



Sector: Water

SDG-NDC Synchronization: Assessment and Recommendations

How can the Nationally Determined Contributions on Climate Change and the 2030 Agenda for Sustainable Development complement and support each other towards a sustainable future?

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Assessment and Recommendations for Integration of Sustainable Development Goals within Lebanon's Climate Related Plans

Description and Objectives

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. The aim of this analysis is to assist policymakers in:

- Assessing the sectoral policies that make up the NDC in terms of SDG linkages using the SDG Climate Action Nexus tool (SCAN tool) in order to establish and clarify the linkages;
- Identifying progress indicators of NDC policies to inform SDG progress and vice versa, in order to synchronize reporting;
- Operationalizing the coordination between institutions responsible for the implementation and reporting of both the NDC and SDGs.

Methodology

- The SCAN-tool provides high-level guidance on how climate actions can impact the achievement of the SDGs (http://ambitiontoaction.net/scan_tool/);
- Coupled with local expertise, this analysis:
 - Identifies potential linkages between specific recommendations included in each of Lebanon's climate related plans and policies and the SDGs;
 - Includes the identification of a primary SDG linkage along with other relevant SDG linkages;
 - Identifies potential linkages to all of the SDG targets, and provides further recommendations.
- All climate-relevant and sustainable development plans inherently contribute to SDG 13 (climate action);
- SDG 17 addresses global partnerships and means of implementation, relevant SDG 17 linkages to local plans are also identified in this assessment.

This is not an exhaustive analysis but it provides a sound basis to better understand where and how Lebanon's climate actions impact SDG achievement.

How to use this guide?

Step 1: Review

This guidance recommends certain linkages per SDG which should be reviewed in the context of policy-making.

Step 2: Prioritize

Not all the linkages made have the same relevance to the policy or activity, therefore, the linkages should be prioritized considering magnitude of impact, co-benefits and other criteria depending on the institution and its priorities.

Step 3: Consult

Depending on the prioritized SDGs, stakeholder consultations for policy-drafting should include the lead institutions responsible for implementing the selected SDGs.

Step 4: Synchronize

When implementing the policy, synchronization at the level of tracking between the different institutions, the NDC committee and the SDG committee should be considered.

Sector:	Water
Sub-sector:	N/A
Source document:	National Water Sector Strategy (NWSS)
Ministry:	Ministry of Energy and Water
URL:	http://climatechange.moe.gov.lb/viewfile.aspx?id=182

Plan/ Policy Overview

The National Water Sector Strategy (NWSS) objectives are laid out in the 'Road Map' under the baseline analysis. These objectives include broader objectives such as assuring a water supply to all regions of Lebanon, improving the distribution and transmission network, and increasing awareness. The plan also places large emphasis on institutional and regulatory reforms needed to implementation. Private sector participation also has a strong presence in implementation strategies. While this is more of a technical implementation plan, there are many linkages with the SDGs through the plan's strategic objectives in the baseline section. The strategy addresses climate change as part of its strategic roadmap specifically in terms of increasing climate change and its implications on the water sector.

Links to Climate Change and Sustainable Development

Lebanon, water scarcity is a challenging issue, and the country will continue to be vulnerable to water scarcity as a result of climate change. The Third National Communication provides water related projections as follows:

- Snow will melt earlier in the spring. These changes will affect the recharge of most springs, reduce the supply of water available for irrigation during the summer, and increase winter floods by up to 30%;
- This will have adverse impacts on rivers and groundwater recharge, and will affect water availability during the summer season and in drought periods;
- Droughts will occur 15 days to 1 month earlier, and countrywide drought periods will extend 9 days longer by 2040 and 18 days longer by 2090;
- Changes in temperature and rainfall will decrease productivity of lands currently used to produce most crops and fruit trees.

Lebanon's Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, makes mention of adaption measures in the water sector. Lebanon's NDC mentions adaptation as a priority with the following target for 2030:

Overarching objective: Increase water availability and improve water usage to decrease the sector's vulnerability to climate change impacts by:

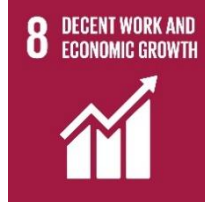
- Improving water security such as through increasing artificial recharge of groundwater aquifers and increasing surface storage dams and hill lakes;
- Optimizing the use of the current water resources through the rehabilitation of the existing network and the installation of water meters;
- Increasing wastewater collection and treatment;
- Increasing water reuse, especially after wastewater treatment;
- Improving water efficiency and decrease water loss in irrigation.

The NDC recognizes that, “more technical, financial and capacity building support and technology transfer is needed to optimize water storage, water use efficiency, improve irrigation systems and demonstrate reuse of wastewater”. The following assessment identifies the linkages between the specific actions in the NWSS to the SDG targets. It identifies, how waste water reuse for example, can positively or negatively impact SDG targets.

Table 1: Primary SDG Target

Relevant SDG	How does the NWSS contribute to this SDG? (examples)
	- Optimization of water resources through groundwater recharge and surface storage substantially increases water-use efficiency and can help to protect surface water dependent ecosystems - Optimization of water resources through groundwater recharge and surface storage is a more sustainable use of freshwater resources - Improved water quality by eliminating dumping and reducing the proportion of untreated wastewater - Integrated wastewater management and investment programs supports the treatment and reuse of wastewater - Restructuring the water management system will support the achievement of safe and affordable drinking water for all - Revised and improved organization structures will support the integration of water resources management - Local participation to improve the design and management of irrigation projects - Mobilizing resources can support the cost of infrastructure upgrades - Consumption based tariffs can modify consumer behavior and increase water use efficiency - An adequate legal and regulatory framework supports the implementation of an integrated water management system - Policies and regulations can support measures that increase water use efficiency

Table 2: Highly Relevant SDG Targets

Relevant SDG	How does the NWSS contribute to this SDG? (examples)
	- Improving resiliency of the poor engaged in climate sensitive livelihoods through reduction in use of inputs through efficiency measures (e.g., water efficiency and recycling, better soil management)
	- Increased access to adequate sanitation and hygiene through efficient water treatment and sewage systems
	- Improvement in water efficiency through conservation initiatives in agriculture and industry - Contributes to decoupling growth from environmental degradation



- More efficient water transmission and distribution through improvements in the water infrastructure that supports economic development and human well-being
- Conservation initiatives in industry and agriculture increases resource efficiency and supports adoption of environmentally sound technologies and processes



- Reduce the likelihood of water-related disasters through increased water quality and protection, and flood mitigation



- Groundwater recharge and increased surface water storage is an efficient use of natural resources
- Reduction in use of inputs through efficiency measures (e.g., water efficiency and recycling, better soil management)
- Public outreach, awareness and education programs to promote industrial water conservation measures
- Wastewater collection and treatment contributes to sustainable management and efficient use of natural resources



- Combat desertification through improved water management



- Restructuring government entities to provide improved service delivery supports more efficient and accountable institutions
- Implementation and enactment of a water code supports the development of more transparent and accountable institutions



- Improving operation and performance through restructuring delivery of services and strengthening of law supports policy coherence
- Policy coherence is achieved through a strengthened legal framework to improve the performance of service delivery

Summary of Recommendations

The next water strategy should explicitly address linkages to specific SDG targets, and the NDC goals. In doing so, there should be narrative that focuses on the plan's broader societal goals and impact on addressing climate change. The water strategy is highly relevant to at least eighteen SDG targets and advances the NDC goals in increasing resiliency, and it should therefore be demonstrated in the plan so that common entry points can be better understood within and among Lebanon's sustainable development related plans and policies.

- For example, in Lebanon untreated wastewater (due to the absence of operational waste Water treatment plants) is discharged directly into the Mediterranean Sea impacting marine life and ecosystems. Examining water management through the lens of SDG 14 (life below water) and SDG 3 (health and well-being) might result in different priorities and strategies.
- In Lebanon's rural areas, agriculture is a primary source of income and employment for 25% of the population, and represents 80 percent of rural GDP (Ministry of Agriculture, 2015). At the same time, irrigation is the largest water consumer which is mired by low efficiencies and outdated technology. Therefore, improvements in the efficiency and delivery of irrigation systems can directly benefit livelihoods and income earning potential SDG 1 (poverty), increase agricultural productivity SDG 2 (hunger) and use water resources more efficiently SDG 8 (sustainable consumption and production).

Future iterations of the NWSS should consider the potential impact on SDG targets and in addressing climate change when developing and prioritizing specific implementation strategies. For example, the plan should prioritize measures that are most economically feasible and have largest impact on both the NDC and SDGs. In other words, there are opportunities in portraying energy efficiency through a more holistic approach, looking through the lens of the SDGs and NDC might result in a different prioritization of plan strategies.

- For example, looking at water and sanitation from an equity perspective might result in new strategies to include key stakeholder groups including youth, women and girls, city dwellers and rural communities, farmers, coastal businesses etc. in water and sanitation decision making and implementation strategies.
- Further, NWSS key indicators should be developed and synthesized with other plans and policies, to include a broader assessment of meeting SDG targets and NDC goals.
- The SDG and NDC committees should work collaboratively, alongside the responsible ministries, in the development of joint indicators that can be utilized among all sustainable development related plans and policies to jointly assess both NDC and SDG progress.

Finally, while developing water strategies, and considering the linkages with non-environment SDGs, stakeholders from other ministries and institutions should be consulted for more comprehensive decision-making (Annex I).

Sustainable Development Anchors: what is there and what is missing?

A key word search and review of the NWSS identifies where the plan explicitly addresses components of sustainable development and climate change. While the SCAN tool identified where linkages exist between plans and the SDG targets, further examination of each plan reveals where these linkages are explicitly stated in each plan. For example, measures to improve water efficiency through improving the transmission and distribution networks have strong linkages to SDG 9 (Industry, Innovation and Infrastructure) but these linkages are not included as part of the NWSS narrative. Likewise, education and awareness raising plays a central role in the NWSS, however, the narrative does not place it in the context of sustainable development.

The following is an assessment of sustainable development and climate change language included the NWSS and recommendations for creating linkages in future iterations of the plan. The below recommendations tackle the primary SDG, the other important SDG linkages as well as the rest.

Table 3: Recommendation for Estimation of Impact of SDGs

Key Words	Description in the Policy/Strategy/Action Plan	Recommendation for Estimation of Impact/Integration of Impact
Highly Relevant SDG SDG One: No Poverty - Low-income - Poor - Poverty - Disadvantaged - Underprivileged	Strategy Vision: “Water: A right for every citizen, a resource for Vision the whole country”.	In addition to SDG 1 in Table 2: - Protecting households from asset loss, crop loss, and potential food price shocks through building of infrastructures, such as irrigation facilities; reservoirs for micro-irrigation and livestock watering; restoration of vegetation cover to avoid erosion; - Promoting public participation in the design and management of irrigation project supports more inclusive development strategies; - Improved / refined climate change knowledge, and particularly its implications on the water sector and its vulnerability (i.e. refinement of model and figures) can protect the livelihood and increase productive capacity of the poor.
SDG Two: Zero Hunger - Hunger - Food access - Food security - Food affordability - Agricultural Productivity	- Irrigation is the largest water consumer with low efficiencies; - Irrigation: Provide adequate quantities and quality of irrigation water and incentivize modern, water-saving irrigation techniques; - Adoption of high efficiency on-farm irrigation techniques, e.g., drip irrigation, sprinkler irrigation, overhead irrigation where applicable; - Coordination with Ministry of Agriculture for the adoption towards lower consumption crops; - Farm audits and optimization according to local conditions.	- Increase in agricultural productivity through improved irrigation systems; - Providing irrigation facilities and infrastructure, together with hydrological information, enhance agricultural productivity; - Flood mitigation and improved water quality can increase agricultural productivity; - Climate change knowledge, and particularly its implications on the water sector and its vulnerability can help to ensure the proper functioning of the food commodity market.
Highly Relevant SDG SDG Three: Good Health and Well-being - Environment - Health - Pollution	- The level of bacteriological contamination differs from a public water source to another, ranging from 0% in certain rural areas to reach 90% around more populated urban area; - The chemical contamination varies widely among Water Establishments (WES); - Inadequate domestic sewage disposal predominantly discharged in the environment without treatment; 70% of all natural sources with bacterial.	In addition to SDG 3 in Table 2: - Improved water and wastewater quality can help prevent the spread of communicable disease; - Improve / refine climate change knowledge, and particularly its implications on the water sector and its vulnerability can strengthen the capacity to respond to risks.

Table 3: Recommendation for Estimation of Impact of SDGs

Key Words	Description in the Policy/Strategy/Action Plan	Recommendation for Estimation of Impact/Integration of Impact
SDG Four: Quality Education · Education · Awareness raising · Youth	Lack of awareness on water consumption and conservation.	Water conservation awareness programs can teach people (and companies) how to use water resources more efficiently.
SDG Five: Gender Equality · Women · Gender · Vulnerable groups · Rural communities	Gender is not addressed in the NWSS.	- Women and girls are responsible for water collection in 80% of the world's households without access to water on premises. Easy access to safe drinking water so that women have more time to earn an income, girls are more likely to attend school, and family health and hygiene improve (UN Women); - Ill health caused by a lack of adequate water and sanitation increases the need to care for sick family members, a responsibility that falls primarily on women and girls (UN Women); - The lack of adequate sanitation facilities may expose women and girls to illness, safety risks and violence at school, at work and in their communities—hampering their ability to learn, earn an income and move around freely (UN Women).
<u>Primary SDG</u> SDG Six: Clean Water Sanitation · Clean water · Drinking water · Wastewater · Water quality	- Wastewater network coverage of 60% is higher than regional average, coupled with significantly low treatment levels (<8%); - Surface water resources are largely exploited but with limited storage, while significant stress is put on groundwater mainly through private wells; - Renewable water resources per capita are already slightly below scarcity threshold, with expected decrease in the coming years; - Low coverage of wastewater networks and severe shortage in treatment efficiency; - The level of bacteriological contamination differs from a public water source to another, ranging from 0% in certain rural areas to reach 90% around more populated urban area; - The chemical contamination varies widely among WES;	In addition to SDG 6 in Table 1: - Increased access to adequate sanitation and hygiene through efficient water treatment and sewage systems; - Increase economic productivity through technological upgrading and innovation (as result of implementing modern waste management systems); - Upgrading the water distribution and transmission infrastructure contributes to a more efficient use of water resources; - Upgrading the water distribution and transmission infrastructure means less water wasted and therefore ecosystems are better protected; - More efficient irrigation systems support more sustainable with drawls of fresh water addressing water scarcity; - Take actions to protect against contaminants that may be found in drinking water and its sources;

Table 3: Recommendation for Estimation of Impact of SDGs

Key Words	Description in the Policy/Strategy/Action Plan	Recommendation for Estimation of Impact/Integration of Impact
	- Inadequate domestic sewage disposal, predominantly discharged in the environment without treatment; - Water Supply: Ensure proper and continuous access to high quality water supply through increased coverage, reduced unaccounted for water and optimized network management; - Main sources of water in Lebanon include surface water and groundwater while surface storage and non-conventional sources are limited.	- Promote integrated management solutions; - Update periodically water usage scenarios and thus water management options to promote water efficiency; - Improvement in water efficiency through conservation initiatives in agriculture and industry; - Review and upgrade water quality standards supports improved water quality.
SDG Seven: Affordable & Clean Energy · Energy efficiency · Electricity transmission · Electricity distribution · Reliable energy · Affordable energy · GHG reduction · Mitigation · Energy security	Energy is not addressed in the NWSS.	Renewable energies such as hydropower are inextricably linked to the availability of water.
<u>Highly Relevant SDG</u> SDG Eight: Decent Work and Economic Growth · Jobs · Income · Employment	Uses historical and forecasted real GDP growth to assess the impact of economic development on projected demand for water, leading to an increase of 1% per annum.	In addition to SDG 8 in Table 2: - Increase in agricultural productivity through improved irrigation systems; - Providing irrigation facilities and infrastructure, together with hydrological information, enhance agricultural productivity; - Improved water quality and wastewater management supports economic development.
<u>Highly Relevant SDG</u> SDG 9: Industry, Innovation, Infrastructure · Industry · Innovation · Infrastructure	- Accidental pollution due to industrial waste and oil intrusion from gasoline; - State of water quality in Lebanon; - Although coverage is better than the regional average, more than 50% of transmission and distribution networks are past their useful life;	In addition to SDG 9 in Table 2: Develop sustainable and resilient infrastructure for wastewater management to support economic development and human well-being.

Table 3: Recommendation for Estimation of Impact of SDGs

Key Words	Description in the Policy/Strategy/Action Plan	Recommendation for Estimation of Impact/Integration of Impact
Research and development	- Irrigation is the largest water consumer with low efficiencies; - Inefficient and poorly maintained systems and networks, leading to high losses and supply interruptions, with a limited focus on demand management; - Direct discharge of industrial effluent into the environment (concentrated along the coast, in Mount Lebanon, in the Bekaa valley and Litani water; - Increase coverage of wastewater collection networks and treatment capacities; - Optimize current wastewater treatment processes and sludge disposal, and ensure adequate reuse of treated effluents where applicable; - Water Supply: Ensure proper and continuous access to high quality water supply through increased coverage, reduced unaccounted for water and optimized network management; - Irrigation: Provide adequate quantities and quality of irrigation water and incentivize modern, water-saving irrigation techniques; - Installation of conservation kits (plumbing retrofits and high-efficiency toilets and showerheads, dual flush toilets, faucet aerators, kitchen aerators).	
SDG 10: Reduced Inequalities - Equity - Inclusion	- Strategy Vision: "Water: A right for every citizen, a resource for Vision the whole country"; - Mission: "Ensure water supply, irrigation and sanitation services over all the Lebanese territory on continuous basis and at optimal service levels, with commitment to environmental, economic and social sustainability."	Improved water efficiency and quality supports agricultural productivity which primarily impacts lower-income households.

Table 3: Recommendation for Estimation of Impact of SDGs

Key Words	Description in the Policy/Strategy/Action Plan	Recommendation for Estimation of Impact/Integration of Impact
Highly Relevant SDG SDG 11: Sustainable Cities and Communities · Cities · Communities · Urban · Urbanization · Fuel efficient vehicles · Modal share shift · Public transportation · Accessibility · Mobility	Cities are not addressed in the NWSS.	In addition to SDG 11 in Table 2: - Reduces environmental impact of cities through wastewater management; - Protects natural habitats through reduced non-energy pollution; - Developing rural livelihood resilience and enhancing connectivity to prevent excessive rural to urban migration; - Capacity building to mainstream climate change into development plans, and ensure inclusive and sustainable urbanization; - Increase access to basic services and upgrade slums; - Increase sustainable urbanization and sustainable human settlement planning and management; - Having sustainable wastewater systems can prevent spread of diseases caused by floods spreading wastewater across city. This contributes to reducing the number of deaths and people affected caused by disasters.
Highly Relevant SDG SDG 12: Sustainable consumption and production · Consumption · Production · Output · Productivity · Efficiency	- Maximize the potential and improve the quality of surface water resources; - Improve management and protection of groundwater resources, moderate extractions, promote artificial recharge, and consider this resource as a strategic reserve; - Water Supply: Ensure proper and continuous access to high quality water supply through increased coverage, reduced unaccounted for water and optimized network management; - Irrigation: Provide adequate quantities and quality of irrigation water and incentivize modern, water-saving irrigation techniques.	In addition to SDG 12 in Table 2: - Upgrading the water distribution and transmission infrastructure is a more efficient use of natural resources (less waste); - More efficient irrigation systems are a more sustainable and efficient use of natural resources; - Contributes to management of chemicals and all wastes to reduce their release to air, water and soil in order to minimize adverse impacts on human health and the environment.
SDG 13: Climate Change · Climate Change · GHG emissions · Resilience	- Achieve advanced climate change knowledge; - Improve water quality, flood mitigation and protection of recharge zones.	- Reference how the Water Strategy contributes to climate change mitigation and adaptation; - Reference role of water policy in the NDC;

Table 3: Recommendation for Estimation of Impact of SDGs

Key Words	Description in the Policy/Strategy/Action Plan	Recommendation for Estimation of Impact/Integration of Impact
• Mitigation • Adaptation • Nationally Determined Contribution (NDC)		- Align policy targets with the NDC.
SDG 14: Life Below Water • Water • Sea • Lakes • Streams • Rivers • Mediterranean • Marine life • Run-off • Water pollution • Coastal	Sea water intrusion being a common problem for all the coastal wells raising the issue of high salinity and conductivity problems.	Potential to reduce water pollution due to avoided wastewater dumped in the ocean and rivers.
<u>Highly Relevant SDG</u> SDG 15: Life on Land • Ecosystems • Biodiversity • Forests • Reforestation/ afforestation • Seed bank • Genetic	- Overexploitation of water resources due to excessive drilling and pumping (mainly concentrated in coastal area and Bekaa); - Maximize the potential and improve the quality of surface water Resources; - Improve management and protection of groundwater resources, moderate extractions, promote artificial recharge, and consider this resource as a strategic reserve.	In addition to SDG 15 in Table 2: - Increased vegetation (through improved irrigation) promotes biodiversity; - Integration of climate change impacts to development planning.
<u>Highly Relevant SDG</u> SDG 16: Peace, Justice & Strong institutions • Capacity • Legislation • Regulation • Legal framework • Policy • Participatory • Inclusive (decision-making)	- These discrepancies between legal and de facto responsibilities have created institutional uncertainty, and weakened the accountability line between the policy-maker and service providers; - The lack of technical capacity, financial autonomy and accountability are preventing full takeover of O&M responsibilities; - Support a full implementation of the water sector reform and improve on the management model between WES and MEW; - Enhance and modernize the legal setup to support the implementation of the NWSS and future requirements;	In addition to SDG 16 in Table 2: Protecting agricultural income from extreme events such as extreme precipitation can prevent personal violence and property crime.

Table 3: Recommendation for Estimation of Impact of SDGs

Key Words	Description in the Policy/Strategy/Action Plan	Recommendation for Estimation of Impact/Integration of Impact
	- Enforce a regulatory regime which would align Wes with leading utilities in the region and worldwide.	
<u>Highly Relevant SDG</u> SDG 17 Partnerships for the Goals · Resource · Financing mechanism · Public-Private Partnerships	- Investment planning, capital spending and service provision responsibilities are scattered among various players with weak coordination; - These discrepancies between legal and de facto responsibilities have created institutional uncertainty, and weakened the accountability line between the policy-maker and service providers; - Absence of volumetric charges is limiting incentives for conservation at the consumer, and production at the WE. No wastewater tariff introduced so far; - Introduce and implement new tariff strategies; - Promote private sector participation in O&M and capital projects; - Gradually achieve O&M and then full cost-recovery; - Tariff changes will have an impact on the different types of consumptions. This impact needs to be defined through further studies.	In addition to SDG 17 in Table 2: Strengthening institutional frameworks supports better policy coherence.

Annex I: Lead Institution per SDG in Lebanon

Theme: People		Leading Institution: Ministry of Education and Higher Education										
1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	10 REDUCED INEQUALITIES							
												
Theme: Planet		Leading Institution: Ministry of Environment										
6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND							
												
Theme: Prosperity		Leading Institution: Ministry of Economy and Trade										
8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	11 SUSTAINABLE CITIES AND COMMUNITIES										
												
Theme: Peace		Leading Institution: Office of the Minister of State for Administrative Reform										
16 PEACE, JUSTICE AND STRONG INSTITUTIONS												
												
Theme: Data and Statistics		Leading Institution: Central Administration of Statistics										
Cross-cutting theme:												
17 PARTNERSHIPS FOR THE GOALS												
												

Annex II: Indicators

A cohesive and integrated indicator framework that synchronizes SDG and NDC progress is essential for coordinated implementation and joint progress assessment. Lebanon has yet to nationalize the SDG indicators which provides an opportunity to include climate focused indicators into the nationalized approach so that both agendas can be assessed through a mutual set of indicators. The absence of nationalized SDG indicators withstanding, a robust database of national level data can be found through the SDG API database. The database provides data from global sources at the national level that correspond to the Global SDG Indicator Framework, making comparisons of SDG progress across countries easily accessible and consistent.

The SDG global framework provides a valuable starting point to integrate the two agenda's indicator framework. However, a barrier to solely utilizing the SDG global framework for both agendas, is that it is limited in its ability to measure NDC implementation. Many of the SDG indicators are too unspecific or insufficient for tracking NDC progress. For example, greenhouse gas emissions are not included as an SDG indicator in the global framework (Bouyé and Schulz, 2018). Therefore, in addition to utilization of the SDG global indicator framework, additional indicators are needed to effectively and cohesively monitor both agendas. As part of this research, identification of the targets, goals, data points and/or indicators within the NDC, Third National Communication and within specific plans and policies that comprise Lebanon's climate policies were identified to further provide a basis for developing an integrated indicator framework. The final product should be a combined list of indicators that incorporates the SDG global framework complemented by additional indicators that are climate focused, and germane to the goals of the specific plan/policy. The NWSS does not include indicators. These are identified in Table 1 'other potential indicators' for the SDG targets that are relevant to climate change.

Annex I, Table 1: Integration of SDG and NDC Indicators	
SDG	Indicator
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	6.1.1 Proportion of population using safely managed drinking water services
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	6.2.1 Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water
6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	6.3.1 Proportion of wastewater safely treated
	6.3.2 Proportion of bodies of water with good ambient water quality
	Other potential indicators: Sewer network coverage - connection rate Proportion of treated wastewater reuse
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	6.4.1 Water Use Efficiency (United States dollars per cubic meter)
	Other potential indicators: Water use per capita Access to water networks (%) Water distribution loss (%) Annual water demand per sector (%) Change in precipitation by percentage Water supply transmission pipes added (in KM) Water storage tanks (in M3 of capacity) Change in hill lake and surface storage damn capacity (in millions of cubic meters) Water supply distribution pipes added (in KM) Number of water meters installed Irrigation rehabilitation (in hectares) Irrigation expansion (in hectares)
	6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
	Other potential indicators: Renewable water resources per capita Surface water storage (in millions m3) Change in artificial recharge groundwater aquifer (in millions of cubic meters)
6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	6.5.1 Degree of integrated water resources management implementation (0–100)
	Other Potential Indicators: Population connected by Water Establishments Household water connection rates Percentage of population with access to safe drinking water
	6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation
6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	6.6.1: Nationally derived quality of groundwater (percent)
	6.6.1: Nationally derived quality of river(percent)
	Other potential indicators: Change in the extent of water-related ecosystems over time Amount spent annually on water-related ecosystem protection and restoration Surface Water quality: Rivers & springs, Annual flow volume, Salinity, BOD loads, E.Coli & T. Coliform, Nitrates Groundwater quality

Annex III: SDG List

PEOPLE	 Goal 1. End poverty in all its forms everywhere	1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day
		1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
		1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable
		1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance
		1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters
		1.a Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions
		1.b Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions
PEOPLE	 Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round
		2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons
		2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment
		2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
		2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed
		2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries
		2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round
		2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

PEOPLE	3 GOOD HEALTH AND WELL-BEING  Goal 3. Ensure healthy lives and promote well-being for all at all ages	3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births 3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births 3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases 3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being 3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol 3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents 3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes 3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination 3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate 3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all 3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States 3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks
PEOPLE	4 QUALITY EDUCATION  Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes 4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education 4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship 4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations 4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development 4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all 4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries 4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

PEOPLE	5 GENDER EQUALITY  Goal 5. Achieve gender equality and empower all women and girls	5.1 End all forms of discrimination against all women and girls everywhere
		5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
		5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation
		5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate
		5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life
		5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences
		5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws
		5.b Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women
		5.c Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels
PEOPLE	10 REDUCED INEQUALITIES  Goal 10. Reduce inequality within and among countries	10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average of the population at a rate higher than the national average
		10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status
		10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard
		10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality
		10.5 Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations
		10.6 Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions
		10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies
		10.a Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements
		10.b Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programmes
		10.c By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent

PLANET	6 CLEAN WATER AND SANITATION  Goal 6. Ensure availability and sustainable management of water and sanitation for all	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all
		6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
		6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
		6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
		6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
		6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
		6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies
		6.b Support and strengthen the participation of local communities in improving water and sanitation management
PLANET	7 AFFORDABLE AND CLEAN ENERGY  Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	7.1 By 2030, ensure universal access to affordable, reliable and modern energy services
		7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
		7.3 By 2030, double the global rate of improvement in energy efficiency
		7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology
		7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support

PLANET	12 RESPONSIBLE CONSUMPTION AND PRODUCTION  Goal 12. Ensure sustainable consumption and production patterns	12.1 Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries
		12.2 By 2030, achieve the sustainable management and efficient use of natural resources
		12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
		12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
		12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
		12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle
		12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities
		12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature
		12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production
		12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products
		12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities
PLANET	13 CLIMATE ACTION  Goal 13. Take urgent action to combat climate change and its impacts	13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
		13.2 Integrate climate change measures into national policies, strategies and planning
		13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
		13.a Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible
		13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities

PLANET	 Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
		14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
		14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
		14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
		14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information
		14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation
		14.7 By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
		14.a Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries
		14.b Provide access for small-scale artisanal fishers to marine resources and markets
		14.c Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want
PLANET	 Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements
		15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally
		15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world
		15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development
		15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species
		15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed
		15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products
		15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species
		15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts
		15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems
		15.b Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation
		15.c Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities

PROSPERITY	8 DECENT WORK AND ECONOMIC GROWTH  Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries
		8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors
		8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services
		8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead
		8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
		8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training
		8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms
		8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment
		8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products
		8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all
		8.a Increase Aid for Trade support for developing countries, in particular least developed countries, including through the Enhanced Integrated Framework for Trade-Related Technical Assistance to Least Developed Countries
PROSPERITY	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE  Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
		9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries
		9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets
		9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
		9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending
		9.a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States
		9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities
		9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020

PROSPERITY	11 SUSTAINABLE CITIES AND COMMUNITIES  Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
		11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
		11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
		11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage
		11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
		11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
		11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
		11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning
		11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels
		11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials
PEACE	16 PEACE, JUSTICE AND STRONG INSTITUTIONS  Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	16.1 Significantly reduce all forms of violence and related death rates everywhere
		16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children
		16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all
		16.4 By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime
		16.5 Substantially reduce corruption and bribery in all their forms
		16.6 Develop effective, accountable and transparent institutions at all levels
		16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels
		16.8 Broaden and strengthen the participation of developing countries in the institutions of global governance
		16.9 By 2030, provide legal identity for all, including birth registration
		16.10 Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements
		16.a Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence & combat terrorism & crime
		16.b Promote and enforce non-discriminatory laws and policies for sustainable development

17 PARTNERSHIPS FOR THE GOALS



Goal 17.
Strengthen the means of implementation and revitalize the global partnership for sustainable development

- 17.1 Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection
- 17.2 Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of ODA/GNI to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries
- 17.3 Mobilize additional financial resources for developing countries from multiple sources
- 17.4 Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress
- 17.5 Adopt and implement investment promotion regimes for least developed countries
- 17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism
- 17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed
- 17.8 Fully operationalize the technology bank and science, technology and innovation capacity building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology
- 17.9 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation
- 17.10 Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda
- 17.11 Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020
- 17.12 Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access
- 17.13 Enhance global macroeconomic stability, including through policy coordination and policy coherence
- 17.14 Enhance policy coherence for sustainable development
- 17.15 Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development
- 17.16 Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries
- 17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships
- 17.18 By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts
- 17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

Recommendation/ Intervention	Primary SDG Target	SCAN Tab	SDG	SDG Target (blue = primary target alignment)	SCAN Category	Action	Link +/-	Description of Link	Primary Source	Secondary Source
Optimization of surface water resources – Limited optimization of around 1% per year for the period 2011 -2015, and a second stage 2016-2020 – Experience proved the efficiency of superficial improvement of the catchment of surface water springs – An increase of 10-15% of the initial flow during the low season would be achieved Artificial groundwater recharge – Artificial recharge is technically feasible in a large portion of the country – Pilot projects can be started near Beirut, Tripoli and Baalbek. The situation in South Lebanon requires deeper consideration – Preliminary studies show that each well could have a potential flow of 50-100 l/s during a period of at least 3 months Surface storage – Around 46 sites have been identified as suitable for surface storage – Detailed designs and tender documents for a number of sites are ready.	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity		6.4	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water	N//A			Optimization of water resources through groundwater recharge and surface storage substantially increases water-use efficiency	LOCAL EXPERT	
	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes		6.6	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	N//A			Optimizing water resources through groundwater recharge and surface storage can help to protect surface water dependent ecosystems	LOCAL EXPERT	
	12.2 By 2030, achieve the sustainable management and efficient use of natural resources		12.2	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	N//A			Groundwater recharge and increased surface water storage is an efficient use of natural resources	LOCAL EXPERT	
	15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements		15.1	15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	N//A			Optimization of water resources through groundwater recharge and surface storage is a more sustainable use of freshwater resources	LOCAL EXPERT	
Water Supply Transmission – Replacement of existing over-aged transmission systems and associated equipment and bulk meters – Leakage detection/rehabilitation and partial replacement of damaged middle-aged systems and associated equipment – Expansion of transmission systems to meet growing demand including district metering – Rehabilitation/replacement of existing storage tanks including hydraulic equipment and flow meters – Construction of new storage tanks to meet growing demand and achieve 0,5 and 1 day retention time for BML and other WE's respectively including hydraulic equipment and flow meters – Construction of Awali – Beirut and Canal 800 (WS share only) conveyors and related transmission systems and equipment Water Supply Distribution – Replacement of existing over-aged distribution networks including house connections – Rehabilitation and partial replacement of damaged middle-aged networks, supported by leakage detection campaigns – Expansion of distribution networks to cover new geographic areas and meet growing demand including house connections – Installation of customer water meters. Metering targets by 2015 in BML 95%, in North/South 85% and Bekaa 75%	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all		6.4	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	N//A			Upgrading the water distribution and transmission infrastructure contributes to a more efficient use of water resources	LOCAL EXPERT	
	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity		6.6	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	N//A			Upgrading the water distribution and transmission infrastructure means less water wasted and therefore ecosystems are better protected	LOCAL EXPERT	
	12.2 By 2030, achieve the sustainable management and efficient use of natural resources		9.1	9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	N//A			More efficient water transmission and distribution through Improvements in the water infrastructure that supports economic development and human well-being	LOCAL EXPERT	
	15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements		12.2	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	N//A			Upgrading the water distribution and transmission infrastructure is a more efficient use of natural resources (less waste)	LOCAL EXPERT	

			15.1	15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	N//A			Improved water and transmission infrastructure supports a more sustainable use of freshwater ecosystem services	LOCAL EXPERT	
Irrigation – Rehabilitation/replacement of existing over-aged irrigation systems and networks – Implementation of additional 15,000 ha of irrigation schemes until 2015 and 15,000 ha between 2016-2020	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity 12.2 By 2030, achieve the sustainable management and efficient use of natural resources	Agriculture	1.1.	1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day	Exposure	Physical protection		Protecting households from asset loss, crop loss, and potential food price shocks through building of infrastructures, such as irrigation facilities; reservoirs for micro-irrigation and livestock watering; restoration of vegetation cover to avoid erosion	SCAN	Hallegatte et al. (2016)
		Agriculture	1.2	1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	Exposure	Physical protection		Protecting households from asset loss, crop loss, and potential food price shocks through building of infrastructures, such as irrigation facilities; reservoirs for micro-irrigation and livestock watering; restoration of vegetation cover to avoid erosion	SCAN	Hallegatte et al. (2016)
		Agriculture	1.5	1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	Exposure	Physical protection		Protecting households from asset loss, crop loss, and potential food price shocks through building of infrastructures, such as irrigation facilities; reservoirs for micro-irrigation and livestock watering; restoration of vegetation cover to avoid erosion	SCAN	Hallegatte et al. (2016)
		Agriculture	2.3	2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	Exposure	Physical protection		Increase in agricultural productivity through improved irrigation systems; Providing irrigation facilities and infrastructure, together with hydrological information, enhance agricultural productivity	SCAN	Nyasimi et al. (2016); Hammill and Price-Kelly (2017)

Agriculture	2.4	2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	Exposure	Physical protection		Increase in agricultural productivity through improved irrigation systems; Providing irrigation facilities and infrastructure, together with hydrological information, enhance agricultural productivity	SCAN	Nyasimi et al. (2016); Hammill and Price-Kelly (2017)
Agriculture	6.4	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Exposure	Physical protection		More efficient irrigation systems support more sustainable with drawls of fresh water addressing	LOCAL EXPERT	
Agriculture	8.1	8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	Exposure	Physical protection		Increase in agricultural productivity through improved irrigation systems; Providing irrigation facilities and infrastructure, together with hydrological information, enhance agricultural productivity	LOCAL EXPERT	
Agriculture	10.1	10.1 By 2030, progressively 10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average of the population at a rate higher than the national average	Exposure	Physical protection		Increase in agricultural productivity through improved irrigation systems; Providing irrigation facilities and infrastructure, together with hydrological information, enhance agricultural productivity	LOCAL EXPERT	
Agriculture	11.a	11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning	Exposure	Physical protection		Developing rural livelihood resilience and enhancing connectivity to prevent excessive rural to urban migration	SCAN	Expert judgement
Agriculture	12.2	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	Exposure	Physical protection		More efficient irrigation systems is a more sustainable and efficient use of natural resources	LOCAL EXPERT	
Agriculture	15.1	15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Exposure	Physical protection		Increased vegetation promotes biodiversity	SCAN	Expert judgement

		Agriculture	16.1	16.1 Significantly reduce all forms of violence and related death rates everywhere	Exposure	Physical protection		Protecting agricultural income from extreme events such as extreme precipitation can prevent personal violence and property crime	SCAN	Burke et al. (2015)
Wastewater – Collection and treatment to at least preliminary level of 80% by 2010 and 95% by 2020 – Pre-treatment of all industrial wastewater by 2020 – Reuse of 20% of treated wastewater by 2015, and 50% by 2020 – Secondary treatment and reuse of all inland wastewater by 2020 and secondary treatment by 2020 of coastal wastewater where reuse is economically justified 1. Integrated and prioritized immediate investment: a. Funded networks for the seven completed and two operational WWTPs along the coast b. Completion of already funded projects c. Networks for already completed projects (23 inland and 11 coastal plants) 2. Preparation of regional wastewater master plans 3. Integrated national investment program 2013-2020 a. Preparation and implementation b. MEW responsibility for budget execution and project implementation with staff recruitment and capacity building 4. Economic reuse of treated wastewater and sludge (studies and investment) 5. Capacity building and pilots for wastewater sub-sector Long term (wastewater) – Continuation of the integrated national investment program – Updating pre-treatment plants to secondary and extension of Jbeil plant – Investments for reuse of treated wastewater for irrigation	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally 6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate 12.2 By 2030, achieve the sustainable management and efficient use of natural resources	Waste	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Reduce emissions intensity	Sustainable waste management systems		Increased access to adequate sanitation and hygiene through efficient water treatment and sewage systems	LOCAL EXPERT	
		Waste	3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Reduce emissions intensity	Sustainable waste management systems		Increased access to adequate sanitation and hygiene through efficient water treatment and sewage systems	LOCAL EXPERT	
		Waste	6.2	By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	Reduce emissions intensity	Sustainable waste management systems		Increased access to adequate sanitation and hygiene through efficient water treatment and sewage systems	SCAN	
		Waste	6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Reduce emissions intensity	Sustainable waste management systems		Improved water quality by eliminating dumping and reducing the proportion of untreated wastewater	SCAN	
		Waste	6.5	By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	Reduce emissions intensity	Sustainable waste management systems		Integrated wastewater management and investment programs supports the treatment and reuse of wastewater	LOCAL EXPERT	
		Waste	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Reduce emissions intensity	Sustainable waste management systems		Increase economic productivity through technological upgrading and innovation (as result of implementing modern waste management systems)	SCAN	
		Waste	8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Reduce emissions intensity	Sustainable waste management systems		Contributes to creation of decent jobs	SCAN	

		Waste	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Reduce emissions intensity	Sustainable waste management systems		Develop sustainable and resilient infrastructure for wastewater management to support economic development and human well-being	MODIFIED FROM SCAN	
		Waste	11.1	By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	Reduce emissions intensity	Sustainable waste management systems		Increase access to basic services and upgrade slums	SCAN	
		Waste	11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Reduce emissions intensity	Sustainable waste management systems		Increase sustainable urbanization and sustainable human settlement planning and management	SCAN	
		Waste	11.5	By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	Reduce emissions intensity	Sustainable waste management systems		Having sustainable wastewater systems can prevent spread of diseases caused by floods spreading wastewater across city. This contributes to reduce the number of deaths and people affected caused by disasters	MODIFIED FROM SCAN	
		Waste	11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Reduce emissions intensity	Sustainable waste management systems		Reduces environmental impact of cities through wastewater management	MODIFIED FROM SCAN	
		Waste	12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Reduce emissions intensity	Sustainable waste management systems		Wastewater collection and treatment contributes to sustainable management and efficient use of natural resources	MODIFIED FROM SCAN	
		Waste	12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Reduce emissions intensity	Sustainable waste management systems		Contributes to management of chemicals and all wastes to reduce their release to air, water and soil in order to minimize adverse impacts on human health and the environment	SCAN	
		Waste	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Reduce emissions intensity	Sustainable waste management systems		Reduces water pollution due to avoided wastewater dumped in ocean and rivers	MODIFIED FROM SCAN	

1.1. Perform all priority actions required to complete the restructuring of WEs and address potential limitations, mainly: – Development of revised and improved organization structures for WEs based on roles and responsibilities – Drafting revised WE organization bylaws, supporting in the approval process and following up on their enactment – Implementation of the restructuring of WEs – Evaluate the potential for outsourcing of certain non-core functions – Providing needed support for WEs to gradually reach full administrative and financial autonomy 1.2. Improve on the operating model between WEs and MEW, through: – Ensuring an integrated management of water resources – Ensuring the involvement of WEs in project planning and implementation for water supply, irrigation and wastewater – Improvement in coordination – Ensuring operational and financial empowerment of WEs together with proper mechanisms for performance management 1.3. Improve on the performance efficiency of WEs to reflect: – More focus on irrigation and wastewater responsibilities, in addition to current water supply activities – Most suitable organization for technical functions – Improvements to support functions e.g., Strategic Planning and Business Planning, Water Demand Management, performance management, more focus on IT, Fixed Asset Management, Supply Chain Management, Customer Service, Control and Audit functions 1.4. Restructure MEW’s organization in line with the requirements of laws 221 and 247 to reflect more its water governance role, with main focus on policy making, planning and regulatory roles: – Development of revised organization structures for MEW – Drafting a revised organization law, supporting in the approval process and following up on its enactment – Implementation of the restructuring of MEW 1.5. Develop the process for the performance monitoring and evaluation of WEs, including: – Monitoring body – Performance indicators – Tools and procedures 1.6. Provide the required manpower levels and capabilities to ensure an appropriate operation and maintenance of assets and the delivery of water at optimal service levels, through the: – Reduction of current vacancies (over 81% at MEW and 67% in WEs) to required manpower levels according to recommended organization structures – Continuous development of staff through proper training 1.7. Enforce planning and capital spending responsibilities and coordination among various players in the water sector with a clear delineation of authorities, where: – MEW is responsible for setting policies, strategies and national planning – CDR is in charge of planning and securing foreign financing of capital projects based on national plans – WEs, LRA and other national entities develop their specific business plans and master plans according to policies and guidelines of the national plan 1.8. Involve stakeholder participation in the design and management of irrigation projects according to best practices, through: – Creation of formal Water Users Associations (WUAs) to replace the different organizations currently in charge of O&M of irrigation schemes – Definition of roles and responsibilities with respect to water management (including water quality) of the WUAs and other partners, in close cooperation with the intended beneficiaries – Providing well-focused training related to the establishment and management of WUAs to all involved parties 1.9. Improve irrigation water demand management and cost recovery, and sustainability of irrigation schemes, through: – Adjustment of irrigation water tariffs to cover O&M costs at a first stage, and periodically review and adjust water tariffs to reflect actual costs – Basing water charges on volume of water used rather than area. Where metering is not feasible at this time, base water charges on a combination of a fixed charge to cover the basic services, and other charges which can be used as a proxy for the volume of water used, such as crop grown and/or hourly use of water – Carrying out periodic public awareness campaigns to inform policy makers and farmers of water shortages that could be faced in the next thirty years, and the need for water conservation for irrigation	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all 6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate 6.b Support and strengthen the participation of local communities in improving water and sanitation management 16.6 Develop effective, accountable and transparent institutions at all levels 17.14 Enhance policy coherence for sustainable development	General	1.b	1.b Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions	Avoiding potential impacts	Institutional development		Promoting public participation in the design and management of irrigation project supports more inclusive development strategies	LOCAL EXPERT	
		General	6.1	By 2030, achieve universal and equitable access to safe and affordable drinking water for all	Avoiding potential impacts	Institutional development		Restructuring the water management system will support the achievement of safe and affordable drinking water for all	LOCAL EXPERT	
		General	6.5	6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	Avoiding potential impacts	Institutional development		Revised and improved organization structures will support the integration of water resources management	LOCAL EXPERT	
		General	6.6	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Avoiding potential impacts	Institutional development		Integrating hygiene and sanitation plans and policies in overall strategic plan; as well as policies to manage urban water and reduce landfill waste; implementation of integrated water resource management	SCAN	Expert judgement
		General	6.a	6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	Avoiding potential impacts	Institutional development		Integrating hygiene and sanitation plans and policies in overall strategic plan; as well as policies to manage urban water and reduce landfill waste; implementation of integrated water resource management	SCAN	Expert judgement
		General	6.b	6.b Support and strengthen the participation of local communities in improving water and sanitation management	Avoiding potential impacts	Institutional development		Local participation to improve the design and management of irrigation projects	LOCAL EXPERT	
		General	8.4	8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Avoiding potential impacts	Institutional development		Capacity building to mainstream CC into development plans, and ensure sustainable, inclusive, and rapid economic growth	SCAN	Expert judgement
		General	10.1	10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average of the population at a rate higher than the national average	Avoiding potential impacts	Institutional development		Capacity building to mainstream CC into development plans, and ensure sustainable, inclusive, and rapid economic growth		Expert judgement

3.1. Produce the final version of the draft Water Code and follow up the process for its effective implementation and enactment, through: – The approval of the Ministry of Energy and Water – Discussion and adoption by the Council of Ministers – Transfer by decree to the Parliament for final approval and implementation 3.2. Strengthen the legal framework in order to improve the performance of the delivery of water and wastewater services and support the implementation of the proposed strategic initiatives, including all legal aspects related to: – Improvements to current organizational bylaws of WEs – Development and enactment of new organizational law for MEW’s restructuring – Reevaluation of some provisions of law 221/2000 in view to strengthen the capacities of the management and to provide better performance to the end users – Establishment of an efficient regulatory framework – Setting of a transparent tariff structures – Development of a wastewater collection and disposal regulations – Improvement of irrigation regulation bylaws – Providing adequate legal environment to promote private sector participation – Development of performance based incentives (e.g., procurement framework,) – Ensuring normal access to potable water and sanitation including requirements for a proper implementation of operational and quality standards	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity		6.1	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	N/A	N/A		Policy and legislation can support the achievement of access to safe and affordable drinking water	LOCAL EXPERT	
	16.6 Develop effective, accountable and transparent institutions at all levels		6.4	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	N/A	N/A		Policies and regulations can support measures that increase water use efficiency	LOCAL EXPERT	
	17.14 Enhance policy coherence for sustainable development		16.6	16.6 Develop effective, accountable and transparent institutions at all levels	N/A	N/A		Implementation and enactment of a water code supports the development of more transparent and accountable institutions	LOCAL EXPERT	
			17.14	17.14 Enhance policy coherence for sustainable development	N/A	N/A		Policy coherence is achieved through a strengthened legal framework to improve the performance of service delivery	LOCAL EXPERT	
4.1. Improve / refine climate change knowledge, and particularly its implications on the water sector and its vulnerability (i.e. refinement of model and figures): – Collect, analyze and develop trends for climatic data (precipitation and temperature) covering all Lebanon, to compare with historic data and detect possible deviations – Establish a unified database to include all water monitoring data and maintain it regularly updated – Develop and implement long-term river, spring and snow cover monitoring programs – Update periodically water usage scenarios and thus water management options 4.2. Improve water quality and protection of recharge zones: – Review and upgrade water quality standards – Take actions to protect against contaminants that may be found in drinking water and its sources – Design and implement a comprehensive integrated surface & groundwater quality monitoring network – Develop a implement a concept for protecting recharge zones – Centralize data and ensure communications with the consumers – Design and implement an integrated monitoring system for irrigation water quality 4.2. Develop flood mitigation arrangements: – Establish a flood plain zoning – Develop an integrated flood management plan – Assess the potential use of flood water for groundwater recharge – Support initiatives aiming at combating desertification 4.3. Improve wastewater quality: – Review and update water quality standards for wastewater discharge – Review and adopt draft standards for wastewater reuse in agriculture & sludge reuse – Implement pollution control programs 4.5. Evaluate environmental consequences of the proposed NWSS (Strategic	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all (4.2)	General	1.a	1.a Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions	Avoiding potential impacts	Institutional development		Improved / refined climate change knowledge, and particularly its implications on the water sector and its vulnerability (i.e. refinement of model and figures) can protect the livelihood and productive capacity of the poor	LOCAL EXPERT	
	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally									
	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity									
	6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	General	1.b	1.b Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions	Avoiding potential impacts	Institutional development		Improved / refined climate change knowledge, and particularly its implications on the water sector and its vulnerability (i.e. refinement of model and figures) can protect the livelihood and productive capacity of the poor	LOCAL EXPERT	
	11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations (4.2)									
	15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	General	2.2	2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons	Avoiding potential impacts	Institutional development		Flood mitigation and improved water quality can increase agricultural productivity	LOCAL EXPERT	

Environmental Assessment) to ensure they are :
– fully included
– addressed appropriately at the earliest possible stage of decision making on par with economic and social considerations

General	2.c	2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility	Avoiding potential impacts	Institutional development		Climate change knowledge, and particularly its implications on the water sector and its vulnerability can help to ensure the proper functioning of the food commodity market	LOCAL EXPERT	
General	3.3	3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases	Avoiding potential impacts	Institutional development		Improved water and wastewater quality can help prevent the spread of communicable disease	LOCAL EXPERT	
General	3.d	3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks	Avoiding potential impacts	Institutional development		Improve / refine climate change knowledge, and particularly its implications on the water sector and its vulnerability can strengthen the capacity to respond to risks	LOCAL EXPERT	
General	6.1	By 2030, achieve universal and equitable access to safe and affordable drinking water for all				Take actions to protect against contaminants that may be found in drinking water and its sources	LOCAL EXPERT	
	6.3	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally				Review and upgrade water quality standards supports improved water quality	LOCAL EXPERT	
	6.4	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity				Update periodically water usage scenarios and thus water management options to promote water efficiency	LOCAL EXPERT	
General	6.5	6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	Avoiding potential impacts	Institutional development		Promote integrated management solutions	LOCAL EXPERT	
General	6.6	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Avoiding potential impacts	Institutional development		Improve water quality and protection of recharge zones will support the protection of water ecosystems	LOCAL EXPERT	

General	6.a	6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	Avoiding potential impacts	Institutional development		Integrating hygiene and sanitation plans and policies in overall strategic plan; as well as policies to manage urban water and reduce landfill waste; implementation of integrated water resource management	SCAN	Expert judgement
General	8.1	8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	Avoiding potential impacts	Institutional development		Improved water quality and wastewater management supports economic development	LOCAL EXPERT	
General	8.4	8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Avoiding potential impacts	Institutional development		More efficient use of water resources supports sustainable production and consumption	LOCAL EXPERT	Expert judgement
General	10.1	10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average of the population at a rate higher than the national average	Avoiding potential impacts	Institutional development		Improved water efficiency and quality supports agricultural productivity which primarily impacts lower-income households	LOCAL EXPERT	
General	11.5	11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations (4.2)	Avoiding potential impacts	R&D		Reduce the likelihood of water-related disasters through increased water quality and protection, and flood mitigation	LOCAL EXPERT	
General	11.b	11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels	Avoiding potential impacts	Institutional development		Capacity building to mainstream CC into development plans, and ensure inclusive and sustainable urbanization	SCAN	Expert judgement

		General	15.3	15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	Avoiding potential impacts	Institutional development		Combat desertification through improved water management	LOCAL EXPERT	
		General	15.5	15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Avoiding potential impacts	Institutional development		Increase institutional capacity to monitor illegal activity, particularly related to endangered species and illegal logging; protection of critical habitat for vulnerable species through regulatory protection	SCAN	
		General	15.9	15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	Avoiding potential impacts	Institutional development		Integration of CC impacts to development planning	SCAN	
5.1. Conservation Initiatives on Domestic and Industrial Demand – Installation of conservation kits (plumbing retrofits and high-efficiency toilets and showerheads, dual flush toilets, faucet aerators, kitchen aerators) – High-efficiency cloth washers – Complete retrofit of large water consumers, e.g., industrial, commercial – Public outreach, awareness and education programs – Household and establishment audits 5.2. Conservation Initiatives on Irrigation Water – Adoption of high efficiency on-farm irrigation techniques, e.g., drip irrigation, sprinkler irrigation, overhead irrigation where applicable – Coordination with Ministry of Agriculture for the adoption towards lower consumption crops – Public outreach, awareness and farmer education programs – Farm audits and optimization according to local conditions	1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters 6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity 6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities 12.2 By 2030, achieve the sustainable management and efficient use of natural resources 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	Agriculture	1.1.	1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day	Vulnerability	Increase resource efficiency		Improving resiliency of the poor engaged in climate sensitive livelihoods through reduction in use of inputs through efficiency measures (e.g., water efficiency and recycling, better soil management)	SCAN	Nyasimi et al. (2016)
		Agriculture	1.2	1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	Vulnerability	Increase resource efficiency		Improving resiliency of the poor engaged in climate sensitive livelihoods through reduction in use of inputs through efficiency measures (e.g., water efficiency and recycling, better soil management)	SCAN	Nyasimi et al. (2016)
		Agriculture	1.5	1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	Vulnerability	Increase resource efficiency		Improving resiliency of the poor engaged in climate sensitive livelihoods through reduction in use of inputs through efficiency measures (e.g., water efficiency and recycling, better soil management)	SCAN	Nyasimi et al. (2016)
		Agriculture	2.4	2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	Vulnerability	Increase resource efficiency		Irrigation water conservation initiatives can help protect ecosystems and ensure more sustainable food production systems	LOCAL EXPERT	

Agriculture	6.3	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Vulnerability	Increase resource efficiency		Lowering consumption for agricultural and industrial purposes should benefit water quality	LOCAL EXPERT	
Agriculture	6.4	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Vulnerability	Increase resource efficiency		Improvement in water efficiency through conservation initiatives in agriculture and industry	LOCAL EXPERT	
Agriculture	6.5	6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	Vulnerability	Increase resource efficiency		Improvement in water efficiency through conservation initiatives in agriculture and industry	LOCAL EXPERT	
Agriculture	6.6	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes					LOCAL EXPERT	
Agriculture	8.1	8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	Vulnerability	Increase resource efficiency		Increase in productivity through efficiency in use of inputs (lower average unit cost)	SCAN	Nyasimi et al. (2016); Expert judgement
Agriculture	8.2	8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Vulnerability	Increase resource efficiency		Increase in productivity through efficiency in use of inputs (lower average unit cost)	SCAN	Nyasimi et al. (2016); Expert judgement
Agriculture	8.4	8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead				Improvement in water efficiency through conservation initiatives in agriculture and industry	LOCAL EXPERT	

Agriculture	10.1	10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average of the population at a rate higher than the national average	Vulnerability	Increase resource efficiency		Water conservation measures in agriculture can reduce input cost and bolster economic productivity	LOCAL EXPERT	
Agriculture	11.a	11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning	Vulnerability	Increase resource efficiency		Developing rural livelihood resilience and enhancing connectivity to prevent excessive rural to urban migration	SCAN	Expert judgement
Agriculture	12.2	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	Vulnerability	Increase resource efficiency		Reduction in use of inputs through efficiency measures (e.g., water efficiency and recycling, better soil management)	SCAN	Expert judgement
Agriculture	12.4	12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Vulnerability	Increase resource efficiency		Reduction in use of inputs through efficiency measures (e.g., water efficiency and recycling, better soil management)	SCAN	Expert judgement
Agriculture	12.5	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	Vulnerability	Increase resource efficiency		Reduction in use of inputs through efficiency measures (e.g., water efficiency and recycling, better soil management)	SCAN	Expert judgement
Agriculture	15.1	15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Vulnerability	Increase resource efficiency		Increased agricultural productivity through use of same agricultural area, but more productive produce	SCAN	Expert judgement
Agriculture	15.3	15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	Vulnerability	Increase resource efficiency		Combating desertification through water conservation initiatives	LOCAL EXPERT	

Agriculture	15.5	15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Vulnerability	Increase resource efficiency		Reducing degradation of natural habitats through water conservation initiatives	LOCAL EXPERT	
Industry	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Reduce emissions intensity	Non-energy		Contributes to technological and infrastructure upgrading, and to economic diversification and innovation	SCAN	
Industry	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Reduce emissions intensity	Non-energy		Contributes to decoupling growth from environmental degradation	SCAN	
Industry	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Reduce emissions intensity	Non-energy		Lower emissions technologies / processes and reduced leakages / fugitive emissions in industrial sites supports the development of sustainable and reliable infrastructure	SCAN	
Industry	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Reduce emissions intensity	Non-energy		Supports sustainable industrialisation and could improve industrial productivity and profitability	SCAN	
Industry	9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Reduce emissions intensity	Non-energy		Conservation initiatives in industry and agriculture increases resource efficiency and supports adoption of environmentally sound technologies and processes	LOCAL EXPERT	

		Industry	11.4	Strengthen efforts to protect and safeguard the world’s cultural and natural heritage	Reduce emissions intensity	Non-energy		Protects natural habitats through reduced non energy pollution	SCAN	
		Industry	12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Reduce emissions intensity	Non-energy		Reduced non energy / fugitive emissions (e.g. reduced coolant leakage) supports sustainable management of chemicals and wastes and reduces their release to air and water	SCAN	
		Industry	12.6	Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	Reduce emissions intensity	Non-energy		Public outreach, awareness and education programs to promote industrial water conservation measures	LOCAL EXPERT	
		Industry	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Reduce emissions intensity	Non-energy		Reduced non energy / fugitive emissions (e.g. reduced coolant leakage) can reduce pollution to marine environments	SCAN	
		Industry	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Reduce emissions intensity	Non-energy		Improves water ecosystem and habitat conservation due to reduced pollution	SCAN	

References

- Bouyé, B., Harmeling, S. & Schulz, N-S. (2018). Connecting the Dots: Elements for a Joined-Up Implementation of the 2030 Agenda and Paris Agreement. World Resources Institute. Retrieved from <https://www.wri.org/publication/connectingthedots-ndc-sdg>
- Energy research Centre of the Netherlands (ECN) and New Climate Institute. (2019). Ambition to Action SCAN tool. Retrieved from <http://ambitiontoaction.net/>
- Ministry of Energy and Water (MOEW). (2010). National Water Sector Strategy. Retrieved from <http://climatechange.moe.gov.lb/viewfile.aspx?id=182>
- Ministry of Environment, Global Environmental Facility and United Nations Development Programme (MOE, GEF & UNDP) (2015). Lebanon's Third National Communication to the UNFCCC. Retrieved from <http://climatechange.moe.gov.lb/viewfile.aspx?id=239>
- Ministry of Environment and United Nations Development Programme (MOE/UNDP) (2016). Intended Nationally Determined Contribution (INDC). Beirut, Lebanon: MOE. Retrieved from <http://climatechange.moe.gov.lb/Library/Files/Uploaded%20Files/Republic%20of%20Lebanon%20-%20INDC%20-%20September%202015.pdf>
- United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) (2018). Turning promises into action: Gender equality in the 2030 Agenda for Sustainable Development. Retrieved from <https://www.unwomen.org/en/digital-library/publications/2018/2/gender-equality-in-the-2030-agenda-for-sustainable-development-2018#view>
- United Nations Statistics Division. (2019). Sustainable Development Goal indicators website: SDG API. Retrieved from <https://unstats.un.org/sdgs/>