

Sector: Waste



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?

MINISTRY OF ENVIRONMENT
UNITED NATIONS DEVELOPMENT PROGRAMME
Nationally Determined Contribution Support Programme



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:	Waste
Sub-sector:	Solid Waste
Source document:	National Strategy on Integrated Solid Waste Management (NSISWM) (Draft)
Ministry:	Ministry of Environment
URL:	N/A - in draft form

The National Strategy on Integrated Solid Waste Management (NSISWM) provides an extensive list of initiatives aimed at building a sustainable and comprehensive waste management sector across Lebanon including both physical management solutions as well as governance solutions. The strategy contains interventions aimed at: 1) waste prevention 2) increase of waste reuse, resource utilization, 3) reduction of waste that ends up at landfills, 4) elimination of waste disposed in non-sanitary landfills and dumpsites and 5) closure and rehabilitation of dumpsites. The strategy is broken into six ‘Thematic Areas’ which directly align well with the SDGs though it is not part of the strategy’s narrative. Solid waste management is a cross-cutting issue that directly aligns with SDG 12: Sustainable Production and Consumption.

Note: The following is an assessment of the Draft Report from February, 2019.

Links to Climate Change and Sustainable Development

The NSISWM tackles waste management through an integrated strategy but does not set targets for GHG emission reductions. According to the Third National Communication, most of the emission reductions potential in the solid waste sector can be met through using waste-to-energy to replace landfilling and open dumping, which is a central part of the strategy.

In Lebanon’s Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, the overall mitigation targets do not include specific waste targets. However, where the NDC mentions the energy sector, this covers power and fuel consumption in all sectors, including industry, transport, households, agriculture, etc.

<i>Unconditional Target</i>	A GHG emission reduction of 15% compared to the Business-As-Usual (BAU) scenario in 2030
<i>Conditional Target</i>	A GHG emission reduction of 30% compared to the Business-As-Usual (BAU) scenario in 2030

The following assessment identifies the linkages between the specific actions in the NSISWM to the SDG targets (Tables 1 and 2). It identifies, how waste-to-energy, for example, can positively or negatively impact SDG targets.

Table 1: Primary SDG Target

Relevant SDG	How does the NSISWM contribute to this SDG? (examples)
	<ul style="list-style-type: none"> - Promote effective waste collection throughout Lebanon and reduce the impact of waste management on humans and ecosystems - Established waste management policies and legislation can support waste reduction through effective enforcement - Polluter pay principles can reduce waste generation through economic disincentives - Contributes to reduce waste generation through prevention, reduction, recycling and reuse

Table 2: Highly Relevant SDG Targets

Relevant SDG	How does the NSISWM contribute to this SDG? (examples)
	<ul style="list-style-type: none"> - Prevent air, soil and water contamination through proper waste disposal policies and legislation reducing and preventing non-communicable disease - Health link to respiratory diseases through adequate waste management and avoiding waste burning. Adequate waste management also contributes to less air, soil and water pollution caused by burning or runoff
	<ul style="list-style-type: none"> - Waste management awareness allows for self-regulation to prevent communicable diseases through hygienic and good sanitation practices - Increasing awareness on waste management can change behavior towards illegal dumping and burning - Increasing awareness on environmental protection and waste management can change behavior towards waste generation and encourage reduce, recycle and reuse
	<ul style="list-style-type: none"> - Ensure environmentally sound long-term land use planning is the basis of all development decision-making to better coordinate national waste management activities - Increase sustainable urbanization and sustainable human settlement planning and management - Promote effective waste collection and reduce the impact of waste management on humans and ecosystems
	<ul style="list-style-type: none"> - Support Waste Management (WM) activities that create more effective and transparent institutions and legislation - Strengthen capacities of all institutions involved in waste management by additional reorganization and financial resources, by additional employment and also by executing adequate training of staff at a national, regional and local level
	<ul style="list-style-type: none"> - Improved capacity for revenue collection contributes to a self-sustaining SWM sector - Provide better policy coherence through the establishment of enforceable regulations and legislation - A financially self-sustaining SWM is derived from mobilizing multiple revenue streams - Economic instruments connected to the real cost of waste management (landfill fees, polluter pay schemes) provides policy coherence for a self-sustaining waste sector

Summary of Recommendations

The next NSISWM update or amendment 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. To start, the NSISWM can explicitly link the strategy's 'thematic areas' to specific SDGs. An integrated approach to solid waste management positively impacts at least thirteen SDG targets and advances the NDC goals in reducing GHG emissions, 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, just because recycling facilities exist and a program is in place, it does not necessarily guarantee household participation in the program, and therefore there likely needs to be a strong emphasis on education (SDG 4) to realize a successful recycling program.
- Likewise, according to the National Biodiversity Strategy marine areas are used as open solid waste dumpsites where untreated wastewater, industrial and solid waste are discharged directly into marine waters. Therefore, strategies to address waste management in a sustainable and environmentally friendly way should also tackle efforts to reduce waste impacts on coastal zones and marine life SDG 14 (life under water).

Future iterations of the NSISWM 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 waste management 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 waste management from a gender perspective might result in new strategies to include women and girls in waste decision making and implementation strategies. The effectiveness of waste disposal initiatives can be improved through the incorporation of an understanding of gender differences and inequalities. Waste disposal projects can also provide support to women (especially if they are responsible for waste disposal) and ease their overall work burden through improved family health. Waste disposal initiatives can also contribute to gender equality through offering opportunities for women's increased employment ([OECD](#)).
- Further, key indicators should be expanded 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 waste management 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).

Potential Negative Linkages

The majority of solid waste management measures result in largely positive benefits to the environment however, a few measures can have negative or unintended consequences. The overall impact and potential trade-offs need to be weighed to determine if projects have a net positive impact and/or if potential negative impacts can be avoided. Moreover, some negative linkages may not be detrimental specifically to the environment, but they can have negative consequences on other SDGs such as hunger, poverty, health or jobs. Therefore, it is imperative to understand how certain plan recommendations may negatively impact some SDGs. Table 3 illustrates some examples of the potential negative linkages that the deployment of waste management strategies could have on the SDGs.

Table 3: Potential Negative Linkages to the SDGs

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	Complex solid waste management systems may come at the expense of immediately addressing waste management through traditional and immediately available sources
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	Formalizing the waste management sector to have landfills that can manage GHG emissions instead of dumps can impact lower income population working in the informal waste sector

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

A key word search and review of the NSISWM 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, waste management measures have strong linkages to responsible consumption and production (SDG 8) but these linkages are not included as part of the NSISWM narrative. Likewise, education and awareness raising plays a central role in the NSISWM, 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 NSISWM and recommendations for creating linkages in future iterations of the plan. Below recommendations tackle the primary SDG, the other highly relevant SDG linkages as well as the rest (Table4).

Table 4: Recommendation for Estimation of Impact of SDGs

Key Words	Description in the Policy/Strategy/Action Plan	Recommendation for Estimation of Impact/Integration of Impact
<p>SDG One: No Poverty</p> <ul style="list-style-type: none"> · Low-income · Poor · Poverty · Disadvantaged · Underprivileged 	<p>Poverty is not addressed in the NSISWM.</p>	<p>Climate risk awareness allows for self-regulation to prevent communicable diseases through hygienic and good sanitation practices.</p>
<p>SDG Two: Zero Hunger</p> <ul style="list-style-type: none"> · Hunger · Food access · Food security · Food affordability · Agricultural Productivity 	<p>Hunger is not addressed in the NSISWM.</p>	<p>Reduction and redistribution of food waste can reduce the amount of food winding up in landfills as well as assist in feeding those that are food insecure.</p>
<p>Highly Relevant SDG</p> <p>SDG Three: Good Health and Well-being</p> <ul style="list-style-type: none"> · Environment · Health · Pollution 	<ul style="list-style-type: none"> - Such inappropriate waste management practices relying mainly on waste disposal on landfills and dumpsites pose severe risks for public health and the environment; - Waste burning is still practiced causing severe health and environmental effects; - In this respect it seeks to establish the framework and set the path for reduction of waste generation in Lebanon and guide the development and improvement of current waste management practices in order to ensure their sustainable manner and ensure the protection of the environment and public health; - Ensure environmental and public health protection and become self-sustainable in hazardous waste management infrastructure, when applicable, on the path to a nontoxic environment. 	<p>In addition to SDG 3 in Table 2:</p> <p>Increase awareness to avoid illnesses and deaths from air, water, soil pollution and contamination.</p>
<p>Highly Relevant SDG</p> <p>SDG Four: Quality Education</p> <ul style="list-style-type: none"> · Education · Awareness raising · Youth 	<ul style="list-style-type: none"> - Thematic area: Public Awareness/Consultation: <ul style="list-style-type: none"> - To increase public awareness on their WM responsibilities; - To introduce and enhance community participation on waste management; - To promote waste reduction, recycle and reuse among the public. - Education and awareness regarding the reformulation of the waste collection, recovery, re-use and recycling, waste treatment and disposal; 	<p>In addition to SDG 4 in Table 2:</p> <ul style="list-style-type: none"> - Waste management awareness allows for self-regulation to prevent communicable diseases through hygienic and good sanitation practices; - Increasing awareness on climate change and future impacts on ground and water contamination can change behavior towards waste management; as well as hygiene and sanitation practices;

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	<ul style="list-style-type: none"> - Education and awareness to affect the level of citizens behavior and mentality for uncontrolled disposal; - Design and implementation of awareness and education campaigns for hazardous waste producers with emphasis on their responsibilities, technological evolutions in waste management and hazardous waste prevention; - National public awareness campaign informing on the provisions of the strategy. 	<ul style="list-style-type: none"> - Increasing awareness on waste management can change behavior towards illegal dumping and burning.
<p>SDG Five: Gender Equality</p> <ul style="list-style-type: none"> · Women · Gender · Vulnerable groups · Rural communities 	<p>Gender is not addressed in the NSISWM.</p>	<ul style="list-style-type: none"> - The effectiveness of waste disposal initiatives can be improved through the incorporation of an understanding of gender differences and inequalities (OECD); - Waste disposal projects can also provide support to women (especially if they are responsible for waste disposal) and ease their overall work burden through improved family health (OECD); - Waste disposal initiatives can also contribute to gender equality through offering opportunities for women’s increased employment (OECD); - Women play a vital role in protecting their families from illnesses due to open dumping and burning waste.
<p>SDG Six: Clean Water Sanitation</p> <ul style="list-style-type: none"> · Clean water · Drinking water · Wastewater · Water quality 	<ul style="list-style-type: none"> - Many non-sanitary landfills and dumpsites are still in operation or not in operation but are still not rehabilitated. Hence there is high risk of pollution for ground and underground water and atmosphere due to the dispersion of untreated leachate and biogas; - Ensure environmental and public health protection and become self-sustainable in hazardous waste management infrastructure, when applicable, on the path to a nontoxic environment. 	<ul style="list-style-type: none"> - Policies and legislation to reduce landfill waste, and air, soil, and water contamination, and the implementation of an integrated waste management system; - Implementation of integrated solid waste management can help to protect and restore water related ecosystems; - Improved water quality due to reducing the amount of waste and garbage produced, enforcing legal dumping and by increasing recycling and safe reuse; - Improved water quality by eliminating dumping and reducing the proportion of untreated wastewater;

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Key Words	Description in the Policy/Strategy/Action Plan	Recommendation for Estimation of Impact/Integration of Impact
<p>SDG Seven: Affordable & Clean Energy</p> <ul style="list-style-type: none"> · Energy efficiency · Electricity transmission · Electricity distribution · Reliable energy · Affordable energy · GHG reduction · Mitigation · Energy security 	<ul style="list-style-type: none"> - Lebanon set as prime goal to treat waste that is not suitable for reuse/recycling prior to disposal and to use waste as an energy resource; - Support the diversion of high calorific waste from landfill to recovery options. Waste disposed to landfill should be minimized and hence, the waste that cannot be recycled or reused should be forwarded for energy recovery. The production of combustible waste from municipal waste streams for use as alternative fuel should be increased, contributing also to the increase of the recovery rates; - Identify the other streams, besides municipal solid wastes, that should be utilized for energy production; - Waste treatment & Energy recovery: Within 10 years from the strategy adoption, 25% of the waste will be driven for treatment or energy recovery, while 20% will be driven to sanitary landfill. 	<ul style="list-style-type: none"> - Increasing awareness on waste management can change behavior towards illegal dumping and burning. - Landfill waste to produce energy generates less greenhouse gases than letting waste decompose (Argonne National Lab, 2017); - Using waste to produce energy, can avoid emissions from landfills and potentially reduce the need for additional landfills across the country (Argonne National Lab, 2017); - Solid waste can be a derivative of renewable energy from organic material (waste-to-energy).
<p>SDG Eight: Decent Work and Economic Growth</p> <ul style="list-style-type: none"> · Jobs · Income · Employment 	<ul style="list-style-type: none"> - To encourage participative approach during the waste management system development and implementation, including incorporation of informal sector and promotion of private participation; - Lebanon will progressively move toward a 'circular economy' to realize resource recovery opportunities and grow recycling sector investment and jobs; - Strengthen capacities of all institutions involved in waste management by additional reorganization and financial resources, by additional employment and also by executing adequate training of staff at a national, regional and local level. 	<ul style="list-style-type: none"> - Increasing economic productivity through environmentally sound long-term land use planning is the basis of all development decision-making, and ensures sustainable, inclusive, and rapid economic growth; - Increase resource efficiency by reducing waste production; - Actions to increase recycling can contribute to formalize the sector and create decent jobs; - Increase economic productivity through technological upgrading and innovation (as result of implementing modern waste management systems); - Contributes to creation of decent jobs.

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Key Words	Description in the Policy/Strategy/Action Plan	Recommendation for Estimation of Impact/Integration of Impact
<p>SDG 9: Industry, Innovation, Infrastructure</p> <ul style="list-style-type: none"> · Industry · Innovation · Infrastructure · Research and development 	<p>Infrastructure measures (IM): development of infrastructure, acquisition of equipment, closure of dumpsites.</p>	<ul style="list-style-type: none"> - Ensuring competitiveness, innovation and the spirit of enterprise by adopting various internationally proven technologies, selecting sites based on specified environmental conditions and adopting degraded as a preference; - Reduce, reuse, recycle contributes to achieve increased resource-use efficiency.
<p>SDG 10: Reduced Inequalities</p> <ul style="list-style-type: none"> · Equity · Inclusion 	<p>To encourage a participative approach during the waste management system development and implementation, including incorporation of informal sector and promotion of private participation.</p>	<p>No further recommendations.</p>
<p><u>Highly Relevant SDG</u></p> <p>SDG 11: Sustainable Cities and Communities</p> <ul style="list-style-type: none"> · Cities · Communities · Urban · Urbanization · Fuel efficient vehicles · Modal share shift · Public transportation · Accessibility · Mobility 	<ul style="list-style-type: none"> - Thematic Area: Sustainable Integrated Waste Management: <ul style="list-style-type: none"> - To enhance sustainability of SWM practices; - To promote effective waste collection (taking into consideration the sorting at source process) and disposal throughout Lebanon and reduce the impact of waste management on humans and ecosystems; - To promote waste management hierarchy; - To promote decentralized waste management; - To improve waste management infrastructure and support sustainable operation and maintenance; - To promote the use of best available techniques for waste management; - To encourage participative approach during the waste management system development and implementation, including incorporation of informal sector and promotion of private participation. 	<p>In addition to SDG 11 in Table 2:</p> <ul style="list-style-type: none"> - Having sustainable landfill systems can prevent spread of diseases caused by floods spreading waste across city. This contributes to reduce the number of deaths and people affected caused by disasters; - Increase the number of municipalities adopting and implementing integrated policies and plans towards resource efficiency; - Reduces environmental impact of cities through waste management.
<p><u>Primary SDG</u></p> <p>SDG 12: SDG 12: Sustainable Consumption and Production</p> <ul style="list-style-type: none"> · Consumption · Production · Output · Productivity 	<ul style="list-style-type: none"> - Seeks to establish the framework and set the path for reduction of waste generation in Lebanon and guide the development and improvement of current waste management practices in order to ensure their sustainable manner and ensure the protection of the environment and public health; - Thematic Area: Waste reduction, recycle, reuse: <ul style="list-style-type: none"> - To reduce the amount of waste generated and landfilled; - To maximize waste utilization; 	<p>In addition to SDG 12 in Table 1:</p> <ul style="list-style-type: none"> - Waste management plans and enacted laws provide the basis of information for sustainable solid waste management; - Financial incentives would support companies in adopting sustainable practices and technologies; - Reduces environmental impact through the minimization of chemicals and hazardous waste released into the air, water, and soil through

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Key Words	Description in the Policy/Strategy/Action Plan	Recommendation for Estimation of Impact/Integration of Impact
<ul style="list-style-type: none"> · Efficiency 	<ul style="list-style-type: none"> - To progressively move toward a 'circular economy' and resource efficiency. 	<p>proper disposal, reduction, reuse, and recycling.</p>
<p>SDG 13: Climate Change</p> <ul style="list-style-type: none"> · Climate Change · GHG emissions · Resilience · Mitigation · Adaptation · Nationally Determined Contribution (NDC) 	<ul style="list-style-type: none"> - Such inappropriate waste management practices relying mainly on waste disposal on landfills and dumpsites pose severe risks for public health and the environment; - The main aim of the NSISWM is to strengthen the country's commitment to minimize the environmental impacts associated with waste management activities and also to promote the provision of best practices for waste services and facilities. 	<ul style="list-style-type: none"> - Reference how the Waste Strategy contributes to climate change mitigation and adaptation; - Reference role of waste policy in the NDC; - Align policy targets with the NDC.
<p>SDG 14: Life Below Water</p> <ul style="list-style-type: none"> · Water · Sea · Lakes · Streams · Rivers · Mediterranean · Marine life · Run-off · Water pollution · Coastal 	<ul style="list-style-type: none"> - Several landfills and dumpsites are located in the coast lines creating marine litter; - Identification of locations for new landfills is problematic especially in the coastal areas. 	<ul style="list-style-type: none"> - Preventing the open dumping of untreated waste into marine waters will benefit fish habitats, marine life and ecosystems; - Prevention of open dumping into marine waters can prevent plastics from ending up in the ocean thus protecting marine life and ecosystems; - Policies and legislation to reduce landfill waste and implementation of integrated solid waste management can help to protect and restore water related ecosystems; - Improved water quality due to reducing the amount of waste and garbage produced, enforcing legal dumping and by increasing recycling and safe reuse; - Improved water quality by eliminating dumping and reducing the proportion of untreated wastewater.
<p>SDG 15: Life on Land</p> <ul style="list-style-type: none"> · Ecosystems · Biodiversity · Forests · Reforestation/ afforestation · Seed bank · Genetic 	<ul style="list-style-type: none"> - Many non-sanitary landfills and dumpsites are still in operation or not in operation but are still not rehabilitated. Hence there is high risk of pollution for ground and underground water and atmosphere due to the dispersion of untreated leachate and biogas; - To promote effective waste collection (taking into consideration the sorting at source process) and disposal throughout Lebanon and reduce the impact of waste management on humans and ecosystems. 	<ul style="list-style-type: none"> - Preventing illegal dumpsites will help to restore fresh water quality, fish, bird and mammal habits and positively impact their distribution and growth; - To promote effective waste collection (taking into consideration the sorting at source process) and disposal throughout Lebanon and reduce the impact of waste management on humans and ecosystems.

Table 4: Recommendation for Estimation of Impact of SDGs

Key Words	Description in the Policy/Strategy/Action Plan	Recommendation for Estimation of Impact/Integration of Impact
<p>Highly Relevant SDG</p> <p>SDG 16: Peace, Justice & Strong institutions</p> <ul style="list-style-type: none"> · Capacity · Legislation · Regulation · Legal framework · Policy · Participatory · Inclusive (decision-making) 	<ul style="list-style-type: none"> - Thematic Area: Policy, Legislation & Enforcement: <ul style="list-style-type: none"> - To support Waste Management (WM) activities with practical, effective and enforceable legislation in the light of the new Law on waste management; - To ensure environmentally sound long-term land use planning is the basis of all development decision-making - To better coordinate national waste management activities and ensure that the Strategy is periodically reviewed and updated to achieve the stated goal and purpose; - To setup and strengthen procedures for monitoring and enforcement. - Thematic Area: Capacity development: <ul style="list-style-type: none"> - To define roles and responsibilities at national and regional/service area level; - To strengthen the capacities of those involved in waste management; - It is noted that, since both the law itself as well as the strategy require several legal means to be adopted, which will specify the several provisions and requirements for waste management, these provisions will be finalized after consultation with all stakeholders; - Waste management operators lack financial and human resources for proper design, construction and operation of facilities. 	<p>In addition to SDG 16 in Table 2:</p> <p>Support Waste Management (WM) activities with practical, effective and enforceable legislation.</p>
<p>Highly Relevant SDG</p> <p>SDG 17 Partnerships for the Goals</p> <ul style="list-style-type: none"> · Resource · Financing mechanism · Public-Private Partnerships 	<ul style="list-style-type: none"> - Thematic Area: Sustainable Financing: <ul style="list-style-type: none"> - To develop waste management systems and programmes financially self-sustaining; - To establish incentive schemes that implement the polluter pays principle by encouraging cleaner production and waste recovery; - To promote Extended Producer Responsibility and polluter pays principle (EPR); - To adopt and apply economic instruments; - To develop a Law for Financial incentives related to sorting at source. - Inability to finance in a sustainable manner, since the collected fees are not sufficient to cover the current waste management cost, even though the existing system is very problematic in terms of operation and efficiency. 	<p>In addition to SDG 17 in Table 2:</p> <ul style="list-style-type: none"> - Provide better policy coherence through the establishment of enforceable regulations and legislation; - Improved capacity for revenue collection contributes to a self-sustaining SWM sector.

Annex I: Lead Institution per SDG in Lebanon

To be determined: Lead institutions per theme are currently being determined. Results of the institutional leadership will be posted here in due time.

Theme: People		Leading Institution: TBD			
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: TBD			
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: TBD			
8 DECENT WORK AND ECONOMIC GROWTH 	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	11 SUSTAINABLE CITIES AND COMMUNITIES 			
Theme: Peace		Leading Institution: TBD			
16 PEACE, JUSTICE AND STRONG INSTITUTIONS 					
Theme: Data and Statistics		Leading Institution: TBD			
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, Harmeling, & 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 NSISWM does not include indicators in the solid waste management strategy but it does make mention of the need to utilize indicators as part of monitoring and evaluation. That said, the NSISWM, does include specific targets which can be utilized as a basis for high level indicator development. Annex II, Table 2 demonstrates how the plan's specific targets can be transformed into relevant solid waste indicators for mutual SDG/NDC tracking. This is not a finalized list but it does provide a good basis of additional indicators that could be included in the final nationalized NDC/SDG 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. These are identified in Annex II, Table 1 'other potential indicators' for the SDG targets that are relevant to solid waste.

Annex II, Table 1: Potential Indicators Based on NSISWM Targets		
Thematic area	Specific Target	Potential SDG/ Climate Indicators
Waste Prevention	<p>Development of a National Waste Prevention Plan (NWPP) in one year from the strategy adoption;</p> <ul style="list-style-type: none"> - Reduce the amount of waste generated per capita by 3% across 10 years from the strategy adoption; - Planning and implementation of waste prevention campaigns that will include information, promotion and regulation actions; - Promotion of specific measures concerning: a) the reduction in the use of single-use plastic bags, b) home and community composting and c) the return and reuse of packaging products. 	<ul style="list-style-type: none"> ○ Municipal solid waste generation rate in kg/capita/d ○ Number of single use plastic bags used per year ○ Home composting rate (as a percentage of all households) ○ Community composting rate (as a percentage of all communities) ○ Return and reuse of packaging rate
Waste Collection	<p>Connection rate to sanitation services to be maintained to ~100%;</p> <ul style="list-style-type: none"> - Recyclables: Within 5 years from the strategy adoption it is intended that measures to implement separation at source will be introduced in order to cover 50% of the country population. Within 10 years from the strategy adoption it is intended that measures to implement separation at source will be introduced in order to cover 80% of the country population; - Biowaste: Within 5 years from the strategy adoption, the proportion of separate collection of BMW should be, at least, 5% of the total weight of the biowaste and within 10 years from the strategy adoption, at least, 10% of the total weight of the biowaste; - Separate collection of 50% of edible used oils generated within 10 years from the strategy adoption; <p>Modernization of waste collection and transport systems;</p> <ul style="list-style-type: none"> - Re-organization of collection service areas, new zoning design, and improvement of routing plans, urban / rural areas; - Optimization of logistics via a development of a network of transfer stations. 	<ul style="list-style-type: none"> ○ Waste collection rate ○ Percentage of coverage of country- separation at source ○ Rate of collection of bio mass waste as a percentage of the total weight of biowaste ○ Rate of collection of edible used oils as percentage of total used edible used oils

<p>Waste Reduction, Reuse</p> <p>Sorting, Recycling</p>	<p>Increase reuse and recycling rates of products:</p> <ul style="list-style-type: none"> - 55% recycling rate in rural areas and 50% recycling rate in urban areas within 10 years from the strategy adoption. The rate refers to percentage of total waste generated from households and possibly from other origins as far as these waste streams is similar to waste from households and includes the total amount of waste reused/recycled (incl. organic waste). Remote areas are to improve their recycling rates by weight as much as practicable, considering distance to waste management and treatment facilities. Within these targets there will also be a variation of what can realistically be achieved, depending on factors such as population and distance from transport corridors; - Encourage the establishment of a network of Material Recovery Facilities (MRFs) for recyclables and biological treatment plants for biowastes. This refers to the management of separately collected recyclables and biowaste; - Promote Home Composting: within 5 years from the strategy adoption a minimum of 2% for biowaste home composting is set, and within 10 years from the strategy adoption a minimum of 4%; - Extended Producer Responsibility (EPR). This strategy by assigning such responsibility will in principle provide incentives to prevent wastes such as packaging waste at the source promote product design for the environment and support the achievement of public recycling and materials management goals. EPR regulates that packaging industry is responsible beyond point of sale for particular products that have toxic constituents or pose waste management challenges, particularly where voluntary waste measures have failed. The ultimate goal of EPR is to encourage cleaner, safer materials and production processes, as well as to eliminate waste at each stage of the product's life cycle. 	<ul style="list-style-type: none"> ○ Recycling rate rural ○ Recycling rate urban ○ Number of Material Recovery Facilities (MRFs) for recyclables and biological treatment plants for biowastes ○ Biowaste home composting rate
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Waste treatment	<p>Support the diversion of high calorific waste from landfill to recovery options. Waste disposed to landfill should be minimized and hence, the waste that cannot be recycled or reused should be forwarded for energy recovery. The production of combustible waste from municipal waste streams for use as alternative fuel should be increased, contributing also to the increase of the recovery rates. Three facts should be taken into consideration:</p> <ul style="list-style-type: none"> - WtE plants will treat residual streams following source separation and recycling operations and specifically those streams that cannot be reused / recycled; - Design the waste treatment facilities in such way, so that the proper high calorific value materials to be recovered in MBT facilities, following the completion of all recycling activities; - Identify the other streams, besides municipal solid wastes, that should be utilized for energy production; - Waste treatment & Energy recovery: Within 10 years from the strategy adoption, 25% of the waste will be driven for treatment or energy recovery, while 20% will be driven to sanitary landfill. 	<ul style="list-style-type: none"> ○ Waste recovery rates as a percentage of total waste ○ % of waste driven for treatment or energy recovery ○ % of waste driven to sanitary landfill
Waste Disposal	<p>Development of sanitary landfills network which will cover the 100% of the country is a long-term goal and in this direction sufficient physical and financial resources should be available over next years to reach this standard of waste disposal;</p> <ul style="list-style-type: none"> - Ensure proper leachate management for the existing and new sanitary landfills; - Reduce the percentage (%) of waste disposed to landfill. Within 10 years from the strategy adoption, maximum 20% of the waste will be driven to sanitary landfill. 	<ul style="list-style-type: none"> ○ Sanitary landfill coverage (percentage of country) ○ Percentage of waste disposed to landfill ○ Percentage of waste driven to sanitary landfill
Closure and rehabilitation of dumpsites	<ul style="list-style-type: none"> - Prohibit the creation of new dumpsites; - Ban of waste burning at dumpsites; - Closure of existing dumpsites; - Rehabilitation of dumpsites (by priority) and rehabilitation of 50% the dumpsites within 10 years from the strategy adoption 	<ul style="list-style-type: none"> ○ Number of dumpsites ○ Number of dumpsite closures ○ Number of dumpsites rehabilitated
Construction and demolition waste management	<p>Extended Producer Responsibility (EPR) – The main responsibility for the organization of the system to manage C&DW will be assigned to the generators of C&DW in order to motivate them to prevent wastes at the source promote product design for the environment and apply construction and demolition practices safer for the environment and public health. They will also be responsible for reaching the recycling targets foreseen;</p> <ul style="list-style-type: none"> - Integrated systems for management of C&DW. The development of such 	<ul style="list-style-type: none"> ○ C&DW collection, recovery, treatment and disposal facilities - national coverage % ○ Separate collection rate of C&DW ○ Recovery rates of C&DW

	<p>systems including collection, recovery, treatment and disposal facilities covering at least 50% of the country within 10 years from the strategy adoption;</p> <ul style="list-style-type: none"> - Separate collection of C&DW: The strategy proposes that 80% of total C&DW to be collected separately within 10 years from the adoption of the strategy; - Increase recovery rates. The strategy proposes a 50% recovery rate for C&DW within 10 years. 	
N/A	General waste indicators (Third National Communication)	<ul style="list-style-type: none"> o GHG emissions (Gg CO₂eq.) from solid waste o CH₄ emissions from solid waste o GHG emissions by solid waste treatment technology o Total waste generated (Gg/year) o % deposited in SWDS o % deposited in sanitary landfills o % going to dumpsites o % recycled reused composted o % of MSW incinerated

Annex II, Table 2: SDG Indicators and Other Potential Indicators

SDG	Indicator
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	12.5.1 National recycling rate,
	12.5.1 Tons of material recycled
	<p>Other potential indicators:</p> <ul style="list-style-type: none"> ○ Municipal solid waste generation rate in kg/capita/d ○ Number of single use plastic bags used per year ○ Home composting rate (as a percentage of all households) ○ Community composting rate (as a percentage of all communities) ○ Return and reuse of packaging rate ○ Waste collection rate ○ Percentage of coverage of country- separation at source. ○ Rate of collection of BMW as a percentage of the total weight of biowaste ○ Rate of collection of edible used oils as percentage of total used edible used oils ○ Recycling rate rural ○ Recycling rate urban ○ Number of Material Recovery Facilities (MRFs) for recyclables and biological treatment plants for biowastes ○ Biowaste home composting rate ○ Waste recovery rates as a percentage of total waste ○ % of waste driven for treatment or energy recovery ○ % of waste driven to sanitary landfill ○ Sanitary landfill coverage (percentage of country) ○ Percentage of waste disposed to landfill ○ Percentage of waste driven to sanitary landfill ○ Number of dumpsites ○ Number of dumpsite closures ○ Number of dumpsites rehabilitated ○ C&DW collection, recovery, treatment and disposal facilities - national coverage % ○ Separate collection rate of C&DW ○ Recovery rates of C&DW ○ GHG emissions (Gg CO₂eq.) from solid waste ○ CH₄ emissions from solid waste ○ GHG emissions by solid waste treatment technology ○ Total waste generated (Gg/year) ○ % deposited in SWDS ○ % deposited in sanitary landfills ○ % going to dumpsites ○ % recycled reused composted ○ % of MSW incinerated

Annex III: SDG List

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">PEOPLE</p>	<p>1 NO POVERTY</p>  <p>Goal 1. End poverty in all its forms everywhere</p>	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
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">PEOPLE</p>	<p>2 ZERO HUNGER</p>  <p>Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture</p>	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		

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

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 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

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

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



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



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

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
- 8.b By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization

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

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

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

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