



REPUBLIC OF LEBANON  
MINISTRY OF ENVIRONMENT



# KEY PARTNERSHIP ACHIEVEMENTS

OF THE MINISTRY OF ENVIRONMENT  
AND THE UNITED NATIONS DEVELOPMENT PROGRAMME IN LEBANON  
FROM 2016 TO 2020



Despite the tragic Beirut port explosion of August 2020, the care-taker status of the Government since, and the unprecedented prevailing economic and financial situation since October 2019, all this exacerbated by the COVID-19 outbreak in early 2020, we are still striving. I am pleased to introduce this publication prepared by the United Nations Development Programme (UNDP), summarising the results of its latest five years of partnership with the Ministry of Environment (MoE) from 2016 to 2020.

Following the election of a new President in 2016, President General Michel Aoun, the Parliamentary elections in 2018 and the formation of two national unity Governments (in December 2016 and January 2019) led by PM Saad Hariri, this renewed national stability was promising a prospective recovery with a reform agenda and the pledged funds under CEDRE (US\$ 11 billion) in 2018. However, the country faced new challenges in 2019 resulting in a financial crisis and social unrest leading to political gridlock and economic recession.



In January 2020, a new Government was established, led by PM Dr. Hassan Diab, while the country was still facing the shortfall of the 2019 internal crisis and the accumulated pressures on the human, social and natural capitals over the years. Shortly after, the national priorities had to be shifted towards, among others, containing the spread of the COVID-19 (more than 180,000 cases and 1,450 deaths by end 2020), managing lockdown and responding to the tragic Beirut blast (more than 200 deaths and 6,000 injured as well as overall damages estimated at almost US\$ 4.2 billion for the Beirut Port and neighbouring areas without accounting for losses and the forgone opportunities<sup>1</sup>).

In terms of natural capital, Lebanon Cost of Environmental Degradation (COED) in 2018 (US\$ 2.35 billion equivalent to 4.4% of the Gross Domestic Product in 2018) has increased in absolute and relative terms as compared to the COED in 2000 (US\$ 0.56 billion equivalent to 3.4% of the Gross Domestic Product in 2000). Hence, air, water, land and ecosystems are suffering from more pressures that are preventing sustainable development, already affected by climate change.

Despite its limited human and budgetary resources in this difficult and complex political and economic context, the MoE continued to rise to the challenge and maintained the MoE institutional strengthening, policy design and enactment process as well as international commitments with the collaboration of UNDP and the mobilisation of funds from various development partners over the past five years. More specifically, the MoE prioritised air and water pollution, solid waste, quarry, as well as land and biodiversity management where strategies, policies and regulations were endorsed by the Government. All these outcomes will require additional efforts for compliance and enforcement, while pursuing international environmental commitments.

Last but not least, the MoE engaged with all the stakeholders, by initiating a forum of collaboration and exchange through the First Beirut Conference on Environment in May 2019 to harness all the resources towards bringing together the public sector, the private sector, civil society, academia, media, and development partners. During these difficult circumstances Lebanon is facing, this initiative goes along with the Lebanon Reform, Recovery and Reconstruction Framework, launched by the World Bank, the European Union and the United Nations in December 2020. Such a platform is key to improve environmental governance by better defining the roles and responsibilities of all stakeholders engaged in building a resilient, inclusive and sustainable greener environment along the “building back better” principles.

I wish to conclude by thanking all the parties involved over the past five years, and particularly the staff of UNDP and the staff of MoE for their efforts and dedication towards a better environment in Lebanon.

## **Dimyanos Kattar**

Minister of Environment  
Republic of Lebanon

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<sup>1</sup> World Bank Group, European Union, United Nations. August 2020. Beirut Rapid Damage and Needs Assessment.





The partnership between the Ministry of the Environment and UNDP is rooted in our shared commitment to protect Lebanon’s people and their natural environment, and a history of longstanding and robust cooperation. Since the early nineties, we have worked together to uphold Lebanon’s commitments to global environmental frameworks while addressing national priorities.

Over the last five years, the timeframe of this report, our joint efforts yielded promising results to advance Lebanon’s green recovery from multifaceted crises, while putting in place key institutions, policies and systems for longer-term sustainability and greening of Lebanon’s economy and society.

Despite these strong foundations, the impact of recent shocks – the global COVID-19 pandemic, the Beirut port explosion, and the economic and financial crisis – illustrates how much more needs to be done. In particular, these crises have magnified the depth of development deficits, including decades of growing inequalities, environmental degradation, and unsustainable patterns of production and consumption.

The good news is that we have a universal blueprint for Lebanon’s emergence from crisis, in the form of Agenda 2030 for Sustainable Development and the Paris Climate Agreement. Taken together, they provide a framework for the holistic action required to regain momentum and rebuild Lebanon in ways that redress legacies of the past and “build forward better and greener”. Particularly, environmental sustainability and climate action must be at the heart of any future financial and socioeconomic recovery plan for Lebanon, and its implementation.

In reflecting on global drivers of crisis and the task of building back greener from COVID-19, UNDP’s 2020 Human Development Report concludes that all future action towards human well-being must be reframed by need to rebalance social and planetary systems to ensure that both people and planet survive and thrive. The choice is ours– and the time is now.

The journey that MoE, UNDP and partners have embarked on is already beginning to change national policies, institutions, and behaviours. For example, as highlighted in this report, this is the case for our collaboration to mainstream natural resource management and sustainability considerations across economic, financial, industrial, agricultural and productive sectors.

Building on these results, over the next five years, and in partnership with other key international partners, civil society, and the private sector, MoE and UNDP will step up collaboration to regain Lebanon’s momentum on the Sustainable Development Goals (SDGs) by promoting more sustainable patterns of production and consumption, the management of natural resources, sustainable livelihoods, renewable energy, green public procurement, and climate change adaptation and mitigation in line with Lebanon’s Nationally Determined Contribution (NDC).

UNDP shares the Ministry of Environment’s conviction that these challenging times represent an unmissable opportunity to build Lebanon forward in a way that breaks the cycle of social and planetary imbalance, averts climate catastrophe and lays the foundation for a sustainable future for people and planet.

### **Celine Moyroud**

Resident Representative  
UNDP Lebanon



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## LIST OF ACRONYMS

ACE	Action for Climate Empowerment	MLF	Multilateral Fund (of the Montreal Protocol)
AICS	Italian Agency for Cooperation Development	MoA	Ministry of Agriculture (of Lebanon)
AQMN	National Air Quality Monitoring Network	MoE	Ministry of Environment (of Lebanon)
BdL	Banque du Liban	MoEW	Ministry of Energy and Water (of Lebanon)
BUR	Biennial Update Report	MoF	Ministry of Finance (of Lebanon)
CBIT	Capacity-Building Initiative for Transparency	Mol	Ministry of Industry (of Lebanon)
CDR	Council for Development and Reconstruction (of Lebanon)	MoIM	Ministry of Interior and Municipalities (of Lebanon)
CEDRE -CIP	<i>Conférence économique pour le développement, par les réformes et avec les entreprises</i> (Economic Conference for Development through Reforms with the Private Sector)-Capital Investment Programme	MoJ	Ministry of Justice (of Lebanon)
COED	Cost of Environmental Degradation	MRV	Monitoring, Reporting and Verification
CoM	Council of Ministers (of Lebanon)	NAMAs	Nationally Appropriate Mitigation Actions
COP	Conference of Parties	NCE	National Council for the Environment (of Lebanon)
EE	Energy Efficiency	NCPL	National Cooling Plan of Lebanon
EIA	Environmental Impact Assessment	NDC	Nationally Determined Contribution
EROI	Environmental Rehabilitation through the Enhancement of Integrated Waste Management	NDCSP	Nationally Determined Contribution Support Programme
EU	European Union	NGO	Non-Governmental Organisation
GCF	Green Climate Fund	NOU	National Ozone Unit
GDP	Gross Domestic Product	NSDS	National Sustainable Development Strategy
GEF	Global Environment Facility	ODS	Ozone Depleting Substances
GHG	Greenhouse Gas	PCM	Presidency of the Council of Ministers (of Lebanon)
GiZ	German Corporation for International Cooperation GmbH	PV	Photovoltaic
GoL	Government of Lebanon	RE	Renewable Energy
GWP	Global Warming Potential	SDG	Sustainable Development Goal
HCFC	Hydrochlorofluorocarbons	SDGI	Sustainable Development Goal Index
HFC	Hydrofluorocarbons	SEA	Strategic Environmental Assessment
HPMP	HCFC Phase-Out Management Plan	SLM	Sustainable Land Management
IRENA	International Renewable Energy Agency	SOE	State of the Environment
IS	Institutional Strengthening of MoE Phase I and Phase II	SOPs	Standard Operating Procedures
ISWM	Integrated Solid Waste Management	StREG	Support to Reforms – Environmental Governance
KfW	German Development Bank	SWM	Solid Waste Management
LARI	Lebanese Agricultural Research Institute	TA	Technical Assistance
LCA	Lebanon Climate Act	TNC	Third National Communication to the UNFCCC
LDN	Land Degradation Neutrality	TOR	Terms of Reference
LECB	Low Emission Capacity Building Programme	UNCBD	United Nations Convention on Biological Diversity
LEPAP	Lebanon Environmental Pollution Abatement Project	UNCCD	United Nations Convention to Combat Desertification
LGIF	Lebanon Green Investment Facility	UNDAF	United Nations Development Assistance Framework
MDG	Millennium Development Goal	UNDP	United Nations Development Programme
MISCA	Management and Information System for Climate Action	UNFCCC	United Nations Framework Convention on Climate Change
		UNSF	United Nations Strategic Framework
		UNV	United Nations Volunteer



## 1. INTRODUCTION

The Ministry of Environment (MoE) and the United Nations Development Programme (UNDP) have enjoyed long-standing and results-oriented cooperation since 1993. The objective of this quinquennial publication is to present the key achievements of the MoE-UNDP's cooperation over the past five years (2016-2020), with a view to provide a platform for continued policy dialogue and learning that can shape future environmental planning and support the progress of sustainable development in Lebanon.

The MoE was established in 1993 in response to strong political will to address environmental priorities in Lebanon following the Sustainable Development Summit of 1992. Since 1993, a total of 17 Ministers of Environment have taken office, and have played an important role in setting the agenda of the MoE in carrying out its mandate to address environmental challenges faced by Lebanon. The weak enforcement of environmental laws, policies and regulations remains a critical area of concern.

### Government of Tammam Salam (February 2014 – December 2016)

The work programme of the MoE proposed by H.E. Mr. Mohamad Al Mashnouk, Minister of Environment, sought to complete policies initiated under previous governments, specifically in the following areas:

- Ratifying environmental conventions and protocols.
- Adopting key environmental laws.
- Issuing key environmental decrees and decisions.
- Adopting key strategies for the well-being of the citizens.
- Supporting environmental governance.
- Protecting Lebanon's natural resources.
- Reinforcing the management of environmental risks.

Further details can be found in the booklets released in 2016 on the "Achievements of the MoE from 15 February 2014 through 31 October 2016"<sup>1</sup> as well as the "MoE/UNDP Partnership: Key Achievements from 2010 to 2015"<sup>2</sup>.

### Government of Saad Hariri (December 2016 – May 2018 and caretaker until early 2019)

The work undertaken by the MoE under the auspices of H.E. Mr. Tarek El Khatib, Minister of Environment, focused on the following areas:

- Establishing, for the first time in Lebanon, the transition to a circular economy through the Government's adoption of a comprehensive policy for the solid waste sector based on the principle of waste recovery (materials and energy) and participatory decision-making, as well as the Integrated Solid Waste Management (ISWM) Framework Law (Law 80/2018).
- Making a qualitative shift in the management of waste and hazardous materials through the safe environmental disposal of hundreds of tons of waste resulting from the July 2006 war and hazardous materials used in several sectors.
- Introducing tax and customs breaks as incentives for environmentally friendly activities through the adoption of the necessary decree (Decree 167/2017), 15 years after the adoption of the Protection of the Environment Law 444 of 2002.
- Demonstrating that industrial growth and environmental protection are possible, even in the face of economic challenges, through three pilot trials where US\$ 3 million of green investments were borne by the industries.
- Providing the MoE with the necessary soft tools to ensure the sound environmental safeguarding of the oil and gas exploration process.
- Pursuing the efforts to mobilise the financial resources needed to protect the rivers from pollution starting with the Litani Basin and Qaraoun Lake.
- Preserving Lebanon's ecological wealth through the Government's approval of the national biodiversity strategy (Council of Ministers (CoM) Decision No. 62 of April 4, 2018) which is the cornerstone of the process of stopping or reversing poorly regulated urban sprawl, thereby preserving mountain tops, landscapes, natural and green areas, agricultural lands, and beaches.

1- MoE website: <[www.moe.gov.lb/%D8%A7%D9%84%D9%88%D8%B2%D8%A7%D8%B1%D8%A9/Agreements,-Plans-and-Reports/%D8%AA%D9%82%D8%A7%D8%B1%D9%8A%D8%B1/Achievements-of-the-Ministry-of-Environment-2016.aspx](http://www.moe.gov.lb/%D8%A7%D9%84%D9%88%D8%B2%D8%A7%D8%B1%D8%A9/Agreements,-Plans-and-Reports/%D8%AA%D9%82%D8%A7%D8%B1%D9%8A%D8%B1/Achievements-of-the-Ministry-of-Environment-2016.aspx)>

2- MoE website: <[www.moe.gov.lb/%D8%A7%D9%84%D9%88%D8%B2%D8%A7%D8%B1%D8%A9/Agreements,-Plans-and-Reports/%D8%AA%D9%82%D8%A7%D8%B1%D9%8A%D8%B1/MOE-UNDP-partnership-KEY-achievements-from-2010-t.aspx](http://www.moe.gov.lb/%D8%A7%D9%84%D9%88%D8%B2%D8%A7%D8%B1%D8%A9/Agreements,-Plans-and-Reports/%D8%AA%D9%82%D8%A7%D8%B1%D9%8A%D8%B1/MOE-UNDP-partnership-KEY-achievements-from-2010-t.aspx)>

- Opening the hunting season for the first time since the adoption of the hunting law in 2004 (Law 580), thus allowing hunting in an orderly and sustainable manner while securing revenues of more than 10 percent of the budget of the MoE.
- Drafting a sustainable policy for the sustainable and integrated management of the sand pit, quarry and crusher sector, including the issue of dealing with rock quarries for crushers, backfilling and existing sand pits operating without a license.
- Adopting the Air Quality Protection Act (Law 78/2018), the first law regulating the management of pollution affecting ambient air in Lebanon and completing it on the ground by equipping a full national air quality monitoring network.

### **Government of Saad Hariri (January 2019 – October 2019 and caretaker until early 2020)**

The work undertaken by the MoE, under the aegis of H.E. Mr. Fady Jreissati, Minister of Environment, focused on the following areas as per the environment section of the Ministerial Declaration:

- Pursuing the ISWM drive by issuing seven key application decrees and decisions to the ISWM Framework Law 80/2018 (Decree 5605/2019 on sorting at source; Decree 5606/2019 on hazardous waste management along with three of its application decisions; MoE Decision 108/1-2019 establishing the ISWM coordination committee; and MoE Decision 58/1/2020 on the classification of refuse-derived fuel), preparing a 10-point road map for achieving ISWM with a gradual transition to a circular economy and approving it by the CoM (Decision No. 3 of August 27, 2019) as well as following up on implementation (including introducing a plastic bag fee in the draft 2020 budget bill, and awareness).
- Strengthening the execution of the law and particularly environmental safeguards, through the preparation of detailed environmental impact assessment (EIA) guidelines for the oil and gas as well as the wind energy sectors.
- Pursuing projects needed to abate pollution of the Litani River and Qaraoun Lake (Law 63/2016 and Roadmap), particularly in relation to activating the compliance of private institutions (industrial, classified, health, quarrying and others) by providing the necessary technical and financial support on the one hand, and supporting prosecution of violations on the other, while sustainably managing land in the basin (see SLMQ project).
- Bringing the protection of the coastal and marine environment to the fore by advocating for an end to land-based pollution resulting from untreated wastewater and waste washed into rivers. An example of such efforts included a coastal clean-up and awareness campaign organized on World Environment Day (June 9, 2019) which included the participation of the Minister of Environment and a number of deputies from the regions, international organisations, national institutions, civil society and volunteers.
- Securing the approval of the CoM on the draft policy for the integrated management of sand pits, quarries and crushers (Decision No. 45 of March 21, 2019) and following up on its implementation, more particularly through the following actions: (a) drafting the decree amending the Decree 8803/2002 and its amendments organising the quarrying sector, and getting it approved (by the CoM Decision No. 1 of September 17, 2019 - except for the approval of the map, which was postponed till a further Cabinet session which was not held due to the resignation of the Government in October 2019); and (b) activating the environmental commitments in this sector by holding the necessary periodic meetings for the National Council of Quarries, communicating with the concerned unions, and organising field tours in various regions.
- Securing the approval of the CoM for MoE proposal – pending since 2012 – to prepare a masterplan to protect mountain peaks and natural areas, and to regulate coastal investments, green spaces, and agricultural lands, thus putting an end to the urban sprawl phenomenon (Decision No. 50 of September 5, 2019). The task of preparing the masterplan was assigned to the Council for Development and Reconstruction (CDR) in coordination with all stakeholders.
- Implementing the National Biodiversity Strategy and Action Plan 2016-2030 approved by the previous Government by: (a) securing the adoption of two key laws (Law 130/2019 (Protected Areas Framework Law) and Law 127/2019 (Specially Protected Areas SPA protocol)); (b) obtaining the approval of the CoM on the establishment of five new nature reserves to be transmitted to Parliament (Abbassieh Beach, Tyre (Decision No. 16 of August 22, 2019); Ras al-Shaqqa, Batroun (Decision No. 23 of August 29, 2019); Andket, Akkar (Decision No. 33 of September 5, 2019); Hermon, Rachaya (Decision No. 34 of September 5, 2019); and Al-Nmeyrieh, Nabatiyeh (Decision No. 46 of October 17, 2019)); and (c) pursuing the smooth management of the hunting seasons, including prosecution of violations.
- Putting the Air Quality Protection Act into implementation by securing the approval of CoM of the National Air Quality Management Strategy 2015-2030 (Decision No. 14 of October 17, 2019) and initiating consultations about the proposed amended Emission Limit Values.

- Incentivising climate action and ozone protection through: (a) securing the adoption of the Paris Agreement annexed to the United Nations Framework Convention on Climate Change (Law 115/2019); and (b) securing the adoption of the Kigali-Ronda amendments related to the Montreal Protocol on the protection of the ozone layer from its depleting substances (Law 119/2019) (see Climate Change and Ozone projects).
- Reactivating the work of the National Council for the Environment (NCE) in coordination with the concerned authorities and organisations, in addition to organising, under the patronage of His Excellency the President of the Republic, and in partnership with the World Bank and the United Nations, and with the participation of the European Union and relevant bodies from the public and private sectors and civil society, the "Beirut Environment Conference 2019 - Lebanon's Opportunity" on May 3, 2019 (Box 3).

### **Government of Hassan Diab (January 2020 – August 2020 and still the caretaker Government by the end of 2020)**

The work undertaken by the MoE, under the tutelage of H.E. Mr. Dimyanos Kattar, Minister of Environment, focused on the following areas as per the environment section of the Ministerial Declaration:

- Mainstreaming environmental concepts into the draft government's reform program, which was approved by the CoM (Decision No. 13 of April 30, 2020).
- Pursuing the implementation of the policy on the integrated management of the sand pits, quarries and crushers sector, through: (a) securing the preparation and adoption of the application Decree for article 61 of the 2019 Budget Law concerning the field survey of quarries and crushers (Decree 6569/2020) in coordination with the Ministry of National Defense - Army Command; (b) arbitrating, through the Ministry of Justice, on the cement licensing permitting and rehabilitation (while putting in place an Oversight Committee composed of representatives from the concerned public administrations, local authorities, civil society and higher education through CoM Decision No. 4 of July 14, 2020, which was later amended by CoM Decision No. 19 of July 28, 2020 to exceptionally, temporarily and conditionally allow for raw material extraction to meet the need of the local market during a three-month period starting July 30, 2020); and (c) allowing the import of grey and white cement by the Ministry of Industry (Mol) through Circular No. 48/1 of August 17, 2020 to help improve the sustainability and competitiveness of the sector.
- Continuing activities related to protection of Lebanon's green areas by securing the adoption of Laws 169/2020, 170/2020 and 202/2020 pertaining to the establishment of three nature reserves in Nmeyrieh-Nabatiyeh, Abbasiyeh Beach-Tyre and Hermon-Rachaya, bringing the number of nature reserves in Lebanon to 18.
- Pursuing the ISWM drive by: (a) promoting the convergence of stakeholders' views about the 10-year roadmap adopted by the previous government (amended in a report issued on July 10, 2020 and prepared by a committee appointed through the Presidency of the Council of Ministers (PCM) Decision 96/2020); (b) incentivising decentralisation by obtaining the CoM's approval to transfer 150 and 200 tons of waste from Kesrwan to the Ghosta plant (Kesrwan) (Decisions No. 2 of May 19, 2020 and No. 16 of May 29, 2020); and (c) securing interim measures to avoid another waste crisis in Beirut and Mount Lebanon, including by extending the life-time of the sanitary landfill serving the Northern part of the Greater Beirut Area.
- Responding to environmental emergencies related to: (a) the COVID-19 pandemic, by preparing a reference paper on the environmental impact of the COVID-19 on Lebanon's solid waste sector and priority interventions and circulating it to stakeholders; and (b) the Port of Beirut explosion by supporting waste assessment and treatment activities.
- Following-up on the implementation of the roadmap to combat pollution of the Litani River and Qaraoun Lake by addressing the challenges facing existing loans and grants and preparing for others.
- Activating the application of national environmental safeguards across all sectors particularly the Oil and Gas sector, which resulted in the approval of the first EIA for Exploration in Area 4 in Lebanese marine waters, with conditions.
- Securing the issuance of the Decree adopting the National Ambient Air Quality Management Strategy (2015-2030) (Decree 6212/2020) and preparing a twinning project to support its implementation.
- Pursuing MoE's industrial pollution abatement stance by scaling up incentive-based financial instruments to be gradually implemented by the financial sector.
- Securing additional funding due to the financial crisis and COVID-19 pandemic disruption to keep Lebanon's commitment to sustainable development as well as international environmental treaties, protocols and conventions (climate change, ozone protection, biodiversity, persistent organic pollutants, and others) on track.

**Ministers per Government term – in the past five years, 4 Ministers**



**Mohamad Al Mashnouk**  
February 2014 - October 2016 / December 2016



**Tarek Mohamad Al Khatib**  
December 2016 - May 2018/ January 2019



**Fady Jreissati**  
January 2019 - October 2019 / January 2020



**Dimyanos Kattar**  
January 2020 - August 2020 /And still the caretaker  
Government by the end of 2020

**UNDP's Resident Representatives during the same period**



**Robert Watkins**  
2011 - 2014



**Ross Mountain**  
2014 - 2015



**Philippe Lazzarini**  
2015 - 2019



**Celine Moyroud**  
2019 - To Date

Until 2016, the MoE-UNDP cooperation was based on the national environmental priorities set forth by MoE and by the United Nations Development Assistance Framework for Lebanon (UNDAF). The main goal was to meet the Millennium Development Goal (MDG) number 7 “Ensuring Environmental Sustainability”: however, the start of the Syrian conflict in 2011, which triggered the influx of more than 1.5 million forcibly displaced Syrians into Lebanon, as well as the solid waste crisis of 2015, made this goal difficult to achieve, despite its central importance to the global environmental management in the country.

In 2015, in order to adapt international environmental policy to new and increasing development challenges, world leaders gathered in New York to adopt the “2030 Agenda for Sustainable Development”. This resolution set new international goals to be reached by 2030, i.e. the 17 sustainable development goals (SDGs) (Figure 1), to be measured by an SDG Index (SDGI) . Lebanon’s ratings are illustrated in Box 1 and Figure 2.



The logo features the United Nations emblem on the left, followed by the text "SUSTAINABLE DEVELOPMENT" in blue, and "GOALS" in a large, bold, blue font where the letter "O" is a colorful wheel representing the 17 goals.



Figure 1: Sustainable Development Goals

Box 1: Lebanon Sustainable Development Goal Index Ratings (2019)

The SDGI was developed to benchmark the SDG performance of a country relative to other countries. The higher the score over 100 the higher the performance.

Lebanon ranks 94 over 162 countries with a score of 65.7 which is quasi in line with the average of the region (65.9) in 2019. The SDGI comprises an assessment of current progress as well as overall trends in achieving the 17 SDGs.

Current assessment of progress across the 17 SDGs: One SDG (SDG 1) was achieved; one SDG (SDG 7) had remaining challenges; 10 SDGs including 4, 6, 9, 10, 11, 12, 14, 15, 16 and 17 had significant challenges; and five SDGs including 2, 3, 5, 8 and 13 had major challenges.

Overall trends: Three SDGs including 1, 6 and 13 are on track; two SDGs including 3 and 9 are moderately improving; four SDGs including 2, 8, 15 and 16 are stagnating; two SDGs including 4 and 5 are decreasing; and six SDGs including 7, 10, 11, 12, 14, and 17 have no information available.

With respect to the SDGs directly related to environment and climate: SDG 7 faces remaining challenges; SDGs 6, 11, 12, 14 and 15 are encountering significant challenges, whereas SDG 13 is confronted with major challenges.

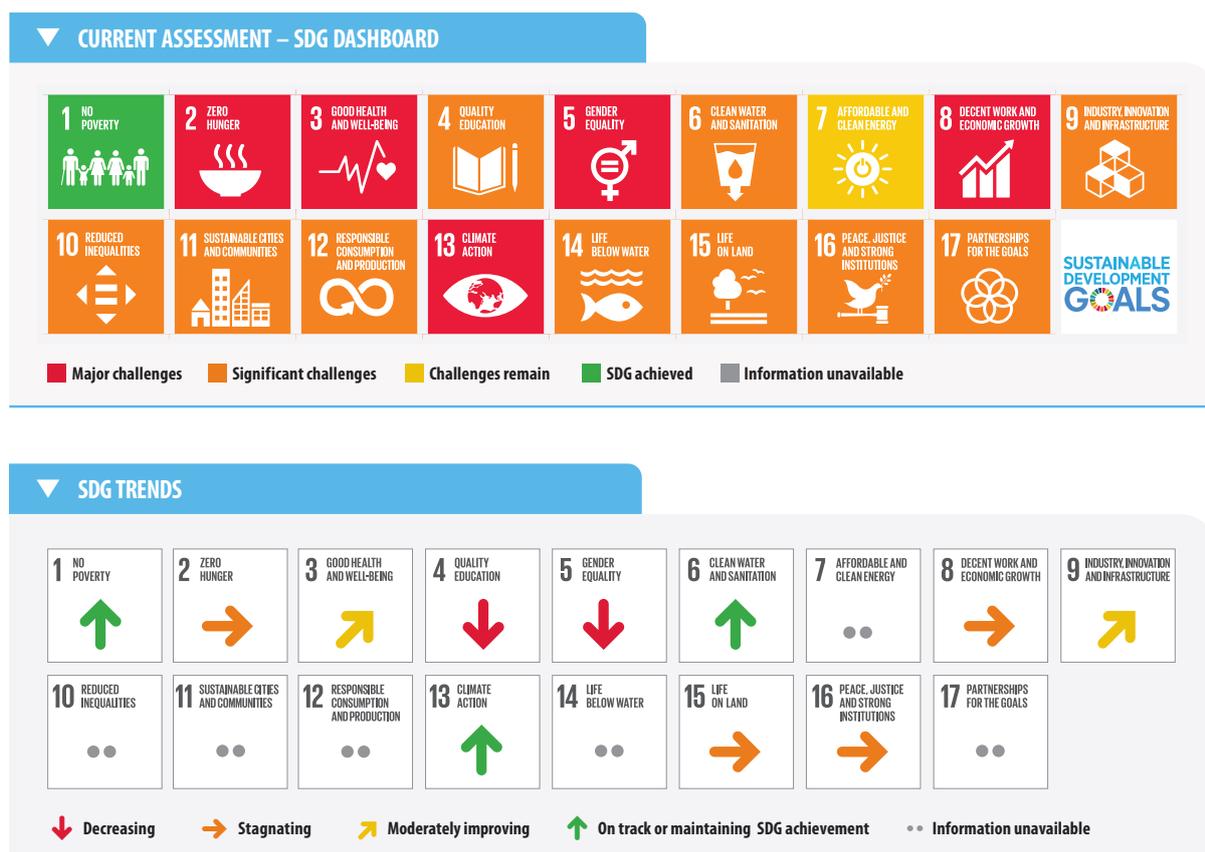


Figure 2: Lebanon Sustainable Development Goal Index, 2019

As the successor framework to the MDGs, the SDGs, as reflected in the United Nations Strategic Framework for Lebanon (UNSF 2017-2020), gave new objectives to the cooperation between MoE and UNDP. These objectives are formulated as follows:

- **Sustainable Development and Environment** to meet the requirements set by international environmental conventions and protocols in terms of promoting environmental protection and effective natural resource management.
- **Adaptation to Climate Change and Water Management** which includes the promotion of water management and conservation, protection of vulnerable water resources and awareness raising.
- **Mitigating Climate Change and Sustainable Energy** to meet the target of 12 percent renewable energy by 2020 while promoting demand-side energy management and energy conservation in terms of the application of renewable energy technologies in the productive sectors, as well as its use at the household and communal levels which will be promoted as a means to increase access to green sustainable energy.
- **Supporting the Government in formulating an integrated waste management strategy.**

Accordingly, the MoE-UNDP cooperation during the 2016-2020 period focused on the following:

- Mainstreaming environmental considerations at the strategic, planning and policy levels.
- Improving Government capacity to meet obligations related to international environmental conventions and protocols.
- Mainstreaming climate change considerations into national priorities.

Under these three areas of intervention, the MoE-UNDP programme included approximately 20 projects between 2016 and 2020; some of which have been completed during this period, while others were developed during this period, and will be implemented after 2020. Through these projects, MoE has been able to better respond to the growing challenges in Lebanon in the field of environmental management and sustainable development. A breakdown of the MoE-UNDP projects between 2016 and 2020 is illustrated in Table 1.

Table 1: MoE-UNDP Projects (2016-2020)

No	Project	Duration	Budget (US\$ Mn)	Donors
<b>ENVIRONMENTAL POLICY AND MAINSTREAMING</b>				
1a	Institutional Support to MoE Phase I	January 2010 - December 2016	6.52 0.42	Government of Lebanon, Solidere, UNDP
1b	Institutional Support to MoE Phase II	June 2017 - December 2020	0.93 0.54	Government of Lebanon, UNDP, UNICEF, UNCHR
2	ISWM - Baalbek Caza	July 2010 - December 2022	2.4	AICS
3	ISWM Response to Syria Crisis	Jan 2017 - October 2019	2.99	The Netherlands
4	SWM for Host Communities	March 2018 - June 2021	1.79	Government of Japan
5	Promoting Waste Management Practices and 3R	March 2020 - March 2021	1.8	Government of Japan
6	Response to Emergencies: COVID-19 Pandemic & Beirut Port Explosion	2020 - 2023	2.2	UNDP and KfW
7	Environmental Rehabilitation through the enhancement of Integrated waste management (EROI)	November 2020 - April 2022	1.8	AICS
8	Lebanon Environmental Pollution Abatement Project (LEPAP)	January 2014 - June 2021	2.53	AICS World Bank
<b>INTERNATIONAL CONVENTIONS</b>				
9	Institutional Strengthening Project for the Implementation of Montreal Protocol in Lebanon (Phase X & Phase XI)	October 2019 - September 2021	0.2	MLF
10	The Phase-Out Management Plan of HCFCs Stage-II for Post 2015 Targets	October 2016 - December 2025	4.2	MLF
11	Early Ratification of Kigali	April 2019 - April 2021	0.15	MLF
12	Energy Efficiency Interventions (K-CEP Windows 1&2 and Global Component)	April 2019 - April 2021	0.4	Kigali Cooling Efficiency Programme
13	Sustainable Land Management in the Qaraoun Catchment (SLMQ)	January 2016 - July 2021	3.49	GEF
14	Land Degradation Neutrality of Mountain Landscapes in Lebanon (LDN)	March 2020 - May 2024	4.74	GEF
15	6 <sup>th</sup> National Biodiversity Report	2016	0.03	GEF
<b>MAINSTREAMING CLIMATE CHANGE</b>				
16	Lebanon's Third National Communication	January 2013 - December 2016	0.48	GEF
17	Lebanon's Low Emission Capacity Building Programme (LECB)	January 2013 - December 2018	1.1	Australia, EU and Germany
18	Lebanon's Second Biennial Report	July 2016 - June 2019	0.32	GEF
19	Nationally Determined Contribution Support Programme (NDCSP)	July 2018 - May 2021	0.8	UNDP CCDRR/Climate Change Funding Window Allocation, EU, Germany and Spain
20	Lebanon's Fourth National Communication and Third Biennial Update Report under the UNFCCC (4NC BUR3)	July 2019 - July 2023	0.85	GEF

## 2. ENVIRONMENTAL POLICY AND MAINSTREAMING

Since its inception, MoE has not received the necessary budget envelope to be truly effective. The MoE's annual budget of approximately US\$ 1 million in 1993 remained the same in 2020, with approximately LBP 9 billion equivalent to US\$ 1 million at the exchange market rate further to the sharp depreciation of the Lebanese pound vis-à-vis the dollar since 2019- although it reached the equivalent of US\$ 10 million in previous years. This budget is not sufficient to meet the MoE's needs to achieve its programme of work as it only covers salaries, rent, office supplies and a few additional expenses. As such, MoE's capacity to ensure the enforcement of the environmental legal framework remains weak and accordingly does not allow a strong foundation for good environmental governance; for example, the environmental police is still not staffed. If all technical and administrative staffing allocations (total of 215 staff) are considered at the end of 2020, the MoE is working with less than half the staff needed. MoE also has key gaps for assessing and implementing modalities to further strengthen environmental policy and mainstream this policy at the sectoral level.

For these reasons, environmental policy mainstreaming and enforcement constitute the most important long-term and strategic priorities for strengthening environmental management in Lebanon, and have been a priority focus of previous and current support under the MoE-UNDP cooperation programme through the following key projects:

- 2.1a. Institutional Support (IS) to MoE Project Phase I
- 2.1b. Institutional Support (IS) to MoE Project Phase II
- 2.2. Solid Waste Management Response Projects
- 2.3. Lebanon Environmental Pollution Abatement Project (LEPAP)

### 2.1 A. Institutional Support to MoE Project – Phase I

The Phase I of the IS project was established for the purpose of providing the appropriate support to the MoE by identifying and assessing technical requirements at the national level and assisting in the planning and programming. The IS project was subject to an independent review in 2015/2016 five years after it started operations. The review found the project to be relevant and overall, technically sound. It also highlighted the fact that it was instrumental in strengthening MoE capacity and more importantly increasing the visibility and profile of the MoE. The assessment also identified improvement opportunities in the project management practices that were taken into consideration in IS phase II that started in 2017/2018.

Phase I of the IS project continued supporting the MoE from 2016 through 2018 on a wide array of activities building on the achievements realised since 2010:

- In the fight against pollution of the Qaraoun lake, in addition to periodic reporting and communication, a related *Loi Programme* was ratified (Law 63 of October 27, 2016) along with a US\$ 55 million loan from the World Bank and a US\$ 3.5 million GEF grant for sustainable land management (see SLMQ project).
- The project also contributed to framing the legislative and policy debate concerning ISWM and wastewater; key reports include the preparation of an updated masterplan for the closure and rehabilitation of uncontrolled dumps (2016/2017), as well as mainstreaming of key environmental concepts in the final report of the Parliamentary sub-committee on wastewater.
- Additional support was extended to matters such as petroleum and the environment, the environmental impact of the Syrian conflict and sustainable land management.
- The IS project also played a pivotal role in allowing the MoE to accomplish its purview by extending technical, legal, administrative, financial, and external affairs support to the Minister's office and the Ministry's departments. This included:
  - development and adoption of additional laws and regulations (see section 5.1 "Key Legal Texts and Policies") as well reinforcing the basis for enforcement through: (a) the facilitation of a joint MoE-Moj workshop on "Strengthening Environmental Inspection and Enforcement" and co-signing of proceedings (2016); (b) continuation of the cooperation with an NGO (YMCA) as Environmental Watchdogs for Environmental Protection: 450 inspection visits (protected areas and nature reserves; quarries; hospitals; solid waste facilities; hunting; etc.) conducted to support MoE services; and (c) independent evaluation of the MoE's management of the EIA system as well the drafting and enactment of the procedure for compensating MoE officers for the review of EIAs;
  - pursuing efforts to enhance staffing at MoE by issuing Decree 1933/2017 appointing 12 additional technical officers (i.e., ~ 25 percent of the available technical staffing in 2015), and obtaining CoM authorisation (CoM Decision 84 of October 13, 2016 amended by CoM Decision 39 of October 27, 2016) to engage in direct contract with six United Nations Volunteers (UNVs), crucial for sustaining experience gained through bilateral projects as per earlier CoM decisions;

- developing the Ministry's integrated vision for the economic recovery from an environmental standpoint, undertaking research and providing support on technical matters as well as reporting on MoE activities and enhancing awareness through decorating MoE hallways with banners about the seven MoE services and the 15 (at the time) nature reserves of Lebanon; and
  - participating in key meetings with international and local partners and mobilising funding for the MoE with international donors.
- The project also followed up on several ongoing initiatives at the MoE including the Support to Reforms – Environmental Governance (StREG - European Union EU) grant, Lebanon Environmental Pollution Abatement Project (LEPAP - World Bank and AICS) loan and grant, and the Protection and Sustainable Development of Maritime Resources in Lebanon (EU) grant which included, among others, treatment and disposal of the 2006 oil spill recovered wastes.

In addition to ongoing initiatives, the IS project contributed to the development of a pipeline of projects aimed at mobilising upward of €45 million.

## 2.1 B. Institutional Support to MoE Project – Phase II

The Phase II of the IS of the MoE, started in 2017/2018, carries on the strengthening of the enabling environment for sustainable environmental development at the national policy-level as Lebanon faces increased environmental and natural resources pressure challenges. The project supports MoE capacity strengthening along three pillars:

- Carrying on the environmental policy development in terms of laws, regulations and other policy mechanisms.
- Mainstreaming SDGs in local development planning and programming.
- Pursuing MoE's institutional strengthening and capacity building processes with a focus on environmental monitoring.

### Environmental Policy Development

The IS projects I and II contributed significantly to the adoption of laws, decrees and strategies strengthening the legal framework and operational toolkit of the MoE in its efforts to achieve SDGs (see section 5.1 "Key Legal Texts and Policies"). More importantly, the project supported the MoE in leading on the preparation of the draft National Sustainable Development Strategy (NSDS) in collaboration with all sectoral ministries and under the aegis of the Premiership. Moreover, several concept notes were prepared, and new policy instruments were developed as per the below.

An overarching **strategy** at the national level, that would build on the National Physical Master Plan of the Lebanese Territory and link to the SDGs while bringing coherence to the plethora of other existing sectoral strategies, has been identified as a critical need. Such an overarching strategy is to take on transformative challenges, which is to say that Lebanon needs to embark on a paradigm shift to implement the NSDS in conjunction with the SDGs. Following the Roadmap towards NSDS launched at the Serail in March 2015, the background documents for the NSDS were finalised in 2017 with the following overall broad contours: human capital advancement, healthy population, inclusion, social coherence and balanced spatial sustainable development; responsive, and efficient service provision; green growth, and local, regional and international competitiveness; collective responsibility toward the stewardship of the commons and cultural assets as well as resilience to all sorts of shocks; enforcement of the rule of law and governance; and assertion of sovereignty and specificity. Yet, the integrated strategy that would build on these draft documents still needs to be drafted, taking into account the major developments that took place in the last two years, and noting the first Voluntary National Report on SDGs coordinated by the PCM office in 2018 and which the IS project contributed to.

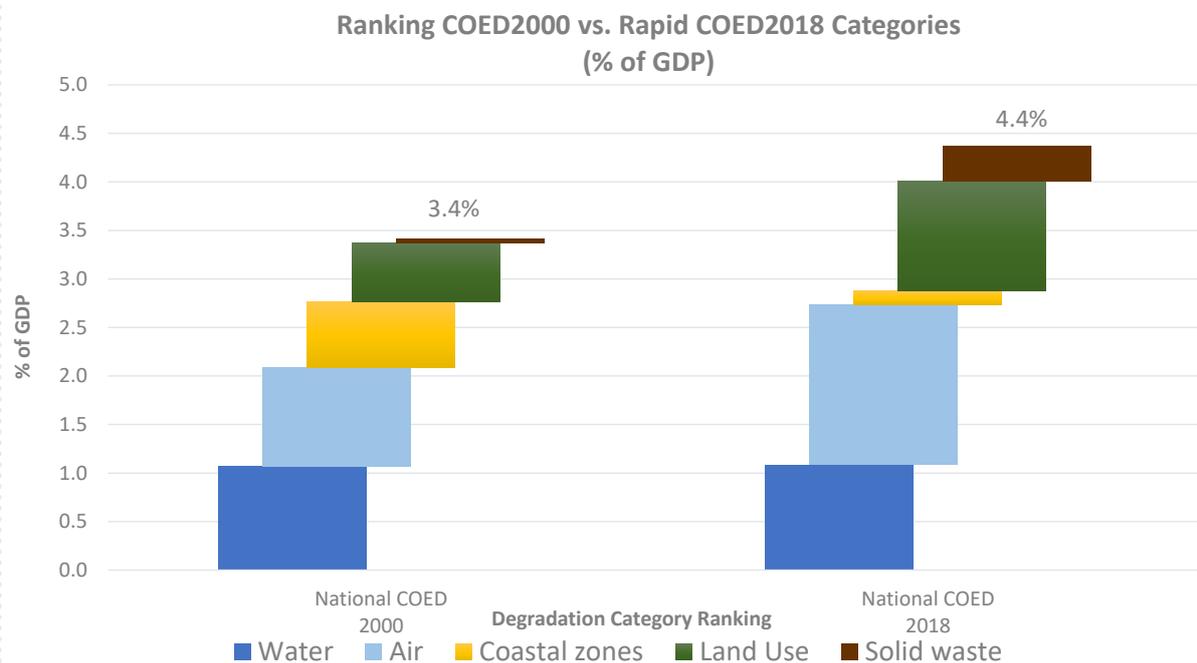
The draft NSDS work was complemented by the update of the **Cost of Environmental Degradation (COED)** in 2018 whose results are illustrated in Box 2 and three **concept notes**: (a) A follow up to the NSDS at the local level through the implementation of Sustainable Plans; (b) Debt-for-Nature/Climate Swap to reduce the public debt burden by increasing the environmental stewardship; and (c) Strengthening capacities in investigating environmental violations.

- a. A concept note to implement two Sustainable Orientation Plans was developed and has four milestones: performing a state of the environment by sink and source; carrying out an economic assessment by considering the cost of environmental degradation and remediation; producing a governance gap analysis; and based on the three deliverables, formulating a Sustainable Orientation Plan including a participatory environmental action plan/pre-feasibility study.

- b. A concept note on Debt-for-Nature/Climate Swap (DNCS) was developed to explore the possibility to use this debt reduction instrument to improve the environment in Lebanon in terms of contributing towards attaining the environment and climate related SDGs and achieving the Nationally Determined Contributions (NDCs). This could reverse Lebanon environmental degradation and mitigate climate impacts by carrying out well defined environmental and climate-proof plans and programmes in the future while reducing the growing public debt that reached US\$ 78.7 billion by October 2019 (date of preparation of the concept note) of which 41.3 percent is held in foreign currency.<sup>3</sup>
- c. A concept note for strengthening capacities in investigating environmental violations, developed in coordination with the MoIM, parallel to the preparation and signature of a joint action plan between MoE and MoIM in 2019.

*Box 2: Rapid Cost of Environmental Degradation in 2018*

A COED was updated for year 2018 to gauge and value the pressures on the environment and compare it to the previous 2000 COED. The rapid COED ranges between 3.1% and 5.5% of GDP in 2018 with a mean estimate of 4.4% equivalent to about US\$ 2.35 billion in 2018 as compared to a mean estimate of 3.4% of GDP in 2000 equivalent to US\$ 0.56 billion in 2000 without considering the Global environment. The latter amounts to US\$ 1.52 billion equivalent to 2.8 percent of GDP as the social cost of carbon used in 2018 is much higher than the one used in 2000. Still the large difference between 2000 COED and the 2018 COED could be explained by both a marginal degradation of the environment over the period, and different valuation techniques and monetisation used. The rapid 2018 COED increased in both relative and absolute terms when compared to the 2000 COED. The main sources are: (i) substantial negative impacts to health from mainly ambient air pollution and to a lesser extent indoor air pollution; (ii) water-borne diseases associated with poor water and sanitation provision as well as behaviour practices for a small segment of the population, whereas water quantity degradation exceeds water quality; (iii) significant strain on land resources in terms of land, range and forest degradation while active and passive quarries have scared the landscape with a very high rehabilitation cost to restore initial landscapes; (iv) waste whose treatment and disposal remain a problem; (v) coastal zone degradation which includes coastal ecosystem services area losses due to increased pressures on the marine environment but needs additional analysis to capture the real degradation; and (vi) damages affecting the global environment due to an increasing CO<sub>2</sub> equivalent per capita in Lebanon.



*Note: Coastal Zone degradation is underestimated in 2018 and needs further analysis.*

*Source: Rapid Cost of Environmental Degradation 2018 | UNDP in Lebanon*

In addition, new policy instruments, in the form of laws, decrees and decisions touching on a wide variety of environmental topics including solid waste management, quarrying, air quality, land management and conservation of migratory species, were prepared (see Sections 1 and 5.1).

<sup>3</sup>- Bdl Monthly Factsheet, October 2019: <[www.bdl.gov.lb](http://www.bdl.gov.lb)>.

## Mainstreaming SDGs in Local Development Planning and Programming

The IS project initiated the update the 10-year-old 2010 State of the Environment Report (SOER) and contributed to the review of its draft chapters. The updated SOER, expected early 2021, will contribute to determining the upcoming priorities. Sustainable plans (as per the concept note above) are also being prepared for two governorates.

Moreover, implementation of the Litani roadmap to combat pollution (which is one of the areas of action on the SDG) was pursued. The IS project developed, in coordination with stakeholders, a methodology for dealing with non-municipal point source pollution. It provided support to preparing the Business Plan for Combating Pollution of the Lower Litani Basin (World Bank-CDR, 2020) and mobilising €21 million in grants and loans for waste management and local development in the Litani watershed (Table 2) as well as initiating the preparation for a new World Bank loan for comprehensive environmental management. The project also took part in many high-level meetings and conferences to raise the profile of the Litani roadmap and contribute to its advancement.

Table 2: SDG Mainstreaming in Local Development Planning and Programming - Project Pipeline

Project	Partner	Grant Amount
Environmental Rehabilitation through the Enhancement of Integrated Waste Management	AICS	€1.5 million
STEPping up Nature Reserves Capacity	AICS	€3 million
The local development programme along the Litani river basin	EU	€20 million
Towards a Decentralised Waste Management Integrated Response TaDWIR	EU	€20.7 million
<b>Total</b>		<b>€45.2 million</b>

## Strengthening the Ministry of Environment

To draw a **vision for the MoE**, an in-kind grant from Strategy & was mobilised in 2019 to frame the vision and roadmap with the objective of defining the way forward. The project took active part in this initiative through contributing to its direction, coordination, and review.

The project contributed also to the greening of the policy statement of the various Governments in terms of mainstreaming of environmental considerations in the ministerial declarations and proposed reforms, as well as the World Bank/EU/UN led 3RF (Reform, Recovery and Reconstruction Framework) initiative and the Lebanon Crisis Response Plan. The project also supported preparing the MoE **work programme**, reporting on progress, and including MoE key planned projects in the Government three-year development priorities (2020) as well as at the governorate level (2017 – based on PCM Decision 56/2017).

And because enforcement remains the main challenge, the project built on the afore-mentioned 2016 MoE-MoJ reference document on “Strengthening Environmental Inspection and Enforcement” to prepare a background paper on the status of environmental policy enforcement in Lebanon and the way forward, and contributed to strengthening the **national environmental safeguards** framework and **strengthening the capacities of MoE staff** by:

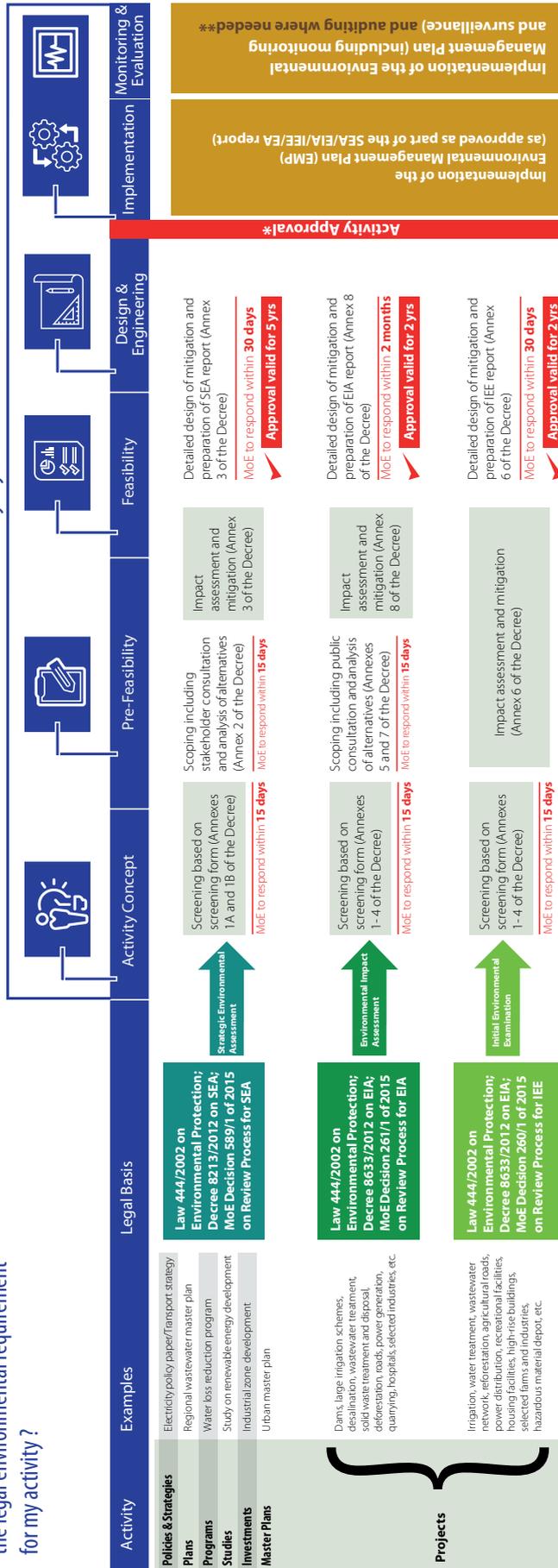
- Collaborating with the EU-funded StREG project to prepare and publish a guidance brochure on “Environmental Safeguards for Ongoing and Planned Activities”, 2017 (Figure 3).
- Mobilising a Memorandum of Understanding with the Netherlands Commission for Environmental Assessment for technical assistance on environmental and social impact assessment (ESIA) and strategic environmental assessment (SEA).
- Securing a component for the MoE in the phase III of the Norwegian funded Oil for Development programme, including preparation of EIA guidelines for the sector, with follow up with the Norwegian Environment Agency.

As the **Solid Waste Sector** was a major area of concern, the IS project supported the preparation of the ISWM policy summary adopted in 2018 by CoM, as well as the adoption of the ISWM Framework Law (80/2018). The project contributed to the preparation, submission and adoption by CoM of the solid waste roadmap in 2019 and its update by a PCM-appointed committee in 2020. Moreover, the IS project led the preparation of the background paper about COVID-19 implications on the solid waste sector and priority interventions and supported the review of waste assessment reports associated with the August 4, 2020 Beirut Port explosion.

Last but not least, the project supported enhancing **environmental communication** internally through better streamlining and externally through a strategic use of effective means, particularly the May 3, 2019 Beirut Environment Conference (Box 3), along with organising and participating in many meetings with foreign delegations and international institutions.

# What is the legal environmental requirement for my activity?

## Activity Cycle



\* If a project is approved without undertaking an EIA/IEE although it requires one, and construction is not completed yet, at least an EMP should be undertaken; penalties are incurred (Article 58 of Law 444/2002).

\*\* Environmental audits are required for establishments in order to obtain their Certificate of Environmental Compliance (Decree 8471/2012 and MoE Decisions 539/1 and 540/1 of 2015) and/or as requested by MoE following a proactive or reactive inspection.

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Figure 3: Lebanon – Environmental Safeguards for Planned and Existing Activities, 2017

The First Beirut Conference on Environment was organised by the MoE and held in Beirut on May 3, 2019. The Conference was prepared in partnership with the World Bank and UNDP. The overall objective was to strengthen the need to adopt a national development strategy that includes environmental protection and improved natural resource management in its core objectives and that goes across all economic sectors. Based on the priorities adopted in the Government Policy Statement of February 2019, the first objective of the conference was to provide a forum to debate the most critical environmental challenges facing the country and bring to the forefront the needs of the sector from various perspectives: central and local governments, civil society, academia and the private sector. The second objective was to put back on track the NSDS initiated in 2015.

The conference was organised around 6 main environmental themes and talks:

1. Integrated Solid Waste Management
2. Sustainable Quarrying and Land Management
3. Ecosystem and Natural Heritage
4. Air Quality and Climate Change
5. Integrated Environmental Basin Management
6. Governance

**Solid Waste.** The conference recommended a better implementation of the polluter pays principle, a better selection of suitable technologies, sorting of waste and recycling processes, and to facilitate the investments in recycling technologies and processes.

**Quarrying.** The conference recommended that the rehabilitation of quarries must be done in parallel with on-going works, reinforce the control at a local level, monitor through regular reporting to and by the MoE, engage the private sector in the financing of quarries rehabilitation and raise awareness and educate stakeholders.

**Ecosystem and the Natural Heritage.** MoE has reiterated the importance of halting the unsustainable and abusive exploitation of natural resources, e.g., the current hunting violations, and has succeeded to ensure the promulgation of the Protected Areas Framework Law in 2019 which will support establishing a strong network of protected areas, governed under a modern law and with ambitious targets as set in Lebanon's National Biodiversity Strategy and Action Plan of 2016, and which include ambitious targets such as:

- By 2030, the total percent coverage of nature reserves is increased to reach at least five percent of Lebanon's total area.
- By 2030, 50 percent of natural ecosystems are sustainably managed and carefully considered in spatial planning implementation.

**Air Quality and Climate Change.** The Ministry made progress on both counts thanks to the EU Support to Reforms Environmental Governance (StREG) and the World Bank/Italian Agency for Cooperation Development Funded Lebanon Environmental Pollution Abatement Project (LEPAP). Following the implementation of the first phase of the National Air Quality Monitoring Network (AQMN), the second phase of the AQMN was launched in 2017 with the support of the EU and covered the installation of nine additional stations to monitor criteria pollutants, in addition to eight weather stations, three Particulate Matter stations and one calibration station. As for LEPAP, more than a dozen soft loans were subscribed by polluting industries to change their process or reduce end-of-pipe pollution. As for climate change, the recommendations included the scaling up of the use of renewable energy while a national waste management strategy was to be formulated (draft was finalised) by the MoE in accordance with the ISWM Law that complies with environmental and public health best practices.

**Integrated Environmental Basin Management.** Recommendations included the need for the preparation of a master plan for the Water Sector and for the storage of water that would build on the joint Ministry of Energy and Water (MoEW) and MoE Strategic Environmental Assessment (2015).

**Governance.** The recommendations included the reinforcement of environmental legislation, public and administrative awareness, transparency and cooperation among stakeholders. Moreover, the finalisation of the NSDS as a comprehensive and complete framework on sustainable development will underscore the need to strengthen economic, environment and social linkages and will help the Government better achieve the SDGs.

Through this conference, Lebanon reiterated his highest commitment towards achieving the 2030 SDGs with goals such as education and health being high on the government agenda and the cooperation between the public sector, the private sector and civil society helping achieve inclusive green growth.

## 2.2 Solid Waste Management Response

The Syrian displacement crisis put significant pressures on host-communities on several front including water, wastewater, energy and solid waste management since 2011. The COVID-19 pandemic exerted additional pressure on the solid waste sector, particularly the infectious hazardous waste. Moreover, the catastrophic explosion of the Beirut Port – August 4<sup>th</sup>, 2020<sup>4</sup> will have profound impacts on and even reverse SDG progress, notably SDG11 (sustainable cities and communities) and SDG12 (responsible consumption and production). The clean-up and reconstruction stance will generate significant construction and debris waste volumes that could put additional pressure on the commons if they are not properly handled.

A number of development partners have helped to address the critical waste challenge since 2011 by targeting large municipalities where daily capacity neither met actual needs nor the incremental waste volume generated by the Syrian displaced population. Given the growing waste volume to be processed and disposed, waste could not be properly handled by many municipalities already suffering from lack of financial and technical resources. This led to growing environmental degradation notably in the Bekaa: air (waste was burnt), water (untreated leachate and waste dumping polluted surface and underground water), land (scattered waste in nature affected ecosystems and polluted agricultural land) and global commons (unsanitary waste disposal emitted greenhouse-gases).

The Netherlands, Japan, Italian Cooperation and the EU stepped up to the plate by promoting ISWM at the national (strategy, policy and instruments) and local (improved municipal management) levels through better collection, processing and disposal while also trying to introduce innovative 3R (Reduce, Reuse, Recycle) and circular economy practices by notably harnessing biogas. As an immediate response after the Beirut Port explosion, the UNDP provided emergency funds to survey the potential destruction and debris waste volume ensuing from the blast, as the disaster waste (rubble and other specific waste streams) resulting from the explosion and upcoming demolition and rehabilitation works must be treated in an environmentally-sound manner.

### 2.2.1 Integrated Solid Waste Management - Baalbek Caza

The Italian Cooperation Integrated Solid Waste Management for Baalbek Caza project, which was initiated in July 2010 (total budget of € 1.82 million), is facing several challenges including the lack of firm commitment from stakeholders as well as the security situation in Baalbek, which is delaying its successful completion.

The project objectives are to:

- Improve the municipal solid waste collection services in Baalbek;
- Rehabilitate the Baalbek maintenance workshop and technical facilities for municipal solid waste, including collection equipment;
- Procure and install the co-generator set required for the operation of the COSV biogas generation; and
- Close and rehabilitate the Kayal dumpsites as the first step toward their full rehabilitation and restoring them into “old Roman quarries” (pending the operation of landfill by the Office of the Minister of State for Administrative Reform (OMSAR)).

The project achievements include so far (Photo 1):

- The improvement of the municipal solid waste (MSW) secondary collection services in Baalbek.
- The rehabilitation of the Baalbek maintenance workshop and technical facilities for the operation of the MSW collection equipment.
- The procurement of the co-generator set necessary for the proper operation of the biogas generation plant, constructed with funding from the EU. This was complemented by the construction of a sorting/composting plant, also funded by the EU through OMSAR.



*Photo 1: Co-Generator and Gas Treatment Unit in Baalbek*

4- About 200 deaths and more than 6,000 injured, in addition to preliminary damages estimated at US\$ 4.2 billion for the Beirut Port and neighboring areas without accounting for losses and the forgone opportunities.

## 2.2.2 Integrated Solid Waste Management Response to Syria Crisis

The Netherlands ISWM Response to Syria Crisis was launched in January 2017 and ended in October 2019. The project aimed at identifying and implementing critical interventions in Solid Waste Management (SWM), in line with the national policy and plans and in coordination with the different players, including municipalities.

The project had also as a main target to support the MoE and the MoIM in coordinating the work on SWM under the social stability component of the Lebanon Crisis Response Plan (LCRP) for 2017-2020. This includes updating of information on projects under implementation in the solid waste sector, and coordinating amongst the various NGOs, national and international agencies, and the national partners working in this sector.

The project, which targeted 250,000 beneficiaries including Syrian displaced, achieved the following results (Photo 2):

- Drafting of the Integrated Solid Waste Management National Strategy with all stakeholders.
- Promoting the 3Rs at the Qaraoun Lake Union of Municipalities through (1) sorting at source awareness campaign in five villages; (2) constructing and equipping of a storage facility for recyclables; and (3) purchasing of waste collection vehicles.
- Construction of an additional cell at the Bar Elias (Bekaa) sanitary landfill (86,000 m<sup>3</sup>).
- Cost-sharing the construction of a sanitary landfill in Deir El Ahmar (Baalbek) with funding from KfW through the Lebanon Host-Community Project.
- Technical studies for closure/rehabilitation of the Hezzerta dumpsite (Bekaa).
- In addition to supporting the LCRP in SWM coordination, as well as developing an environmental training programme for the Lebanese municipalities.

Bar Elias Sanitary Landfill



North Baalbek Sanitary Landfill



Storage Facility for Recyclables in Qaraoun



ISWM Training in Tripoli



Photo 2: ISWM Response to Syria Crisis

### 2.2.3 Solid Waste Management for Host-Communities

The Japan SWM for host-communities was launched in March 2018 and will end in June 2021 (total budget of US\$ 1.79 million). This project's main objective is to strengthen the social stability of the host and displaced community in the North Baalbek, by protecting public health and improving environmental protection through the implementation of the integrated waste management solution.

The specific objectives are to: (1) construct a material recovery facility (MRF) in Deir Al Ahmar (Baalbek) to complement the landfill constructed as part of the ISWM response to the Syria crisis project, financed by the Netherlands; (2) carry out an awareness campaign in 14 targeted villages in coordination with a local NGO in order to ensure the participation of a wide range of local populations; and (3) identify ISWM gaps in the studied area, and provide bins and trucks as needed to ensure a better collection system.

To date, the design and launch of the bid for the construction of the MRF in Deir El Ahmar have been completed. In addition, the awareness raising campaign on sorting at source in the 14 targeted villages was carried out in coordination with a local NGO (LOST). The project is currently working on the procurement process of the needed equipment.

### 2.2.4 Promoting Waste Management Practices and 3R

The Japan Promoting Waste Management Practices and 3R (circular economy) was launched in March 2018 and will end in March 2021 (total budget of US\$ 1.8 million), with the objective of strengthening national and communities' capacity to move toward circular economy for social stabilisation by improving plastics recycling and curbing plastic waste.

The project is expected to achieve the following results:

- Initiation of the financial and economic assessment for the plastic sector in Lebanon.
- Pre-identification of potential beneficiaries in the private sector for upgrading recycling systems in Lebanon.
- Support for two NGOs in upgrading recycling systems:
  - Recycle Lebanon that will be developing a platform that tackles interconnected social and environmental sectors including water, solid waste, energy and land management.
  - Live Love Lebanon that will be working on the development of a mobile application (Live Love Recycle version 2.0) to enhance the waste collection system and link between stakeholders.

Under the second expected result, the project will upgrade the existing recycling systems in two industries in order to increase the uptake of plastic recyclable. This activity will include installation of a new sorting or reprocessing technology at a pilot level. The selection process for the industries is currently ongoing in coordination with the sector stakeholders (MoE, Association of Lebanese Industrialists, and others) and based on the following criteria: status of the sorting facility, number of beneficiaries and impact on circular economy.

### 2.2.5 Response to Emergencies: COVID-19 Pandemic and Beirut Port Explosion

In response to the COVID-19 pandemic, an intervention related to the upgrading of the Abbassiyeh (South) medical waste facility's capacity, through procuring an additional autoclave and other related equipment (shredder, boiler, washer, etc.), has been initiated, in addition to repairing/rehabilitating the existing autoclave. This initiative is expected to be completed in 2021.

Another intervention related to the COVID-19 pandemic was undertaken with Arcenciel, a local NGO with almost two decades of experience in infectious waste treatment in Lebanon. The initiative included a brief assessment of Arcenciel health care waste treatment facilities, based on which transportation equipment, that would ensure the safe transport of infectious waste to the Arcenciel facilities, has been provided, in addition to the supply of personal protective equipment for workers and the upgrade of the facility in Saida (in terms of cold storage capacity).

On the other hand, the response to the Beirut Port explosion project, which was initiated in August 2020 after the catastrophic blast, is ongoing and has the following objectives:

- Provide personal protective equipment (PPE) and other needed material to undertake the needed engineering assessment and to support future responses.
- Support the design of an environmentally sound and cost-effective construction and demolition waste (CDW) management plan for outside the Port of Beirut by identifying and quantifying the debris wastes – knowing that based on past experience, the volume of such waste is expected to increase over time due to CDW during recovery and reconstruction activities.
- Assist in rubble removal and CDW waste sorting and treatment in an environmentally-sound manner.

The surveying exercise was led and executed by the Frontline Engineers, a group of engineers who volunteered to undertake technical assessments, with support from UNDP and EU experts (Photo 3). To date, the assessment report has been completed and published<sup>5</sup> and support provided to the municipality of Beirut in removing debris from the streets. The project will continue to provide support in assessing the potential end use of CDW, if sorted and treated, including the potential for recycling and/or for the rehabilitation of an abandoned quarry site.



Photo 3: Construction and Demolition Waste Survey Conducted After the Beirut Port Blast

**2.2.6 Environmental Rehabilitation through the Enhancement of Integrated Waste Management (EROI)**

Building on the support already provided by other funding partners to the Zahle (Bekaa) MSW facility that is of high operational capacity, the Environmental Rehabilitation through the Enhancement of Integrated Waste Management (EROI) project, funded by the Italian Agency for Cooperation Development (AICS), aims to complement this assistance by upgrading the leachate management system at the facility. In addition, the project aims at improving the overall management of the facility by providing technical assistance where needed. The project will also work at closing a waste dumpsite in the region to reduce the negative environmental impacts of unsanitary waste management practices. The project was initiated at the end of 2020 and is expected to be completed by April 2022 (total budget of €1.5 million).

5- Demolition Waste Assessment : Demolition Waste Assessment Outside the Port of Beirut | UNDP in Lebanon

### 2.3 Lebanon Environmental Pollution Abatement Project (LEPAP)

The industrial sector in Lebanon represents 10 percent of the Gross Domestic Product (GDP) in 2019<sup>6</sup> and contributes to global and local pollution (air, water, land and ecosystem pollution, greenhouse gas, etc.). To respond to the environmental challenge caused by this sector, the first phase of the Lebanon Environmental Pollution Abatement Project (LEPAP) was launched in 2014, became effective in January 2016 and will last till 2021.

LEPAP is a joint initiative between the MoE, the Ministry of Finance (MoF), Banque du Liban (BdL), the World Bank and the Italian Agency for Cooperation Development (AICS) to set up a mechanism for financing the abatement of industrial pollution in targeted industrial enterprises and to provide the necessary technical assistance for ensuring the implementation and the sustainability of these interventions. LEPAP seeks to pursue a sequenced approach by targeting priority areas and helping individual industries achieve environmental compliance. The project complements the Government strategy to reduce air, water and soil pollution, and is consistent with the 2011 World Bank Corporate Environment Strategy for the Middle East and North Africa on diving deeper into country priorities and enhancing attention to cross-cutting issues.

The LEPAP envelope amounted to US\$ 15 million for the soft loan provided by the World Bank and € 2.3 million for project administration and technical assistance provided by the AICS and executed by UNDP. By the end of 2020, the US\$ 15 million were over-subscribed and more than 10 enterprises have benefited from the soft loans (eight have been completed with a US\$ 11.4 million disbursement (Photo 4) and three are under way with a US\$ 3.5 million commitment), with more enterprises waiting to obtain soft loans from the planned second phase additional funding. These loans correspond to the priority sectors defined by the Sustainable Consumption and Production (SCP) Action Plan supported by LEPAP.

Since its inception, LEPAP has also delivered extensive support to MoE in terms of capacity building and development of the legal and technical enabling environment related to environmental compliance of industries.

On the legal front, in addition to the technical assistance in the development and adoption of application decisions to the Decree 8471/2012 (MoE Decisions 202/1 and 203/1 of 2012 and Decision 189/1 of 2016), LEPAP contributed towards the preparation of the draft decree pertaining to Article 20 of Law 444/2002 on incentives in terms of tax holidays for environmental activities (Decree 167/2017).

On the technical assistance front, the Project supported the MoE, the banking sector and the industrial sector represented by the Association of Lebanese Industrialists in the following areas:

- Assist in the establishment of a joint MoE-Mol industrial database.
- Assess the environmental status of several industrial sub-sectors including paper and cardboard, food, glass and paints industries, as well as the private generators and reciprocating engines sector, and develop ten sector specific draft environmental guidelines.
- Support the update of the air emissions environmental limit values and draft the corresponding ministerial decision.
- Assess the industrial pollution mitigation needs (EIAs, Environmental Audits, and Compliance Action Plans), cost-effective options and monitoring as a precondition to subscribe to LEPAP soft loans covering the following areas: air emissions, effluent discharges and industrial waste generation towards compliance with national environmental standards in a cost-effective manner as well as pollution prevention, resource recovery, clean technology adoption, fuel substitution, waste minimisation, or end-of-pipe environmental control where no other alternatives are available.
- Support a good communication between the industries and the MoE by providing technical advice to specific industrial cases, as well as inspecting in follow up to complaints.

LEPAP represents a crucial step for the reduction of industrial pollution in Lebanon. It involves the financial sector in pollution abatement and contributes to the improvement of the population well-being affected by industrial air, water and land pollution. A second phase with an envelope of US\$ 50 million is expected to start in 2022 and last till 2024.

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6- CAS website: <[http://cas.gov.lb/images/PDFs/National%20Accounts/GDP\\_2019Q4.pdf](http://cas.gov.lb/images/PDFs/National%20Accounts/GDP_2019Q4.pdf)>

Sicomo Wastewater Plant



Liban Lait Wastewater and Nutrient Recycling Plant



Chateau Ksara Wastewater Plant



Kassatly Chtaura Wastewater Plant



Cimenterie Libanaise Bag Filter



Ciment de Sibline Petcoke Cover



Photo 4: LEPAP Selected Achievements 2016 - 2020

### 3. INTERNATIONAL CONVENTIONS

To be able to respond to global environmental challenges, Lebanon has ratified most Multilateral Environmental Agreements (MEAs) and has benefited from international support and funding to address priority response those challenges on a national level. UNDP has since supported MoE in responding to Lebanon's commitments under these agreements.

This support role was activated following the Rio Conference on Sustainable Development in 1992 and the conventions that resulted from it, especially the United Nations Convention on Biological Diversity (UNCBD), the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention to Combat Desertification (UNCCD). Other important conventions, including their protocols, were also ratified by Lebanon after the Rio Conference, and confirmed Lebanon's involvement to join international efforts for environmental protection.

In addition to Climate Change (Section 4), the cooperation between MoE and UNDP has specially focused on the implementation of Lebanon's obligations to the following environmental conventions and their related protocols:

- Vienna Convention for the Protection of the Ozone Layer (and its Montreal protocol);
- UNCCD; and
- UNCBD.

#### 3.1 Response to the Vienna Convention for the Protection of the Ozone Layer

The Vienna Convention and its Montreal Protocol for the Protection of the Ozone Layer were among the first global environmental conventions ratified by the Lebanese Government in 1993 which committed Lebanon to the complete phase-out of the Ozone Depleting Substances (ODS)<sup>7</sup>, based on a Country Programme and a National Strategy for the phase-out of ODS. Lebanon also ratified the Kigali Amendment, which aims at gradually reducing the consumption and production of Hydrofluorocarbons (HFCs) (Box 4). To that end, Lebanon is receiving financial assistance from the Multilateral Fund of the Montreal Protocol, in coordination with UNDP as the implementing agency.

MoE and UNDP established the Project National Ozone Unit (NOU) at the MoE in 1998. This project unit is responsible for coordinating, monitoring, and implementing Montreal activities. It assists MoE in the effective and efficient phase out of ODS, the adoption of policies and regulations, monitoring procedures, and overseeing the programmes and projects specified in the country programme for the GoL to meet its commitments under the Montreal Protocol (Figure 4).

Over the past years, the Project NOU sustained its efforts to help MoE complying with the Montreal Protocol obligations and control measures (ODS data reporting and reduction schedules, and ratification of Montreal Protocol Amendments).

To achieve 2013 and 2015 targets for HCFC phase-out, the Multilateral Fund Executive committee launched from 2011 to 2017 the first phase of the "HCFC Phase Out Management Plan" (Box 4). Its goals included ensuring investments in technology transfer, introducing effective policies and regulations as well as providing technical assistance, training, awareness (Photo 5), coordination, and monitoring in the foam, air conditioning and refrigeration sectors.

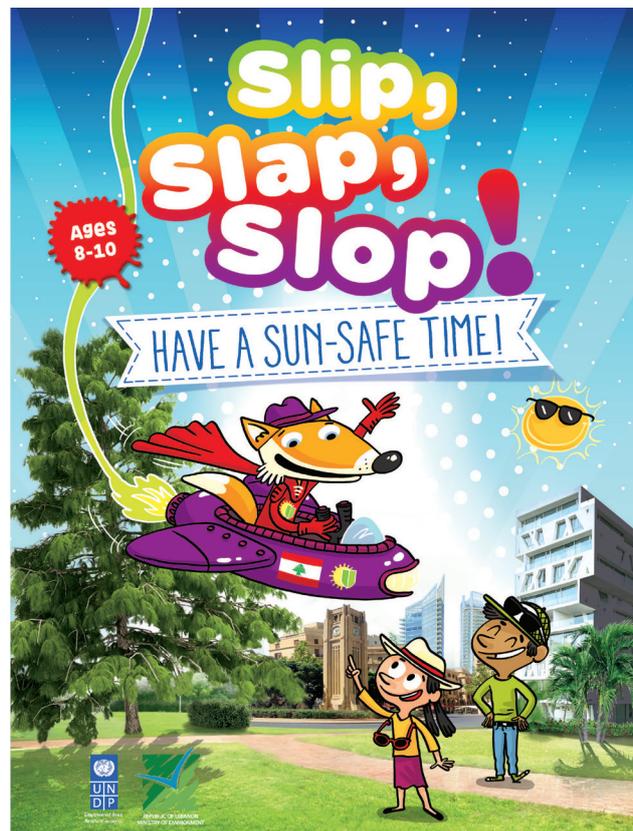


Photo 5: Sun Safe Guide Activity Book

7- ODS include: Chlorofluorocarbons (CFC), Hydrochlorofluorocarbons (HCFC), Halons, Methyl Bromide and others

## GEOGRAPHICAL DISTRIBUTION OF

# ODS CONVERTED INDUSTRIES

FUNDED BY THE MULTILATERAL FUND OF THE MONTREAL PROTOCOL  
IN LEBANON

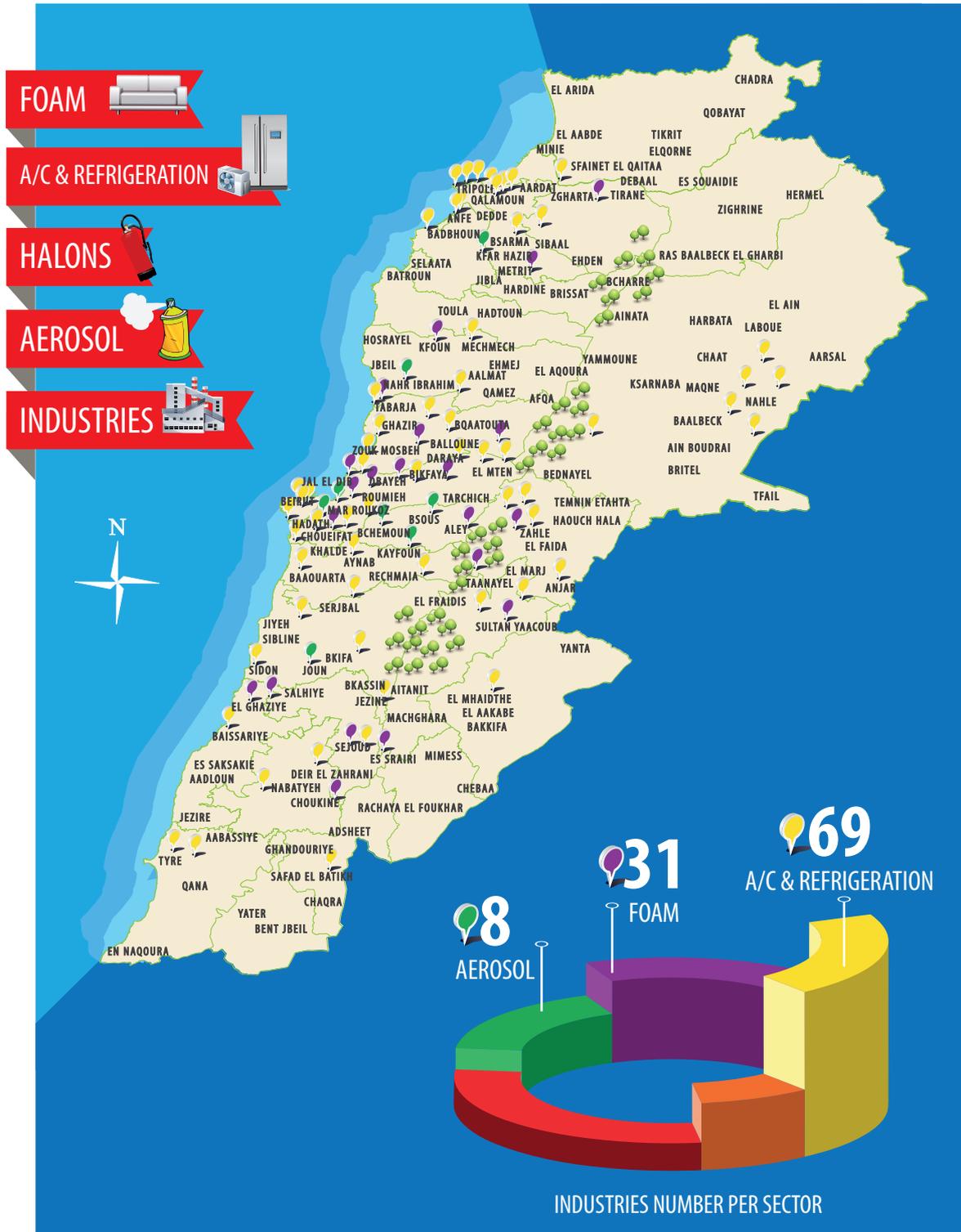


Figure 4: Geographical Distribution of ODS Converted Industries and ODS Workshops

*Box 4: Why Is It Important to Phase Out HCFCs and HFCs?*

Hydrochlorofluorocarbons (HCFCs) have proven to be aggravating factors of global warming and ozone layer depletion and could represent 20 percent of global greenhouse gas emissions in 2050 worldwide. HCFCs are used in Lebanon in various industry sectors, such as HCFC-22 mainly used in the Refrigeration and Air Conditioning Sectors and HCFC-141b used in the foam sector. HCFC consumption in Lebanon increased from 413 metric tons in 2008 to 941 metric tons in 2014, indicating an average annual growth rate of about 15%. The main reason for this growth is the sustained economic development and resulting increase in demand for consumer, commercial and industrial products that use HCFCs. Lebanon is a big consumer of air conditioners; thus it is important to phase out the use of these gases.

Hydrofluorocarbons (HFCs) were initially adopted to replace the more potent chlorofluorocarbons (CFCs) which, in 2010, were phased out from use by the Montreal protocol, and hydrochlorofluorocarbons (HCFCs) that are presently being phased out. HFCs are also used in air-conditioning and refrigeration as well as insulating foams, aerosol propellants, solvents and for fire protection. They do not harm the ozone layer as the compounds they replace, but they do contribute to global warming, with thousands of times the warming potential of carbon dioxide. Their atmospheric concentrations and contribution to anthropogenic greenhouse gas emissions are rapidly increasing, causing international concern about their radiative forcing.

After the successful implementation of Phase I, the Phase II of the “HCFC Phase Out Management Plan” Project was initiated in 2015 and is due to fully end in 2027. Focusing on three main focal areas, it will continue the progress of the first phase and aims to reach a 50 percent reduction of HCFCs in 2020 (Figure 5). These areas include:

- Phasing out the residual HCFC consumption in the manufacturing sectors (which could not be addressed in Stage I), through investments, regulations and technical assistance.
- Reducing HCFC consumption in the Servicing Sector with necessary supporting actions in terms of investments, policy, regulations, technical assistance, training, capacity-building and awareness.
- Sustaining the monitoring and enforcement of regulations issued during Stage I.

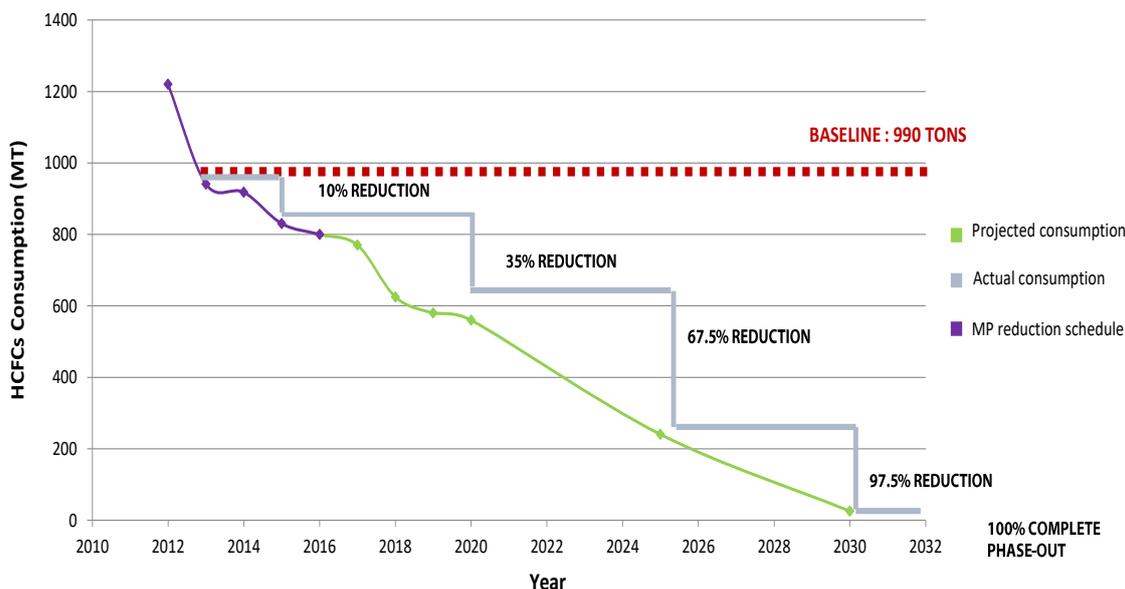


Figure 5: HCFCs Reduction Goals

In addition to the technical and financial support that will be provided to the industries, the project provided technical support to over 500 technical workshops, 11 vocational schools and 1,000 - 1,500 technicians in the refrigeration and air conditioning (RAC) servicing sector through the following indicative actions (Photo 6):

- Equipment support to servicing workshops (400 - 500 workshops) and vocational schools (two schools).
- Training on good servicing practices, particularly on recovery and reclamation programmes with training of trainers' programme and training on good practices addressed to service technicians.
- Equipment support to service technicians (100 - 200 technicians).
- Production of training manuals to service technicians (1,000 copies), containing all applications of non-ODS refrigerants for the RAC sector in general and focusing on theoretical and practical applications and training on ODS alternatives.

Refrigeration and Air-Conditioning Technicians Guidebook



Sandwich Panels



Foam (Sandwich Panel) Manufacturing Plant



RAC Center at Dekwaneh Vocational School



RAC Center at Dekwaneh Vocational School



Photo 6: Technical and Capacity Building Support Provided to Technical Vocational Schools

The NOU project prepared the strategy for the phasing out of the remaining HCFCs consumptions in all sectors as well as a plan of activities to address the RAC sector, noting that the first and second milestones activities related to the foam and air-conditioning enterprises have been completed.

### 3.1.1 Institutional Strengthening Project for the Implementation of Montreal Protocol in Lebanon (Phase XI)

The latest phase of the Institutional Strengthening project for the Implementation of Montreal Protocol in Lebanon (Phase XI) was launched in October 2019 and will end in September 2021 (total budget of US\$ 0.2 million). It is expected to support meeting the obligations of Montreal Protocol through: (1) the reduction of the HCFCs consumption and importation in the country (Projected reduction of 55% by 2021); (2) the implementation of the HCFCs phase-out management plan during the period 2016-2025, including conversion of manufacturing industries (foam and air-conditioning sectors) to non-ODS technologies; (3) enforcement of legislation; (4) development of capacities of the technical sectors; and (5) building awareness on ozone depletion.

By the end of 2020, Lebanon was committed for compliance with the Montreal Protocol targets related to the consumption and imports of HCFCs used in the foam and air-conditioning sector.

### 3.1.2 The Phase-Out Management Plan of HCFCs Stage-II for Post 2015 Targets

The Montreal Protocol Phase-out Management Plan of HCFCs Stage-II for post 2015 targets was launched in October 2016 and will end in December 2025 (total budget of US\$ 4.2 million). Its objective is to reduce the HCFC consumption by 75 percent of the baseline by 2025.

By the end of 2020, the project resulted in the phase-out of approximately 400 metric tons of HCFCs (HCFC-22 in the air-conditioning and HCFC-141b in the foam sandwich panels manufacturing sectors - 13 industries). This project represents a pivotal step for the reduction of the consumption and imports of HCFCs used in the manufacturing sectors towards the use of Ozone-friendly alternatives and low Global Warming Potential (GWP) alternatives which will lead to the compliance of Lebanon with the national plan for the total phase-out of HCFCs in 2030 as well as with the Montreal Protocol targets.

Moreover, those conversions will lead to the following:

- Reduction in the production cost of the finished products.
- Increase of the production capacity of those industries.
- Compatibility with the international markets (exports to international markets, competence with international products and possibility for International Organisation for Standardisation (ISO) and Chartered Engineers (CE) certification).
- Creation of jobs.

### 3.1.3 Early Ratification of Kigali

The early ratification of Kigali to the Montreal Protocol for the Phase-down of HFCs was launched in April 2019 and will end in April 2021 (total budget of US\$ 0.15 million), and is expected to implement the following activities:

- Enable the legal framework for the ratification and implementation.
- Facilitate the coordination mechanism among stakeholders.
- Establish the licensing systems for HFCs import/export.
- Prepare a national action plan for Kigali implementation.
- Raise awareness and build capacities.

The Government of Lebanon ratified the Kigali amendments in 2019 and accordingly became eligible to receive funds for the phase-down of HFCs starting 2021 (Law 119/2019). The National Action Plan for Kigali implementation has been prepared; according to this action plan, all relevant industries in Lebanon will be converted to Non-HFCs using environmentally friendly alternatives, which have a zero-ozone depletion potential and low global warming potential (GWP) which will lead to the compliance of the GoL with both the Montreal Protocol and the UNFCCC.

This project met the 2020 targets through update of the ODS alternatives used in the different sectors as well as data collection of HFCs used in these sectors, critical for developing the HFC phase-down national strategy.

### 3.1.4 Energy Efficiency Interventions (K-CEP Windows 1&2 and Global Component)

The Energy Efficiency Interventions project was launched in April 2019 and will end in April 2021 (total budget of US\$ 0.4 million), with the objective of enhancing energy efficiency of appliances and equipment to achieve additional GHGs mitigation, while also delivering additional sustainable development co-benefits such as air quality, improved public health, improved energy access and energy security.

The project is expected to achieve the following results: (1) national refrigeration and air-conditioning equipment survey assessment; (2) development of the National Cooling Plan of Lebanon (NCPL); and (3) development of the minimum energy performance standards, labelling systems and testing procedures/protocols for the refrigeration and air-conditioning equipment (domestic refrigerators and split unitary air-conditioning systems).

This project's main deliverable in 2020 was the development of the NCPL report (Photo 7). This report has put in place the measures for the pathway to low GWP and energy efficient refrigeration and air conditioning appliances in Lebanon, which will include the transition to low GWP refrigerants, improvement of energy efficiency of RAC systems and appliances as well transformation of the necessary respective policy frameworks. This will support Lebanon in working towards the international conventions targets (Montreal Protocol and UNFCCC), through development of guidelines and policies for the import of energy efficient equipment, which will reduce the electricity bill.

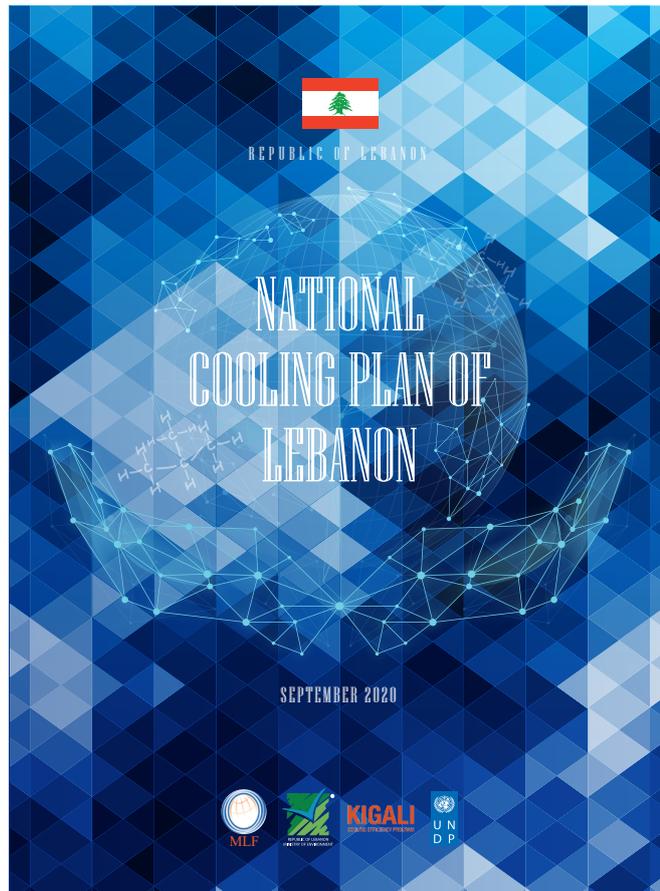


Photo 7: Cover Page of the NCPL Report

## 3.2 Response to the United Nations Convention to Combat Desertification

Lebanon is a party to the UNCCD which is the sole legally binding international agreement linking environment and development to sustainable land management. The Convention addresses specifically the arid, semi-arid and dry sub-humid areas, known as the drylands, where some of the most vulnerable ecosystems and people can be found. The Sustainable Land Management in the Qaraoun Catchment project (SLMQ) is an ongoing project that is complemented by a Land Degradation Neutrality of Mountain Landscapes in Lebanon project (LDN) that falls under the breadth of the Convention.

### 3.2.1 Sustainable Land Management in the Qaraoun Catchment Project (SLMQ)

The Sustainable Land Management in the Qaraoun Catchment project (SLMQ) kick-started in 2016 and was extended till 2021 (US\$ 3.49 million). It is funded by the GEF and implemented by UNDP in partnership with the MoE. The project sets a goal of sustainable land use for the Qaraoun Catchment by developing institutional tools upstream, providing central authorities as well as the Bekaa Governorate, District Administrations and Municipalities with the know-how, means and mechanisms for promoting sustainable land use as in the best interest of the landowners, farmers, and communities (Box 5). At the site-specific level, forests, rangelands, and arable lands that are currently weakly managed will benefit from comprehensive management plans that will provide information and education as well as livelihoods opportunities and financial security. Furthermore, land-use plans at the landscape level will benefit from the project through the identification of land productivity values and ecosystem services and how they can be managed and protected. Also, an information monitoring system will be established to centralise data, maintain it and serve for the identification of worrying trends before they become irreversible.

*Box 5: Why Is the Qaraoun Catchment Important?*

The Qaraoun Catchment lies within the Bekaa Valley and is characterised as Lebanon's agriculture heartland running between Mount Lebanon and the Anti-Lebanon mountain ranges. The catchment spans parts of four districts - Baalbek, Zahle, West Bekaa and Rachaya - and feeds Lebanon's largest and longest river, the Litani, up to where it discharges into the human-made Qaraoun Lake. The Litani River and Qaraoun Lake are the most important sources of fresh water in Lebanon with 350,000 people in 161 communities being dependent on the surface and groundwater resources of the river basin for drinking water, food and industrial production and urban use. Despite its importance, the catchment suffers from accelerating land degradation, which is undermining ecosystem functions and affecting the welfare and livelihoods of rural people who are dependent upon these services. Land degradation is attributable to historic deforestation, excessive firewood collection, overgrazing, expansion of urban settlements, inappropriate infrastructure placement and loss of agricultural fields to competing land uses.

The project has developed a strong scientific foundation for the implementation of on-the-ground interventions. Three major assessments have been undertaken: land degradation assessment, ecological assessment and socio-economic assessment targeting the agricultural, forestry and livestock sectors, examining potential adjacent growth opportunities and identifying natural products, such as: keshek (dried yogurt) - a high value dairy product, soap, honey, grape molasses, dried fruits, nuts and rural tourism (Photos 8 & 9). These business opportunities were taken forward by the project through small grants or through the rehabilitation works to boost socio-economic conditions in the target areas while optimising the use of natural resources.



*Photo 8: SLMQ - Beneficiaries of Rangeland Management Activity. Photo Credit: Dr. Elsa Sattout*



*Photo 9: SLMQ - Honey and Goat Milk Soap Produced by Trained Beneficiaries*

Furthermore, innovation is a strength of the project. Not only is SLM a relatively new concept in Lebanon, but the project has actively sought new approaches for project implementation. An example of the innovation shown by the project is the design and construction of a new imprinter with seeder for rangeland restoration as well as the use of the World Overview of Conservation Approaches and Technologies (WOCAT) methodology in assessing land degradation, using a combination of satellite imagery and field validation.

On that front, rehabilitation activities undertaken by the project on forests and rangelands are underway: reforestation has been completed (114 ha of direct implementation) based on the results of the land degradation assessment using local species and mixes identified through a rigorous sampling methodology. Rehabilitation of rangelands has been initiated with a goal of 465 ha including most importantly the identification of rangeland species and locality mixes, the installation and operationalisation of a seed propagation unit at the Lebanese Agricultural Research Institute (LARI) - Tal Amara (Bekaa), and the identification of public lands suitable for imprinting works (seeded or left to natural regeneration after improving their water retention capacity).

The rehabilitation of agricultural lands has also been initiated and concept designed in a way to build on the results of the socio-economic assessment, which highlighted several agro-related business opportunities for the districts of Zahle, West Bekaa, and Rachaya - of relevance in this case the production of grape molasses, dried fruits, and aromatic and medicinal plants. Accordingly, clusters of abandoned agricultural terraces were surveyed and assessed for rehabilitation using old cultivars of grapes (Merwah and Obeidi). Additionally, the project is intercropping these varieties with *Rosa damascena* and *Origanum syriacum*, a SLM technology promoted by the Project.

In parallel with the rehabilitation works on forests, rangelands, and agricultural lands, the project has finalised both forest and rangeland management guidelines and has implemented and planned a series of training of trainers allowing MoE and MoA officials, as well as experts to use the guidelines. The project is also working very closely with the MoA to embed these in the existing legal regulatory mechanisms. In parallel, the project is actively working on developing forest management plans (covering 765 ha) and rangeland management plans (covering 1,755 ha) by testing and validating the participatory approach used and the user-friendliness of the guidelines.

The project continues to mainstream SLM in new regulations and legislation namely in the Forest Law and is developing rangeland management legal elements to be incorporated in the said Law to be submitted to the Council of Ministers for endorsement in a first stage. Furthermore, the project is working on creating the enabling environment for two cornerstone thematic areas: (a) the local production of fodder; and (b) the local production of biopesticides and simplification of registration for imported biopesticides. Both activities have the double benefit of reducing pressures on rangelands and reducing costs on herders and farmers.

In view of reducing pressures on ecosystems, the project proposed a Strategic Masterplan for the Bekaa Governorate (Figure 6) and has finalised its Strategic Environmental Assessment (required as per provisions of Decree 8213/2012 for masterplans). The masterplan is undergoing a final round of validation by the administrations before making its way to the relevant planning authorities for endorsement. Detailed Urban Plans for 68 localities have been developed but will only be submitted for review once the masterplan is endorsed allowing informed decision-making by the authorities. Furthermore, the project set the foundation for the monitoring of planning and its impacts through the set-up of a Land Use Information Management System baptised Sustainable Planning Information Management System (currently under development) to be operated through a committee from the relevant administrations created to facilitate coordination and synergies in planning and sustainability matters.

The implementation of this project has an immediate global environmental benefit, albeit on a small scale, through the increased management efficiency of arable land and rangelands and the expansion of the area under forests through land use plans, buffer zones, and riparian strips. This will lead to the restoration of natural productivity and conservation of the habitats of a number of plant and animal species and valuable ecosystems and will secure migratory bird pathways. As a result, globally significant biodiversity will be conserved, and valuable ecosystem services will be safeguarded.

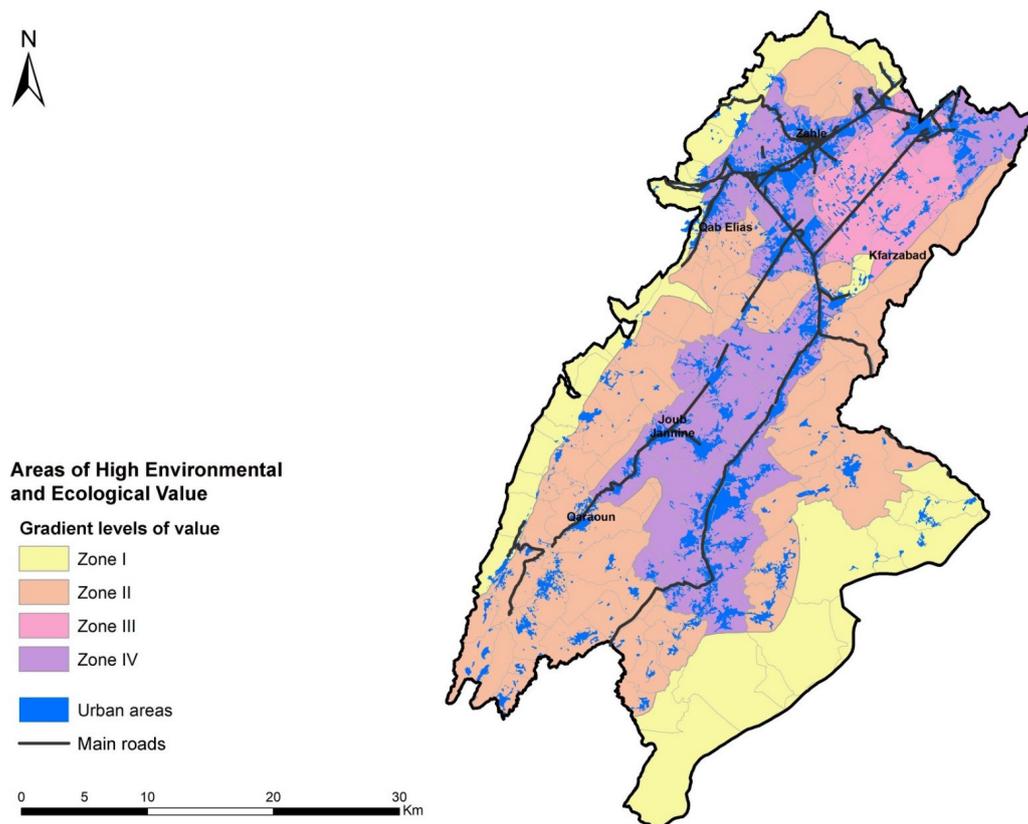


Figure 6: Proposed Strategic Masterplan for the Bekaa Governorate (reflecting the gradient approach adopted for the protection and valorisation of the character, identity and economic role of the defined zones (Zone I being of highest environmental vulnerability and highest ecological importance))

### 3.2.2 Land Degradation Neutrality of Mountain Landscapes in Lebanon (LDN)

Through integrated landscape management, the Land Degradation Neutrality of Mountain Landscapes in Lebanon project (LDN) was initiated in March 2020 with a completion date set for May 2024 (US\$ 4.74 million). LDN is funded by GEF and executed by UNDP in partnership with the MoE. The project seeks to reach land degradation neutrality in mountain lands by rehabilitating degraded land and preventing further degradation. LDN is defined by the UNCCD as “a state whereby the amount and quality of land resources necessary to support ecosystem functions and services and enhance food security remain stable or increase within specified temporal and spatial scales and ecosystems” - an optimal mix of measures designed to avoid, reduce and/or reverse land degradation in order to achieve a state of no net loss of healthy and productive land. At its core are better land management practices and better land use planning.

The project has started identifying the major threats to mountain areas in two specific pilot locations in Akkar and Jbeil. The project will seek technical and institutional remedies to be applied at a pilot scale in these regions to test proposed land degradation neutrality approaches that can be up scaled in the future.

Activities will include the rehabilitation and restoration of degraded land such as forests or natural areas damaged by development activities such as quarrying, the promotion of responsible tourism, sustainable agriculture and grazing and improved local level planning that takes land protection concepts into consideration. The project will also support at the institutional level by providing technical tools and pushing for policies that protect mountain areas at the national level.

### 3.3 Response to the United Nations Convention on Biological Diversity

Due to its geographic position, its mountainous topography, and the diversity in its climate conditions, Lebanon possesses a unique and rich biodiversity. Although Lebanon is a small country compared to its neighbours, the country has one of the highest densities of floral diversity in the Mediterranean basin. Lebanon occupies only 0.007 percent of the world’s land surface area and is home to 1.11 percent of the world’s plant species and 2.63 percent of reptile, bird and mammal species. Its sea is home to about 1,790 species, representing almost 2.7 percent of the world’s marine species. This fragile ecosystem requires that actions are taken to address the extensive threats to biodiversity across the country.

Conscious of these threats, Lebanon ratified the UNCBD in 1995 as well as the additional protocols attached to the convention. Accordingly, it received international funding to address priority responses to the threats facing Lebanon’s natural heritage, especially from the GEF. Many projects were implemented to protect the wildlife (sea turtles, migratory soaring birds, etc.) and its environment.

As required by the article 6a of the Convention, UNDP supported MoE through GEF funding to prepare the third National Biodiversity and Action Plan (NBSAP) in 2016, adopted by the CoM in 2018. National targets and thirteen priority areas have been identified, as illustrated in Figure 7.



Figure 7: NBSAP Thirteen Priority Areas

There are 18 national targets and 91 national actions that the country must reach by 2030. These targets give goals to achieve in terms of protection of species and knowledge of the vulnerable ecosystems (mapping, data, national red list of plants species, etc.). The goal is also to allow Lebanon’s ecological footprint and biocapacity to reach an equal state. Administratively, the NBSAP must ensure the legal protection of the biodiversity with the implementation of the Cartagena Protocol on Biosafety and the strengthening of legal instruments related to biodiversity. Moreover, significant efforts have been devoted to raise public awareness and capacity building on biodiversity issues through campaigns organised by UNDP, MoE, MoA, universities, and NGOs.

**4. MAINSTREAMING CLIMATE CHANGE**

Climate Change is one of the greatest environmental challenges facing the world today. Rising global temperatures bring changes in weather patterns, sea levels are rising, and extreme intensity climatic events happen regularly. Developing countries are the most vulnerable to these effects as they are less able to adapt to the negative impacts of global warming.

In December 1994, Lebanon ratified the UNFCCC and has since been involved in diverse activities aimed at spreading climate change awareness in the country; reducing national greenhouse gas (GHG) emissions; developing measures to reduce adverse impacts on environmental, economic and social systems; building institutional capacity; and mainstreaming climate change into the different policies. UNDP has since been a key partner to the MoE in undertaking these activities through the multiple Climate Change projects.

MoE and UNDP have adopted a participatory approach for mainstreaming climate change in key economic sectors (such as agriculture, water, energy, transport, gender and private sector), through several projects, including reporting to the UNFCCC, the implementation of Lebanon’s climate commitment under the Paris Agreement, as well as the Nationally Determined Contribution (NDC).

These projects support increasing policy coherence, minimising duplications and non-aligned policies and capturing opportunities for sectoral development by introducing a proper governance regime in Lebanon that would lead to the development of low emission climate resilient strategies. To this end, coordination mechanisms involving strategic planning, effective communication and appropriate financial mechanisms are strengthened and governmental institutions are engaged in planning and implementing effective national adaptation activities. Additionally, the Climate Change projects provided support to shape Lebanon’s position under the UNFCCC

negotiations, including its role in leading the negotiations. As a regional climate leader, and with the support of UNDP, Lebanon hosted the 21<sup>st</sup> meeting of the Cartagena Dialogue for Progressive Action in 2017 with over 60 participants from around 40 countries. The aim was to discuss the negotiating agenda of the Conference of the Parties (COP) 23 which was to be held in Bonn, Germany. Moreover, the MoE hosted the GIZ-organised 8<sup>th</sup> Annual Partnership Retreat of the Partnership on Transparency in the Paris Agreement to discuss the transition between the old transparency system and the new one mandated by the Modalities, Procedures and Guidelines of the Katowice Climate Package agreed at COP 24. The retreat was held in 2019 and was attended by 54 climate transparency experts and negotiators from 24 developing and industrialised countries, as well as international organisations.

#### **4.1 Reporting to the United Nations Framework Convention on Climate Change**

Under its UNFCCC obligations, Lebanon is mandated to report the steps undertaken or envisaged to implement the provisions of the UNFCCC through National Communications and Biennial Update Reports (BUR). Those periodic reports include information related to the national GHG emissions and removals, mitigation action and options, vulnerability to climate change, adaptation options, climate finance received and needed, gaps and constraints in implementing the provisions of the Convention and any other relevant information the country wishes to communicate. The process is guided by UNFCCC decisions. To date, Lebanon released its Third National Communication (TNC) to the UNFCCC in 2016 (Figure 8) with funding from the GEF and comprised of an updated national GHG inventory, as well as mitigation, vulnerability and adaptation analysis and policy recommendations. Moreover, the TNC included the analysis of the economic impacts of climate change in Lebanon which was the first of its kind. The main findings of that assessment are that economic damage from climate change in Lebanon could reach more than US\$ 80 billion in 2040, if the world does not implement quick and serious measures to reduce GHG emissions. The Government of Lebanon will bear around US\$ 26 billion from this economic damage in 2040, according to the assumptions adopted in the study, whereas the Lebanese households will each bear around US\$ 60,000 in the same year.

Moreover with funding from the GEF, Lebanon's Second Biennial Update Report (BUR2) to the UNFCCC was submitted in October 2017 and prepared with the Enhanced Transparency Framework of the Paris Agreement in mind. It drafted a vision for efficient institutional arrangements and transparent reporting of emissions, mitigation, finance and Measuring, Reporting and Verifying (MRV) system to monitor the Agreement implementation era. Lebanon's Second BUR has been an opportunity to launch work on a national data repository for tracking emissions and progress on the implementation of the intended NDC, on the design of a climate finance reporting system, and on the establishment of standard procedures for preparation and communication of BURs.

Moreover, Lebanon was the 7<sup>th</sup> developing country to submit its Third Biennial Update Report (BUR3) in October 2019, which included an overview of its most recent inventory, list of mitigation actions undertaken to curb emissions, climate finance received, institutional arrangements and needs for improved reporting. Initiated in 2019, Lebanon's Fourth Biennial Report is expected to be submitted in 2021, and its Fourth National Communication to be submitted in 2022.

Throughout the reports, challenges were addressed by the Low-Emission Capacity Building (LECB) project (Section 4.2), through the improvement of cooperation between the Ministries of Environment, Industry, Finance and other stakeholders. Indeed, efforts have been made to engage the private sector and non-state actors in climate action. Lebanon's Parliament also ratified the "Access to Information" Law in February 2017 that prescribes that virtually all government entities publish online key documents showing performance indicators such as annual reports, orders and decisions, and office expenditures. The full enactment of the Law is pending the issuance of other legislative documents as the establishment of an anti-corruption commission to enforce the Law.

Nevertheless, the Law is a positive step towards improving transparency and public accountability, and work for climate change transparency will benefit from this initiative. The LECB project also liaised with the EU-funded ClimaSouth project to design and develop an online information system to facilitate the exchange of data between ministries. It was intended to track progress of implementation of Lebanon's Nationally Determined Contribution. The system targeted the energy sector as priority sector for the first phase to enhance data sharing between the MoE and MoEW and improve the preparation of the energy sector's GHG emission inventory and mitigation action reporting. The Management and Information System for Climate Action (MISCA) is designed to help MoE track its own progress and automatically calculate resulting CO<sub>2</sub> reductions. The MoE aimed at expanding the MISCA initiative to include other ministries such as the MoA and the Ministry of Public Works and Transport in the future, based on the experience and lessons-learned from the first phase. This would be an important move towards enhancing the effectiveness and transparency of Lebanon's MRV of data on climate action.

# LEBANON'S GREENHOUSE GAS INVENTORY FOR 2015



TOTAL NATIONAL EMISSIONS: 27 MILLION TONNES OF CO<sub>2</sub>eq.  
= 0.06% OF WORLD EMISSIONS

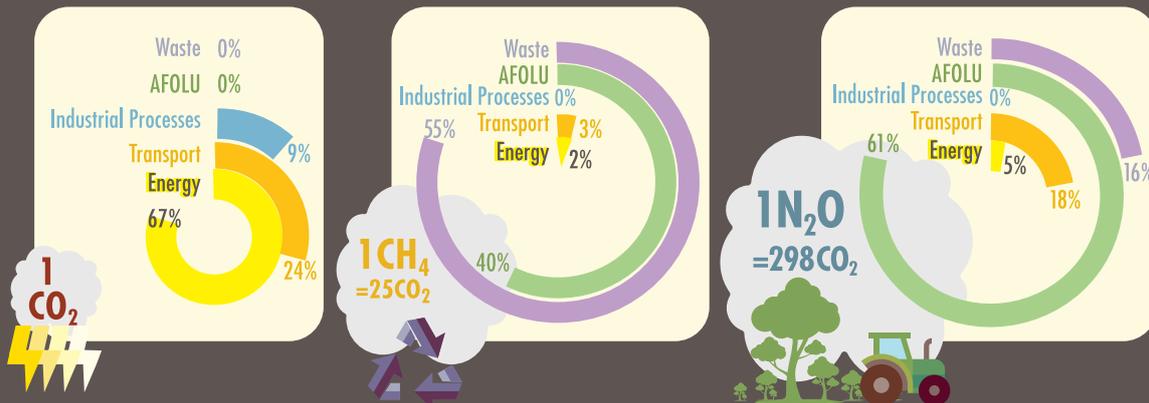


## The main contributors to greenhouse gas emissions

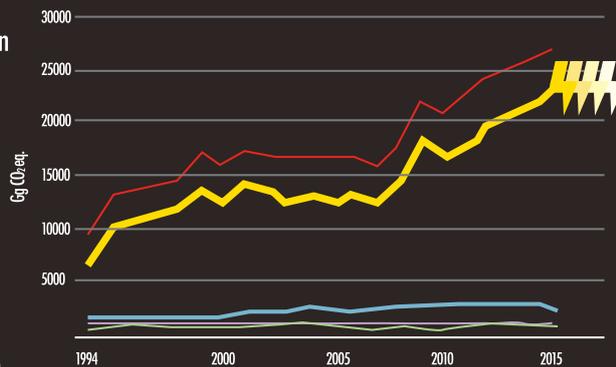
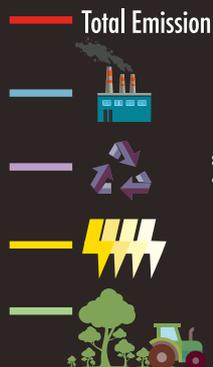


Lebanese forests absorb 3.3 million tonnes of CO<sub>2</sub>, bringing Lebanon's NET emissions down to 23.7 million tonnes CO<sub>2</sub>eq.

## There are 3 main greenhouse gases emitted in Lebanon, with varying warming impacts



Lebanon committed to reducing its emissions unconditionally by 15% by 2030 through policies on renewable energy, clean transportation, reforestation and waste management. This will not only benefit climate change but will also serve sustainable development and reduce air pollution.



GHG emissions increased by approximately 3-fold, with the energy sector being the main driver of this increase.

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Figure 8: Lebanon TNC, BUR2 and BUR3 to the UNFCCC

The MoE's Decision 99/1 of April 2013 allowed to establish an incentive targeting the private sector (commercial, institutional, and industrial enterprises) by helping them report their GHG emissions on a voluntary basis under the LECB project, as a quality assurance measure to the GHG inventory reporting.

With the 24<sup>th</sup> Conference of Parties' Katowice Climate Package came the Modalities, Procedures and Guidelines, which constitute the rulebook for climate reporting going forward. Lebanon's transparency framework, institutional arrangements and the MRV system needs have notably been improved through the LECB. The Modalities, Procedures and Guidelines call for a considerable improvement of parties' MRV system to reach a mechanism that ensures the periodic flow of needed information while ensuring the transparency, accuracy, completeness, consistency, and comparability in all its components, which currently represents a challenge for Lebanon. In order to further prepare for the Enhanced Transparency Framework, the Capacity-Building Initiative for Transparency (CBIT) project was submitted to the GEF to increase Lebanon's capacity in more accurate and transformative reporting. The project is expected to start in 2021.

The reporting projects have enabled other kinds of activities to mainstream climate change, as part of the Action for Climate Empowerment (ACE). The Lebanon Climate Act (LCA) is an initiative that has been launched in 2016 by the Green Mind NGO in cooperation with the UNDP LECB project, the BdL, the Federation of Chamber of Commerce, Industry and Agriculture and the MoE to engage the private sector and non-state actors in climate action.

A series of trainings labelled as Business Knowledge Platforms have been conducted in cooperation with the EU ClimaSouth project to support companies in determining their level of engagement, identifying potential partners from civil society and municipalities, and developing implementation, monitoring and reporting plan for their climate actions.

To date, around 100 companies and non-state actors have joined this initiative with different level of engagements. In 2017, 10 champion companies have been selected from the LCA members and rewarded for their engagement in a high-level ceremony organised in Beirut.

Finally, in order to raise awareness, the Climate Change Teacher's guide (Photo 10) was finalised and piloted in a few schools to mainstream climate change. The Guidebook has been developed to complement the existing academic curriculum and teaching subjects at primary, middle and secondary levels in Lebanese schools. It has been designed to meet diverse educational approaches, strategies and themes in order to guide teachers and educators in various disciplines.

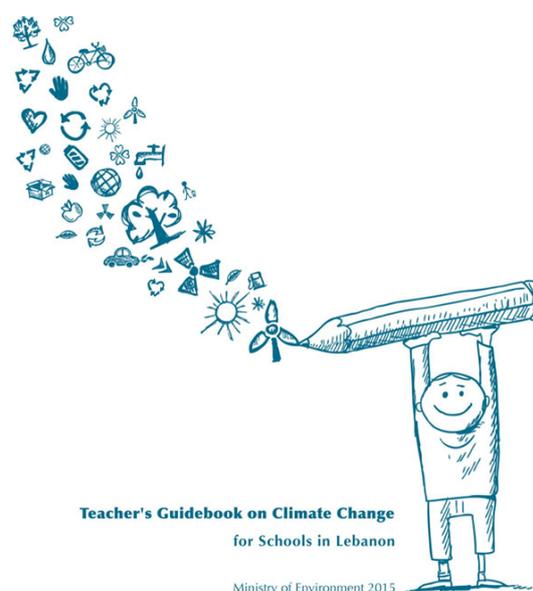


Photo 10: Climate Change Teacher Guide

#### 4.2 Lebanon's Low Emission Capacity Building Programme

Lebanon's Low Emission Capacity Building Programme (LECB) was initiated in 2013 and ended in 2017 (US\$ 1.1 million). LECB was executed by UNDP in partnership with MoE and with funding from the Australian Government, the EU and the Germany Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety. This project was instrumental in developing Lebanon's first NDC, ratifying the Paris Agreement and developing mitigation instruments to reduce GHG emissions.

The LECB project provided support to the MoE to develop the first NDC, in coordination with numerous ministries. To better follow up on the NDC implementation, the MoE has requested to be officially designated as the authority responsible for the follow-up of the NDC implementation, and to form an official NDC committee for implementation: the CoM (Decision 33/2017 of December 20, 2017) granted that request to the MoE in 2017.

Nationally Appropriate Mitigation Actions (NAMAs) are finance mobilisation tools for developing countries pertaining to climate mitigation. After several consultations and prioritisation exercises, the LECB project developed two NAMAs: The NAMAs in Lebanon's Private Road Transport Sector and the NAMAs in Lebanon's Municipal Solid Waste Sector. The transport NAMAs and the waste NAMAs project proposals have been endorsed by the CoM Decision No. 14/2017 of October 12, 2017. MRV systems for both the transport and waste NAMAs have been designed and completed.

Moreover, a tax exemption Law (Article 55 of Law 79) was passed in 2018 where Parliament legislated the reduction or removal of customs taxes on hybrid and electric vehicles: for private vehicles, customs and excise taxes are reduced by 80 percent for hybrid and 100 percent for electric vehicles; for taxis/service vehicles, the customs and excise taxes are reduced by 90 percent for hybrid and 100 percent for electric cars, in addition to a total exemption on registration and circulation fees. This legislation creates the necessary incentive to enable the system under the transport NAMAs.

The LECB project set out to address the barriers to renewable energy investments in Lebanon through The De-risking Renewable Energy Investment analysis. It assessed the most cost-effective public de-risking measures to promote private sector investment in large-scale wind energy and solar PV in Lebanon (Figure 9). The report sets out the results from a quantitative, investment-risk informed modelling analysis. A set of policy recommendations has been put forward to lower the risk of investing in renewable energies.

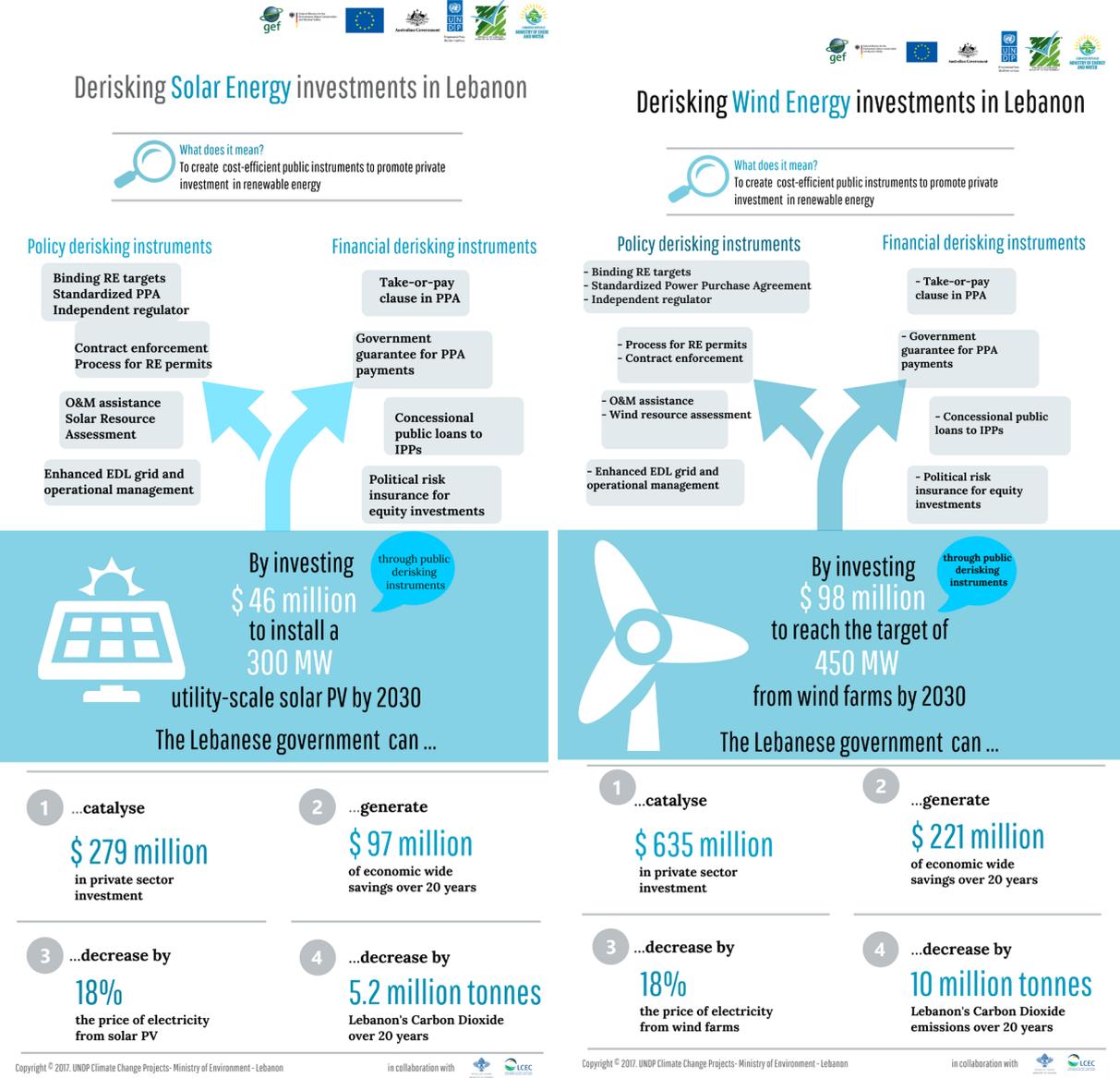


Figure 9: De-Risking Solar and Wind Energy Investments in Lebanon

**4.3 Nationally Determined Contribution Support Programme**

The Nationally Determined Contribution Support Programme (NDCSP) was launched in May 2018 and will end in May 2021 (total budget of US\$ 0.8 million) and has the following objectives: mainstreaming gender in climate change plans (including in the NDC) and enhancing gender-responsiveness across sectors; developing incentives to improve the implementation of the NDC, both for the private and public sectors and finding the synergies between the SDGs and the NDC for an integrated approach of efforts.

Both LECB and NDCSP projects have supported the MoE in the Paris Agreement ratification process. The Paris Agreement has become Law (115/2019 of March 29, 2019), and the Decree 5599 (2019) has been issued by the GoL on September 11, 2019, thus finalising the national legislative process of the ratification of the Paris Agreement. The instrument of ratification has been forwarded to the Lebanon's UN Permanent Mission in New York and has been deposited in February 2020, officially making Lebanon a party to the Paris Agreement.

Responding to the global call for ambition, the NDCSP project prepared Lebanon's 2020 NDC update through the production of a tool which enabled the construction of a robust and accurate NDC. Moreover, the project collaborated with the International Renewable Energy Agency (IRENA) on the mitigation component of the NDC to identify the appropriate renewable energy mix till 2030, based on the IRENA 2030 Outlook for Lebanon. The stakeholder consultation process has concluded, and the NDC update completed (Figure 10).

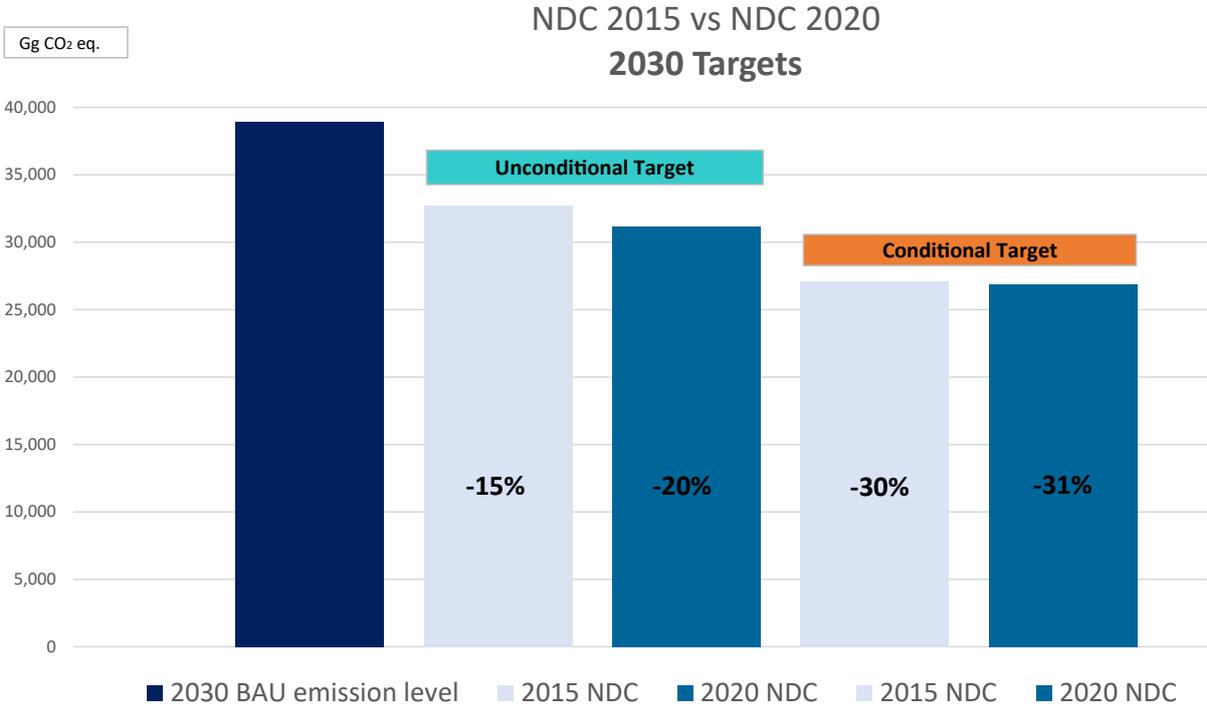


Figure 10: NDC 2015 vs. NDC 2020

In order to effectively implement the NDC, greening new investments is essential. Under the UNDP Climate Promise, the project is climate-proofing Lebanon's investments (CEDRE-CIP, McKinsey Lebanon Economic Vision and Economic Recovery Plan) to avoid major emission increase during the economic reform. A cost-benefit analysis is being developed for Lebanese institutions to use when evaluating projects in order to assess socio-economic and climatic impacts. This exercise is being conducted in consultation with various concerned ministries (see Figure 11 as a sample).

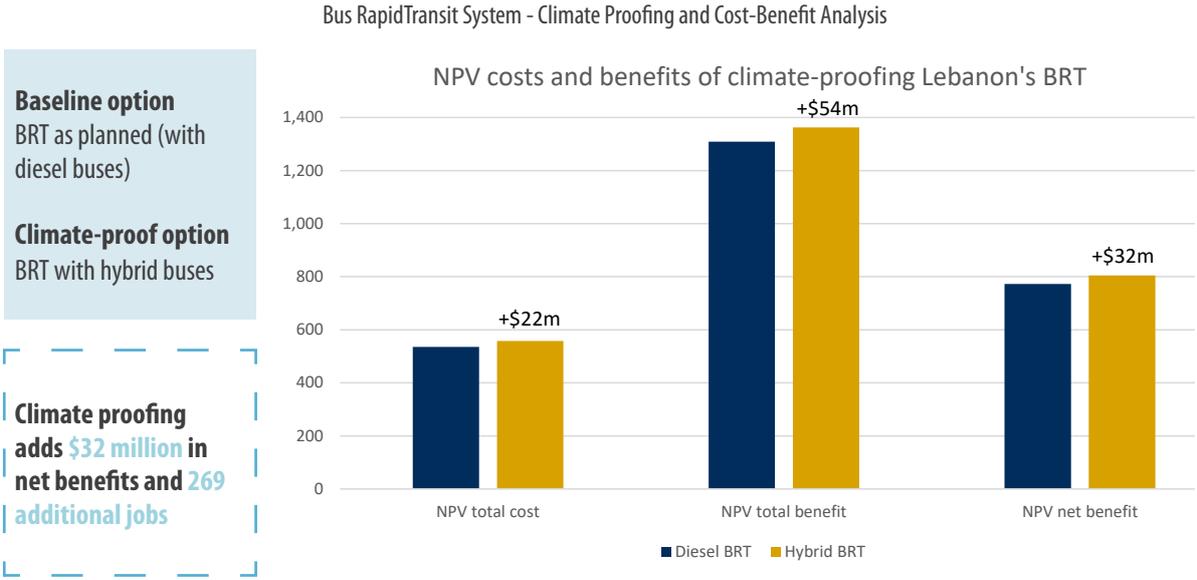


Figure 11: Bus Rapid Transit System - Climate Proofing and Cost-Benefit Analysis

# HOW ARE LEBANON'S NATIONALLY DETERMINED CONTRIBUTION (NDC) AND SUSTAINABLE DEVELOPMENT GOALS (SDGs) INTERLINKED?

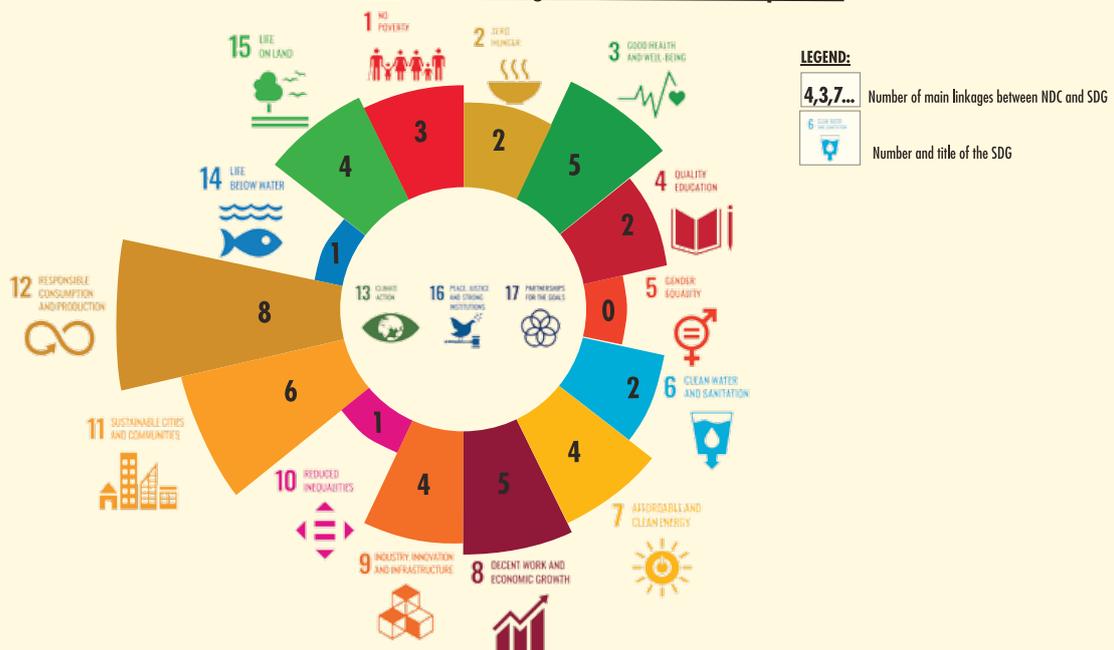


The Paris Climate Agreement's Nationally Determined Contribution (NDC) and the Sustainable Development Goals (SDGs) share some mutual goals and a common target year (2030). Many synergies exist between the two agendas and addressing those linkages from an integrated institutional viewpoint will enhance the implementation, coordination and tracking of the different actions.

## Lebanon's Nationally Determined Contribution (NDC) to Climate Change



### Number of main SDG linkages in Lebanon's NDC policies



### Primary SDG linkages per NDC sector

**SDG 2: No Hunger**  
Ministry of Agriculture Strategy

**SDG 12: Responsible Consumption & Production**  
Solid Waste NAMA  
Integrated Solid Waste Management Strategy (Draft)

**SDG 15: Life on Land**  
National Biodiversity Strategy & Action Plan

**SDG 15: Life on land**  
National Forest Program  
National Forest Fire Plan  
National Afforestation and Reforestation Plan

**SDG 6: Clean Water & Sanitation**  
National Water Sector Strategy

**SDG 11: Sustainable Cities & Communities**  
Transport Strategy  
Transport NAMA

**SDG 7: Affordable & Clean Energy**  
National Energy Efficiency Action Plan  
National Renewable Energy Action Plan  
Electricity Policy Paper (2019)

**SDG 9: Industry, Innovation & Infrastructure**  
Industry Vision

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Figure 12: NDC and SDGs Linkages

The NDCSP project has focused on integrating climate change with other portfolios, such as gender and the SDGs. Synchronising the 2030 Agenda for Sustainable Development and the NDC is crucial to enhance the implementation efficiency of both the SDGs and climate action. After a methodological assessment, 14 integration documents were produced to recommend the synchronisation of NDCs with SDGs. This exercise was conducted in coordination with the Presidency of the Council of Ministers' Office (Figure 12).

Moreover, in cooperation with the National Commission for Lebanese Women (NCLW), the NDCSP project drafted Standard Operating Procedures (SOPs) for ministries to use in order to anchor the gender integration in the institutions as a step-wise approach for the understanding of gender concepts and its integration in policy-making. NCLW is producing a draft legal document to mainstream the SOPs in all ministerial policies, to be adopted by the Council of Ministers.

The project supported Lebanon in becoming a member of the NDC Partnership in March 2019 and has engaged in the process of developing sectoral NDC Partnership Plans based on a detailed compilation of needs to enable NDC implementation. Moreover, Lebanon is receiving support from the NDC Partnership for economic advisory support to the CDR to assess impacts of the COVID-19 pandemic and the economic crisis on climate action. The focal points for the NDC Partnership work in Lebanon are the MoE and the CDR. Lastly, the MoE has been asked to serve on the NDC Partnership board for two years. Moreover, under the NDC Partnership Climate Action Enhancement Package, Lebanon is working to design the Lebanon Green Investment Facility (LGIF) with the support of the World Bank and Islamic Development Bank. The LGIF aims at providing climate and green finance through accessible and affordable finance instruments for both the public and private sectors, as well as provide needed technical assistance to various entities ensuring bankable projects. The design of the LGIF has been included in the government's financial recovery plan, making it a priority for Lebanon.

The NDCSP project is providing support to the Green Climate Fund (GCF) readiness project, which is focusing on developing the NDC country programme, as well as building the capacities of the National Designated Authority (NDA), namely the Ministry of Environment, to apply a no-objection procedure to GCF projects. Lastly, the NDCSP project is supporting the MoE in a technical advisory support exercise from GCF to assess the development of a macroeconomic risk profile from climate change, the review of greenhouse gas emissions' scenarios/trajectories up to 2050 to be incorporated in the Low-Emission Development Strategy and analysis of compatibility with the Paris Agreement goals, and the development of a climate risk profile.

## 5. KEY ACHIEVEMENTS OF THE MOE-UNDP COOPERATION

Building on the on-going collaboration between MoE and UNDP in past years and specifically on the various projects implemented since 2016, the following sections provide selected highlights of the achievements and impact of this cooperation along three themes: key legal texts and policies, resource mobilisation, and communication and outreach products. The examples provided in this section do not provide an exhaustive list of all achievements but offer a spectrum of the key results that were attained.

### 5.1 Key Legal Texts and Policies

A number of legal texts and decisions were approved by the legislative branch and executive branch of Government over the 2016-2019 period with support from the IS project and other projects, with the most important ones being:

- Litani *Loi Programme* Law 63/2016 & Amendments.
- Protection of Air Quality Law 78/2018.
- Integrated Solid Waste Management Law 80/2018.
- Paris Agreement on Climate Change - Law 115/2019.
- Kigali amendments to the Montreal Protocol on Ozone Depleting Substances - Law 119/2019.
- Specially Protected Areas (SPA) Protocol - Law 127/2019.
- Protected Areas Law 130/2019.
  
- Environmental Police Decree 3989/2016.
- Economic Incentives for Environmental Protection Decree 167/2017 with MoE application Decision 1281/1/2017 and MoF application Decision 18/1/2020.
- Conservation of Migratory Species Convention enacted by Decree 3320/2018.
- Compensation of the NCE members enacted by Decree 4523/2019 and corrected by Decree 5604/2019.
- Sorting at Source Decree 5605/2019.
- Hazardous Waste Management Decree 5606/2019.
- Air Quality Strategy Decree 6212/2020.
  
- Endorsement of the solid waste and private land transport NAMAs through CoM Decision No. 14 of October 12, 2017.
- Designation of the MoE as the national coordination to follow up on the implementation of the NDC through CoM Decision No. 33 of December 20, 2017.

- Policy for the integrated management of solid waste through CoM Decision No. 45 of January 11, 2018.
- National Biodiversity Strategy and Action Plan 2016-2030 through CoM Decision No. 62 of April 4, 2018.
- Policy for the sustainable management of the quarrying sector through CoM Decision No. 45 of March 21, 2019.
- ISWM 2019-2030 Roadmap through CoM Decision No. 3 of August 27, 2019.
- Preparation of a masterplan for protecting mountains, protected areas, coastal zones, green surfaces and agricultural terrains through CoM Decision No. 50 of September 9, 2019.
- Review procedures for environmental audit reports through MoE Decision 189/1/2016.
- ISWM coordination committee through MoE Decision 108/1/2019.
- Reminding project proponents from both the public and the private sectors of EIA Environmental Management Plans provisions through MoE Memo 10/1/2016.
- Wastewater treatment plants for private establishments through MoE Memo 7/1/2019.

However, the draft National Environmental Fund Decree has not been finalised yet. Internationally, the yearly UN General Assembly resolutions on the “Oil slick on the Lebanese shores” (2006) have not been complied with vis-à-vis the compensation (US\$ 856.4 million in 2014) by Israel to the Government and people of Lebanon.

## 5.2 Resource Mobilisation

Resource mobilisation was successfully performed to leverage funds in support of implementation of MoE priorities:

- GCF Large size projects: Global Subnational Climate Fund (SnCF Global) Equity” and “Global Subnational Climate Fund (SnCF Global) Technical Assistance Facility” (with Pegasus Capital Advisors and IUCN respectively) (US\$ 750 million and US\$ 28 million respectively) - Lebanon’s share from these projects (excluding the Technical Assistance from IUCN) ranges between US\$ 5 million to US\$ 75 million.
- Adaptation Fund/ UN Habitat - regional project on “Increasing the resilience of both displaced persons and host communities to climate change-related water challenges in Jordan and Lebanon “ (US\$ 14 million – of which US\$ 5.5 million for Lebanon).
- GEF Capacity-Building Initiative for Transparency (CBIT) (US\$ 990,000).
- GCF Readiness window: “National Designated Authority Strengthening and Country Programming Support for Lebanon” (with South Centre) (US\$ 828,000)
- GCF Readiness window: “Development of Energy Efficiency Standards and Labelling Program for Electric Motors, Transformers, Washing Machines and TVs in Lebanon” (with UNEP-CTCN, Ministry of Energy and Water/Lebanese Center for Energy Conservation) (US\$ 584,048)
- NDC Partnership Climate Action Enhancement Package - Lebanon Green Investment Facility (LGIF) (US\$ 362,000).
- NDC Partnership: In-Country Engagement and Economic Advisory Support (US\$ 200,000)
- GCF Technical Advisory Support: Development of a macro-economic risk profile, a climate risk profile and review of greenhouse gas emissions’ scenarios/trajectories up to 2050 (US\$ 99,293).
- EU-ClimaSouth grant support for MRV of finance and MISCA (€100,000).
- GIZ - Capacity-building for improved GHG inventories (€30,000).
- Support to the formulation and later implementation of the local development programme along the Litani river basin (€20 million) grant by the EU to ESFD.

Some additional funding was either approved but has not yet been disbursed, or is being under discussion:

- Litani river catchment comprehensive environmental management project (US\$ 200 million) loan by the World Bank.
- Towards a Decentralised Waste Management Integrated Response TaDWIR (€20.7 million) grant by the EU.

### 5.3 Communication and Outreach Products

To ensure visibility, UNDP supported events (e.g. the First Beirut Conference on the Environment – see Box 3), documents (available online) and outreach products on a regular basis with the most salient ones being:

#### Governance:

- UNDP. Lebanon Rapid Cost of Environmental Degradation (2018).
- MoE-EU-UNDP. Brochure on Environmental Safeguards for Existing and Planned Activities - in both English and Arabic (2017).
- Brochure on Environmental Complaints - in both English and Arabic (2017).
- MoE/UNDP Partnership: Key Achievements from 2010 to 2015 - in both English and Arabic (2016).

#### Solid Waste Management:

- MoE-UNDP. Updated Masterplan for the Closure and Rehabilitation of Uncontrolled Dumps (2016-2017).
- UNDP. "Demolition Waste Assessment outside the Port of Beirut" Report (2020).
- MoE-UNDP Training Programme for Municipalities on Environmental Management (2018-2019).
- Awareness material on solid waste management in Qaraoun Lake Union of Municipalities, West Bekaa (2017-2018).
- Awareness material on Integrated Solid Waste Management in the Communities of North Baalbek (2019).
- Brochure on Solid Waste collection and preventive measures for COVID-19 outbreak in both Arabic and English (2020).
- Capacity building material for healthcare centres on medical waste segregation, storage, and disposal in South Lebanon (2020).
- Brochure on the measures related to clean-ups and debris removal, related to Beirut Port Explosion - in both Arabic and English (2020).

#### Sustainable Land Management in the Qaraoun Watershed:

- MoE/UNDP/GEF (2017) Land degradation mapping assessment for the districts of Zahle, West Bekaa, and Rachaya.
- MoE/UNDP/GEF (2017) Socio-Economic Assessment for the districts of Zahle, West Bekaa, and Rachaya.
- MoE/MoA/UNDP/GEF (2021) National Forest Management Guidelines (unpublished pending endorsement).
- MoE/MoA/UNDP/GEF (2021) National Guidelines for the Management of rangelands outside forests (unpublished pending endorsement).
- MoE/UNDP/GEF (2021) General Forest Management Plan for the Forests of the Bekaa Governorate (unpublished).
- MoE/UNDP/GEF (2021) Forest Management Plans for the Forests of Manara, Saghbine, Anjar, and Bakkifa (separate documents).
- MoE/UNDP/GEF (2021) General Management Plan for the Rangelands outside Forests of the Bekaa Governorate (unpublished).
- MoE/UNDP/GEF (2021) Rangelands Management Plans for Rangelands in Kefraya, Kfardines, Bouerij, Manara, and Kfarzabad (separate documents).
- MoE/UNDP/GEF (2021) Strategic masterplan for the governorate of Bekaa and its related SEA (pending approval by the Higher Council for Urban Planning).
- MoE/UNDP/GEF (2021) Guidelines for the rehabilitation and management of riparian areas (under finalisation).
- MoE/UNDP/GEF (2021) Analysis of the current production environment for feed and fodder in Lebanon (unpublished).
- SLMQ project on rangelands rehabilitation: Short video (3 minutes) and social media video (1 minute).

#### Response to the Vienna Convention for the Protection of the Ozone Layer

- Term course on Refrigeration and Air-Conditioning at AUB (American University of Beirut) - Department of Mechanical Engineering, with ASHRAE (The American Society of Heating, Refrigerating and Air-Conditioning Engineers) (2016).
- National Best Poster Design Competition 2017 - Caring for All Life Under the Sun (2017).
- Sun Safe Guide Activity Book "Slip Slap Slop" - in both Arabic and English (2017).
- MLF/GEF/UNDP (2017) Past Successes and Future Opportunities. A Growing Success Story: The National Ozone Unit - Lebanon.
- Refrigeration and Air-Conditioning Technicians Guidebook (2019).
- National Cooling Plan (NCP) (2020) (unpublished pending endorsement).
- Infographic: National HCFCs Phase-Out Management Plan. HPMP Stage-II 2015-2025.

### Climate Change - Table 3.

Table 3: Pool of Climate Change Publications

Publication	Web Link
Lebanon's Second Biennial Update Report to the UNFCCC	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=264">http://climatechange.MoE.gov.lb/viewfile.aspx?id=264</a>
Teacher's Guidebook on Climate Change for Schools in Lebanon	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=240">http://climatechange.MoE.gov.lb/viewfile.aspx?id=240</a>
Guide de l'enseignant sur le changement climatique pour les écoles au Liban	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=244">http://climatechange.MoE.gov.lb/viewfile.aspx?id=244</a>
How to create value from climate change	<a href="http://www.climasouth.eu/sites/default/files/handbooks/HB9_interattivo.pdf">http://www.climasouth.eu/sites/default/files/handbooks/HB9_interattivo.pdf</a>
Lebanon's Third Biennial Update Report to the UNFCCC	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=293">http://climatechange.MoE.gov.lb/viewfile.aspx?id=293</a>
Lebanon's 2015 GHG Inventory in Brief	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=294">http://climatechange.MoE.gov.lb/viewfile.aspx?id=294</a>
Energy and Climate Change in Brief	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=300">http://climatechange.MoE.gov.lb/viewfile.aspx?id=300</a>
Agriculture and Climate Change in Brief	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=299">http://climatechange.MoE.gov.lb/viewfile.aspx?id=299</a>
Forestry and Climate Change in Brief	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=317">http://climatechange.MoE.gov.lb/viewfile.aspx?id=317</a>
Transport and Climate Change in Brief	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=314">http://climatechange.MoE.gov.lb/viewfile.aspx?id=314</a>
Waste and Climate Change in Brief	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=316">http://climatechange.MoE.gov.lb/viewfile.aspx?id=316</a>
Transport NAMAs	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=272">http://climatechange.MoE.gov.lb/viewfile.aspx?id=272</a>
Solid Waste NAMAs	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=261">http://climatechange.MoE.gov.lb/viewfile.aspx?id=261</a>
De-Risking Renewable Energy Investments (DREI)	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=273">http://climatechange.MoE.gov.lb/viewfile.aspx?id=273</a>
Lebanon's 2015 Intended Nationally Determined Contribution	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=232">http://climatechange.MoE.gov.lb/viewfile.aspx?id=232</a>
Standard Operating Procedures (SOPs) to Integrate Gender in Climate Reporting and Planning	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=303">http://climatechange.MoE.gov.lb/viewfile.aspx?id=303</a>
Standard Operating Procedures to Integrate Gender in Climate Related Policies and Strategies	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=302">http://climatechange.MoE.gov.lb/viewfile.aspx?id=302</a>
SDG NDC Agriculture Integration Sheet	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=281">http://climatechange.MoE.gov.lb/viewfile.aspx?id=281</a>
SDG NDC Forestry Integration Sheet	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=285">http://climatechange.MoE.gov.lb/viewfile.aspx?id=285</a>
SDG NDC Energy Integration Sheet	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=282">http://climatechange.MoE.gov.lb/viewfile.aspx?id=282</a>
SDG NDC Renewable Energy Integration Sheet	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=288">http://climatechange.MoE.gov.lb/viewfile.aspx?id=288</a>
SDG NDC Energy Efficiency Integration Sheet	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=284">http://climatechange.MoE.gov.lb/viewfile.aspx?id=284</a>
SDG NDC Solid Waste Integration Sheet	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=290">http://climatechange.MoE.gov.lb/viewfile.aspx?id=290</a>
SDG NDC Solid Waste NAMA Integration Sheet	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=289">http://climatechange.MoE.gov.lb/viewfile.aspx?id=289</a>
SDG NDC Public Transport Integration Sheet	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=287">http://climatechange.MoE.gov.lb/viewfile.aspx?id=287</a>
SDG NDC Private Transport Integration Sheet	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=286">http://climatechange.MoE.gov.lb/viewfile.aspx?id=286</a>
SDG NDC Water Integration Sheet	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=292">http://climatechange.MoE.gov.lb/viewfile.aspx?id=292</a>
SDG NDC Biodiversity Integration Sheet	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=283">http://climatechange.MoE.gov.lb/viewfile.aspx?id=283</a>
SDG NDC Industry Integration Sheet	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=291">http://climatechange.MoE.gov.lb/viewfile.aspx?id=291</a>
Infographic: Gender and Climate Change in Brief	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=295">http://climatechange.MoE.gov.lb/viewfile.aspx?id=295</a>
Infographic: Derisking Solar Energy Investments in Lebanon	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=311">http://climatechange.MoE.gov.lb/viewfile.aspx?id=311</a>
Infographic: Derisking Wind Energy Investments in Lebanon	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=309">http://climatechange.MoE.gov.lb/viewfile.aspx?id=309</a>
Infographic: Lebanon's NAMA on Transport	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=312">http://climatechange.MoE.gov.lb/viewfile.aspx?id=312</a>
Infographic: Lebanon's INDC	<a href="http://climatechange.MoE.gov.lb/viewfile.aspx?id=308">http://climatechange.MoE.gov.lb/viewfile.aspx?id=308</a>

## 6. CONCLUSION

The MoE-UNDP partnership has been crucial to move the environmental agenda in Lebanon through its focus on advancing environmental policies, strategies and legislation; mobilising resources; enforcing environmental safeguards and developing capacities; enhancing environmental consciousness, and responding to environmental emergencies including in relation to the COVID-19 pandemic and the catastrophic Beirut Port Explosion.

However, to effect real policy change, more remains to be done to position environmental issues at the centre of the legislative, executive and judicial agendas, and to secure support at the highest political levels. Key priorities in each area include:

- Legislative: Advancing on the formulation and implementation of environmental policy needs to be prioritised by lawmakers, given that policy action is frequently stymied by a lack of political consensus. Legislators also need to be sensitised to the cross-cutting importance of the environmental agenda to drive progress across the SDGs, the linkages to the NSDS and the ground-breaking work being done to respond to climate change (see Table 3);
- Executive: Further advocacy is required to promote a forward-looking outlook on critical priorities including the preservation of land and ecosystems; the promotion of the circular economy and the protection of water resources;
- Judicial: Greater engagement of the judiciary is needed to overcome obstacles relating to divergent interpretations of environmental law, for example in relation to legislation focused on cement quarries and quarry rehabilitation.

The overall MoE policy approach of promoting inclusive natural resource and landscape management at the local level in partnership with UNDP, through its GEF-funded land degradation neutrality projects, has proven to be very successful and effective. Collaboration in this area has yielded rich experience and lessons learned. Knowledge gained needs to be mainstreamed to improve the management of nature reserves.

Another key lesson is the need to broaden engagement with civil society in the process of defining and debating national priorities, so that the process includes representation from all segments of society and leads to more strategic outcomes. The 2019 Beirut Conference on the Environment was a first forum that brought together the government at the central and local levels, civil society, universities and other development partners in this regard.

As highlighted in this report, the MoE-UNDP partnership has achieved many tangible results. However, these results have not been adequate to meet the growing scope and scale of cumulative needs for environmental action which have emerged in the wake of compound crises including the financial and economic crisis, ongoing social unrest and political deadlock, the unresolved Syrian displacement crisis, the COVID-19 pandemic and the catastrophic Beirut Port Explosion of August 2020.

Incremental improvements in policymaking achieved over the past few decades need to be scaled-up while being more targeted. Going forward, intensified focus is required to enhance policy design, compliance management systems and evaluation practice to overcome a new generation of exogenous and endogenous factors, including the impact of the crises named above.





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