subproject enterprise facing major unresolved environmental penalties or environmental responsibilities? (e.g. pending legal proceedings involving environmental issues)							To consult with relevant departments for data research.
19. Is the subproject enterprise facing environmental and social impact complaints from the surrounding residents or non-governmental organizations?							To conduct media search and consultation with the local communities and non-governmental organizations.
20. Has the subproject obtained the approval document or registration of EIA report issued by environmental protection department?							To review the approval documents through online audit of relevant departments' websites.

Screening factor	Y	N	Risk rating				Remark / Suggestion
			L	M	S	H	
21. Has the subproject obtained the relevant land use certificate or land use approval document issued by the land department?							To review the approval documents through online audit of relevant departments' websites. For the existing enterprise, it is required to carry out Due Diligence on land acquisition.
22. Does the subproject need to be examined and approved by relevant departments such as safety, soil and water conservation, geological disasters, flood control and so on? If necessary, state the approval status.							
Overall environmental and social risks: (The overall level of E&S risk is determined by the highest risk rating of the issues above.)							Documents required:

ANNEX B - DIAGRAM OF THE NATIONAL EIA SYSTEM

As per Annex 9 of the EIA Decree 8633/2012:



ANNEX C - STATEMENT OF INFORMATION REQUIRED FOR THE INITIAL ENVIRONMENTAL EXAMINATION (IEE)

As per Annex 7 of the EIA Decree 8633/2012:

Statement of information required for the “Initial Environmental Examination (IEE)” report

The initial environmental examination report should include the following information (not necessarily in this order):

1. Executive summary.
2. Table of contents
3. Introduction: defining the project, the project owner, the person of office conducting the initial environmental examination, as well as a brief explanation of the type, size and location of the project.
4. Policy, legal and administrative frameworks: an investigation of the enforceable regulations, principles, and standards observed by the environment sector at the local and national levels, laws governing the sector under which the project is included. The information should address specifying the official department concerned, and its potential at the local and national levels.
5. Description of the proposed project: description of project components, the relevant maps according to the appropriate scale and photos, information of project location, comprehensive design, size, capacity, work program, services, the duration of operation, etc.
6. Description of the surrounding environment of the project: gathering and evaluation basic information of environmental characteristics of the study location (physical, chemical, biological, social and economic environment) taking into consideration any expected modifications before the commencement of the project or any likely changes in future.
7. Potential environmental impact of the project: identification, estimation, and assessment of all potential effects of the project on the environment (physical, chemical, biological, social and economic consequences) whether positive or negative, direct or indirect, over the short or long term.
8. Environmental management plan: this paragraph summarizes a group of impact mitigation measures, monitoring and control tools, and institutional procedures taken during building, operating, or decommissioning a project, with a view to eliminating or mitigating negative environmental effects to locally acceptable levels, if any, or to global standards. This paragraph should include the estimated cost of the environmental management plan.
9. Conclusion
10. Annexes:

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- Summary of project documents.
- Tables and information statements
- List of scientific and non-scientific references used
- List of the names of who prepared the initial environmental examination report (individuals and institutions).

Note: The Ministry of Environment has the right to modify items required in this annex in accordance with environmental essentials that are applicable to standards and role of the project. Special consideration is given to the application of article 12 "Information Publication".

ANNEX D - STATEMENT OF INFORMATION REQUIRED IN THE “ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REPORT

As per Annex 7 of the EIA Decree 8633/2012:

Statement of information required in the “Environmental Impact Assessment (EIA)” report

The EIA report should include the following information (not necessarily in this order):

1. Executive summary.
2. Table of contents
3. Introduction
 - ✓ Objective and rationale of the project:
 - Definition of the project and the project owner
 - Brief description of the type, size and location of the project
 - Importance of the project to the country
 - ✓ The EIA scoping, which include the person or the agency that prepared the study
4. Policy, legal and administrative frameworks:
 - ✓ Official department concerned, its capabilities at local and national levels
 - ✓ Environmental legislation, other regulations related to the environment, the policy observed in the country
 - ✓ Environmental requirements for any of the parties participating in financing the project
 - ✓ Applicable Environmental agreements or treaties the country have joined
5. Public participation:
 - ✓ Official agencies
 - ✓ NGOs
 - ✓ Groups affected by the project
6. Description of the proposed project:
 - ✓ Type of the project
 - ✓ Location of the project: maps showing the project site and its impact
 - ✓ Size of the project, including the related activities
 - ✓ Proposed program for construction and operation
7. Description of the surrounding environment of the project:
 - 7.1 Physical and chemical environment:
 - ✓ Topographical and geological aspects, and the impact of earthquakes and other hazards

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- ✓ Study of surface and underground water
- ✓ Measuring sea and coasts
- ✓ Available means of discharging polluted water, and the quality of water
- ✓ Surround air quality, sources of air pollution
- ✓ Climate and weather service
- ✓ Noise

7.2 Biological environment:

- ✓ Vegetation and animal life
- ✓ Fish and water living creatures
- ✓ Rare or endangered species
- ✓ Sensitive areas (forests, protected areas, natural parks, etc.)

7.3 Socio-economic environment:

- ✓ Demographics (population, social fabric, employment, income distribution, customs and traditions, people expectations, etc.)
- ✓ Development activities (infrastructure, industry, agriculture, institutions, tourism, recreation, etc.)
- ✓ Land use
- ✓ Traffic
- ✓ Public health
- ✓ Historic and archaeological heritage
- ✓ Aesthetic values
- ✓ Culture and civilization values (customs and tradition, aspirations)

8. Potential environmental impact of the project:

8.1 Physical and chemical environments

8.2 Biological environment

8.3 Social and economic environment

9. Preliminary analysis of project alternatives:

- ✓ Non establishment of the project
- ✓ Alternative projects with same objectives
- ✓ Same project with different technologies
- ✓ Comparing various environmental and economic potentials

10. Environmental management plan:

a. Negative impact mitigation program:

- ✓ Summary of significant environmental consequences

- ✓ Technical detail of each mitigation measure (applicable to which impact, the conditions of their application, designs, detailed fittings and operational procedures)
- ✓ Potential environmental effects of these measures
- ✓ Linkage between these measures and other mitigation programs
- ✓ Cost of negative impact mitigation program

b. Monitoring and control program:

- ✓ Specific technical detail of control means (control standards, control techniques, periodicity of the required control, control location, measurement procedures, keeping and analyzing information, and emergency measures)
- ✓ Reporting and report submission
- ✓ Detailed budget, acquisition program and the required supplies
- ✓ Cost of monitoring and control program

c. Institutional capacity development program:

- ✓ Detailed description of institutional procedures required for the above environmental measures (responsibility for implementing mitigation measures and control/follow up procedures etc.).
- ✓ Technical assistance programs
- ✓ Acquisitions and supplies
- ✓ Organizational changes
- ✓ Cost of institutional capacity development program

11. Conclusion:

- ✓ Net profit justifying the establishment of the project
- ✓ Explanation of how to mitigate negative impact
- ✓ Prior preparations for following up control and supervision

12. Annexes:

- ✓ Minutes of public participation
- ✓ Summary of project-related documents
- ✓ Tables and information statements
- ✓ List of related reports
- ✓ List of scientific and non-scientific references used
- ✓ List of the names of who prepared the EIA report (individuals and agencies)

Note: The Ministry of Environment has the right to modify items required in this annex in accordance with environmental essentials that are applicable to standards and role of the project. Special consideration is given to the application of article 12 "Information Publication".

ANNEX E - INDICATIVE OUTLINE OF ESMP

An ESMP consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation of a project to eliminate adverse environmental and social risks and impacts, offset them, or reduce them to acceptable levels. The ESMP also includes the measures and actions needed to implement these measures. The Borrower will (a) identify the set of responses to potentially adverse impacts; (b) determine requirements for ensuring that those responses are made effectively and in a timely manner; and (c) describe the means for meeting those requirements.

Depending on the project, an ESMP may be prepared as a stand-alone document or the content may be incorporated directly into the ESCP. The content of the ESMP will include the following:

<p>A. Mitigation</p>	<p>The ESMP identifies measures and actions in accordance with the mitigation hierarchy that reduce potentially adverse environmental and social impacts to acceptable levels. The plan will include compensatory measures, if applicable. Specifically, the ESMP:</p> <ol style="list-style-type: none"> a. Identifies and summarizes all anticipated adverse environmental and social impacts (including those involving indigenous people or involuntary resettlement); b. Describes—with technical details—each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; c. Estimates any potential environmental and social impacts of these measures; and d. Takes into account, and is consistent with, other mitigation plans required for the project (e.g., for involuntary resettlement, livelihood restoration, Indigenous Peoples, or cultural heritage).
<p>B. Monitoring</p>	<p>The ESMP identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the environmental and social assessment and the mitigation measures described in the ESMP. Specifically, the monitoring section of the ESMP provides:</p> <ol style="list-style-type: none"> a. a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, b. detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; c. monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

<p>C. Capacity Development and Training</p>	<ul style="list-style-type: none"> · To support timely and effective implementation of environmental and social project components and mitigation measures, the ESMP draws on the environmental and social assessment of the existence, role, and capability of responsible parties on site or at the agency and ministry level. · Specifically, the ESMP provides a specific description of institutional arrangements, identifying which party is responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training). · To strengthen environmental and social management capability in the agencies responsible for implementation, the ESMP recommends the establishment or expansion of the parties responsible, the training of staff, and any additional measures that may be necessary to support implementation of mitigation measures and any other recommendations of the environmental and social assessment.
<p>D. Implementation Schedule and Cost Estimates</p>	<p>For all three aspects (mitigation, monitoring, and capacity development), the ESMP provides</p> <ul style="list-style-type: none"> a. an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; b. the capital and recurrent cost estimates and sources of funds for implementing the ESMP. These figures are also integrated into the total project cost tables.
<p>E. Integration of ESMP with the Project</p>	<p>The Borrower's decision to proceed with a project, and the Bank's decision to support it, are predicated in part on the expectation that the ESMP (either stand alone or as incorporated into the ESCP) will be executed effectively. Consequently, each of the measures and actions to be implemented will be clearly specified, including the individual mitigation and monitoring measures and actions and the institutional responsibilities relating to each, and the costs of so doing will be integrated into the project's overall planning, design, budget, and implementation.</p>

ANNEX F - PRESENTATION, ATTENDANCE SHEETS, AND MINUTES OF PUBLIC CONSULTATIONS



Minutes of Meetings

CONSULTATION MEETING FOR BAALBEK-HERMEL AND BEKAA IN BAALBEK (YAHFOUFI AUDITORIUM) – FEBRUARY 15, 2023

The main points, recommendations and concerns can be summarized as follows:

Topic of concern	Representative	Description of concerns raised by participants	Answer
Transparent measures	Dr. Nizar Dandash, Democratic Movement for Culture and Development	Adopt transparent measures and apply lessons learned from previous experiences	
Organic farming	Dr. Nizar Dandash, Democratic Movement for Culture and Development	Encouraging organic farming, planting the unexploited agricultural lands, reducing the use of fertilizers, supporting the marketing of crops (cherries and Zaatar for expatriates), supporting the agro industries, constructing hill lakes, and increasing awareness among the various stakeholders	Technical Assistance will be provided on climate-smart agriculture practices
Municipalities role	Moustapha AlShall – Baalbeck President of Municipal Council	Municipalities are the main stakeholders in this project, especially for agriculture infrastructure	Projects will be identified and implemented on a participatory approach basis, including all relevant stakeholders
Solar-powered systems and agricultural refrigerators	Khodor Jaafar - Representative of Olive trees growers Union in Baalbeck El Hermel	Assist farmers in solar-powered systems and agricultural refrigerators (cold storages). Encourage the fishing (trout fish) sector in the Al Aassi river basin, promote forgotten crops (Figs, and pomegranates), chestnut and olive tree cultivations	
Poultry breeder sector	Rouhi Abou Faisal - Representative of the syndicate of poultry growers	To support the poultry sector because it is suffering from high cost of foddors and energy	
Feasibility studies	Abir Harika - Aailit Al Insan (Human's family Association) عائلة الانسان	Farmers need feasibility studies to lead them in planting new crops.	
Production of wheat and beet	Mohamed Al Farrou - Head of the National Peasants Union	The main crops that should be focused on are wheat and beet. A beet industry owned by the ministry of agriculture was closed in 2000 and can be reopened and operated, in addition to a waste of unused lands that can be planted	
Land reclamation	Mohamed Al Farrou - Head of the National Peasants Union	Land reclamation is an important activity that can increase the use of agricultural lands	

Topic of concern	Representative	Description of concerns raised by participants	Answer
High cost of irrigation	Mohamed Al Farrou - Head of the National Peasants Union	Most farmers rely on private wells as the source of water resulting in additional financial burdens. Supporting solar photovoltaic stations is the solution	
Improving the cultivation of imported crops	Yasser KhairElDine – Farmer from Majdloun and representative of Fruit Trees syndicates in Baalbeck El Hermel	Improving the cultivation of crops such as walnuts, raspberry and blackberry. Empowering Caper bush or Capparis spinose (in Latin) and saffron cultivation which are promising.	Iranian ministry of agriculture proposed assistance for Saffron cultivation for Lebanese farmers
Focus on the quality of produced crops	Ahmed Al Hajj Hassan - Representative of Growth and Development association	It is important to focus on the quality of crops produced. Create access to new local and international markets for the small producers. Establish a cold storage unit for fruits and vegetable. Support extension programs, inputs, marketing for small farmers/ family farmers to keep them attached to their land. Control and monitor the quality of seeds (non-hybrid seeds) Encourage the local and authentic seeds	
Alternative crops	Rima Assaf – Representative of Al Najda Al Shaabiya (النجدة الشعبية) in Baalbeck Al Hermel	Support alternative crops, specifically the mushroom which can be used as a substitute for meat, being an easy cultivation process and convenient for the smallholder farmers. Empower the small farmers and cooperatives owned by women	
Protect the small farmers	Ali Sulaiman – Representative of the Grapes Growers Syndicates	Support and protect the small farmers from the monopolists, and facilitate provision of alternative energy	

Topic of concern	Representative	Description of concerns raised by participants	Answer
Health protection	Amira Taha - Representative of the Committee of Mother and Child association in Bekaa	Absence of health protection for peasants, farmers, and workers in agriculture which make them the most vulnerable group in society	
Interventions should be tailored to the needs	Representative of Central Bekaa Union of Municipalities	Agricultural interventions should be tailored to the needs of each region. The targeted areas can be divided into harmonious climatic zones	
Fruit trees challenges	Omar Al Khateeb - The head of fruit trees syndicates of in Bekaa	Fruit trees such as grapes, apples and other face permanent problems caused by country circumstances: road blocks, Beirut port explosion, and high production cost. It is recommended to support the transportation and establish cold storage for fruits, fruit drying centers, and agro-industries units to allow products to compete in the local and international markets. Focus on promising varieties of crops that resist diseases and dehydration	
Identifying the type of crops	Anwar Al Kazeh - Representative of the rural development Directorate in Baalbeck, Ministry of Agriculture	Climate, soil, geographic location, seeds, and seedlings are the main determinants of identifying the type of crops. Supporting small farmers, and smallholders are important to empower them to identify suitable practices preventing the use of harmful inputs. Supporting the forest sector, livestock, natural pastures, and fodder crops	Environmentally friendly projects will be elaborated and well-studied before being approved
Wheat cultivation	Fatima Hamiyeh - Representative of Mawasem - Food and Crafts Manufacturing Cooperative (Taraya - Baalbeck)	Focusing on wheat cultivation is a strategic necessity for the country with the smart program for organic fertilizing	
Small producers	Rabaa Al Dirani - Representative The Productive Cooperative in	Empowering small producers with supplies to help them in food processing.	

Topic of concern	Representative	Description of concerns raised by participants	Answer
	Qasrnaba and its vicinity (Khairat Al Bekaa (خيرات البقاع))		
Assist the organic agro-food producers	Ali Alaaw - Head of Bouzour Al Tanmiya (Seeds of development – بذور التنمية)	Assist the organic agro-food producers in transportation, cultivation and marketing. Increase tourist services such as Guest Houses (150 Guest Houses in Lebanon, more than 70 percent are located in rural areas). Grafting forest trees with new promising crops such as pistachio and chestnut is an opportunity and already tested by farmers	Climate-Smart Infrastructure and Services for Agri-food Development will be supported
Facilitate the testing of soil, products, and water	Yasser KhairElDine – Farmer from Majdloun and representative of Fruit Trees syndicates in Baalbeck El Hermel	Facilitate the testing of soil, products, and water to support farmers in reducing production costs and the quality of food. Hydroponics farms, aquaponics farms, and the expansion of greenhouses also are promising sectors.	
Opportunities in agriculture	Moustapha Jamal ElDine – Head of the Cooperative for Breeding and Marketing Bee Products in Tal Abyad	Opportunities are vast and promising	
Honey production	Moustapha Jamal ElDine – Head of the Cooperative for Breeding and Marketing Bee Products in Tal Abyad	Honey production is a promising sector, beekeepers need support in honey testing, more promotion in the media, and more awareness among the public on the quality of honey. Cultivation of Almonds, Sumac, and Sesame are also promising crops	Ministry of Agriculture is preparing a national conference for beekeepers and honey production
Trout fish production	Mohamed Amro – Head of the General Agricultural Cooperative in Hermel	Trout production can increase from 2,000 tons to 10,000 tons. Increasing areas and encouraging new farmers is a challenge. Support fishermen in photovoltaic stations and marketing are needed. Finding new markets for olive oil and empowering this sector are important	

Topic of concern	Representative	Description of concerns raised by participants	Answer
Empowering women who produce Mouneh	Roula Dagher - Representative of The Women committee in the Catholics Archbishopric in Zahle	Empowering women producing traditional Lebanese food (Mouneh) in their houses in improving their access to modern marketing and quality control in smart ways	
Value chain of organic cultivation	Nicolas Haddad - Representative of the Advancing Research Enabling Communities Center (AREC) – AUB:	All related studies and research about the incentive crops are available and accessible. The value chain of organic cultivation is a delicate process we need to be aware of all details	Capacity Building will be designed based on the farmers' needs
Find good markets for organic products	Houssain Drwish – Head of Greenhouses growers in Lebanon	<p>Finding good markets for organic products on a sustainable basis. The traditional crops are still important, and it is also important to focus on the cultivation of figs, pomegranate, white cherries, gnarch (جنارك), quince (اسفرجل) and Hawthorns (زعرور).</p> <p>New markets that connect the farmers with the consumers directly.</p> <p>Climate disasters are also constraints for Lebanese farmers. Farmers are suffering from the absence of Social and Health Security, and the Ministries of Agriculture and Health should take this issue into consideration</p>	
Cooperatives culture concept	Douaa Ghali دعاء غالي - Representative of the directorate of Co-operative in the ministry of agriculture in Baalbeck/Al Hermel	Focus on the cooperatives culture concept with the aim of facilitating work in the cooperative sector, investing in knowledge and establishment of cooperatives, and founding schools for farms management	
Support value chains for crops	Jean Fakhry – Head of the Union of Municipalities of Deir Al Ahmar	Support value chains that enhance self-sufficiency, at the same time exporting is very crucial for farmers who need to have sufficient foreign funds to buy imported inputs and fertilizers, therefore balancing between these two components to fulfill the consumer needs	

Topic of concern	Representative	Description of concerns raised by participants	Answer
		<p>and focusing on conforming specifications to foreign markets is a necessary task.</p> <p>In addition, competition with the outside markets require improving the labeling and packing phases</p>	
Local employment and competition	Pauline Balaa - Representative of Zahle municipality	<p>The problem of agricultural local employment and competition with foreign workforce.</p> <p>It is important to identify the role of municipalities during the execution of this project, to identify the farmers in lagging regions and preparing statistical data within the cadastral area of each municipality.</p> <p>In Zahle, supporting the solid Waste treatment facility (serving more than 15 villages) and the waste treatment plant with Solar photovoltaic is an added value in protecting the environment caused by water, soil, and air pollution which it may cause</p>	
Expansion of agricultural land	Najib Fares - Head of the syndicate of wheat and grain growers	<p>It is crucial to expand agricultural lands for wheat cultivation to supply soft wheat for the local market, in order to protect the food security issue for Lebanon. Support the agricultural laboratory to assist farmers specifically the poultry growers with medications and food security.</p> <p>Increase agricultural guidance and good governance for farmers and co-operatives</p>	
Supporting the beekeeping sector	Hamad Jaafar – Head of The United Cooperative of Beekeepers' Cooperatives in the Bekaa	Supporting the beekeeping sector specifically with medications and honey testing.	
Implementing hill lakes	Dr. Salem Darwish – Representative of the Ministry of Agriculture.	Implementation of hill lakes should be done by the Green Plan project in the Ministry of agriculture. The project should consider	

Topic of concern	Representative	Description of concerns raised by participants	Answer
		establishing public markets in different areas to improve the direct marketing of small farmers' products. The role of municipalities is very important for the infrastructure component.	

CONSULTATION MEETING FOR SOUTH LEBANON AND NABATIYEH IN NABATIYEH (AL MALAK RESORT, ANSARIYEH) – FEBRUARY 17, 2023

The main points, recommendations and concerns raised can be summarized as follows:

Topic of concern	Representative	Opinion / Suggestion	Answer / Clarifications
Targeted geographical areas.	Green Project – Ministry of Agriculture (Eng. George Chmali)	- Objection regarding the targeted areas that are limited to south, North, Bekaa and excluding Month Lebanon	Mr. Rouhana from World Bank clarified that the project will target all the Lebanese territory and each area will have its appropriate intervention, targets and projects, depending on its needs, capacity and characteristics.
Engagement of public sector in the identification process / reduce import and increase export of agricultural products.	Jihad al Binaa – Eng. Salim Mrad	- Emphasizing the importance of engaging the public sector as Ministries and parliament committees in the identification of needs and solutions in order to link the projects' interventions with the required legislations. - Prioritize the production of raw materials in order to reduce import from other countries.	
Enhancing Lebanese products and marketing productions	Mr. اتحاد مزارعي التبغ / Hassan Fakih	- The government should support the small-scale agriculture and industries. - The Lebanese embassies and the Lebanese diaspora could play a role in the marketing process of the Lebanese products.	
Clarification about the project	العامل البلدي للمنطقة الاولى – Mr. Ali el Zein	- Questioning the continuity of the project after the departure of the Syrian refugees? - Asking for a more elaborated plan for the project determining clearly the targeted area and beneficiaries.	Confirmation that the project will target the Lebanese population regardless of the presence or departure of the Syrian refugees, knowing that they highly contribute in the agriculture.
Transparency in the methodology of work / water strategy	Agricultural Cooperative in Azour / Eng. Joseph Rouhana	- To adopt transparency and avoid clientelism in the implementation of the project. - The importance of rationalizing water uses by implementing of dams and hill lakes...	Mr. Rouhana clarified that the work will be transparent and clear criteria will be adopted.

Topic of concern	Representative	Opinion / Suggestion	Answer / Clarifications
. Fisherman sector	نقابات الصيادين في حبيزان والساحل الجنوبي / Ali Kawtharani	- The fisherman sector is the most deprived sector. - If this sector is supported it will create many jobs opportunities. - The importance of elaborating a national strategy to preserve this sector and to enforce the law to use legal fishing methods.	
. Linkage between the crops to be supported and the channels of marketing	Representative of the Ministry of Agriculture 24.	- To support crops that can be easily marketed.	
. Women support and marketing ideas	Beit el Hiraf association – Jinan Bader el din	- Support women to work and to achieve self-sufficiency. - Suggestion to create a link between agri food cooperatives and the Lebanese army so that the latter buys the products of the cooperatives.	
. Capacity building	International Group for Humanitarian Assistance (BESME) / Mrs. Goulshan Saglam	- The importance of the capacity building sessions for farmers and women specifically.	Capacity building is Within the project framework
. Importance to support the energy sector	رئيس دائرة الثروة الزراعية في جبل لبنان / Khalil Abou Rjeili	- To emphasize the energy efficient measure in the project.	
. Canals 800 project	Head of Jabal Amel Union of Municipalities / Mr. Ali Taher Yassin	- A recommendation to continue the execution of the Litani irrigation project "Canals 800".	

Topic of concern	Representative	Opinion / Suggestion	Answer / Clarifications
. waste water treatment	Head of Sahel el Zahrani union of Municipalities / Eng. Ali Matar	- The importance to work on waste water treatment as preventing measure to preserve agriculture and to work on having production safe for consumption and suitable for exportation.	
. Extension of the natural reserves	Association Amwaj al Biaa / Mr. Malek Ghandour	- To work on protecting and extending the reserves in the regions in order to preserve the nature and to extend the agriculture lands.	
. Importance of the existing manpower and resources / factors influencing agriculture	International Group for Humanitarian Assistance (BESME) / Mrs. Goulshan Saglam	- The manpower and the natural resources existing in Lebanon are the main resources that should be taken into consideration and supported to grow and to help in the economy growth and ensuring the self-sufficiency. - The main factors influencing the agriculture are: o The Syrian displacement working in agriculture. - The absence of a good and adequate water management system and plans causing the problem of Water insufficiency.	
. Water management and rationalization / climate change influence	Agricultural Cooperative in Azour / Eng. Joseph Rouhana	- The climate change is influencing the rain fed crops mainly and the beekeeping. - The importance of focusing on the good and rationalized water management, to avoid water scarcity. - The importance to define "the small farmers" that can benefit from the project.	
. Agriculture academy / animal / production marketing	Eng. Salim Mrad – جهاد البناء	<u>Suggestion for project:</u> - To establish an agriculture academy and link the benefit from the project with having a graduation from this academy in order to have the best practices and to succeed the project.	

Topic of concern	Representative	Opinion / Suggestion	Answer / Clarifications
		<ul style="list-style-type: none"> - Introducing new climate-friendly crops. - To work on ensuring animal feed. To help the farmer with the knowhow and the needed equipment and seeds that allow him to produce his needed quantity of animal feed. - One of the main problems facing the farmers in Lebanon is to sell their products, this is why the importance to work on ensuring markets and market strategy, in addition to the needed equipment for packaging and labeling... 	
. Production Marketing	Representative Ministry of Agriculture in the south	<ul style="list-style-type: none"> - The importance to build on successful crops/projects as a model of intervention. Ex. Of REGIE and its management of the tobacco crops. - The success of any crop is linked to the marketing and selling of production. 	
. Coordination and collaboration with Municipalities and local authorities / sectors of interventions	Mr. Kassem Hassan – جهاد البناء	<ul style="list-style-type: none"> - To implement the project in close coordination with the Municipalities for being the close to the farmers and their needs. - To intervene in a group of sectors: <ul style="list-style-type: none"> o The fish sector, since the Lebanese sea coast is wide and rich in resources o The livestock sector, such as goats and sheep, is easy to raise with limited risks. o The aromatic and medicinal plants. o Ecotourism. o Food industry, ameliorating the quality, the labeling and the marketing. 	

Topic of concern	Representative	Opinion / Suggestion	Answer / Clarifications
		<ul style="list-style-type: none"> o Establishing of testing labs for food safety, in each cluster. - Developing crops according to the characteristics of each region. 	
. Needs of laboratories	الجمعية التعاونية لتربية النحل- / الشفاء Mr. Mahdi Tarhini	- Establishing advanced laboratories in the regions.	محطة الابحاث العلمية : 12 labs exist in Lebanon to test the agriculture products such as honey, but not all the product properties are tested.
. Harmony between plant and animal farming		- Production must be harmonious between plant and animal farming in order to ensure animal feed and organic fertilizers.	
. Adopt the agriculture strategy prepared by the Ministry of Agriculture.	رئيس جمعية التربية / المحلية Mr. Ali Daoud	- The importance to adopt and update the agriculture strategy prepared by the Ministry of Agriculture.	
. Green projects	العمل البلدي المنطقة الاولى / Mr. Ali el Zein	<ul style="list-style-type: none"> - The importance to implement green projects and to support solar power systems. - To work on projects that ensure food security and not only for exportation. 	
. Marine farms / animal feed	Head of Sahel el Zahrani Union of municipalities / Eng. Ali Matar	<ul style="list-style-type: none"> - To support the establishment of marine farms and monitor the fishing process in order to protect the marine resources. - To support crops that complement animal farming and provide fodder. 	
. Needs of laboratories / incubators for honey queens ...	مدير التنمية والبيئة - نقابة المحرفين الغواصين / Mrs. Amal Jaffal	<ul style="list-style-type: none"> - Empowering of human resources. - To Support university youth innovative proposals - To ensure laboratory for the genetic fingerprint of honey - To ensure Incubator for honey queens. - To rationale the use of agricultural pesticides. 	

Topic of concern	Representative	Opinion / Suggestion	Answer / Clarifications
. Needs for laboratories / crops development according characteristics of regions	اتحاد الوطني للفلاحين في الجنوب / Mr. Habib Yaghi	<ul style="list-style-type: none"> - The importance to support the rain fed agriculture. - The importance to Develop crops according to the characteristics of each region. - To ensure laboratories for soil testing 	Dr. Farid Karam: evidence showing a decline in precipitations should result form an analysis over several decades. There is still no evidence showing that Lebanon is facing such a decline in precipitations.
. Support of agricultural extension centers	Head of Jabal Amel Union of Municipalities / Ali Taher Yassine	<ul style="list-style-type: none"> - To Support the agricultural extension centers in each region in order to offer the following services: <ul style="list-style-type: none"> o Agriculture extension and support for famers in their lands. o Soil analysis and product testing. o Marketing, packaging of products - 	
. Projects proposals		<p><u>Suggestion for projects:</u></p> <ul style="list-style-type: none"> - To Increase solar energy projects - To ensure sufficient water to extend the agriculture lands. - Continue the implementation of the litani project (canal 800). - To implement projects in partnership with the private sector for the operation and management. - To support the plantation of conifers, for all the benefits that offers. - To benefit from the study prepared by Khatib and Alami regarding the precipitation in Lebanon. 	
. Importance of COOPs	مدير عام مديرية العمل التعاوني / Mrs. Gloria Abou Zeid	<ul style="list-style-type: none"> - To implement hill lakes and agricultural ponds to collect water. - The importance to coordinate and support the active cooperatives and to encourage the creation of new active cooperative through a clear and efficient 	

Topic of concern	Representative	Opinion / Suggestion	Answer / Clarifications
		modality that ensure the continuity of the coop in an efficient way. - To work on generalizing the concept of collaborative work.	

CONSULTATION MEETING FOR AKKAR (HALBA MUNICIPALITY) – FEBRUARY 16, 2023

The main points, recommendations and concerns raised can be summarized as follows:

Topic of concern	Representative	Description of concerns raised by participants	Answer
Marketing of production	Al Salam club- Halba (نادي السلام- حلبا)	Marketing of the agricultural production is one of the major concerns for many participants	Production, Marketing and management is part of the conceived activities to be adopted in the project
Involvement of Youth in agriculture	Akkar Network for Development Association	One of the participants proposed encouraging youth to be involved in the agricultural sector, noting that Youth are not motivated towards this promising sector. Moreover, it is advisable to encourage them and relate the sector to modern technology being one of the tools applied in modern Agriculture	Youth are one of the main categories to be targeted by the project
Supporting women in all stages of the project	Nadia Saba	One participant raised this concern, clarifying that Women do work in Agriculture but do not consider it as work. We should give them incentives and provide them with support during the whole cycle of the project	Women are part of the beneficiaries to be targeted in the project
High cost for Onions	Mohamad Youssef	Participants inquired about the high cost of onions sold in the markets	Several reasons lie behind the high cost of onions, according to the Minister: <ul style="list-style-type: none"> - High production cost - Low production - Exporting a voluminous amounts out of Lebanon. As for the proposed solution. The Minister referred to the mutual conventions in the agricultural sector. Accordingly, some agricultural productions such as onions, are among the products to be imported and soon available in the markets. In parallel, the ministry obliged exporters to issue a license to be approved by the ministry before exporting

Topic of concern	Representative	Description of concerns raised by participants	Answer
Nahr El Estwane needs earthy berm (ساتر ترابي) to avoid water	Union of Municipalities of Nahr El Estwane	A well-studied earthy berm (ساتر ترابي) is needed to avoid water expansion	The minister will follow up on this topic, via one of the ministry' officers
Promoting Beekeeping sector	النجدة الشعبية اللبنانية	Knowing the status of beekeeping, we need to promote the beekeepers and enhance this sector' production	As per the Minister, an invitation will be sent to hold a national conference for beekeepers who do not have a syndicate. The conference will be in collaboration with Arab Beekeepers Forum, connected with the League of Arab States. The Forum proposed the signature of a memorandum of understanding, but first we need to sign as a ministry a MOU with beekeepers. At the ministry we have a consultant in charge of this topic. Then we will sign a MOU to be able to export honey
Sustainable Agri-food transition	Dr. Kamal Khazaal	One participant suggested replacing Green Agri-food transition by Sustainable	The point from using Green Agri-food transition is to mitigate the overconsumption of natural resources which aggravates the climate and ecological crisis.
Supporting agricultural crops	Dr. Kamal Khazaal	We have 7 to 8 crops (milk, potatoes, apples, citrus fruits, olives, bananas...). Farmers cultivating these crops are financially losing or benefitting depending on seasons and climate. We should focus on essential agricultural crops, develop them and reduce production cost, instead of providing direct support or distributing fodder or cows	This goes with the scope of the project
Need for practical/ concrete results	Union of Municipalities Of Middle and Coast El Qayteh	Before 2019 Agriculture was not given full attention, even from farmers themselves. But the multiple crisis Lebanon is facing led most residents to work in agriculture. Even employees, military, public sector have all made a transition towards agriculture	Our consultative workshop aims to take into consideration all of the raised concerns to be included in the project planning, to achieve concrete results.

Topic of concern	Representative	Description of concerns raised by participants	Answer
Need for materials and capacities	Union of Municipalities Of Middle and Coast El Qayteh	Available lands in Akkar are suitable for investment. Each region has its specific characteristics producing excellent products in case of affordable materials and capacities to the farmers	One of the project's components consists of providing technical support in this regard
High production cost	Hatem Ahmad Othman	Production cost is increasing due to cost of seeds which is in USD, in addition to fertilizers, medications, workers expenses, watering through canals or wells and the cost of fuels. We should seek a better system to enhance capacities for a better production, for example through the installation of solar system to reduce costs.	The WB is aware of these concerns and remarks are noted
Ensure funds for irrigation Supporting materials Securing markets	Mohamad Youssef	Funds are needed to be allocated for irrigation canals. In addition to providing support for the purchase of fertilizers and medications. In parallel, we should secure markets to sell agricultural production	Within the project framework
Weak milk production	Ard Maymounah Association (أرض ميمونة)	We should focus on milk production, being a weak sector and livestock breeders lack for know-how, experience, and green farms for breeding cows	The project focus on agri-food production and the means for enhancing it
Focus on specific sectors to achieve better results	Dr. Kamal Khazaal	It is recommended to focus on specific sectors. People are draining their energies and resources, while agricultural production is decreasing. We should decrease production costs and promote better production. We have small holdings but we should pay attention to what is more convenient environmentally	Taken into account
Infrastructure for irrigation canals	Moustafa Koucha	We encourage making an integrated plan for irrigation canals and avoid mixing canals' water with stagnant water	Taken into consideration
Overlapping of production	Mohamad Hablas جمعية أهدافنا ألوان	In the time of potatoes harvesting, we find in the markets Egyptian potatoes	This is due to the lack of guidance to farmers, lack for agricultural calendar, and the mutual conventions made with other countries to exchange products

Topic of concern	Representative	Description of concerns raised by participants	Answer
Support cooperatives with small and alternative cultivations such as roses	Moustafa Koucha		Noted
Need for know-how for better production	Rima Rachid	Need know-how and awareness campaigns to know how to make better production. We need to decrease production costs while upgrading the production	Within the project framework
Need for Solar energy or alternative energy	Ahdafouna (Association)	Alwan Due to the increase of fuels, farmers need to install affordable energy outputs such as Solar energy systems or alternative energy producer	Within the project framework
Infrastructure for services	Rima Rachid	With the lack of Lebanese workers in agricultural lands, we need Infrastructure for services, linked to human resources	Taken into account
Administrative procedures	Nidal Bey Merheb	Requested licenses from Lebanese official authorities is becoming tough. We need to mitigate the procedures in order to encourage Agriculture	Within the project framework
Lack for laboratory and bank for seeds	Suhail Kilani	The main problem lies in production cost. No laboratory is available for soil testing, or long distances need to be travelled for this purpose, resulting in additional burdens on farmers. No bank for seeds is available. We need to identify the available resources. Akkar can play a complete cycle in the agricultural and food production, example in animal production	Taken into account
Seed rooting bank	Khaled Taleb	We need seeds rooting bank بنك لتأصيل البذور	
Need for an agricultural plan for each area	Marwan Gauch	We need integrated agricultural plan, appropriate for each area depending on its characteristics. A general plan for farmers will assist them in deciding what and how to cultivate, what seeds are promising, what do local and international markets need to be reachable	Within the project framework

Topic of concern	Representative	Description of concerns raised by participants	Answer
Orientation for farmers	Darb Akkar Association		Within the project framework
Establish syndicates	Union of Municipalities of Sahel Akkar	Agriculture sector must be organized through the establishment of syndicates for farmers especially those working in the food industry. In Akkar, there is no industry for food processing such as tomato paste like in Beqaa	Within the project framework
Establish industries	Union of Municipalities of Sahel Akkar	Need to encourage business men and investors to build industries	Noted
Rain fed crops such as thyme, sumac, carob...	Union of Municipalities of Sahel Akkar	Need support for rain fed crops	Within the project framework
Composting and work on production chain	Khaled Taleb	Need for guiding farmers on how to decrease production cost and improve quality	Within the project framework
Preservation and packaging of production	Khaled Taleb		
Absence of trust in governmental projects	George El Khadra	No trust in implementing project with the government, due to previous experiences which was unsuccessful	
Monitoring and Supervision	George El Khadra	Suggest cutting off 15% to 20% of the project' budget for monitoring and supervision	
Marketing productions	Food and Agriculture Organization	Need to market products	
Alternative cultivations	Khaled Taleb	Alternative cultivations especially medical plants. Due to the costs of medicines in Lebanon many people tend to use medical plants/ herbs to recover	
Organic production	Sira Hablas	Encourage organic production	In some areas it is not feasible to promote organic cultivations due to small holdings interfering with other ones
Impact of Communication cables on bees production	Al Najda Association (النجدة الشعبية اللبنانية)	Is there any impact from communications' cables or towers affecting bees and honey production?	No studies have been made

Topic of concern	Representative	Description of concerns raised by participants	Answer
Cutting off trees such as lizab	Suhail Kilani	Cutting off trees especially lizab should be prohibited	Noted
Soil and water tests	Tarek Seni (صندوق تعاضد عكار)	Soil test and water test should be secured to ensure the sound production in order to reach foreign markets	Soil test is very important: more than 80% of our soil is alkaline and the acidity degree is above 7.5, creating a negative impact on produced cultivations. In Abdeh there was an advanced laboratory but equipment and materials were stolen (including generator, cables...) Nearest laboratory is far for the residents especially with the high cost for transportation. We should have bacterial water analysis.
Incorporate medical herbs	Rawaa Jawhar	Incorporating medical herbs into agricultural products knowing that most people diverted to this cultivation	Taken into account
Cosmetics products	Rawaa Jawhar	Providing support to the making of cosmetic products, since Women can make small scale production at home	
Aromatic plants	Rami Sakr	Recommended to be supported within the project activities	
Alternative production meats	Director of the Green project in the North	One participant is raising rabbits, stating that it is a very productive and easy project. Saying: we need alternative meats, knowing that cows need large farms to be raised and green spaces, water, lot of attention, medicines, supervision... while some alternatives are less expensive	
Milk sector	Dr. Kamal Khazaal	Milk production needs livestock, and high production cost due to expensive fodder. For milk production and red meat, we rely on importing fodder which becomes expensive. We should enable farmers to produce fodder. Grass are everywhere, so we can feed animals instead of burning it.	

Topic of concern	Representative	Description of concerns raised by participants	Answer
		We need animals while ensuring food safety, such as cow, sheep... every farmer is able to work and market his own production within his area. Milk sector is monopolised by wholesale traders	
Local production units	Dr. Kamal Khazaal	we need local production units with marketing centres to sell our production	
Cutting off Eucalyptus (كينا)	Suhail Kilani	Cutting off this kind of trees which absorb stagnant water should be prohibited. Knowing that this tree grows quickly.	
Field management	Khaled Taleb	Field management is essential to separate fields	Each farmer having a surface can manage and cultivate it if properly informed. We should not leave fields without plantation. Under olive trees we can cultivate legumes. In addition to vegetative fertilization
Why some products are cheaper in the markets	Khaled Taleb (Darb Akkar)	We produce rose water, blossom water, pomegranate molasses and other handmade products. But we found in the markets similar products cheaper than ours.	Regarding the pomegranate molasses it is date molasses, giving it the brown colour, and costing less than pomegranates.
Funding Green Project	Elias Mesawmayi	Is there any support to the Green Plan to finance infrastructure projects	Not in the scope of the Project
How to reach small farmers having small holdings	Akkar Network for Development Association		The Minister will elaborate an agricultural register to know the potential beneficiaries
Provision of supplies	Rihab Hammoud	Is it possible to request agricultural supplies within the project?	Yes but based on special criteria set for project selection
How to reach persons in charge	Rihab Hammoud		All necessary contacts will be disseminated to all participants
Fish breeding	Mohamed Hafza	We need agricultural ponds for fish	

Topic of concern	Representative	Description of concerns raised by participants	Answer
Agricultural roads	Rihab Hammoud	We need to build agricultural roads in some areas to improve access to the cultivated lands. Relevant maps are available.	
Waste water	Lebanese Agricultural Research Institute (LARI)	We don't have waste water system	This is not in the scope of the project.
High exportation cost	Khaled Taleb	We worked on a production chain for potatoes and we exported items that have been accepted in the EU. But now it's expensive and the cost for exportation is very high. We don't have an atelier for packaging and refrigerating potatoes. And the transportation is expensive	
Reopening of Al Abdeh Laboratory	Lebanese Agricultural Research Institute (LARI)	We recommend re-opening Al Abdeh laboratory to allow employees resuming work, and reducing costs for farmers for testing soil and water.	
Water scarcity	Nadine Saba	Sometimes water is stolen by residents, making us deprived	Ownership by the beneficiaries will make them protect the project. In conclusion, your opinions will be taken into consideration. We will disseminate our phone numbers and all accessible means to stay in touch, in a way to express your concerns and receive appropriate replies.

ANNEX G – PEST MANAGEMENT PLAN (PMP)

In line with ESS3, Pesticides should only be used to the extent necessary as part of an Integrated Pest Management (IPM) or Integrated Vector Management (IVM) approach, and only after other pest management practices have failed or proven ineffective.

IPM refers to a blend of ecologically-focused and agriculture-focused pest management practices that aim to reduce reliance on synthetic chemical pesticides. This involves: (i) managing pests (keeping them below economically damaging levels) rather than seeking to eradicate them; (ii) rely, where possible, on non-chemical measures to keep pest populations low; and (iii) select and apply pesticides, where they are to be used, in a manner that minimizes adverse effects on beneficial organisms, humans, and the environment.

IVM refers to integrating both chemical and nonchemical interventions to manage disease vectors, the objective being to limit the reliance on chemical pesticides.

An effective IPM/IVM Plan shall:

- Select cultivars and varieties on an understanding of their characteristics, including response to sowing or planting time, productivity, quality, market acceptability, disease and stress resistance, edaphic and climatic, adaptability, and response to fertilizers and agrochemicals.
- Identify and assess pests, thresholds and control options and the risks associated with those control options.
- Rotate crops to reduce the presence of insects, diseases or weeds in the soil or crop ecosystems and maximize benefits of cultural practices that optimize biological prevention of pests and diseases, and where appropriate inclusion of non-host crops legumes to provide reservoir for natural enemies a biological source of nitrogen.
- Apply fertilizers, organic and inorganic, in a balanced fashion, with appropriate methods and equipment and at adequate intervals to replace nutrients extracted by harvest or lost during production.
- Support beneficial biological control organisms – such as insects, birds, mites and microbial agents – to achieve biological pest control (for example, by providing favorable habitat, such as bushes for nesting sites and other native plants that may harbor predators of pests and parasites).
- Maintaining vegetation cover of the soil to inhibit the build-up of soluble nitrogen by absorbing mineralized nitrogen and minimizing leaching during periods of rain; Prioritize manual, mechanical and/or selective weeding.
- Maximize the benefits to soil and nutrient stability by re-cycling crop and other organic residues.
- Consider using mechanical controls, such as traps, barriers, light and sound, to kill, move or repel pests.
- Use pesticides to complement these approaches, not to replace them.
- Integrate livestock into crop rotations and utilize the nutrient cycling provided by grazing or housed livestock to benefit the fertility of the entire farm.
- Before purchasing any pesticide, assess the nature and degree of associated risks and effectiveness, taking into account the proposed use and intended users.

In 2020, the MOA published the National Agriculture Strategy for 2020-2025. The strategy calls for the adoption of good agricultural practices (GAP), supporting and training farmers on the use of biological pest control and integrated control with the aim of decreasing the use of chemicals and pesticides and mitigating pollution³.

The MOA in collaboration with the Food and Agriculture Organization (FAO) has been implementing Projects with the objective of reduction of pollution through the promotion and application of IPM-Good agricultural practices by farmers. GATE project can build on the

³ MoE, UNDP, UNHCR, UNICEF, 2020

previous experiences and achievements of the MOA in collecting baseline data, developing IPM training curricula and technical capacities of MoA technical staff and farmers to promote and develop further the adoption of the IPM concept in Lebanon⁴.

Where the use of pesticides is justified, they should be stored, handled and applied in accordance with the recommendations for the management of hazardous materials presented in the [General EHS and Agribusiness/Food Production Guidelines of the World Bank](#) and the National regulations under the control of the Ministry of Agriculture. The objective being to prevent, reduce or control potential contamination of soil, wildlife, groundwater or surface water resources from accidental spills during transfer, mixing, storage and application of pesticides,

Pest control in Lebanon is regulated by:

- Law 728/2006: Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.
- Law 432/2002: Stockholm Convention on POPs and classification of POPs according to their source as pesticides, industrial (IPOP) and unintentionally released (UPOP).
- Law 6/68: Regulation of trade of pesticides
- Various decisions by the Ministry of Agriculture (MoA) such as (i) MoA Decision 310/1-2010 that regulates the import, registration and use of agricultural pesticides in Lebanon and defines the requirements and conditions for registration and (ii) MoA Decision 311/1-2010 that requires that pesticide consignments be inspected at the port of entries and samples analyzed for active ingredient content and impurities that may have toxicological characteristics

Staff handling and applying pesticides should be appropriately trained. The staff shall:

- Ensure that all pesticides used are manufactured, formulated, packaged, labelled, handled, stored, disposed of and applied in accordance with the [FAO International Code of Conduct on Pesticide Management](#).
- Not buy, store, use or trade pesticides that fall contain active ingredients that are restricted under the international conventions and protocol and under the [World Health Organization \(WHO\) recommended classification of pesticides by Hazards and Guidelines to Classification 2019](#).
- Not use pesticides listed in WHO Hazard Class II (Moderately Hazardous), unless the project has appropriate controls established regarding manufacture, supply or distribution and/or the use of these chemicals. These chemicals should not be accessible to personnel without proper training, equipment and facilities to handle, store, apply and dispose of these products correctly.
- Preferably use selective pesticides with a low Environmental Impact Quotient (EIQ) where appropriate, rather than broad-spectrum products, in order to minimize impacts on non-target species.

Storage

In Lebanon, pesticides are predominantly stored by farmers in agricultural areas. However, some of the pesticides are stored in residential areas (10% of the pesticides in the South and 17% in northern Mount Lebanon) are stored in residential areas.⁵ Recommended practices for storing pesticides are summarized below:

- Store all pesticides in a lockable container or warehouse with a barrier that has enough space to collect any spills without contaminating the environment. Stores should be away from water sources, residential and built-up areas, and livestock and feed storage areas.
- Obtain spill kits and institute appropriate control measures in case of accidental spills.
- Store all pesticides in their original labeled containers and ensure that storage instructions are followed.
- Keep a record of all pesticides purchased, noting when they were received, the amount used, the amount left in store and their location.
- Keep product Safety Data Sheets (SDSs) in appropriate places in storage facilities.

⁴ FAO (2020) Briefing note on Integrated pest management. Retrieved March 2023, from <https://www.fao.org/3/cb1199en/CB1199EN.pdf>

⁵ MoE, UNDP, UNHCR, UNICEF, 2020

- Warehouses should have adequate ventilation, secondary containment, showers and emergency kits.

Handling

- Operators must read, understand and follow product label instructions for safe mixing, application and disposal; use qualified personnel for critical operations (eg mixing, transfers, tank filling and application).
- Insist that the correct Personal Protective Equipment (PPE) (eg gloves, coveralls, eye protection) for each route of exposure listed in the SDS is worn at all times when handling and applying pesticides.
- Require that all mixing and filling of pesticide tanks be done in a designated filling area. It should be away from waterways and sewers. If on concrete, liquids spills should be collected and disposed of as hazardous waste and ensure spills are cleaned up immediately using appropriate spill kits; spills should not be washed into waterways or sewers.

Application

- Use the method of application with the lowest EHS risk and ensure that non-target organisms are not affected.
- Select pesticide application technologies and practices designed to minimize offsite movement or runoff (e.g., low drift nozzles, using the largest droplet size and lowest pressure appropriate for the product).
- Establish buffer zones around waterways, residential and built-up areas, and livestock and feed storage areas.
- Ensure all equipment is well maintained and properly calibrated to apply the correct dosage.
- Insist that applications take place under appropriate weather conditions; avoid wet weather and windy conditions.

Arrangement

- Any unused diluted pesticides that cannot be applied to the crop, as well as rinse water and pesticides that are obsolete or no longer approved, should be disposed of as hazardous waste, in accordance with FAO guidelines.
- The majority of farmers in Lebanon burn empty containers (87% in Akkar and 64% in the South) or throw them with the municipal waste (60% in northern Mount Lebanon and 50% in Central Bekaa). Other practices include throwing empty containers in fields or rivers, handing them over to municipalities or selling them.⁶ Empty pesticide containers, foil seals, and lids should be triple-rinsed, and washings used in the pesticide tank should be sprayed on the field or disposed of as hazardous waste in a manner consistent with FAO guidelines and according to the manufacturer's instructions. Containers should be stored safely under cover prior to safe disposal; they must not be used for other purposes.

Fertilizers

- Store fertilizers in their original packaging and in a dedicated lockable room clearly identified by signs, access to which is limited to authorized persons.
- Ensure that SDSs and inventories are available at fertilizer storage facilities and available to first responders if needed.
- Buy and store only the fertilizers that are needed, and use older fertilizers first.
- Keep fertilizer stores separate from pesticides and machinery (fuels, ignition or heat sources).
- Know and understand the fertilizer needs of each crop and apply only what is needed, when needed, to minimize losses to the environment.
- Set up a suitable training program for personnel responsible for the transport, handling, loading, storage and application of fertilizers.

Any agricultural sub-project to be funded by the Gate project, shall submit an IPM Plan that shall contain the following components and activities:

- Technical plan on how IPM will be implemented
- Training and Awareness raising Plan. The sub-project proponent can seek advice from MoA professionals and trainers. Specific training and awareness raising activities on IPM shall be conducted based on need assessment.

⁶ MoE, UNDP, UNHCR, UNICEF, 2020

ESMF

- Safety and Storage of Pesticides Plan following the instruction of the MoA for the safe use, handling and storage of pesticides, and the proper use, maintenance and storage of pesticide spraying equipment and the provisions of this Annex on IPM and pesticide management
- Monitoring and Reporting: The sub-project shall have means to demonstrate implementation of the IPM.

ANNEX H FULL ENVIRONMENTAL BASELINE DESCRIPTION

This chapter presents the environmental and social baseline and settings related to the GATE project. This Chapter will present general background information about Lebanon.

1. ENVIRONMENTAL OVERVIEW

(a) GEOGRAPHICAL LOCATION

Lebanon is a Middle Eastern country located in Western Asia and bordered by the Syrian Arab Republic from north and east, Palestinian territories from the south, and the Mediterranean Sea from the west. The country extends over an area of 10,452 square kilometers only. Despite the small area of Lebanon, the country has been a host of civilizations and cultures throughout history, similarly to many other Mediterranean countries.

(b) CLIMATE AND METEOROLOGY

Lebanon has a typical Mediterranean climate characterized by a long, hot, and dry summer, and cool, rainy winter. Temperatures gradually decrease during winter season and precipitations either accumulate in groundwater reservoirs through infiltration, or run-off. When springs and water courses are revived again, the spring season begins.

The topography of the country, with an elevation gain that extends only about 40 kilometers, affects the climatic patterns. Along the coast, summers are hot and humid, with little or no rain.

Temperatures may vary from one area to the other, depending on the time during the day and the altitude. Temperatures may reach above 38° C in the daytime and below 16° C at night. The proximity of the sea to the coastal area acts as a buffer effect on the climate, making the range of temperatures narrower than it is inland.

Precipitation records vary from one year to the other, with major rainfalls occurring during the month of December and January. The influence of the Mediterranean Sea is abated by the altitude and, although the precipitation is even higher than it is along the coast, the range of temperatures is wider, and the winters are more severe. The Beqaa Valley and the Anti-Lebanon Mountains witness less precipitation and humidity levels than other parts of the country, as the Mount Lebanon Mountains Chain creates a microclimate for the former areas.

The average annual precipitation in Lebanon is reported to be between 8.6 billion m³ and 9.7 billion m³, of which 1 billion m³ is due to snow (MoEW/UNDP, 2014; Fayad et al., 2017).

Figures referenced by Ziad Hajjar (1997) and recorded at 105 stations spread throughout the different governorates registered average yearly precipitation ranging from 700 mm in the Beqaa to 1,210 mm over Mount Lebanon (Table B). Measurements were taken over several years ranging from 3 years in Terbol and Mayfouq stations to 51 years in the Tripoli station. The lowest level recorded for the country was 80 mm while the maximum observation reached 3,010 mm.

Table B Precipitation levels recorded by region

	NUMBER OF STATIONS	STATION ALTITUDE		PRECIPITATION (MM/YEAR)		
		LOW	HIGH	YEARLY AVERAGE	MIN	MAX
Beirut	4	15	34	891.75	393	1600
North	25	2	1925	1055	425	1890
Mount-Lebanon	36	45	1840	1210.16	421	3010
South	26	5	1150	933.27	342	2139
Beqaa	36	650	1510	705.42	80	2374
Lebanon	105	5	1840	787	80	3010

Source: Hajjar, 1997

The dominant wind direction is westerly from sea to land during the day, while it reverses at night (from land to sea).

Monthly and long term mean wind speed data at 10 m above ground level from the Météo Liban meteorological stations measurements showed wind velocities in the range of 1.6 to 9.1 m/s throughout the country (MOEW/UNDP, 2011)

(c) TOPOGRAPHY

The landscape of Lebanon is influenced by natural systems that extend outside the country. Thus, the Beqaa valley is part of the Great Rift system which stretches from Southern Turkey to Mozambique in Africa.

A major feature of Lebanese topography is the alternation of low lanes and high land running in a parallel manner with a north-to-south orientation. There are four longitudinal strips between the Mediterranean Sea and Syria, which are from west to east as follows:

- A flat and narrow coastal strip (maritime plain) parallel to the Mediterranean Sea
- The Mount-Lebanon chain
- The Beqaa Valley (Central plateau)
- The Anti-Lebanon Mountains Chain

The steepness in Lebanese mountains highly affects the climate and weather in the Beqaa Valley, and at high altitudes.

(d) GEOLOGY

The current geomorphological matrix of Lebanon is highly influenced by the historical geological events that occurred. The main tectonic events that happened are uplift, collision and changes in sea level, which have shaped the structural features and depositional environments of the country.

The uplift in the late Jurassic to early Cretaceous Eras was the first major tectonic event that is documented in the geological history of Lebanon (MOEW/UNDP, 2014). The second tectonic event is the closure of the Tethyan Sea in the early Tertiary Period. The first event led to the exposure, erosion and karstification of the Jurassic Limestone. The second event induced the formation of a collision zone, which has led to the first gentle uplift of Mount Lebanon and Anti-Lebanon Ranges (MOEW/UNDP, 2014). These events were separated by times of rise in sea level,

which has caused the deposition of thick limestone units mainly in the early Jurassic, late Jurassic and middle Cretaceous periods. The early Cretaceous period was characterized by the delta river deposits that were mainly sands and clay and that reach a thickness of 300 m in central Lebanon.

At the end of the Miocene epoch, the Messinian Salinity Crisis occurred, which is a major regional event. This event led to the deposition of thick salt layers and the development of karstification due to a major drop in sea level by about 1000 m following the closure of the Mediterranean Sea. The presence of these salt deposits has been well documented by the recent offshore seismic surveys conducted for oil exploration (Kosi et al, 2012). Moreover, the collision of the Arabian and Asian plates, during the Eocene and Oligocene epoch, led to the shaping the NNE-SSW trending features (MOEW/UNDP, 2014).

The main structural features are shaped by the major tectonic events that are recorded in the geological history of Lebanon (Figure H). These structures have an impact on controlling the groundwater flow directions; they can serve either as a preferential pathway or as a flow-restricting boundary. They are divided into primary and secondary structures. The Primary structures are divided into: 1) primary faults (Yammouneh, Rashaya, Hasbaya, Roum and Serghaya) 2) primary folds (North Mount Lebanon Anticline, Barouk-Niha Anticline, Beqaa Syncline/garben, North Anti-Lebanon Anticline and Mount Hermon Anticline) and 3) platforms (Akkar, Tyre and Saida-Damour) as per the MOEW/UNDP Study (2014). The secondary structures are divided into secondary faults, which are trending in a NW-SE, NE-SW, ENE- WSW and E-W direction, and secondary folds, mainly trending in an NNE-SSW direction parallel to the primary faults (MOEW/UNDP, 2014).

Period	Stratigraphy				Hydrostratigraphy												
	Age	Lithology	App. Thickness (m)	Formation Name/ Code	Lithology	Aquifer Type	Suggested Code	Description/ Karstification									
QUATERNARY	Age	Coast	Bekaa	up to 100	Quaternary (Q)	Sandy beaches, detrital LS, conglomerates, volcanic coastal or alluvial deposits	Aquiclude	BQ Qsg	Major porous medium semi-Aquifer. GW might percolate to and from the underlying aquifers especially in the Bekaa plain.								
		TERTIARY		NEOGENE	50-100	Pliocene (Pl)	Mostly volcanic rocks with marl and conglomerate	Aquiclude	BP Peg	The volcanic layer acts as an aquiclude with small quantities of water in fractured zones especially in Bekaa plain.							
					MIOCENE	50-100	Miocene (mcg)	Conglomerates, sandy, silt, and marl deposits	Aquifer	mcg	Porous medium aquifer. Water might leak to the underlying aquifer.						
						300-400	Miocene (mL)	Reef, marly LS, continental conglomerates, marl, lignites, sequence of thick fractured LS	Aquifer	mL	Acts as an important karstic aquifer under favorable conditions. GW is stored and transmitted in fractures and conduits.						
		TERTIARY		PALEOGENE	EOCENE	Unconformity	No Strata Preserved	No Strata Preserved			Possible leaking from Quaternary and Miocene Aquifer into the underlying Eocene aquifer.						
							200-600	Eocene (e2b)	Marly, chalky, cherty LS, some nummulitic LS	Aquifer	e2b	Important aquifer. Major karstification and high recharge. Mostly present in South Lebanon.					
							150-200	Eocene (e2a)	Some fractured marly to chalky LS	Aquifer							
							50-?	Paleocene (Pa)	White chalks, marly chalks with phosphate & chert nodules and bands.	Aquiclude	C6-Pa-e2a	The marls of this sequence act as an aquiclude separating major aquifers above and below this unit.					
							UPPER	CRETACEOUS	UPPER	Unconformity	100-500	Chekka (C6)	Upper unit with Paleocene not well defined				
											200-300	Maameltain (C5)	Massive to thin bedded white-gray LS & marly LS	Aquifer	C4-C5	Combining these limestone formation to create one of the major water towers in Lebanon, it is widely exposed and highly karstified. Major recharge of this aquifer is from snow.	
500-600	C4c Sammine C4b C4a		Pale gray, fractured fine and thick bedded LS and marly LS with geodes & chert								Aquifer		GW is stored and transmitted in fractures and conduits.				
LOWER	CRETACEOUS		LOWER				Unconformity	100-400	Hammana (C3)	Brown-green marls, carbonates, local basalts grades into limestone at the top	Aquiclude		GW percolating from the upper units is trapped at the marls and volcanic rocks that act as an impermeable layer.				
								50	Mdairej (C2b)	Pale gray, massive fractured cliff forming LS	Semi-Aquifer	C2-C3	Aquifer under favorable conditions especially in the karstic limestone units.				
								50-170	Abeih (C2a)	Brown-green units of argillaceous LS, marls & SS	Aquiclude						
		10-300		Chouf Sandstone (C1)	Ferruginous brown to white, coarse to fine SS with quartz, clay, coal, lignites & local volcanics	Semi-Aquifer		C1	Porous medium aquifer allows the passage and minor storage of GW. Volcanic rocks and clay horizons act as impermeable layers with perched GW build up above them.								
		JURASSIC		UPPER	UPPER	Unconformity		Unconformity				Possible leaking from the C1 Semi-Aquifer into the lower karstic units.					
								40-180	Salima (J7)	Brown, yellow, ferruginous oolitic LS, marls & shale	Semi-Aquifer	J6-J7	GW might leak to the underlying formations through fractures because of structural disturbances. Acts as an important karstic aquifer under favorable conditions. GW is stored and transported in fractures and conduits.				
								50-80	Bikfaya (J6)	Pale massive fractured micritic, dolomitic LS & chert	Aquifer						
								50-100	Bhannes (J5)	Brown-yellow detrital and oolitic LS, basalts, tuff pyroclastics, shales & marl	Aquiclude	BJ 5	Divided into two units: Basalt and LS. Areas of volcanics are taken as a single unit while the LS unit is considered as one major aquifer with the J4.				
								MIDDLE	JURASSIC	MIDDLE	Unconformity	1000-1500	Kesrouane (J4)	Pale gray fractured LS, dolomite & dolostones, massive to bedded with local chert, marls & volcanics	Aquifer	J4	One of the major water towers of Lebanon. Intensely and deeply karstified to the lower units. One of the widest exposed karstified unit in Lebanon. Exposed thickness around 1000m. Dolostone and dolomite are mostly found in north and south Lebanon.
												LOWER	JURASSIC	LOWER	Unconformity	100?	Chouane (J1)
300-450	Triassic		Marly LS, shale and possible anhydrite unit				Semi-Aquifer									T	It might be considered as a semi-aquifer not exposed or studied in Lebanon.

LS: Limestone SS: Sandstone GW: Groundwater

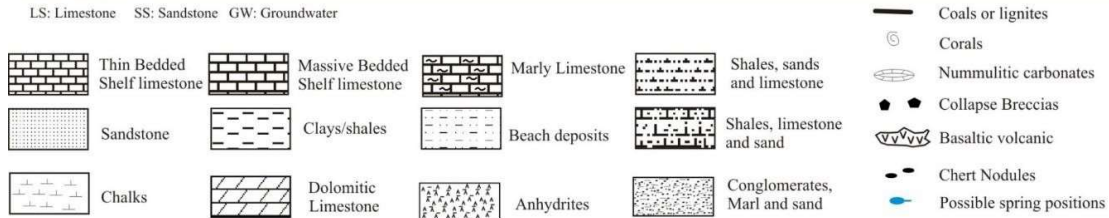


Figure H Stratigraphy and Hydro-stratigraphy of Lebanon (Source: MoEW/UNDP, 2014)

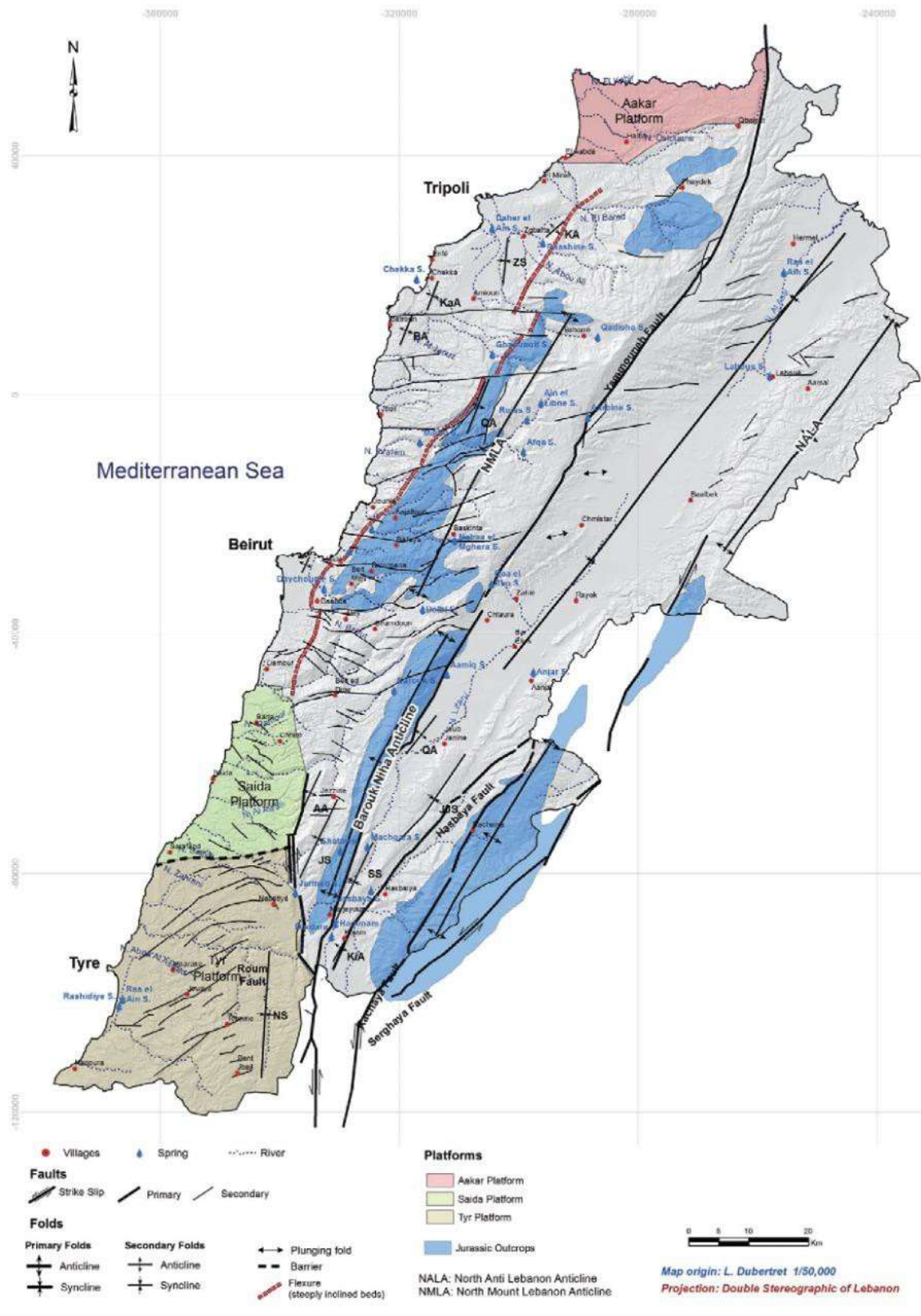


Figure I Major geological structural features of Lebanon (Source: MoEW/UNDP, 2014)

(e) HYDROGEOLOGY

The hydro-stratigraphic units of the country are classified into three (3) main groups: aquifers, semi-aquifers and aquicludes.

A total of three (3) hydro-stratigraphic units are considered as karstic aquifers in Lebanon, two (2) of which are considered the main aquifers of the country (the Kesrouane aquifer J4 aquifer) and the Sannine-Maameltein aquifer (C4-C5 aquifer). They are the two (2) water towers (Chateau-D'eau) of Lebanon and cover about 5590 km², which is about 54% of the country's surface area. The third aquifer is the Upper Eocene Formation (e2b). Given their highly karstified nature and extent that favor a high storage and recharge capacity, all three aquifers were considered to be karstic. The recharge of the aquifers in Lebanon mainly occurs through rainfall, snow and sometimes through losing streams. Infiltration in karstic aquifers is usually highest along high altitudes where precipitation increases. Groundwater tends to flow along preferential pathways enhanced by fractures and cavities in karstic limestone such as the e2b, C4-C5 and J4 aquifers making them highly vulnerable to groundwater pollution. Moreover, the presence of the Yammouneh Fault System and Roubi Fault System along with other fault systems in Lebanon (Figure J), helps in enhancing the fractures and cavities in karstic aquifers (MOEW/UNDP, 2014).

Besides aquifers, several semi-aquifers are present in Lebanon. The semi-aquifers usually have medium vulnerability to surface water pollution. This is because some semi-aquifers such as the Chouf Sandstone (C1) and Quaternary/Neogene (Q/n including mcg and mL) have the tendency to filter the percolating water. However, some semi-aquifers (mainly Mdairej C2b) are considered as highly karstified, especially in the presence of nearby faults (MOEW/UNDP, 2014).

Aquicludes are considered to have very low vulnerability to surface water pollution. This is mainly due to the lithostratigraphic characteristics of an aquiclude that limits the groundwater interaction between the overlying and underlying geological formations (MOEW/UNDP, 2014).

Figure K provides a Simplified Stratigraphy and Hydro-stratigraphy of Lebanon (adapted from Walley 1995; Abbud & Aker, 1986).

Period	Stratigraphy				Hydrostratigraphy					
	Age	Lithology	App. Thickness (m)	Formation Name/ Code	Lithology	Aquifer Type	Suggested Code	Description/ Karstification		
TERTIARY	QUATERNARY	Coast	Bekaa	up to 100	Quaternary (Q)	Sandy beaches, detrital LS, conglomerates, volcanic coastal or alluvial deposits	Aquiclude	BQ Qcg	Major porous medium semi-Aquifer. GW might percolate to and from the underlying aquifers especially in the Bekaa plain.	
				50-100	Pliocene (Pl)	Mostly volcanic rocks with marl and conglomerate	Aquiclude	BP Peg ncg	The volcanic layer acts as an aquiclude with small quantities of water in fractured zones especially in Bekaa plain.	
	NEOGENE	MIOCENE	Upper	50-100	Miocene (meg)	Conglomerates, sandy, silty, and marl deposits			Porous medium aquifer. Water might leak to the underlying aquifer.	
			Middle	300-400	Miocene (mL)	Reef, marly LS, continental conglomerates, marl, lignites, sequence of thick fractured LS	Aquifer	mL	Acts as an important karstic aquifer under favorable conditions. GW is stored and transmitted in fractures and conduits.	
			Lower			No Strata Preserved Unconformity			Possible leaking from Quaternary and Miocene Aquifer into the underlying Eocene aquifer.	
	PALEOGENE	EOCENE		200-600	Eocene (e2b)	Marly, chalky, cherty LS, some nummulitic LS	Aquifer	e2b	Important aquifer. Major karstification and high recharge. Mostly present in South Lebanon.	
				150-200	Eocene (e2a)	Some fractured marly to chalky LS				
	CRETACEOUS	PALEOCENE	Maastrichtian	50-?	Paleocene (Pa)	White chalks, marly chalks with phosphate & chert nodules and bands. Upper unit with Paleocene not well defined	Aquiclude	C6-Pa-e2a	The marls of this sequence act as an aquiclude separating major aquifers above and below this unit.	
		UPPER	Cenomanian	Campanian	100-500	Chekka (C6)	Massive to thin bedded white-gray LS & marly LS	Aquifer	C4-C5	Combining these limestone formation to create one of the major water towers in Lebanon, it is widely exposed and highly karstified. Major recharge of this aquifer is from snow. GW is stored and transmitted in fractures and conduits. Upper unit of the Hammana Formation is part of the C4-C5 Aquifer.
				Santonian						
				Coniacian						
		LOWER	Albian	Upper	100-400	Hammana (C3)	Brown-green marls, carbonates, local basalts grades into limestone at the top	Aquiclude	C2-C3	GW percolating from the upper units is trapped at the marls and volcanic rocks that act as an impermeable layer. Aquifer under favorable conditions especially in the karstic limestone units.
				Middle						
Lower										
UPPER		Aptian		50	Mdairej (C2b)	Pale gray, massive fractured cliff forming LS	Semi-Aquifer	C1	Porous medium aquifer allows the passage and minor storage of GW. Volcanic rocks and clay horizons act as impermeable layers with perched GW build up above them.	
LOWER		Berremian		50-170	Abeih (C2a)	Brown-green units of argillaceous LS, marls & SS	Aquiclude			
UPPER		Hauterivian		10-300	Chouf Sandstone (C1)	Ferruginous brown to white, coarse to fine SS with quartz, clay, coal, lignites & local volcanics	Semi-Aquifer			
LOWER	Valanginian				Unconformity			Possible leaking from the C1 Semi-Aquifer into the lower karstic units.		
JURASSIC	UPPER	Berriasian	40-180	Salima (J7)	Brown, yellow, ferruginous oolitic LS, marls & shale	Semi-Aquifer	J6-J7	GW might leak to the underlying formations through fractures because of structural disturbances. Acts as an important karstic aquifer under favorable conditions. GW is stored and transported in fractures and conduits.		
	MIDDLE	Kimmeridgian		50-80	Bikfaya (J6)	Pale massive fractured micritic, dolomitic LS & chert	Aquiclude	BJ 5	Divided into two units: Basalt and LS. Areas of volcanics are taken as a single unit while the LS unit is considered as one major aquifer with the J4.	
	LOWER	Oxfordian		1000 - 1500	Kesrouane (J4)	Pale gray fractured LS, dolomite & dolostones, massive to bedded with local chert, marls & volcanics	Aquifer	J4	One of the major water towers of Lebanon. Intensely and deeply karstified to the lower units. One of the widest exposed karstified unit in Lebanon Exposed thickness around 1000m. Dolostone and dolomite are mostly found in north and south Lebanon.	
	UPPER	Callovian							GW is stored and transmitted in fractures and conduits.	
	LOWER	Pliensbachian								
	TRASSIC	Sinemurian		100 ?	Chouane (J1)	Some dolomites, dark laminites and collapse breccias	Semi-Aquifer	-	The presence of dolomite might be related to the major faulting and recrystallization of LS. These dolomites might have a porosity up to 20%.	
				300-450	Triassic	Marly LS, shale and possible anhydrite unit	Semi-Aquifer	T	It might be considered as a semi-aquifer not exposed or studied in Lebanon.	

LS: Limestone SS: Sandstone GW: Groundwater

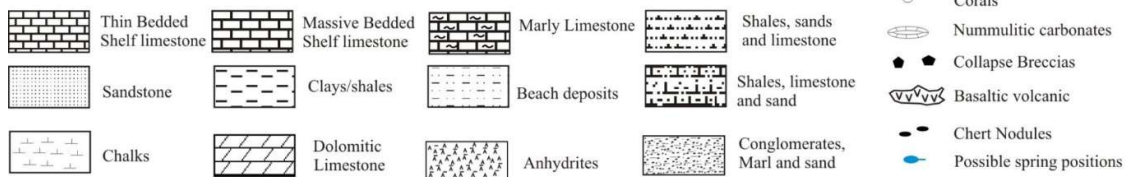


Figure J Stratigraphy and Hydrostratigraphy of Lebanon

Springs and Wells

Springs

A total of about 5,050 springs are depicted in the 1:20,000 topographic maps of Lebanon. The major springs in Lebanon are fed by either the Sannine-Maameltain (C4-C5) Aquifer such as Afqa Spring, Keserouane Aquifer (J4) such as Ain El Delbi, or both, which is the case in the Wazzani Spring (MOEW/UNDP, 2014).

Wells

The UNDP 2014 study revealed the presence of 841 public wells in Lebanon. The survey showed that the operational public wells are exploiting the various aquifers at an estimated rate of about 248.7 million m³/year. The water of the wells is mainly used for domestic purposes. As for private licensed wells, the UNDP, 2014 study revealed the presence of 20,537 wells. More than 50% of the private licensed wells are located in Beirut and Mount Lebanon areas. The estimated number of unlicensed private wells is almost three (3) times higher than the number of licensed private wells (about 55,000 to 60,000 wells). The water extracted from private wells is being used for agricultural, domestic, industrial and commercial purposes (MOEW/UNDP, 2014).

It should be mentioned that the Water Law 192/2020 that amends the Water Code (Law 77/2018), article 37, urges citizens who have an unlicensed well to settle their violation and legitimize their status within a period of two years, the consequence of not doing so being the closing of the well. A committee or unit should be established at MoEW to support the practical execution of this article that includes, at least, a hydrogeologist, a legal counsel, a representative from the concerned WE and evaluates the applications put forth by the public, the well's effect on aquifers and other sources, and the WE's capacity to supply water (MOEW, 2022).

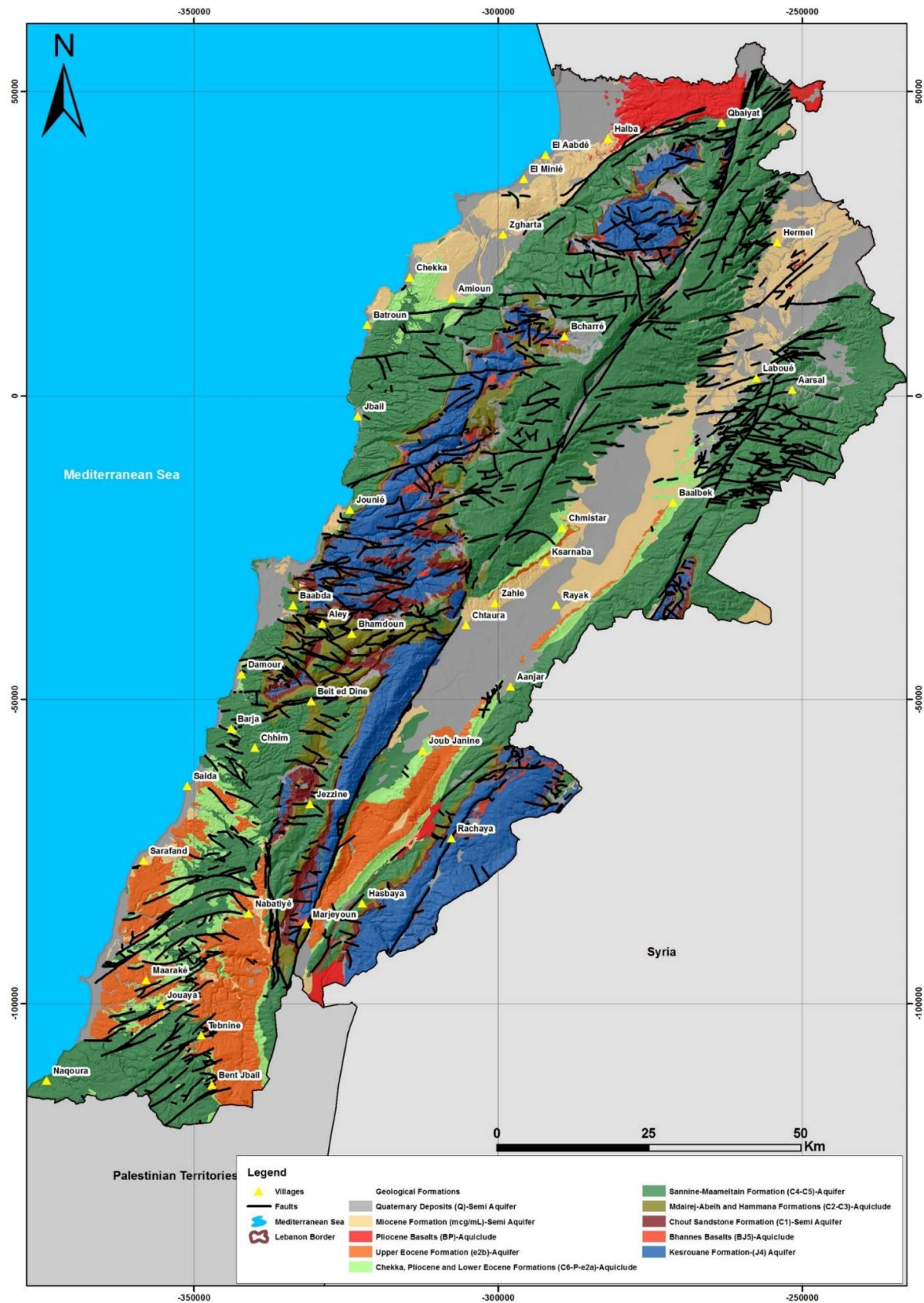


Figure K Simplified Geological Map of Lebanon

Source: Dubertret, 1953

(f) SURFACE HYDROLOGY

More than thirteen (13) rivers cut through Lebanon as shown in **Error! Reference source not found..** The main rivers with recognizable flow rates are the Litani River, Orontes (Assi) River, El Kebir River and Hasbani River. With the exception of the Litani River, which flows entirely within the country's borders, all other main rivers are Transboundary Rivers (MOEW/UNDP, 2014).

The Litani River originates from Baalbek Caza and flows south towards Zahle and West Beqaa where it is trapped by Qaraoun Dam. From Qaraoun Dam it flows toward South Lebanon and Nabatieh governorates before discharging into the Mediterranean Sea. Its total length reaches about 170 Km. The estimated average annual flow volume of the Litani River at Qillaya Gauging Station is around 51 million Cubic Meters (MCM). It is worth noting that the upper watershed of the Litani River is heavily polluted, more than the lower basin (MOEW/UNDP, 2014).

The Orontes River, also named as Al Assi River, is a transboundary river that originates in Lebanon, and flows into Syria to discharge into the sea in Antakya, Turkey. It initiates in Lebanon and is mainly fed by two major springs; Al Assi and Ain Ez Zarqa Springs. It also receives surface runoff from areas located at both sides of its course. Its average flow rate, estimated from the flow record collected between 2001 and 2013, is about 11 m³/s (MOEW/UNDP, 2014).

El Kebir River is a permanent river that flows along the Lebanese-Syrian country border in a west-northwest direction and discharges into the Mediterranean Sea. El Kebir River is gauged at the sea mouth, having an estimated yearly average flow of 474 million Cubic Meters (MCM).

The Hasbani River is a permanent river that flows south for about 40.2 km from its starting point before exiting the country and crossing into bordering nations. The Wazzani Spring emerges on the side of the Hasbani River and discharges into it. The estimated average annual flow volume of the Hasbani River (segment within Lebanon) is around 149 million Cubic Meters (MCM) (MOEW/UNDP, 2014).

Besides the main rivers, several small-scale rivers (such as Damour River, El Bared River, Ibrahim River, Nahr el Kalb, etc.) are present in Lebanon (**Error! Reference source not found.**). All those rivers tend to flow towards the west, eventually discharging into the Mediterranean Sea (MOEW/UNDP, 2014).

It is worth noting that inland wetlands are also present in Lebanon. The wetlands are located in Ammiq and Kfarzabad villages and are considered as Himas (protected areas) with high ecological value.

According to the Updated Water Sector Strategy 2020-2035, there are six operational dams/hill lakes in the country: Chabrouh Dam (Mount Lebanon), Ballout Lake (Mount Lebanon), Qaysamani Lake (Mount Lebanon), Kouachra Lake (Akkar), Yammouneh Lake (Baalbek-Hermel) and Qaraoun Dam (Beqaa) with a total dynamic capacity of around 314 MCM/year, mainly concentrated in Qaraoun and Chabrouh dams (MoEW, 2022). There are also other dams under construction, on hold or requiring repair, as shown in **Error! Reference source not found..**

Table C Total Dynamic Storage Capacity of Existing Dams

Dam	Static Storage (Mm ³ /y)	Dynamic Storage (Mm ³ /y)	Dam Height (m)	Status	Usage
BMLWE					
Chabrouh Dam	9	11	65	Operational	Potable/Irrigation
Ballout Lake	0.5	0.5	15	Operational	Potable/Irrigation
Qaysamani Lake	1	1	15	Operational	Potable
Janneh Dam	38	95	-	Under Const.	Potable/Irrigation/Hydropower
Boqaata Dam	6	12	71.5	Under Const.	Potable
Bisri Dam	125	125	73	On Hold	Potable/Irrigation
	180	245			
NLWE					
Kouachara lake	0.4	0.4	11	Operational	Irrigation
Brissa Dam	0.8	0.8	35	Needs repair	Irrigation
Mseilha Dam	6	12	71.5	Under Const.	Potable/Irrigation
Balaa Dam	1.2	2.2	35	Under Const.	Potable
	8.4	15.4			
BWE					
Yammouneh Lake	1.45	1.45	7	Operational	Irrigation
Assi Dam - Phase I	-	63	10	On Hold	Irrigation
Qaraaoun Dam	220	300	62	Operational	Potable/Irrigation/Hydropower
	221.45	364.5			

Total storage capacity at country scale: Static = 410 Mm³/y - Dynamic = 625 Mm³/y

Source: MOEW, 2022

According to the Green Plan report of 2016, since 2012, Green Plan has been implementing Hill lakes for farmer groups. The Hill lakes designated for groups of farmers are shown in Map 1 and either have been completed or are being studied.

There are 33 lakes in total, with a 1,465,000 m³ capacity. The following assumptions should be noted:

- All hill lakes that were supposed to be built in 2016 were finished on schedule (funds are available and reserved)
- Each lake is efficiently exploited to 70% of its capacity (the rest is lost by evaporation and other factors)
- As supplemental irrigation from the lake, each beneficiary from the common Hill lake will irrigate 2.5 dunums (0.25 ha).
- 3000 m³/ha is the projected average water need.

The total irrigated area every year will be 342 ha, and there will be 1,367 beneficiary farms overall.

Green Plan helps beneficiary farmer groups to create water users groups (water user association), in collaboration with the municipalities where municipalities exist, in order to manage the lakes.

Error! Reference source not found. illustrates hill lakes that have been constructed, are under construction or were supposed to be executed in 2016-17 for famers groups by Green Plan.

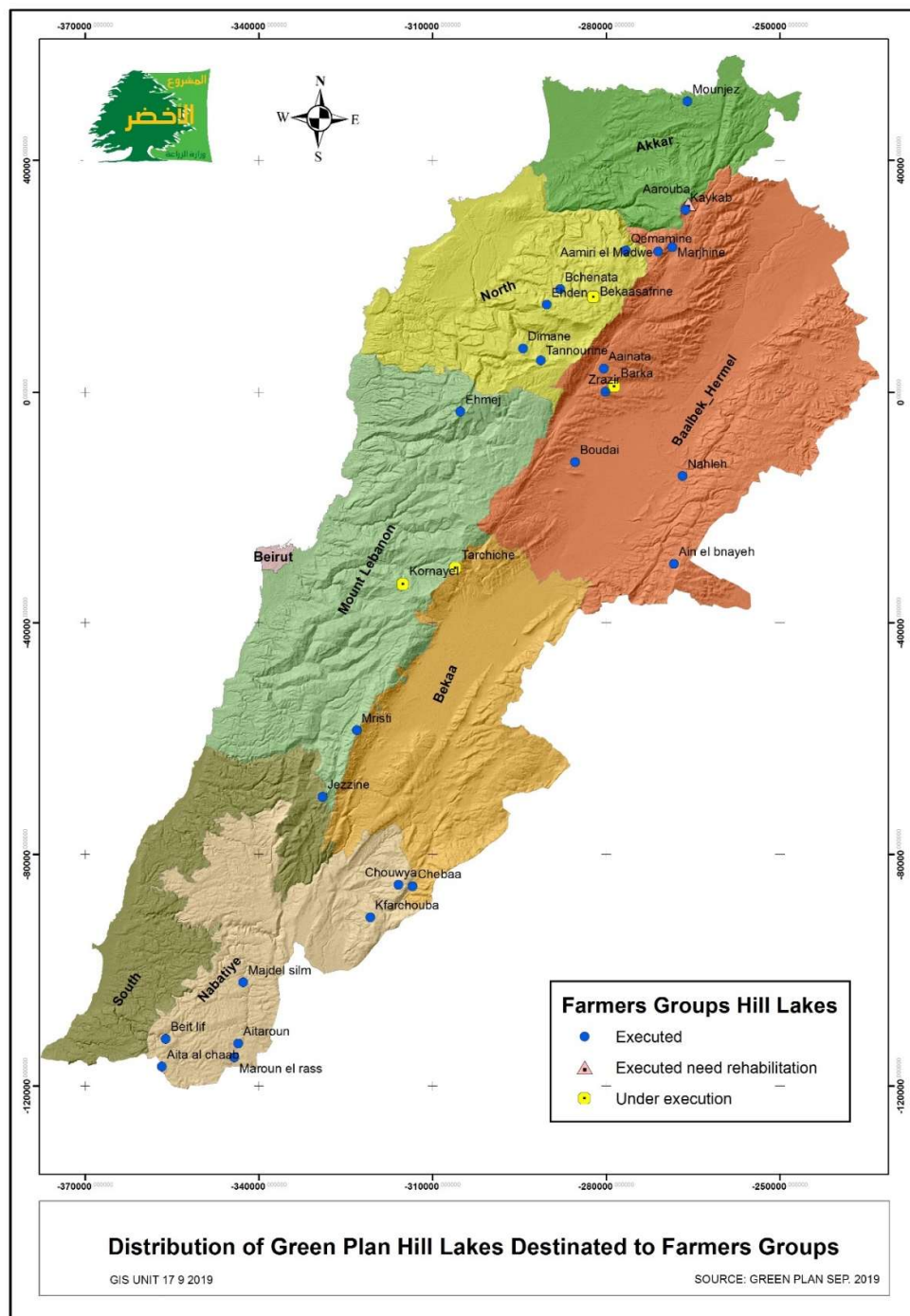


Figure L Distribution of Common Hill Lakes Executed and those that will be Executed in years 2016 – 2017 and Related to Farmer Groups

Source: Green Plan, 2019

Green Plan has received support from various international organizations to execute projects within its mandates, including the construction of hill lakes (Green Plan, 2016):

- The Hilly Areas Sustainable Agricultural Development Project (HASAD) project funded by the International Fund for Agricultural Development (IFAD) comprised the construction of a minimum of 18 small and a maximum of two medium size hill lakes for storing water from springs, runoffs and harvested water for irrigation by small groups of farms. Each hill lake has a capacity between 20,000 m³ and 100,000 m³. The total capacity of water that will be harvested through HASAD project will be around 800,000 m³.
- The Agriculture and Rural Development Programme (ARDP), funded by the European Union under the framework of the European Neighborhood Policy (ENP) comprised the construction of hill lakes with a total capacity of 160,000 m³ (8 medium-sized hill lakes), in addition to provision of support to farmers and cooperatives to manage irrigation networks and to adequately use modern irrigation systems, and development of their capacities.
- The Climate Smart Agriculture: Enhancing Adaptive Capacity of the Rural Communities in Lebanon (AgriCAL) project funded by IFAD aimed to increase community resilience and adaptive capacity to climate change in the Project Areas (Akkar-Donniyeh, North Baalbek-Hermel, South Litani (downstream of Qaraoun Lake). The project covered the following activities: rainwater harvesting from greenhouse roof tops, roads rehabilitation and water efficient irrigation systems deployment.

Error! Reference source not found. present the hill lakes executed/under execution by the Green Plan for groups of farmers between 2010 and 2019. Their total capacity is 1,293,000 m³; and the corresponding total irrigated area is 6,465 dunums.

Table D Collective Hill Lakes Executed by the Green Plan between 2010 and 2019

Nb	Name of the lake	Casa	Capacity m ³	Financial source for execution	Status	Cost LL	Ystereo	Xstereo	Year of execution	Irrigated area (dunum)	Nb of beneficiaries
1	Aainata	Baalback	20,000	ARDP	Executed	339,486,495	4101	-280441	2019	100	33
2	Aamiri ^{el} Madwe	Hermel	55,000	Hassad	Executed	749,674,500	24264	-271018	2018	275	92
3	Aarouba	Hermel	120,000	National budget	Executed need rehabilitation	2,940,374,150	32400	-265816	2013	500	167
4	Ain el Beniye	Baalback	30,000	Hassad	Executed	668,571,000	-29772	-268304	2015	150	50
5	Aita ^{el} Chaab	Bint jbeil	18,200	Hassad	Executed	443,842,500	-116647	-356745	2016	91	30
6	Aitaroun	Bint jbeil	12,300	Hassad	Executed	179,890,500	-112659	-343530	2015	61.5	21
7	Barka	Baalback	40,000	Hassad	Under execution	429,861,000	1010	-278573	2019	200	67
8	Bchenata	Minyeh Daniyeh	75,000	ARDP	Executed	265,823,205	17768	-287945	2019	375	125
9	Beit Leif	Bint jbeil	28,000	Hassad	Executed	544,942,500	-111860	-356053	2016	115	38
10	Bekaasafrine	Minyeh Daniyeh	100,000	Hassad	Under execution	805,347,000	16454	-282198	2019	500	167
11	Boudai	Baalback	47,000	Hassad	Executed	731,605,500	-12174	-285355	2016	235	78
12	Chebaa	Hassbaya	30,000	Hassad	Executed	469,764,000	-85495	-313420	2015	150	50
13	Chouwaya	Hassbaya	15,000	ARDP	Executed	288,275,025	-85218	-315864	2019	75	25
14	Deir ^{el} Moukhalles*	Shouf	55,000	NA	Executed	US\$ 257,392	NA	NA	NA	NA	NA
15	Dimane	Bcharreh	100,000	National budget	Executed	2,948,758,943	7559	-294362	2013	600	200
16	Ehden	Zgharta	25,000	National budget	Executed	573,579,026	15104	-290277	2014	102.5	34

Nb	Name of the lake	Casa	Capacity m ³	Financial source for execution	Status	Cost LL	Ystereo	Xstereo	Year of execution	Irrigated area (dunum)	Nb of beneficiaries
17	Ehmej	Jbeil	30,000	Hassad	Executed	390,981,000	-3342	-305154	2016	150	50
18	Hadath el Jebbeh*	Bcharreh	34,000	NA	NA	US\$ 372,947	NA	NA	NA	NA	NA
19	Jezzine	Jezzine	27,000	ARDP	Executed	384,998,355	-70024	-328985	2019	135	45
20	Kaykab	Hermel	67,000	Hassad	Under execution	659,358,000	31457	-266300	2019	335	112
21	Kfarchouba	Hassbaya	45,000	Hassad	Executed	737,934,000	-90840	-320702	2018	300	100
22	Kornayel	Baabda	20,000	Hassad	Under execution	358,168,500	-33337	-315067	2019	325	108
23	Majdel Silm	Marjeyoun	24,000	Hassad	Executed	529,248,000	-102078	-342692	2018	90	30
24	Makneh*	Baalbek	28,900	NA	Executed, temporary handover	US\$ 394,233	NA	NA	NA	NA	NA
25	Marjhine	Hermel	16,500	Spanish grant	Executed	621,385,470	25045	-268582	2013	202.5	68
26	Maroun el Ras	Bint jbeil	25,500	Spanish grant	Executed	558,099,113	-115069	-344221	2012	127.5	43
27	Medwi*	Hermel	53,500	NA	Executed	US\$ 53,500	NA	NA	2019	NA	NA
28	Mounjez	Akkar	46,000	Hassad	Executed	614,116,500	50164	-265965	2019	250	83
29	Mristi	Chouf	50,000	National budget	Executed	1,533,216,443	-58555	-323023	2012	250	83
30	Nahle	Baalback	20,000	Hassad	Executed	477,183,000	-14619	-266790	2016	100	33
31	Qemamine	Minyeh Daniyeh	18,500	Spanish grant	Executed	508,345,583	24438	-276612	2013	102.5	34
32	Tannourine	Batroun	20,000	National budget	Executed	658,590,000	5486	-291266	2016	150	50
33	Tarchiche	Baabda	38,500	ARDP	Under execution	491,906,100	-30508	-306047	2019	192.5	64

Nb	Name of the lake	Casa	Capacity m ³	Financial source for execution	Status	Cost LL	Ystereo	Xstereo	Year of execution	Irrigated area (dunum)	Nb of beneficiaries
34	Zrazir	Baalback	45,000	Hassad	Under execution	333,672,000	107	-280114	2019	225	75
	Total		1,379,900			LBP 21,236,997,408 US\$ 1,078,072				6,465**	2,155

* Added based on an update by the Green Plan

** Excluding the lakes of Deir el Moukhalles, Hadath el Jebbeh, Makneh, and Medwi.

Source: Green Plan, 2019

Green Plan's objectives are to:

- Increase the irrigation water harvesting and storage capacity by 2.35 million cubic meters through supporting the construction of 400 individual hill lakes and 30 collective hill lakes, as well as 1,500 tanks.
- Improve the efficiency of irrigation water use of Green Plan constructed lakes through reaching 5,000 farmers, connecting 30 collective hill lakes to a distribution network down to the parcel level, and enhancing their cooperative management, rehabilitating 16 small springs' canals, and supporting the conversion of 425 ha to more efficient irrigation systems.

(g) OVERVIEW ON IRRIGATION

There are currently about 100,000 hectares of irrigated land in the country, according to an inventory of irrigation schemes (MOEW, 2022).

Irrigation efficiency is between 50 and 60% under the current irrigation conditions, taking network losses and irrigation practices into account. At the national level, a representative hectare's (ha) average annual irrigation water need is presently 8,400 m³/ha. Current irrigation water demand is illustrated in

Table 2-2.

Table E Present irrigation water demands

WE	Irrigated area (ha)	Commonly used rates in Lebanon (m ³ /ha/year)	Total needs Mm ³ /year
NLWE	23,600	7,500 (most of the area is coastal)	177
BMLWE	5,835	6,500 (most of the irrigated area is at high altitude)	38
BWE	66,115	9,000 (most of the irrigated area is inland/dry weather)	595
SLWE	4,210	7,500 (most of the area is coastal)	32
TOTAL	~100,000	8,435 (Average irrigation water requirement for one representative ha at the country level)	842

Source: MOEW, 2022

According to the Agricultural National Census (MoA, 2010), only 50% of the area that is irrigated is supplied by natural surface water, with the remaining 50% coming from either "expensive" subsurface water or hill lakes. Additionally, 35% of the irrigated areas are only partially irrigated, while 65% of the irrigated areas are permanently irrigated. It is therefore estimated that approximately 75% of the current irrigation water requirement, or about 630 Mm³, are currently supported by available water for irrigation and reflect the actual irrigation water consumption figure throughout the nation. Out of these 630 Mm³, 315 Mm³ are thought to be covered in surface water and the remaining by groundwater.

According to calculations of the water balance at the distribution system level, the dynamic seasonal variation of the population and the irrigable land assumptions, the total annual

ESMF

demand for the year 2020 is estimated to be 1,505 Mm³ (1,837 Mm³ for a network efficiency of 50%).

A rough estimate of the water demand for irrigation is 842 Mm³ per year, or around 55% of the overall water demand (MOEW, 2022).

Future irrigation development is dependent on:

- Executing new projects
- Securing new sources of water (storage structures & water wells).

At the national level, the development of the proposed projects would enable the irrigation of an additional 38,000 acres (

Table F Irrigable land in Lebanon

	Presently irrigated area (ha)		Proposed irrigation projects (ha)		Total (ha)
NLWE (18 schemes)			Noura el Tahta & Dar Baachtar dam	4 200	
			Hill lakes	730	
		28 600		4 930	33 530
BMLWE (15 schemes)		5 835	Hill lakes	540	6 375
BWE (36 schemes)			Aassi dams	6 000	
			Massa dam	1 600	
			Younine dam	1 200	
		66 115		8 800	74 915
SLWE	Qasmieh Ras El Ain	3 200	Conveyor 800	13 250	
	Saida Jezzine	430	Khardale dam	1 300	
	Small local projects	580	Choumaryeh dam	4 000	
		4 210	Ibl es Saki dam	3 800	
			Hill lakes	1 235	
				23 585	27 795
Total		104 760		37 855	142 615

Source: MOEW, 2022

(h) TOTAL WATER SUPPLY

The yearly renewable accessible water volumes are projected to be around 2,050 Mm³ from springs, 1,475 Mm³ from rivers, and 700 Mm³ from wells (public and private). Regarding supply, they vary depending on the types of sources and the extracted resources. It is important to note that groundwater is overexploited by about 300 Mm³ annually and that dams are typically topped off with surface water, primarily from rivers. These numbers are summarized in Table 2-4.

Table G Available and exploited water resources for 2020

Source	Available Resources (Mm ³ /year)	Exploited Resources (Mm ³ /year)
Rivers	1,475	14
Springs	2,050	594
Public and Private wells	700	990
Dams (Static)	-	314 (232)
Total Water Supply	4,225	1,912

Source: MOEW, 2022

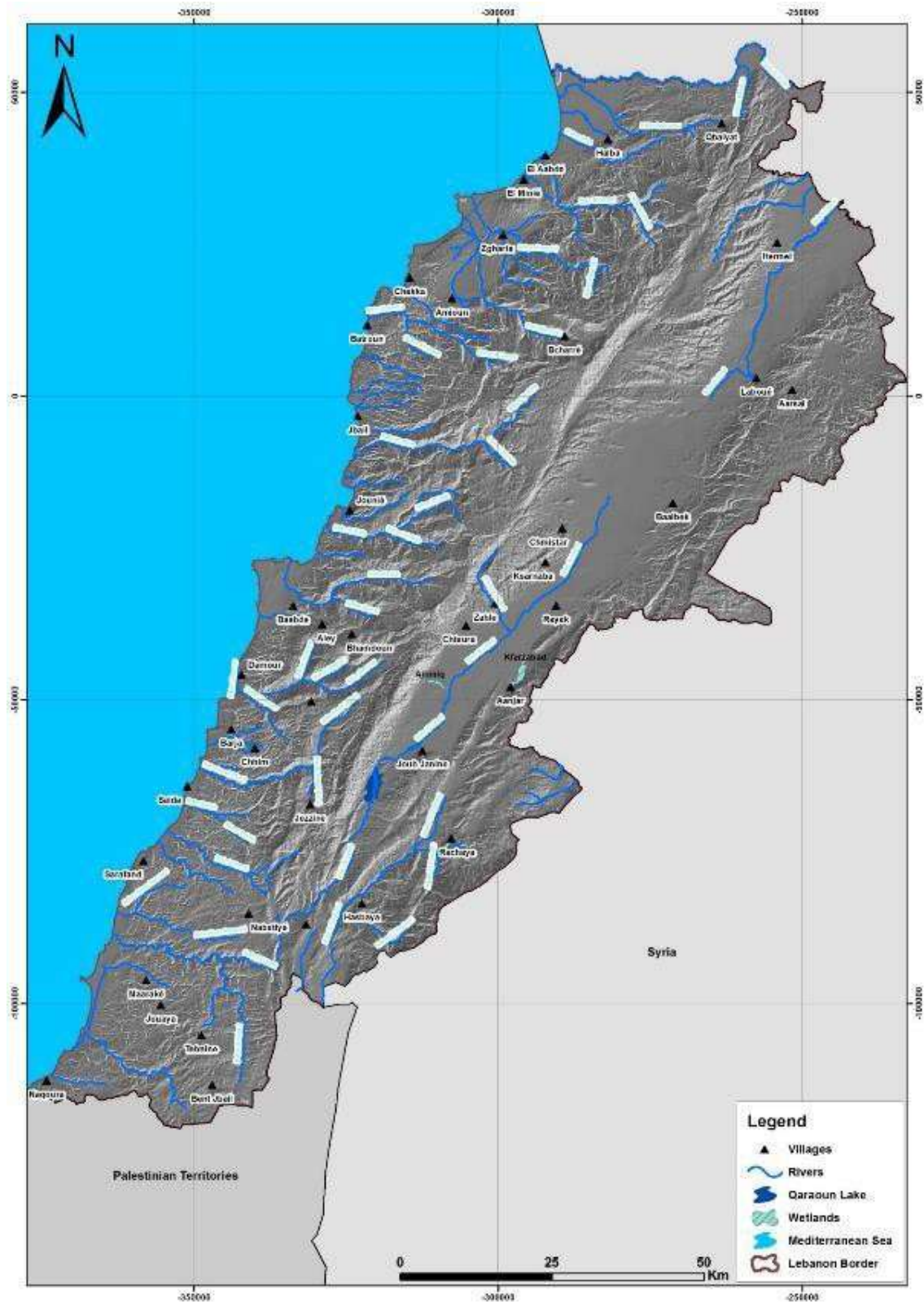


Figure M Map Showing the Major Surface Water Bodies in Lebanon (mainly Rivers and Wetlands)

(i) SOIL

Based on the soil map of Lebanon, there are twelve (12) soil types in Lebanon. The extent of the soil cover layer is shown in Figure N. Leptosols tend to cover the largest surface area out of the twelve soil types. Soil cover characteristics are described in the paragraphs below (Encyclopedia Britannica, no date).

- Cambisols are developed in medium and fine-textured materials (mostly colluvial and onalluvial deposits) which justifies their presence in the Beqaa valley. Cambisols are good for agricultural usage and can be one of the most productive soils in terms of agriculture if the climate is appropriate.
- Leptosols are shallow soils overlying calcareous rocks. Leptosols are unattractive for rainfed agricultures because of their inability to hold water. However, they allow shrubs and small trees to grow over the rocky terrain, which gives them their importance in sustaining such terrestrial ecosystems.
- Fluvisols are mainly composed of river sediments and are genetically young soils within the alluvial deposits. Those soils can be found around water courses.
- Gleysols are wetland soil that is saturated by groundwater. They are usually found in depression areas and low landscape positions. Within Lebanon, they are mainly found at Ammiq and Kfarzabad Wetlands.
- Luvisols are present usually in forested regions. Such soils are characterized by their high content of clay minerals; thus, they do not bear water.
- Regosols are shallow soils with low-humus surface horizon overlying directly the weathering rock in an actively eroding landscape. Such soils allow orchards to grow and thus are important in sustaining such terrestrial ecosystems.
- Anthrosols are formed from heavily modified soils due to long term human activities related to irrigation and cultivation.
- Arenosols are sandy-textured soils that lack any significant soil profile development. Such soils have high permeability and low nutrient content, making their agricultural usage problematic.
- Calcisols are characterized by a layer of calcium carbonate. They are well drained soils and relatively fertile soils given their high calcium content.
- Andosols are dark colored soils of volcanic origin (ash, tuff...). Such soils tend to form good agricultural soils given their richness in nutrients and their water-bearing characteristics.
- Lixisols are soils with "low levels of plant nutrients and a high erodibility, making agriculture possible only with frequent fertilizer applications, minimum tillage, and careful erosion control".
- Vestisols contain high levels of plants with high clay content. Hence, they are not well suited to cultivation without careful management.

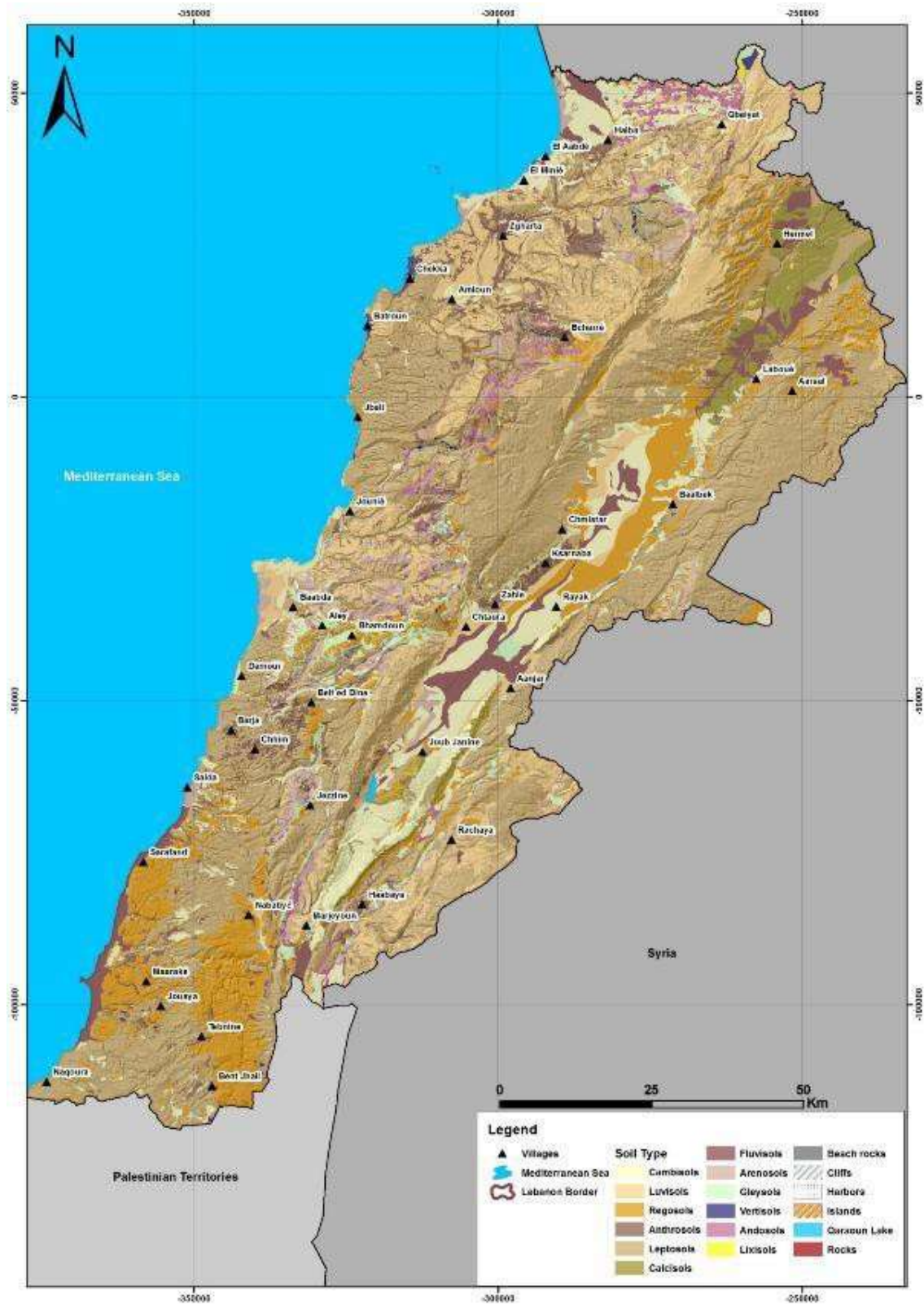


Figure N Soil Types in Lebanon (Source: CNRS-L, 2005)

Many improper human practices are leading to loss of natural resources including soil through erosion and mismanagement. In 2018, the Final National Report on Land Degradation Neutrality (LDN) Target Setting Programme was published, giving an insight about Land Productivity Dynamics (LPD) in Lebanon, and the most vulnerable areas to land degradation and soil erosion (Figure O). The standard LPD classification is used, made of five distinct classes as follows:

- LPD 1: Declining productivity;
- LPD 2: Early signs of decline;
- LPD 3: Stable, but stressed;
- LPD 4: Stable, not stressed; and
- LPD 5: Increasing productivity.

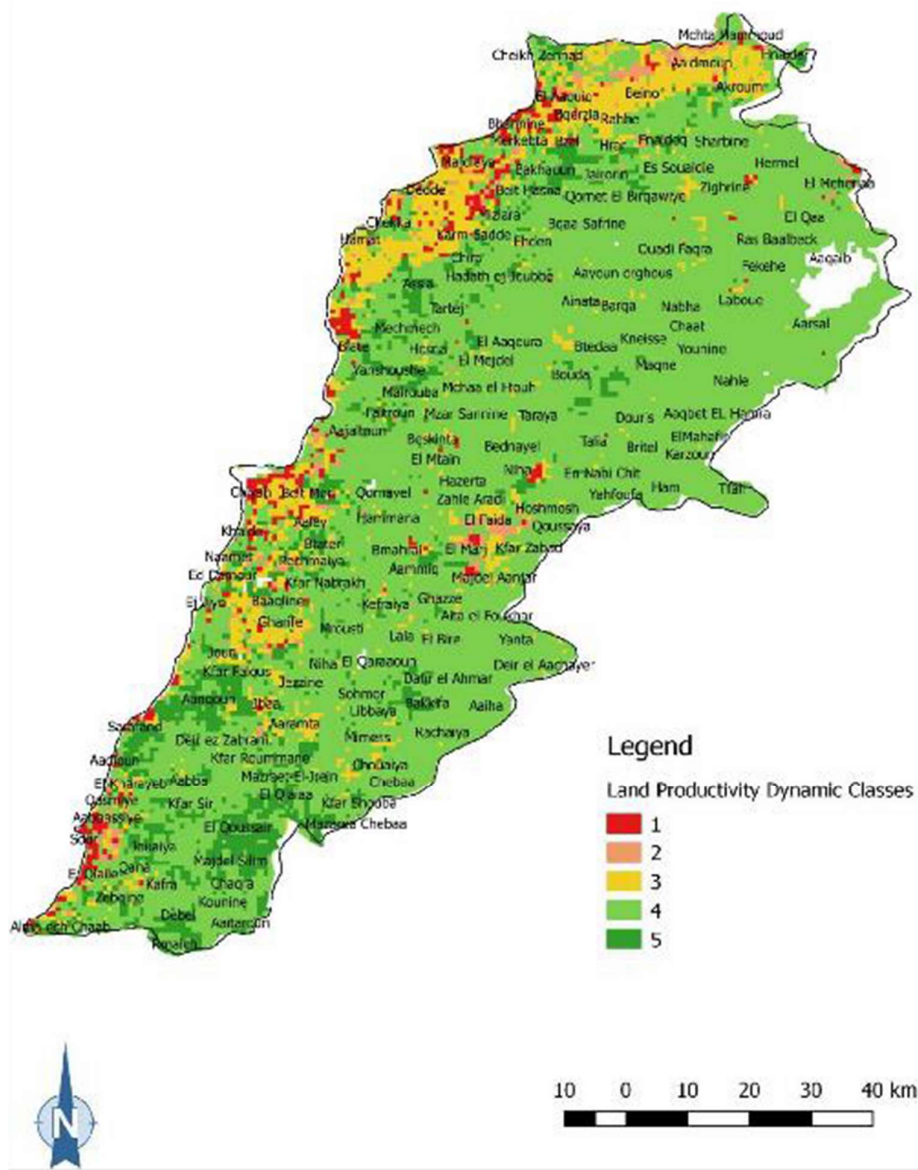


Figure O Land Productivity Dynamics trends of Lebanon (Source: Lebanon LDN TSP Country Report)

(j) LAND RESOURCES

Land usage in Lebanon can be classified into four main categories: agricultural areas, urban areas, natural areas, and mixed rural areas. Natural and agricultural areas, with the latter expanding mostly over the Beqaa Valley, the South, Nabatiyeh, Akkar, Zgharta, Koura, and Minieh-Dannieh as shown in Figure P, are the most prominent land use/cover in Lebanon. The main agricultural crops comprise fruit trees, vineyards, olives, bananas, citrus fruits, and field crops. Most of the agriculture in Lebanon is subject to fertilizers and pesticides (agrochemicals). It is generally known that many farmers do not abide by the correct dosage of fertilizers and pesticides usage, which find their way into the soil and into groundwater by leaching down due to irrigation, and into surface water through runoff. On the other hand, the highest concentrations of urban areas are found in Tripoli, Beirut and the coastal line of Mount Lebanon to the North of Beirut, Saida, Nabatiyeh, Tyre, as well as Zahle and Baalbek (CDR, 2005). Soil nutrition and plant protection are mismanaged with Lebanon showing some of the highest per hectare use of fertilizers (331 Kg/ha) and pesticides (7 Kg/ha) in the world (MOA, 2020).

Akkar is known to have many assets that allowed it to be the third major area of agricultural production after the Bekaa and Baalbeck/ El Hermel. Its lower plain is one of the most productive agricultural regions of the country. The main reason for Akkar's high potential is due to the fertility of the soil and gentle slopes, water abundance, and agro-climatic zones diversity. The FAO estimates that 42,000 hectares, or around half of Akkar's total surface area, consist of arable land, with 43% of that area irrigated. Agriculture is Akkar's second-largest economic sector, providing a source of income for 30% of families (UN, 2011). The plain's high concentration of agricultural activity provides 47% of household income (Mouchref, 2008). According to IDAL, around 38% of cultivated lands are used for the cultivation of cereals, followed by 25% for vegetables. More than 18% of olive oil production in Lebanon takes place in Akkar, making it a prominent location for agro-food processing.

The North's main advantage is access to resources. 15% of the governorate area is considered to be an agricultural area, whereby 62% of its area is dedicated for the cultivation of olives and hence makes up around 50% of total olive groves in Lebanon.

Baalbek's soil texture provides great possibilities for agricultural development. The area owns the largest portion of Lebanon's total arable land (25%). **Hermel**, on the other hand, benefits from the Assi River's presence, making the district Lebanon's principal hydrographic zone.

Bekaa is known to be an agricultural land in its three districts, which is crucial for the local economy and culture. Arable fields in the Bekaa Governorate make up around 18% of all arable lands in Lebanon, according to the Ministry of Agriculture's Census (MOA, 2010).

The South is a significant agricultural region of Lebanon as well. In South Lebanon, greenhouse agriculture has an area of 6,277 dounoum (2010), 78% of which is planted with fruit trees. A total of 201,539 dounoum are utilized for permanent agriculture, 38.9% of which is planted with olives, and 31.6% with citrus crops.

Nabatieh can take advantage of the resources available because of its fertile soil, moderate climate, and water resources. To begin with, 18% of olives cultivation in Lebanon is situated in Nabatieh, which is considered to be the 2nd concentration in Lebanon, only preceding it North Lebanon and Akkar. In addition to that, Nabatieh has a growing livestock sector with a high number of cattle and goats.

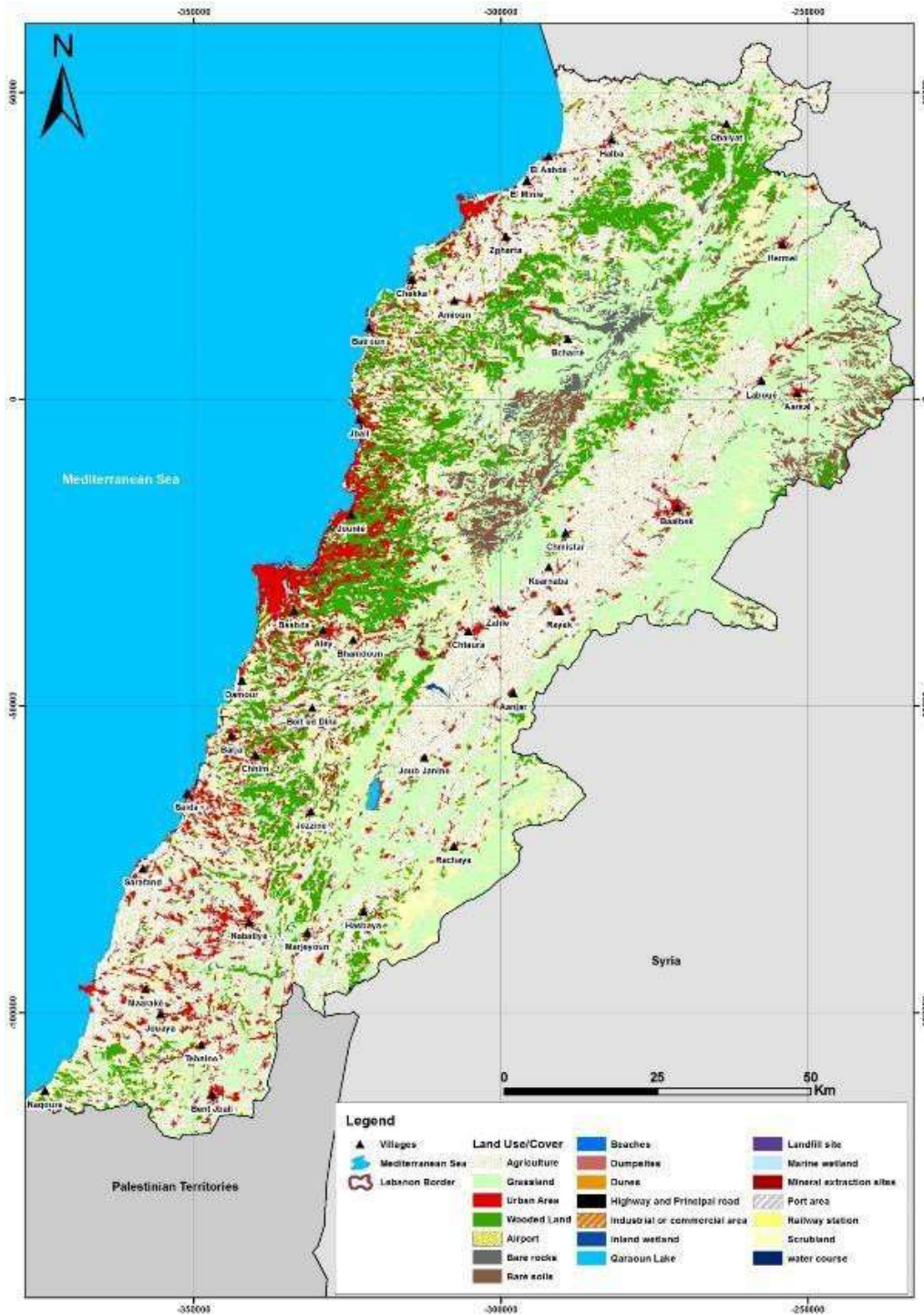


Figure P Land Use/Cover of Lebanon (Source: SDATL, 2013)

main forest hotspots is the wetland of Cheikh Zennad that has important bird areas and bottlenecks in addition to the ecological corridors that include the riverine corridors that go from the northern Lebanese mountain system, forest corridors such as the Lebanese Cedar, coastal corridors, and migratory bird routes.

North

Most of the forest species found in Lebanon can be found in the forests of North Lebanon, which make up about 21% of the northern governorate. These species include the Palestine oak *Quercus calliprinos*, the Aleppo oak *Quercus infectoria*, the Turkey oak *Quercus cerris*, the Greek juniper *Juniperus excelsa*, the Syrian juniper *Juniperus drupacea*, the Lebanon cedar *Cedrus libani*, the Ci (Mediterranean cypress).

The **Hermel** region is characterized by its nature reserves especially cedar trees and perennials. Cultivated land area (3 km²) is equivalent to 5.38% of the total area, which is very little in relation to the area of arable land (15 km²). It is mainly composed of agricultural areas such as terraces, fallow lands, and cultivated trees, in addition to grasslands whereby some are degraded and others are used for grazing, agriculture and forage.

The **Bekaa** region comprises several mountains that reach around 2,740 m above sea level, plains, valleys that reach down to around 600m in altitude, rivers such as the Litani River that is the longest river in Lebanon, wetlands, and an artificial lake, Qaraoun. Bekaa's unique topography and diversity in climate justifies the diversity in its habitats and ecosystems; this leads to the richness in its wildlife, offering unique species to the area. Henceforth, this allows it to be characterized as an important and rich natural heritage.

The forests that are on the eastern slopes of Mount Lebanon are mainly Calliprine Oak, Aleppo oak, Grecian Juniper. As for the western slopes of Anti Lebanon, they are dominated by Calliprine and Aleppo oak. Unfortunately, the forests only represent a small portion of the area compared to pastures due to land degradation and deforestation that have taken place throughout the years.

The **South** is mainly covered by Aleppo Pine Forests. The cultivated land area is 11% and mainly consists of citrus fruits trees, tropical fruit trees, bananas, sumac, carob and sesame (UNDP 2016).

The presence of natural sites in the Governorate is an important location for the conservation of flora and fauna species, providing opportunities for eco-tourism. The sandy beaches of Tyre and the historical ruins of Sidon and Tyre attract numerous visitors (IDAL, 2018).

Nabatieh represents 6% of the total forests in Lebanon (SOER, 2020). The cultivated land area is 11% and mainly consists of citrus fruits trees, tropical fruits trees, banana, sumac, carob and sesame (UNDP, 2016). Nabatieh is the second olive producing region in Lebanon after North Lebanon and Akkar; furthermore, its richness in natural and archeological attractions endow it with a strong touristic potential (IDAL, 2018).

Most of the wildlife consists of livestock-rearing animals like sheep and goats (IDAL, 2018). Common species, however, might also exist, mostly in the nearby natural environments. Moreover, despite the governorate having the third-highest percentage of goats in Lebanon (IDAL, 2018).

ii. Overview of Protected areas

In addition, the Government of Lebanon has designated 17 sites across the country as nature reserves under the responsibility of MOE. Most recently was the designation of Mount

Hermon as a nature reserve in December 2020; and the Abbassiyeh coast, South Lebanon nature reserve in May 2020. Table 2-5 presents the nature reserves and Himas located in the targeted project areas. These are two categories of protected areas (PAs) as per the latest PAs Law, Law 130/2019. The other two categories are 1) natural sites or monuments, and 2) natural parks. These four categories were created in order to meet Lebanon's commitments arising from the relevant international conventions ratified by Lebanon (the United Nations Framework Convention on Biological Diversity - Rio de Janeiro 1992, the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, the Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat, and the Euro-Asian/African Migratory Waterbird Agreement), and to make sure all categories of natural and cultural heritage are covered and protected.

Table H List of Nature Reserves and Himas in Targeted Project Areas (adapted from SOER, 2020)

Governorate	Nature reserve	Hima
Akkar	Karm Chbat	Qammouaa forests, Bazbina zone, Andket, Menjez, Rouaime, Al Maabour Al Abyad
North	Horsh Ehden and Tannourine Cedars Forest designated as IBA Hamat/Deir El Nouoriyeh Cliffs of Ras Shaqaa as Ramsar site	Anfeh
Baalbeck-El Hermel	Yammouneh	Hima of West Baalbek, Charbine and Fakiha
Bekaa	The communal lands of Niha, Jbeih, Mrousti, Khraibe, Maasser, Barouk, Bmohreh, Ain Dara, Ain Zhalta villages, Shouf Biosphere Reserve and Mount Hermon Nature Reserve.	Hima Anjar, Hima Kfar Zabad (Zahle district) Hima Kherbet Kanafar, Hima Ain Zebde, Hima Qaraoun, and Hima Aitanit.
South and Nabatieh	Tyre Coast Ebel Es Saqi area designated as an Important Bird Area (IBA) Wadi Al Houjeir, Kafra, Ramya, Beit Leef, Debel, Abbassiyeh Coast, Mount Hermon, Nmayrieh Abbassiyeh, Jabal el Rihan Biosphere reserve	Ebel El Saqui ; Arnoun, Qaytoui, Roum, Qoleileh and Mansouri

Moreover, Lebanon hosts a variety of unprotected natural important ecological areas such as grottos, mountain tops, natural bridges, forests, valleys, rivers, and holes. These areas are however threatened by anthropogenic and natural threats such as fragmentation, unsustainable exploitation of natural resources, pollution, and climate change.

Local communities in Lebanon have also implemented initiatives for community-based approaches for the protection and conservation of ecologically important sites across the country, such as those established in Anjar-Kfar Zabad (Beqaa) and Jdeidet el Fekha (Baalbek) (UNDP/MOE, 2019).

2. SOCIAL BASELINE

(a) SOCIOECONOMIC PROFILE

i. Demography

With a population density of 669 inhabitants/km², Lebanon ranks in the top 20 list of the most densely populated countries (World Bank Group, 2021). With the start of the Syrian war, millions of Syrians fled their home country and settled in different regions in Lebanon, which lead to an increase in the total number of population (Table 2-6). The growth of the population led to an over-exploitation of natural resources, and resource depletion intensified to cater for a larger population. Mismanagement of natural resources has led to exacerbated environmental degradation, and pressure was added on an already resource-strapped management infrastructure.

Table I Population Number and Density (2011-2018) (Source: World Bank, 2021)

Year	Total Population (including Refugees and displaced)	Total Population Density in Lebanon (inhabitants/km ²)	World Population Average Density (inhabitants/km ²)
2018	6,848,925	669	60
2017	6,811,873	665	59
2016	6,711,121	656	58
2015	6,532,678	638	58
2014	6,262,410	612	57
2013	5,914,621	578	56
2012	5,538,634	541	56
2011	5,202,343	508	55

Roughly, 65% of the population in Lebanon is between 15 and 64 years old (Figure R). 51.6% of the total population are women, and 48.4% are men (EU/CAS/ILO, 2019).

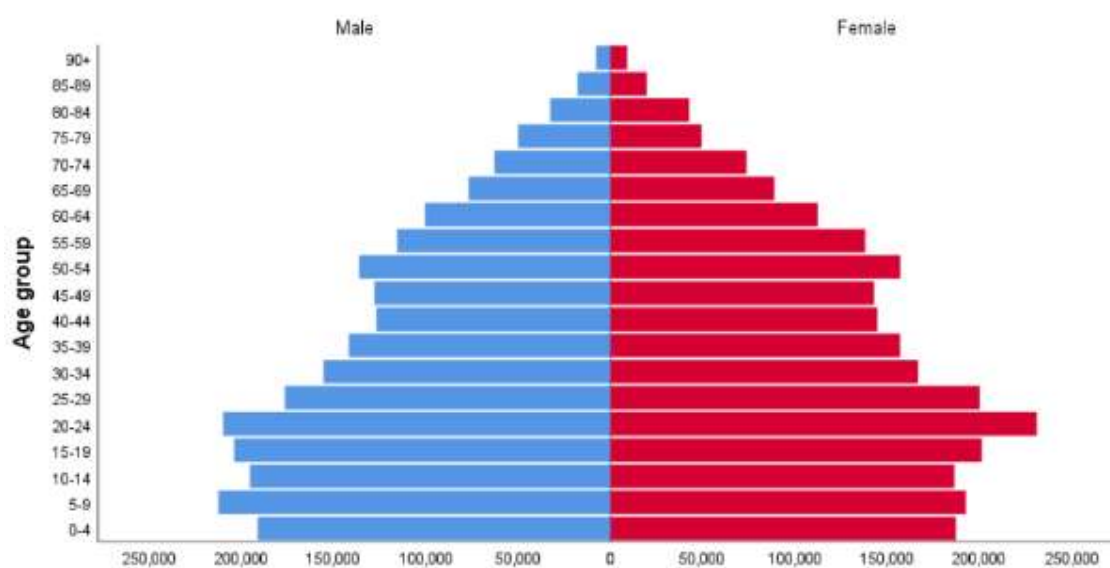


Figure R Age Pyramid of the Lebanese Residing Population (Source: EU/CAS/ILO, 2019)

The segregation of the Lebanese population located in the targeted project areas is shown in Table 2-7.

Table J Population Distribution by Governorate and Caza (Source: EU/CAS/ILO, 2019)

Governorate	Caza	Population per Caza	Percentage from Total Lebanese Population
Akkar	Akkar	324,000	6.7
Baalbek-Hermel	Baabek	214,600	4.4
	Hermel	30,500	0.6
Bekaa	Rachaya	33,800	0.7
	West Beqaa	86,400	1.8
	Zahle	177,400	3.7
Nabatieh	Bint Jbeil	96,200	2.0
	Hasbaya	28,700	0.6
	Marjaoun	74,000	1.5
	Nabatieh	180,200	3.7
North Lebanon	Batroun	58,900	1.2

Governorate	Caza	Population per Caza	Percentage from Total Lebanese Population
	Bcharre	22,100	0.5
	Koura	84,600	1.7
	Minieh-Dannieh	140,800	2.9
	Tripoli	243,800	5.0
	Zgharta	87,700	1.8
South Lebanon	Jezzine	32,100	0.7
	Sidon	296,600	6.1
	Tyre	255,700	5.3
TOTAL		4,842,500	50.9

Note: Excludes people living in non-residential units, such as army barracks, refugee camps and adjacent gatherings, and informal settlements.

ii. Persons with Disability

Based on the guidelines of the Washington Group on Disability Statistics, about 4 per cent of Lebanese residents suffer from a disability, or have difficulty functioning, which restricts their participation because of difficulties in one or more of the following six core functional domains: seeing; hearing; walking or climbing steps; remembering or concentrating; self-care; and communicating (EU/CAS/ILO, 2019). Table K below provides details about people with disabilities based on their gender.

Table K Disability status of the Lebanese population based on their gender (Source: EU/CAS/ILO, 2019)

Disability status	Percentages		
	Women	Men	Total
Person with a disability	4.1	3.9	4.0
Person without a disability	94.4	94.5	94.5
Not applicable (infants and newborns)	1.4	1.5	1.5
Total	100.0	100.0	100.0

The total percentage (4%) of Lebanese residents with a disability can be divided into two groups:

- Persons with only one disability (2.5%); and

- Persons with more than one disability (1.5%).

Several types of disabilities are reported in Lebanon, as shown in Figure S

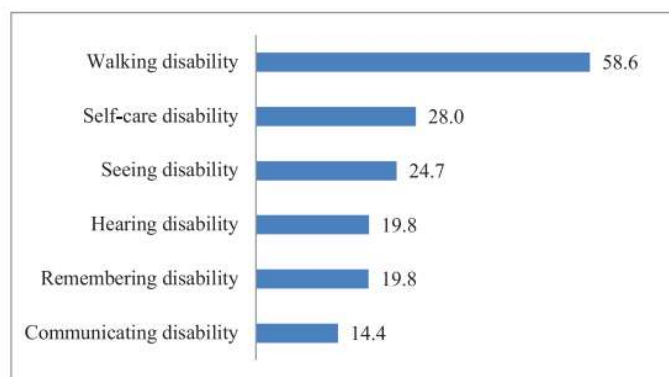


Figure S Percentage of Each Type of Disability in Lebanon (Source: CAS/EU/ILO, 2019)

Table 2-9 presents the percentage of persons with disabilities in the targeted project areas.

Table L Persons with Disabilities in the targeted project areas (Source: CAS/EU/ILO, 2019)

Governorate	Persons with Disability (%)
Akkar	6.1%
North	6%
Baalbek-El Hermel	4.9%
Bekaa	4.7%
South	4.4%
Nabatieh	3.7%

iii. Female-headed Households

Lebanese heads of households represent 85 per cent, while non-Lebanese heads of households made up the remaining 15 per cent before the economic crisis. Around 18 per cent of households were headed by women and 82 per cent by men (EU/CAS/ILO, 2019). Figure T presents the percentage of heads of households by age group and sex.

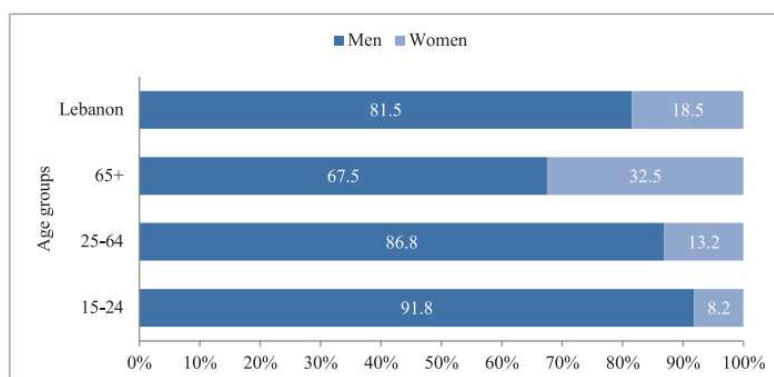


Figure T Distribution of Heads of household by age group and sex

(Source: CAS/EU/ILO, 2019)

Table M Percentage of Female headed Households in the Targeted Elderly.

While the information relating to elderly is limited, it is worth noting that single-person households make up to 10.2 per cent of total households; half of them older adults, mostly elderly women who are generally widows (CAS/EU/ILO, 2019). People aged 65 years-old and above make up to 12.5% of the total Lebanese population, and half of those reported with a disability in Lebanon. Roughly one third of elderly people do not benefit from any health insurance coverage.

Table 2-10 presents the percentage of elderly in the project targeted areas.

Table N Percentage of Elderly in targeted areas)

Governorate	Percentage of Elderly
Akkar	5.4%
North	5.8%
Baalbeck el Hermel	8.8%
Bekaa	N.A.
South and Nabatieh	13.5%

(Source: CAS/EU/ILO, 2019)

iv. *Sexual Exploitation and Abuse / Sexual Harassment*

69% of gender-based violence (GBV) incidents reported through the GBV information management system (GBVIMS) in 2020 were incidents of domestic violence. The GBVIMS is an inter-agency partnership between the United Nations Population Fund (UNFPA), the International Rescue Committee (IRC), and the United Nations High Commissioner for Refugees (UNHCR), in consultation with the Inter-Agency Standing Committee Sub-Working Group on Gender and Humanitarian Action and the Gender-Based Violence Area of Responsibility Working Group of the Protection Cluster. The system enables those providing services to GBV survivors to effectively and safely collect, store, analyze and share data related to the reported incidents of GBV.

Numbers were reportedly increasing due to the cumulative effect of both lockdown and economic collapse (UNFPA, 2020).

Women and girls with intellectual disabilities are particularly vulnerable to sexual violence and are often prevented from accessing a range of services and face un-adapted facilities, poverty, inadequate behavior of service providers. Elderly women are the most at risk due to their suffering from disparities that they experience throughout their lifetime (UNFPA, 2020).

In 2021, UNICEF reported that one in two children in Lebanon is at serious risk of physical, emotional, or sexual violence, as families struggle to cope in the country's deepening economic crisis.

v. *Poverty*

Due to the financial crisis facing the country, the poverty rate increased exponentially with time starting in 2019. According to a study prepared by the UN-ESCWA titled Poverty in Lebanon: Solidarity is vital to address the impact of multiple overlapping shocks (UN, 2020), the portion of Lebanese households living in multidimensional poverty was estimated at 82% of the total

population, out of which 40% live in extreme multidimensional poverty. Only 18% of the population is not poor. Roughly 1.8 million children (more than 80 per cent) are now experiencing multidimensional poverty – up from around 900,000 in 2019 (UNICEF, 2021).

The financial crisis is disproportionately affecting lagging and under-served rural areas. According to the Lebanon Multidimensional Poverty Index (MPI) for Lebanon (CAS & World Bank, 2019), the governorates of Akkar (69.6%) and Bekaa (67.0%) have the highest levels of MPI and incidence of poverty. Out of a total population of 1.1 million people in Northern Lebanon, 708,000 live under the poverty line. Vulnerable Lebanese households face challenges accessing food, healthcare, education, and other basic services. The unemployment rate reached 30% in 2022 – up from 11% in 2019 (ACAPS, 2022) and as a result demand for employment opportunities across the country is high. The highest concentration of displaced populations is found in the Bekaa region (UNHCR, 2022). This has put strains on already fragile services in the Bekaa and increased the vulnerability of host communities, as they compete over employment, accommodation, access to public services, and infrastructure.

vi. Displaced Populations

Lebanon, a small country of 5.2 million people (July 2021 estimate), hosts the highest per capita concentration of displaced populations in the world.

Roughly 1.5 million Syrians had fled their country since 2011 and resettled in Lebanon. Only 879,529 displaced populations are registered as of 2020. The highest concentration of displaced populations is found in the Bekaa region (UNHCR, 2022).

The Bekaa valley and Akkar have been most heavily affected by the Syrian crisis. In fact, the agri-food sector is one of the three sectors where Syrian displaced populations are legally allowed to work, and agriculture is the second-highest employer of displaced Syrians. Child labor among displaced populations is the highest in agriculture in rural areas; a 2019 UNICEF survey in the Bekaa Valley, where migrants are concentrated, showed that around 75 percent of children from displaced populations engaged in labor worked in agriculture.

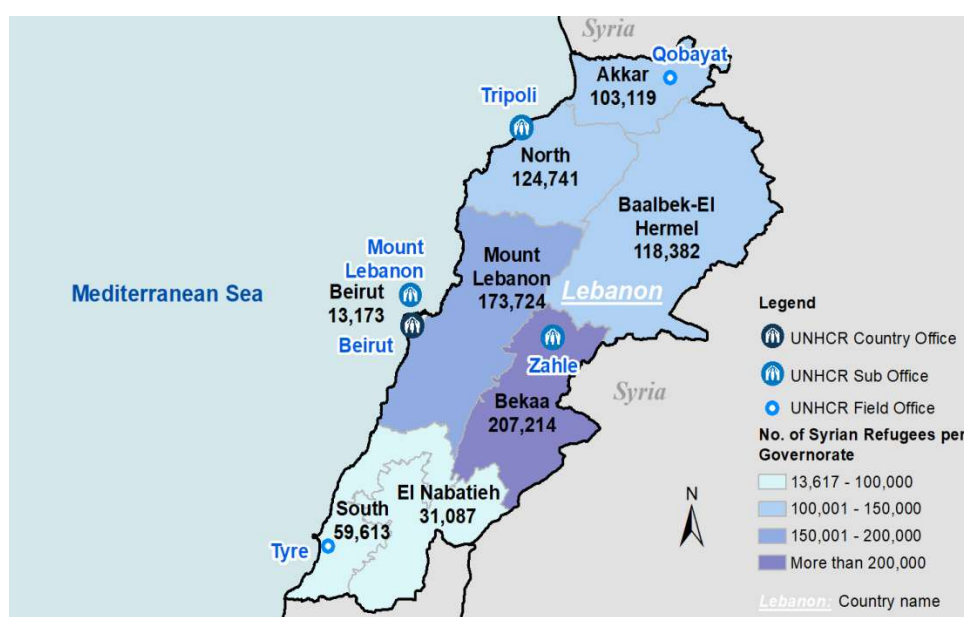


Figure U Number of Syrian refugees per Governorate

Source: UNHCR, 2022

vii. *Basic Services and Utilities*1. *Access to Solid Waste Management Services*

Municipalities are responsible for collecting and transporting solid waste from collection points to designated facilities in a manner that does not harm the environment, in accordance with the standards and conditions set by and subject to approval of MoE, as per Decree No. 118 of 1977 and Law 80 of 2018.

Small-scale facilities in remote areas of the North, South and Bekaa regions provide those areas with Solid Waste Management (SWM) services. These facilities are managed by the Office of the Minister of State for administrative Reform (OMSAR) in coordination with local authorities.

Community-run systems in some regions consist of basic sorting, composting, and final disposal of MSW.

Approximately 2 million tons/year of Municipal Solid Waste (MSW) are generated in Lebanon. Daily MSW generation is estimated at 1.05 kg/capita/day (CDR, 2019). MSW is mainly composed of 51% of organic waste, while the remaining is comprised of recyclables like paper and cardboard, plastic, glass, textiles, metals; demolition/construction waste and others (CDR, 2019). Most of this waste is collected and disposed of by landfilling/ dumping, while some of the waste is being treated at Solid Waste Management Facilities (SWMF) which are distributed all over the country.

Many of the remaining rural areas that are unserved by SWM facilities collect municipal solid waste and dispose of it by open dumping and burning.

Dumpsites and open dumping and burning are frequent in Lebanon. Two types of dumpsites are identified in Lebanon: 1) MSW dumpsites and 2) Construction and Demolition Waste (CDW) dumpsites.

Table 2-11 presents the number of operational MSW dumpsites by governorate according to the Updated Masterplan for Closure and Rehabilitation of Uncontrolled Dumpsites (UNDP, 2017).

Table O Operational MSW Dumpsites by Governorate

Governorate	Operational Dumpsites
Akkar	19
North	19
Baalbeck	39
Hermel	3
Bekaa	54
South and Nabatieh	127

Source: UNDP, 2017

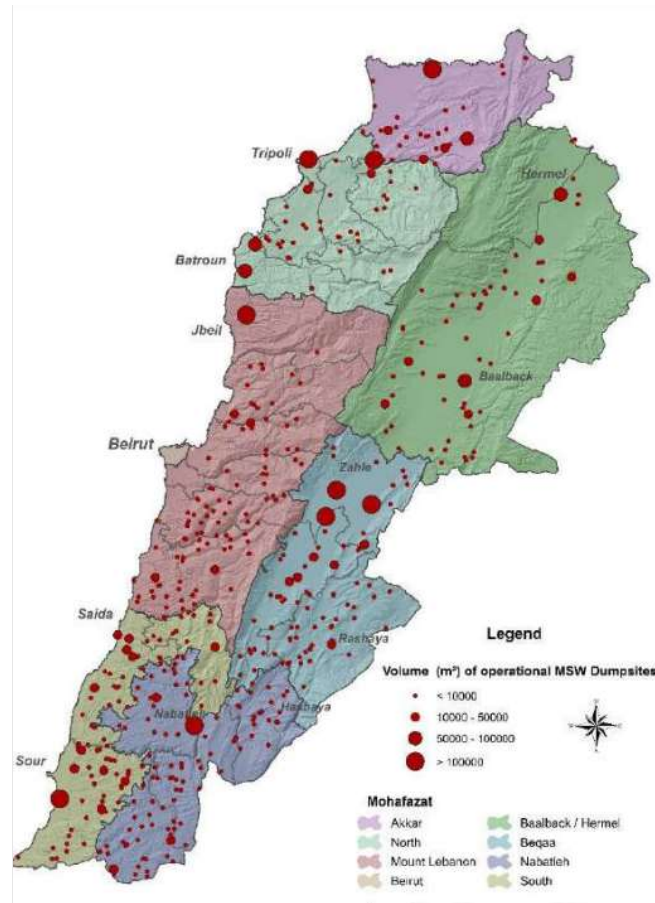


Figure V Map showing the MSW dumpsites locations and volumes

Source: UNDP, 2017

The operational SWMFs are mainly located in Akkar (1), North Lebanon (4), Bekaa (7), Nabatieh and South of Lebanon (13). None exists in Hermel, while one facility is operational in Baalbek.

Error! Reference source not found. presents the operational SWMFs in the project areas while Figure W, Figure X and Figure Y show the distribution of operational SWMFs in addition to the non-operational and planned ones.

Table P Summary of SWMFs by Governorate

Governorate	Caza	Location	Type of operational SWMF
Akkar			1
Akkar	Akkar	Michmich	Sorting and Composting
North Lebanon			4
North Lebanon	Batroun	Chekka	Sorting
	Koura	Bsarma	Sorting
		Bichmezine	Sorting
	Minieh-Dannieh	Minieh	Sorting and Composting

Governorate	Caza	Location	Type of operational SWMF
Bekaa & Baalbek-Hermel	7		
Bekaa	Zahle	Barr Elias	Sorting and Composting
		Barr Elias	Sanitary landfill
		Qabb Elias	Composting
		Qabb Elias (SICOMO)	Thermal treatment
		Zahle (arcenciel)	Autoclaving
		Zahle	Sanitary landfill
		Zahle	Sorting
Nabatieh & South Lebanon	13		
Nabatieh	Bent Jbeil	Aaitaroun	Sorting and composting
		Bent Jbeil	Sorting and composting
		Khirbet Selm	Sorting and composting
	Hasbaya	Rachaya El Foukhar	Sorting
	Marjeyoun	Khiyam	Sorting and composting
		Meiss Ej Jabal	Sorting and composting
		Qabrikha	Sorting and composting
		Qlaiaa	Sorting and composting
		Taybet Marjeyoun	Sorting and composting
	South Lebanon	Saida	Saida/ Arc en ciel
Saida Zahrani / IBC			Sorting, composting and RDF
Zrariyeh/ Green Ecotech			Sorting and thermal treatment
Sour		Ainbaal	Sorting and composting

Source: UNDP, 2017

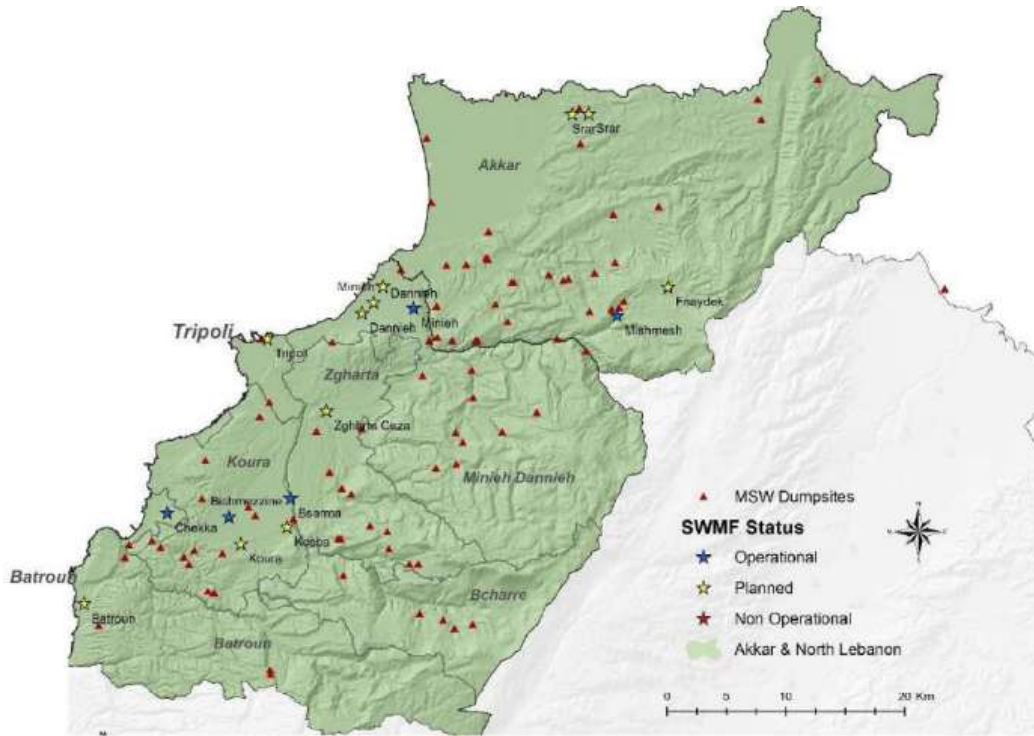


Figure W Akkar & North Lebanon SWMFs distribution

Source: UNDP, 2017

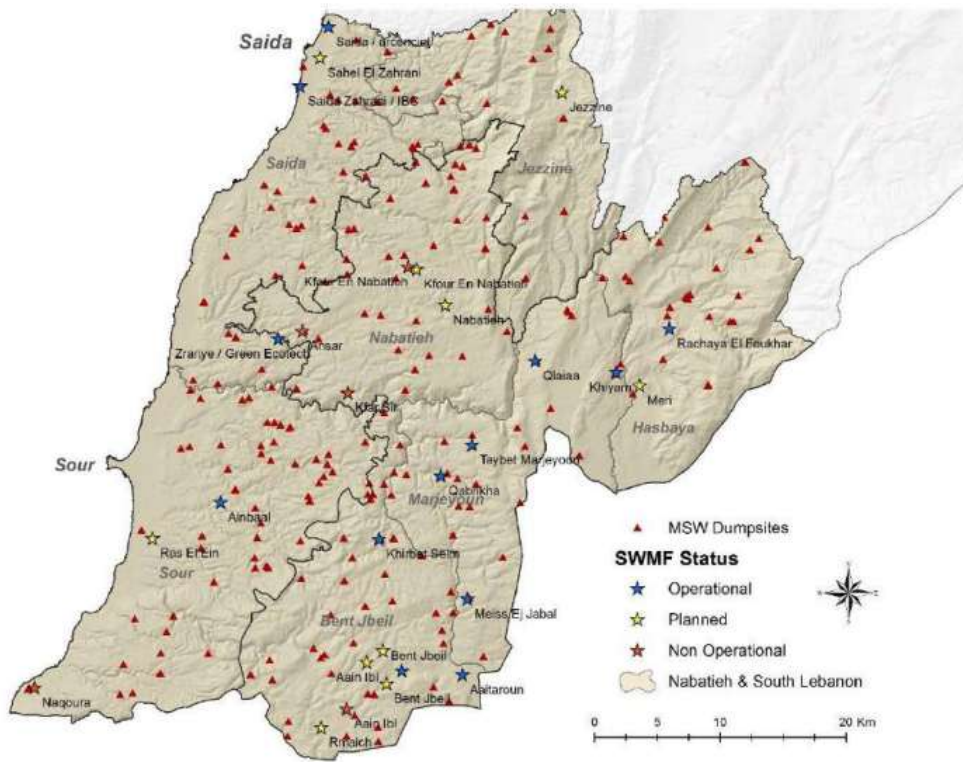


Figure X Nabatieh & South Lebanon SWMFs distribution

Source: UNDP, 2017

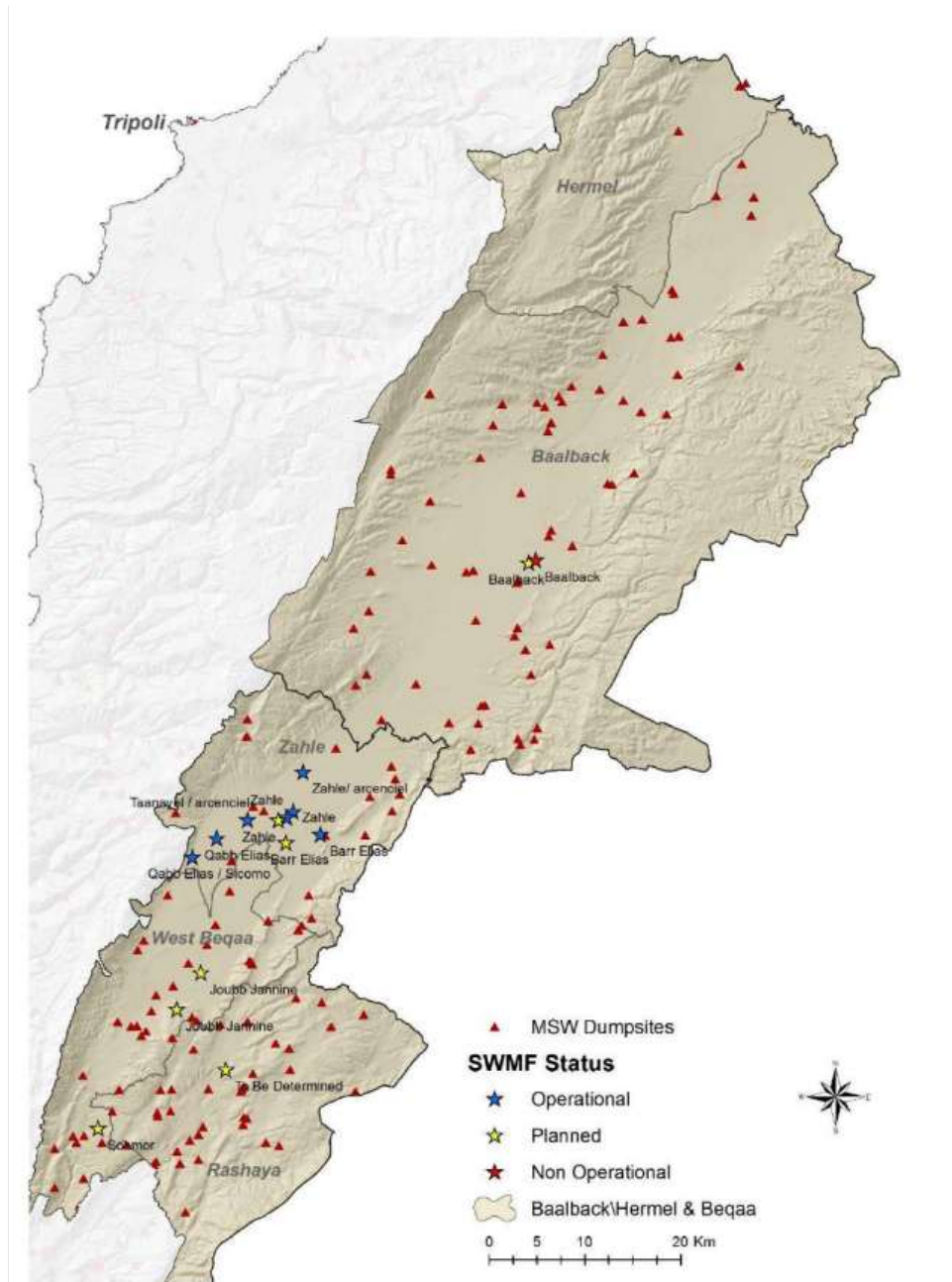


Figure Y Baalbeck/ Hermel & Bekaa SWMFs Distribution

Source: UNDP, 2017

2. Access to Water Supply

The water sector in Lebanon is facing detrimental challenges, hindering the ability of the government to supply adequate and reliable water services while conserving Lebanon's water resources. Although the national coverage of water networks is around 80%, the quality of the supplied public water is questionable due to the lack of protection of water resources, insufficient water treatment at the supply level, deteriorated distribution networks, and the absence of continuous monitoring. Untreated wastewater, which accounts for around 70% of the total generated wastewater, is being directly discharged into the environment, thus polluting the groundwater and surface water resources that supply a significant portion of Lebanon's

potable water. The pollution of water resources, in addition to the poorly managed water supply networks, have impacted the quality of water at the household level. An estimated 65% of the population does not have access to safely managed drinking water services (MoEW, 2022).

Lebanon's available renewable water resources have dropped below the 1,000 m³/capita/year threshold that defines water stress: in 2010, the MoEW estimated that the total renewable resources per capita per year were 926 m³ and predicted that it will continue to fall reaching 839 m³ by 2015 (MoEW, 2012). Since then, population growth, climate change, and the influx of displaced have further strained the available resources and as a result, the total renewable resources per capita have reached 700 m³/capita/year (IFI, 2014). In addition to the challenges associated with ensuring that the water sources are effectively managed to meet the demands of the different sectors, pollution levels in many of these freshwater systems have made them either unable to meet their designated uses, or requiring expensive treatment prior to use (SOER, 2020).

With the ongoing multiple crises since 2019, water supply and access to water has become challenging to most of the Lebanese population. In addition to the decrease in available water resources per capita, the infrastructure of the sector has become very vulnerable lately, which has increased the risk of water shortage in many regions of the country, notably Baalbek-Hermel Governorate and West Beqaa district (UNICEF, 2021), as shown in Figure 2-6 below.

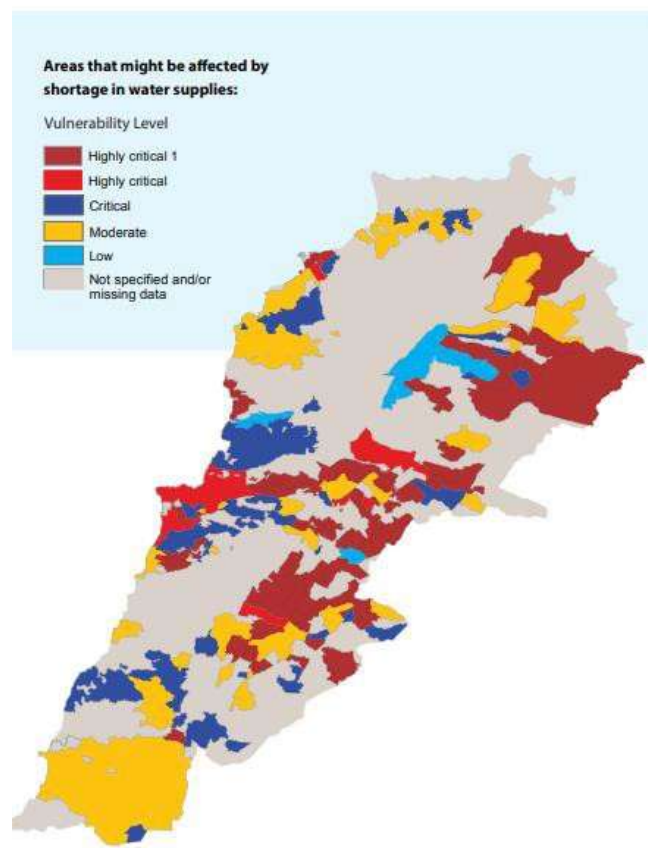


Figure 2 Vulnerability Level to water shortage in Lebanon

Source: UNICEF, 2021

With the cumulative consequences that climate change, infrastructure deterioration, population growth, and climate change have, the vulnerability to water shortage situation of 33% of the total population is classified as Highly Critical 1 (**Error! Reference source not found.**). The severe power outages have also further aggravated the problem of water supply.

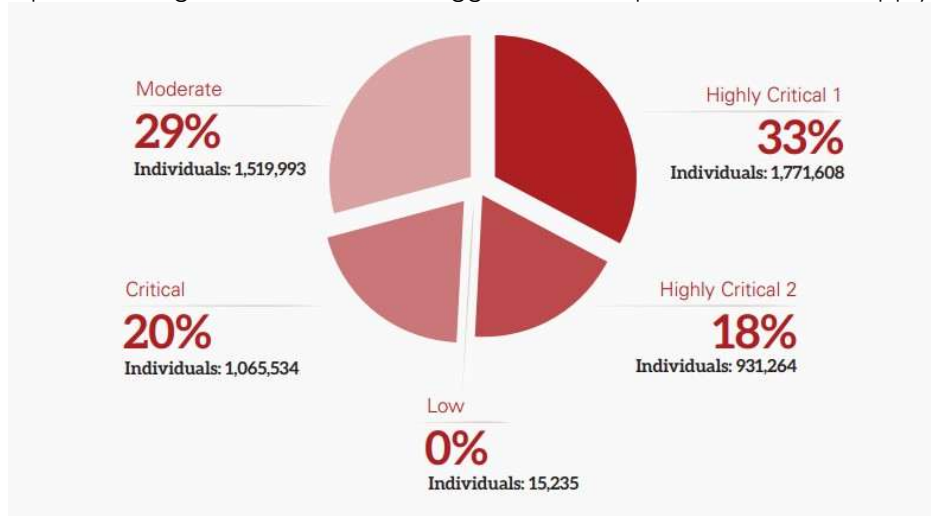


Figure AA Levels of vulnerability of the Lebanese population

Source: UNICEF, 2021

The NLWE provides potable water services in the two governorates (North and Akkar), reaching over 549,639 people, or 61% of the population within its service area (LWP, 2017). Irrigation services are also provided by the Establishment, but are restricted to the areas of Batroun, Dannieh, Minieh, and Halba (USAID3, 2019).

Akkar

Access to improved drinking sources has decreased in Akkar from 99% in 2020 to 90% in 2021 (UNHCR, 2021). As for the sources of the drinking water, they vary whereby 21% is from bottled mineral water, 37% is from protected wells, and 5% are from the water network (UNHCR, 2021).

North

Access to water in the North is poor, with only 57 percent of households connected to the water network, poor hours of public water supply, and overall water scarcity in the region. The average number of hours of public water supply for summer and winter was 11.7 hours before the severe outage in power supply over the last 2 years.

The BWE governs the entire Bekaa region including Hermel, Baalbek. It operates over 196 potable water supply systems, 36 of which depend on local springs of various sizes and the rest are supplied by more than 238 wells. The only operating water treatment plant within the BWE jurisdiction is located in Zahleh, where over 8,000 m³ are treated per day, which are then distributed through a water network of 3,000 km in length (including parts under construction) (USAID2, 2019).

Baalbek-El Hermel

There is a huge water wealth in the Hermel district that is not well utilized, mainly due to the historical neglect and marginalization by the authorities and agencies concerned with securing this service

on the one hand, and the misuse of this wealth by the local community on the other hand, as it is noted that some of these families are collecting winter water in wells or purchasing it through tanks, or by relying on artesian wells, which negatively affects the living standards of the population. But the main problem is the presence of an old and worn-out water network that is more than seventy years old, and it is still a common network in the city (OMSAR, 2016).

Water pollution is another problem that is due to the disposal of wastewater into sanitary pits which overlap with the drinking water sources. The city of Hermel relies on several sources of water, which are: The ever-flowing Orontes River, which has a length of 25 km inside Hermel, and a speed of water flow per second of 13 m³/s, but it is not used for drinking, and there are encroachments on it by the owners of tourist restaurants and cafes; the springs that are used for irrigation of agricultural lands, including: the capital spring, the main spring, Bedita spring, the Daffash spring, and Ain Al-Zarqa; two ponds, Al-Tal Pool and Al-Qamou Pool, are used for irrigation; State water / central water tanks; water from private artesian wells; purchasing water through tankers.

Bekaa

Bekaa suffers from an estimated deficit of 12,384.2m³/day while the needed water supply is of 127,918 m³/day under acceptable conditions. Unfortunately, the deficit is greater when the current actual unaccounted-for Water (UFW) is considered since it can reach 57,155 m³/day.

According to the UNHCR 2016 project, to meet the water demand through the year 2035, two extraction zones in the Zahle and West Bekaa Districts have been suggested for well drilling. Regarding Rachaya District, three extraction zones for well drilling were suggested to meet the water requirement until 2035 (UNHCR, 2016). Additionally, according to the Water Master Plan for the Bekaa (KREDO 2015), nine (9) water supply systems are planned for Rachaya District, six (6) water supply systems for Zahle District, and one (1) for West Bekaa in order to meet the water demand through the year 2035.

The SLWE operates over 500 potable water supply systems, 14 of which depend on springs of various magnitudes, the rest are supplied by over 324 wells. Water is pumped from the source and stored in over 510 reservoirs distributed across the South, distributing water to households (SLWE, 2017). Water is distributed through a network of approximately 3,350 km long (USAID1, 2019).

Nabatieh

The city of Nabatiyeh depends mainly on the wells of Fakhr El-Din, the spring of Al-Tasa, and private wells. Some citizens resort to meeting their water needs by purchasing water through tanks. The city has networks for service and drinking water and needs to increase its water lines and coverage.

The city of Nabatiyeh suffers from a lack of water services, despite the passage of the Litani River and the Zahrani River close to it, as they can be exploited for domestic purposes and for drinking water. The Al-Tasa spring feeds four old neighborhoods, while the new neighborhoods are fed from Fakhr El-Din wells, and there is the Al-Rahebat neighborhood that is fed from Al-Najdah well.

a. Access to Sanitation

In 2015, 81% of the total Lebanese population had access to improved sanitation facilities, and 19% relied on unimproved facilities other than open defecation and shared facilities (WHO/UNICEF JMP, 2015). As of 2017, residents that have access to safe sanitation facilities were reported at 98% of the

total population (WHO/UNICEF JMP, 2019). However, it must be noted that although access to proper sanitation is high, wastewater treatment remains very low and surface water contamination remains high.

3. *Economy, Livelihood and Employment*

The on-going financial crisis in Lebanon has led to an increase in poverty and highly impacted the country's economy. By the end of 2021, Lebanon's real GDP index had contracted by 34.6 percent since 2018, comparable to Lebanon's real GDP index in 2007. In July 2022, the World Bank downgraded Lebanon's economic standing to a low-middle income country (WB, 2022).

The adverse shocks have driven an overwhelming share of the population into poverty and vulnerability to food insecurity. Food price inflation was further exacerbated by the removal of subsidies, particularly impacting the poor and vulnerable.

At the governorate level, the unemployment rate has increased in all governorates without exception. The largest increase in unemployment was observed in Baalbek-Hermel (40.7 percent), followed by South Lebanon (36.5 percent) in 2022. Employment in the informal sector (in terms of the characteristics of the establishment in which the person works) has increased by 13.1 percentage points, from 35.2 percent in 2018-2019 to 48.3 percent in January 2022 (ILO, 2022). The sector with the highest share of informal employment is Agriculture, Fishing and Forestry with 98.1 percent (ILO, 2022).

The gender gap in labor force participation (LFP) stands at 44 percent, with female LFP at 22.2 percent versus a male LFP at 66.2 percent.

(b) OVERVIEW OF THE AGRICULTURE SECTOR

The agro-food industry is the largest industrial sector in Lebanon, accounting for 18% of all industrial companies," claims IDAL, since it contributes around 4.7% of Lebanon's GDP" (IDAL, 2017). This makes the Bekaa governorate's agricultural, agro-pastoral, and tourism industries vital. Wineries-focused tourism and farming activities connected to wine production are two examples of rural tourist activities in West Bekaa, Rachaya, and Zahle.

Lebanon offers a range of agroecological zones well suited to the production of diverse agricultural products and with potential for exports. Five distinct agro-climatic zones are present in the coastal strip, low and middle altitudes of Mount Lebanon, West, Central and North Bekaa. The most fertile and productive lands are located in the Bekaa Valley, the Plain of Akkar and the thin strip of coastal plains. Crop production represents about 60 percent of agricultural output, while livestock production accounts for 40 percent and contributes a critical year-round source of livelihoods. Mountain agriculture is characterized by small holdings sustaining poor farmers and many households for whom agriculture is a secondary source of income. Agriculture in the coastal plains is dominated by permanent crops (e.g., citrus and banana), while the plains of Akkar and Bekaa Valley are dominated by cash crops (potatoes and vegetables). Lebanon's domestic agribusiness market has potential for steady growth. Lebanon has a revealed comparative advantage for vegetable, fruit, nuts and other high-value agriculture products with fruit and vegetable production also representing an important segment of Lebanon's agribusiness sector. It also has a significant comparative advantage for exporting high-value agri-food to premium markets thanks to agri-climatic conditions, favorable trade agreements with Europe and the GCC

and the recent defacto devaluation of the currency. According to the International Trade Centre, the untapped agricultural and agri-food export potential exceeds US\$450 million, with 65 percent coming from fruits, food products and vegetables. Expanding agri-food exports can increase foreign currency inflows, which are much needed given the current context. Increasing local production offers opportunities for import substitution. This can be achieved by supporting small producers and SMEs to comply with stringent food safety, quality, traceability, labeling and environmental sustainability requirements imposed by high-value export markets.

The primary agricultural production's contribution to GDP increased from 3.2 percent (USD 1.77 billion) in 2018 to 8.9 percent (USD 2.32 billion) in 2020. It is estimated that approximately 20 percent of Lebanese households generate primary or secondary income from the broader agri-food sector, with agribusiness as the largest industrial sub-sector of the economy (World Bank, 2021). The agri-food sector accounted for over 17 percent of total exports in 2020 (or USD 0.7 billion on average between 2014 and 2020 (International Trade Center, 2020). Lebanon's top five categories of agricultural and food exports by value were preparations of vegetables, fruit, or nuts; edible fruits and nuts; beverages, spirits, and vinegar; miscellaneous edible preparations; and animal or vegetable fats and oils. Although domestic agri-food production satisfies only 20 percent of local demand, it contributes the largest share to livelihood generation for poor segments of society and is concentrated in the poorest areas, the Bekaa valley and Akkar in particular, which have been most heavily affected by the Syrian crisis. In fact, the agri-food sector is one of the three sectors (other than construction and cleaning) where Syrian displaced populations are legally allowed to work, and agriculture is the second-highest employer of displaced Syrians. The multiple challenges facing the sector are putting its resilience and sustainability at risk and posing threats to food security and rural livelihoods.

Increasing global fertilizer prices and energy costs compounded by the foreign exchange crisis are undermining the viability of agriculture and threaten to diminish the contribution of local production to food security. According to a survey of agricultural households carried out in July and August 2022 by FAO, over 80 percent of crop producers faced production difficulties, with the most frequent being access to fertilizers (72 percent) and pesticides (59 percent).

Lebanese farmers and agri-food SMEs lack the necessary access to finance to invest in sustainable, climate smart and modern modes of production. Small and medium-sized farmers relying only on farming income have been particularly affected by the high input prices, reducing input application, or substituting with lower quality, leading to lower marketable production and incomes (MoA, 2020).

(c) CHILD LABOR

Children in Lebanon are subjected to the worst forms of child labor, including use in the production and trafficking of drugs, sometimes as a result of human trafficking, and in forced labor in agriculture (US Department of Labour, 2022). In Lebanon, food insecurity and child labour have increased in 2020 and both are correlated in vulnerable communities. In addition, 60% of child labor is in agriculture. In the Bekaa region in 2019, 30% of working children reported injuries at work and 42% were insulted at work. Children have also reported physical abuse as 24% of boys and 16% of girls have been threatened (IRC & LPC, 2021).

The NGOs that are working on preventing child labor in Lebanon are Himaya, Lebanese Union of Child Welfare (LUCW), Lebanese Organization of studies and Training (LOST) in addition to the international NGO Humanium.

ILO, Lebanon's Ministry of Labour and Beyond Association launched in 2016 a joint initiative to establish and support a series of community centers to provide a range of services aimed at combatting child labor across the country. The centers that are currently operational are in the Bekaa, Nabatieh and Ouzai (Beirut suburbs) (ILO, no date).

There is no recent data on child labor in Lebanon with reliable information. A large number of children work in the following sectors: auto repair (e.g. Mechanical work, car painting), construction and metalworking including aluminum and forged iron, and sanitary installations. In addition, there are many children working in the agricultural sector in Akkar, Hermel and Baalbek districts.

As for the Syrian displaced populations, a survey conducted in 2019 by the AUB for the Bekaa region showed that most working children (≥ 4 to ≤ 18 years) in this study worked in the agricultural sector (about 75%). Many of these children were subject to harsh working conditions. Workplace injuries were quite common (30%). When children experienced an accident or injury at work, they or their families usually had to pay for the cost of treatment (86%) (AUB, 2019).

Only 18.3% of working children attended some form of schooling at the time of the study. Working children in compulsory school age (≥ 6 to ≤ 15 years) constituted 72.6% (3,178 children) of the total population of working children. Half of the working children did not go to school because they had to work as a consequence of dire familial financial circumstances (AUB, 2019).

(d) OVERVIEW OF THE NATIONAL SOCIAL PROTECTION STRATEGY

In Lebanon, the social protection system is scattered and non-unified. Several schemes exist, including social insurance programmes for public servants and for military and private sector workers, syndicate pension plans, and small social assistance programmes.

Vulnerable people including those with disabilities, elderly, women, and children rely on unsustainable sources of income including informal employment and family support. The country lacks a coherent national social protection system, which has led so far to fragmentation and duplication of assistance while coverage and provision of protection to the poorest and most vulnerable remain inadequate.

The GOL adopted two national plans in an attempt to alleviate poverty in the country: National Social Action Plan Toward Strengthening Social Safety Nets and Access to Basic Social Services (2007), and National Social Development Strategy (NSDSL) in 2010 (Bastagli et al., 2019). A decade later, the GOL launched the Roads and Employment Project (REP) to rehabilitate roads in different regions of the country and create employment opportunities. The REP followed the population growth and the increase in unemployment rates in the country. In 2021, an amount of US\$ 10 million was reallocated to create a new component to support small farmers in rural areas. In addition, GOL developed and launched in 2011 the Emergency National Poverty Targeting Program (NPTP) Project to alleviate poverty rates in the country. Lately, MOSA launched the Daem Network for Social Protection. The DAEM platform has initiated the development of an integrated National Social Registry that will enable Lebanon to address future shocks rapidly, transparently, and equitably. The network comprises two programmes: safety programme, and an e- finance card programme (MOSA, 2022). Managed by IMPACT under the supervision of the Central Inspection, the platform has allowed the registration and

screening of household applications along the highest standards of transparency and efficiency.

Despite the consecutive attempts of GOL represented by MOSA in those programmes, as of September 2021, the UN estimates that roughly 75% of the total population lives in poverty (UN, 2021).

The lack of social security basics and the cumulative effects of the consecutive crises have drowned most of the Lebanese population into poverty, leading them to have limited to no access to proper services, including medical, educational, and transportation among others. The following sections provide an overview of the main programs aiming at alleviating poverty.

i. National Poverty Targeting Program

The National Poverty Targeting Program (NPTP) in Lebanon, launched in 2011, is managed by the Ministry of Social Affairs (MOSA) and the Presidency of the Council of Ministers (PCM). The rationale behind this program is to "provide social assistance to the poorest and most vulnerable Lebanese households based on transparent criteria that assess each household's eligibility to receive assistance, given available public resources" in Lebanon and improve the lives of 237,958 beneficiaries, or 42,935 households (PCM, no date).

NPTP is supported and funded by international organizations including the World Bank (WB), The World Food Programme of the United Nations (WFP), the UNHCR and the German Cooperation.

Based on the "Implementation Completion Result" report issued by the World Bank in 2021, while it was not possible to measure the Project's impact on poverty rates, it is likely to have had a significant impact on both monetary and non-monetary poverty. The certification of NPTP beneficiaries is expected to reduce monetary poverty of 261,000 individuals from extremely poor households that had access to health and school subsidies, while the e-card Food Vouchers improved food security of over 105,500 individuals. It is also expected to have decreased non-monetary poverty by improving access of poor and vulnerable people to education and health services, diversified dietary intake, and reduced negative coping strategies. The NPTP platform was used to target over 225,000 beneficiaries for restoring their access to essential healthcare services at MOHP Primary Health Care Clinics, and for the provision of UNICEF's ATM cash cards to support children through its winterization program during 2016 (US\$3 million) and 2020 (US\$3.5 million). These benefits helped to alleviate monetary poverty and free up household resources for other essentials.

ii. Roads and Employment Project

As part of the efforts to create job opportunities for residents in Lebanon as well as Syrian displaced populations, and to improve the economic situation of households, the Roads and Employment Project (REP) was launched in 2017 with the financial support of a loan accredited from the WB to the GOL. The components of the project were amended in 2021, following the economic collapse and the devaluation of the Lebanese Pound, and the COVID-19 pandemic. Both crises severely affected the living conditions of the Lebanese population, bringing roughly 75% of the total population to live below the poverty line, with 36% of them living in extreme poverty.

An additional component (component 4- Support to farmers engaged in crop and livestock production) was added to the project based on the request of MOA. The project would provide support to approximately 26,700 smaller crop and animal producers in Lebanon (whereby at least 10% of the beneficiaries shall be women) by providing them with vouchers for the

procurement of essential inputs to enable continued agricultural production following COVID-19-related planting and harvesting delays. Two types of paper-based vouchers would be offered: one for crop production inputs, and another for animal production inputs, mostly feed. On the other hand, the vouchers would not finance the purchase of pesticides. The component would also support the annual animal vaccination program of the Directorate of Animal Resources under the MOA by procuring vaccines for animal diseases.

iii. *Emergency Social Safety Network (ESSN)*

The ESSN also known as AMAN is a US\$246 million 3-year project launched in March 2022, that provided cash transfers and access to social services to extremely poor and vulnerable Lebanese populations affected by the economic and COVID-19 crises. The ESSN's purpose is to arrest the increase in extreme poverty and to preserve the human capital of 13 – 18 year-old children enrolled in public schools. It also aims to scale-up and enhance the National Poverty Targeting Program (NPTP): Lebanon's main poverty-targeting social assistance program launched in 2011 with financial and technical assistance from the World Bank.

(e) OVERVIEW OF CULTURAL HERITAGE AREAS

Lebanon is a host country to many archaeological and cultural sites. Five properties are inscribed on the World Heritage List of UNESCO: Anjar, Baalbek, Byblos, Ouadi Qadisha and the Forest of the Cedars of God, and Tyre (UNESCO, no date).

Many other sites are on the tentative list of UNESCO. These sites are:

- The historical center of Batroun (Le Centre Historique de la Ville de Batroun);
- Echmoun Temple;
- Set of Historical Monuments and Natural Sites of the Village of Menjez;
- Sacred Mount Hermon and its associated cultural monuments;
- Nahr el-Kalb Archaeological Site;
- Saida Historical Center;
- The castles of Mount Amel: Qalaat Al Chakif (Beaufort Castle), Qalaat Tibnin (Toron Castle), Qalaat Chakra (Dubieh Castle), Qalaat Deir Kifa (Maron Castle), Burj Al Naoqoura (Naqoura Tower);
- The Ancient City of Tripoli;
- Ras al-Qalaat promontory / Ras Al Natour promontory / Ras el-Mlelih Promontory; and
- The Rachid Karamah International Fair in Tripoli-Lebanon;