



Sector: Agriculture



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

IN CONTRIBUTION TO THE



Supported by:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

based on a decision of the German Bundestag



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Spanish Agency
for International
Development
Cooperation



Federal Ministry
for Economic Cooperation
and Development



This document should be referenced as:

MoE/UNDP (2019). Agriculture SDG-NDC Synchronization: Assessment and Recommendations

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Executed by

Ministry of Environment

Funded by

UNDP Funding Window for Climate Change and Disaster Risk Reduction/Climate Change

Implemented by

United Nations Development Programme, Lebanon

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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 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: Agriculture
Sub-sector: Agriculture
Source document: Ministry of Agriculture Strategy 2015 - 2019
Ministry: Ministry of Agriculture
URL: <http://extwprlegs1.fao.org/docs/pdf/leb149670.pdf>

Plan/ Policy Overview

The agricultural sector plays a vital role in contributing to sustainable development and the management of natural resources. The sector also plays a large role in the economic stability of low-income workers. The Agriculture Strategy 2015-2019 builds upon the predecessor Agriculture Strategy 2010-2014, with a mission to, “improve the performance of the agricultural sector contributing to the economic, social, environmental, and sustainable rural development of Lebanon” (Ministry of Agriculture, 2015). The agriculture strategy throughout its eight main courses of action, places a strong emphasis on multiple sustainable development dimensions and aligns well with many SDGs including inclusion of poverty, economic development, youth and climate change strategies. The plan also pays special attention to education, and gender (which is almost always coupled with youth). Included as a main course of action is addressing climate change which details specific strategies for addressing impacts including introducing adaptation measures; conducting studies to estimate greenhouse gas emissions from the agricultural sector, land use changes and forestry. The Ministry of Agriculture (MoA)’s mission statement demonstrates close alignments with the SDGs as such, “MoA adopts the principles of good governance for the development of the agricultural sector in view of ensuring food security including food safety, reducing poverty and rural-urban migration, creating job opportunities, and increasing efficiency and sustainable use of natural resources” (Ministry of Agriculture, 2015).

Links to Climate Change and Sustainable Development

In Lebanon, water scarcity is a challenging issue, where 70% of available water is used for agriculture. Issues with water scarcity will only be exacerbated by climate change and therefore, the agricultural sector will be put under tremendous strain, and is therefore a key sector in formulating adequate adaptation strategies in response to climate change. 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 agriculture sector, specifically the below:

Overarching objective: Towards sustainably managed forest resources, safeguarded ecological integrity, and economic and social development for the benefit of present and future generations. This will be achieved by (only agriculture actions mentioned):



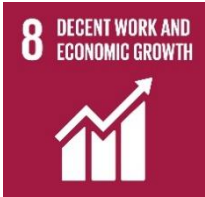
- Rehabilitating irrigation canals
- Promoting Good Agricultural Practices through the support of organic farming and obtaining quality certificates
- Developing an early warning system for agricultural pests and climatic conditions

The following assessment identifies how the specific actions in the Agriculture Strategy relate to the SDG targets (Tables 1 & 2). It identifies how more efficient irrigation systems, for example, can positively impact SDG targets.

Table 1: Primary SDG Target

Relevant SDG	How does the Agriculture Strategy contribute to this SDG? (examples)
 <p>2 ZERO HUNGER</p>	<ul style="list-style-type: none"> - Climate-smart agriculture practices, which improve food security with farming techniques has led to an increase in small-holder profitability - Understanding crop variety demand and production capacity will expand the agricultural sector - Expansion of agricultural land can expand food supply thus decrease the number of people suffering from hunger and ensure food security - Ensure sustainable food production systems through sustainable forest management and use of resources - Promotion of good governance of pasturelands can increase productivity and support income of small-scale producers - Modernization of the irrigation system can increase agricultural productivity and incomes - R&D programs to enhance water efficiency, modernize irrigation, deficient water irrigation, and crop productivity can help ensure climate resiliency of food production, therefore protecting against food insecurity and inflation - Early warning programs to enhance crop/animal/human resiliency to climate change can protect the livelihood and productive capacity of the poor - Improved research on biodiversity of pastoral lands and exploited forests can help to determine agricultural practices that help to maintain ecosystems and strengthen the capacity for climate change adaptation

Table 2: Highly Relevant SDG Targets

Relevant SDG	How does the Agriculture Strategy contribute to this SDG? (examples)
 <p>1 NO POVERTY</p>	<ul style="list-style-type: none"> - 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) - Developing national plans for the conservation and expansion of agriculture and irrigated areas can support income generation for low-income workers - Extension programs can provide training programs to diversify livelihoods (e.g. from fisheries to tourism) may be designed to be gender-sensitive and targeted to poor communities living in coastal areas
 <p>3 GOOD HEALTH AND WELL-BEING</p>	<ul style="list-style-type: none"> - Treating wastewater for agriculture purposes will minimize the risk of exposure to water-borne diseases - Soil and water contamination is reduced through treating wastewater utilized for agriculture purposes - Increase in capacity to collect and analyze data for monitoring of pollution levels help reduce communicable diseases caused by water and air pollution (e.g., respiratory disease, vector borne and water borne disease outbreaks)
 <p>8 DECENT WORK AND ECONOMIC GROWTH</p>	<ul style="list-style-type: none"> - Increase in productivity through efficiency in use of inputs (lower average unit cost) - Strengthening forest management can contribute to more sustainable production and consumption of forest products - Extension programs can enhance skills and agricultural practice thus increasing productivity, economic growth and GDP - Research that supports obtaining higher levels of sustainable agricultural productivity



- Promote good agricultural practices through the support of organic farming and obtaining quality certificates
- Good forest management promotes the efficient use of natural resources
- Increase the awareness on the economic and environmental importance of forests
- Rationalize the harvest and investment of wood and non-wood forest products
- Develop knowledge on good management and sustainable use of forests



- Integration of climate change impacts to development planning
- Studies on biodiversity in ecosystems of pastoral lands and exploited forests can help support the protection of natural habitats
- Improving the conservation of biodiversity and genetic resources can support efforts to conserve and restore terrestrial and freshwater ecosystems
- Strengthen the research on biodiversity and plant genetic resources
- Increasing crop resilience and improved soil management improves biodiversity

Summary of Recommendations

Agriculture strategies 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. This assessment found that agricultural strategies are highly relevant to at least thirty-nine 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, agriculture is a primary source of income and employment in rural areas reaching up to 25 percent of the labor force and representing 80 percent of its GDP. Socio-economic stability can be maintained for low-income workers through introducing more sustainable agricultural processes that reduce environmental impact, increases resiliency, and uses water and land resources more efficiently (SDGs 1, 2, 6 and 12).

Future iterations of the Agricultural Strategy 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 the agricultural sector 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, making more efficient use of natural resources (SDG 12) by modernizing the irrigation system might take precedent over expanding agricultural land to avoid conflicting land uses and potential losses to forests, and valuable ecosystems which could adversely impact SDG 15 (life on land).
- Additionally, approaching agriculture from a supply and demand approach, as a means to address hunger and alleviate food insecurity and malnutrition (SDG 2) might result in different prioritization of strategies such as prioritization of crop and seed selection, nutritious high yield crops, addressing affordability, and tackling food waste.
- Further, agricultural key indicators should be refined 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 agriculture 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 agriculture 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 agricultural initiatives could have on the SDGs.

Table 3: Potential Negative Linkages to SDGs

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	If drought assistance/crop insurance is subsidized ,this can create moral hazard and distributional inequalities if not appropriately administered
6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Increasing agricultural land can increase demand for water impacting water related ecosystems
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	Expansion of agricultural land can adversely impact terrestrial and inland freshwater ecosystems
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	

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

A key word search and review of the Agriculture Strategy 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, many agricultural measures have strong linkages to responsible consumption and production (SDG 8) but these linkages are not included as part of the Agriculture Strategy narrative. Likewise, education and awareness raising plays a central role in the strategy, 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 Agriculture Strategy and recommendations for creating linkages and estimations of impacts in future iterations of the plan (Table 4). The below recommendations tackle the primary SDG, the other highly relevant SDG linkages, as well as the rest.

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><u>Highly Relevant SDG</u></p> <p>SDG One: No Poverty</p> <ul style="list-style-type: none"> · Low-income · Poor · Poverty · Disadvantaged · Underprivileged 	<ul style="list-style-type: none"> - “MoA adopts the principles of good governance for the development of the agricultural sector in view of ensuring food security including food safety, reducing poverty and rural-urban migration, creating job opportunities, and increasing efficiency and sustainable use of natural resources”; - Agriculture is a major cornerstone in rural development, as it represents a primary source of income and employment in rural areas. It plays an important role in the fight against poverty in these regions, where several experiences from other countries showed that, growth in agricultural GDP has been more effective at reducing poverty compared to that originating from other sectors, thus contributing to social stability; - Several social challenges remain significant to the agricultural sector in Lebanon. These include: Existence of vulnerable groups (especially youth and women) which are especially prone to poverty; - To address these social challenges, the agricultural sector can offer great potential in terms of employment generation and poverty reduction. It is therefore of utmost importance to address rural and sustainable development priorities while elaborating the agriculture sector policy; - Encouraging youth to engage in agriculture-related investments, increasing job opportunities and generating income in rural areas, and reducing rural-urban migration in the framework of an integrated rural development approach; - Furthermore, several local and international NGOs, the Chambers of Commerce, Industry and Agriculture, private companies, and universities and research institutions are implementing projects in support to agriculture and delivering a wide range of extension services to farmers and rural communities, from product specific extension to the integrated development extension targeting especially poor rural communities. 	<p>In addition to SDG 1 in Table 2:</p> <ul style="list-style-type: none"> - Sustainable planning and management of pasture lands can increase productive and income potential; - Improve resiliency of the poor engaged in climate sensitive livelihoods through the use of alternative water and energy sources; - Providing farmers with better extension services can help to break the cycle of low input, low output subsistence agriculture; - Build the resilience of the poor through improved extension services that provide technical information to farmers, introduces the conservation agriculture, good production practices, and responds to climate change effects on agriculture.

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>Primary SDG</p> <p>SDG Two: Zero Hunger</p> <ul style="list-style-type: none"> · Hunger · Food access · Food security · Food affordability · Agricultural Productivity 	<ul style="list-style-type: none"> - “MoA adopts the principles of good governance for the development of the agricultural sector in view of ensuring food security including food safety, reducing poverty and rural-urban migration, creating job opportunities, and increasing efficiency and sustainable use of natural resources”; - climate change has adverse effects on water availability, pastures and their carrying capacity, and hence productivity and cost of production; - Course of action II: increase productivity and competitiveness of the Lebanese agricultural products; - Nine areas of intervention were identified in order to increase the productivity and competitiveness of the Lebanese agricultural products. 	<p>In addition to SDG 2 in the Table 1:</p> <ul style="list-style-type: none"> - Expanding agricultural land can lead to an increase in productivity and incomes especially when linked to other incentive programs; - Plans to manage and improve rangelands can increase productive capacity and incomes; - Integrated and sustainable management of pasturelands can support more sustainable production and increase productivity; - Increased water efficiency can increase agricultural productivity thus increasing access to food; - Combat desertification through more efficient use of water resources; - Biodiversity research and knowledge sharing supports resilient seed proliferation; - Awareness campaign conducted for farming communities on the importance of conservation and good use of plant genetic resources; - Innovative insurance schemes protect farmers against catastrophic losses, and help them plan for the future.

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><u>Highly Relevant SDG</u></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"> - Poor wastewater management, treatment and high operation and management costs of treatment plants led to the direct use of untreated wastewater in irrigation, which is posing public health risks and polluting the environment; - The poor conditions of slaughterhouses in terms of public health and productivity, and the reduced capacity to come-up with new processed products; - Provision of safe and quality food from domestic production by ensuring sufficient food supply of locally produced food and the development of food safety systems through the Development of the legislative and operational framework of controllers and inspectors, and health juridical control; - Decrease the rate of food poisoning cases in hospitals. 	<p>In addition to SDG 3 in Table 2:</p> <ul style="list-style-type: none"> - Early warning system for agricultural pests, climatic conditions and agricultural extension to include an additional number of risk analysis and means of communication can mitigate health risks; - R&D that supports the development of early warning systems and health risk reduction.
<p>SDG Four: Quality Education</p> <ul style="list-style-type: none"> · Education · Awareness raising · Youth 	<ul style="list-style-type: none"> - Re-activating agricultural extension services and education: The regional extension centers have increased to a total of 28 distributed all over Lebanon. These centers were staffed and equipped, and the extension agents were trained. The agricultural schools were restructured and their curricula reviewed and unified; - There is a number of food and agriculture universities and institutes that provide high and specialized technical education and professionals; - The public agricultural extension service possesses an important infrastructure and good geographical coverage all over the Lebanese agricultural areas. It relies on 28 agricultural centers, 7 agricultural technical schools, and 3 agricultural service centers covering all districts, with the mission to deliver agricultural extension, education and training; - Course of Action: Development of a pluralistic extension system with a shared vision and an integrated approach in agricultural education, research and extension, which responds to the technical and information needs of farmers; 	<ul style="list-style-type: none"> - Ensure youth, women and adults have the necessary education and skills for sustainable and productive farming; - Awareness programs integrated in the curriculum can empower children to better respond to threats of climate change; - Creating opportunities for girls and women through increased education; - Biodiversity research of unprotected ecosystems can lend to the overall body of knowledge on sustainable development and climate adaptation; - Strengthened institutional capacity can help create agricultural educational opportunities for women and youth, and provide support to small-scale farmers and producers.

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
	<ul style="list-style-type: none"> - Course of Action: Activation of the official technical agricultural education according to market demand through the Formulation of a policy for the development of the official technical agricultural education; Strengthening the management of agricultural schools by updating the related legislative texts, enhancing the schools infrastructure and equipment, improving the schools management system to be in line with the international standards, training of teaching staff and school directors on the new management system, and training of teaching staff, technicians and trainers; - Elaborate new educational programmes on fishing and aquaculture; - Strengthening agricultural extension and education; - Establish a national network for the management and sharing of extension knowledge under the auspices of the Ministry of Agriculture, and managed by the Service of Education and Extension; - Update the legislation including agricultural schools internal bylaws and financial system and the Education Act; - Elaboration of a plan to develop agricultural infrastructure for schools; - Activating cooperation between agricultural technical education and training and LARI and the Faculty of Agriculture at the Lebanese University and a number of agricultural institutions. 	

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
SDG Five: Gender Equality <ul style="list-style-type: none"> · Women · Gender · Vulnerable groups · Rural communities 	<ul style="list-style-type: none"> - Providing support to small-scale farmers and producers, and encouraging youth and women to engage in agriculture-related investments, bringing new blood in the agricultural sector through: the support of the small and fruit trees farmers soft loans and guarantee fund in collaboration with KAFALAT; and the preparation and dissemination of feasibility studies for a number of agricultural projects; - Several social challenges remain significant to the agricultural sector in Lebanon. These include: Existence of vulnerable groups (especially youth and women) which are especially prone to poverty; - Increase in the number of small farmers, youth and women benefiting from soft loans; - Preparation of feasibility studies for a number of agricultural projects and make them available to young people and women; - Sensitize small producers, women and youth about the agricultural soft loans and guarantee funds and the required conditions of applications; - Encouraging youth and women to engage in agriculture-related investments. 	<ul style="list-style-type: none"> - Inclusion of women in extension programs can increase adaptive capacity; creating opportunities for girls and women through increased education; - Creating opportunities for girls and women through increased education; - Ensuring inclusion of women in climate change adaptation programs; - Provision of social safety nets, access to emergency response and disaster relief goods and services help cope with economic losses from extreme events, dampen impact on the vulnerable (women included).
SDG Six: Clean Water Sanitation <ul style="list-style-type: none"> · Clean water · Drinking water · Wastewater · Water quality 	<p>Poor wastewater management, treatment and high operation and management costs of treatment plants led to the direct use of untreated wastewater in irrigation, which is posing public health risks and polluting the environment.</p>	<ul style="list-style-type: none"> - Improvement in water efficiency (e.g. through use of treated water for irrigation purposes); - Wastewater treatment allows for safe and efficient reuse of water resources.

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
SDG Seven: Affordable & Clean Energy <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"> - Modernizing the irrigation system in Lebanon and encouraging the use of alternative sources of water and energy in agriculture; - Rising energy prices forcing people living in altitude to find alternative solutions such as wood for heating during the winter, and forest fires; - Activating the use of treated wastewater in agriculture; and promoting the use of renewable energy in agriculture and irrigation; - Elaborate and implement a plan for the use of alternative energy in agriculture; - Establish 28 demonstration plots for renewable energy use in irrigation (1 in each agricultural center); - Conduct field days to disseminate information about the use and maintenance of renewable energy projects in irrigation. 	<p>No further recommendations</p>
<p>Highly Relevant SDG</p> SDG Eight: Decent Work and Economic Growth <ul style="list-style-type: none"> · Jobs · Income · Employment 	<ul style="list-style-type: none"> - Agriculture is a catalyst for the creation of employment in several related sectors in the rural regions such as rural services, transport, communication, education, tourism, etc.; - Stabilize and prevent the decrease in farmers' income; - Increase household income deriving from agricultural and fishing activities in rural areas; - Additional problems include the high variability of income from agricultural activities leading to market instability, limited farmers' negotiation power, and the large income disparities between producers and traders; - Agriculture is a catalyst for the creation of employment in several related sectors in the rural regions such as rural services, transport, communication, education, tourism, etc.; - Increase household income deriving from agricultural and fishing activities in rural areas. 	<p>In addition to SDG 8 in Table 2:</p> <ul style="list-style-type: none"> - Capacity building to mainstream climate change into development plans, and ensure sustainable, inclusive, and rapid economic growth; - Improvement in water efficiency for irrigation through the use of renewable and alternative energy source; - Extension programs can enhance skills and agricultural practice thus increasing productivity, economic growth and GDP; - Improved negotiation skills can enhance capacity for international trade thereby increasing economic output; - Enhancing international trade opportunities can increase GDP; - Expanding agricultural land can contribute to an increase in GDP.

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Key Words	Description in the Policy/Strategy/Action Plan	Recommendation for Estimation of Impact/Integration of Impact
SDG 9: Industry, Innovation, Infrastructure <ul style="list-style-type: none"> Industry Innovation Infrastructure Research and development 	<ul style="list-style-type: none"> - Enhancing domestic marketing channels through strengthening the wholesale markets, developing farmers and agricultural cooperatives markets, promoting contract farming, and carrying out advertising campaigns to promote the consumption of Lebanese agricultural products; - Increase in agricultural exports by 10 percent in 2019 (567,000 tons in 2013); - Conversion of 25,000 hectares into irrigated agricultural land in 2019; - Increase in the number of small farmers, youth and women benefiting from soft loans; - Advertising campaigns to promote the consumption of Lebanese agricultural products; - Assess the consumption and demand for fishing and aquaculture products and means to increase their added value; - Lebanon is considered a major food importer, with local production satisfying only 20 percent of domestic consumption; - Upgrading agricultural infrastructure and increasing efficiency of natural resources use; - New irrigation technologies that increase water use and distribution efficiency at farm level are available in the market; - Improving the value chains and increasing the added value for products of plant origin through: Strengthening the management of agricultural inputs; Improving the performance of agricultural inputs producers; Implementation of development programmes for a number of agricultural value chains in order to increase their comparative advantage, modernize the Lebanese agriculture and increase its added value, use of new technologies, and increase its efficiency and specialization; and Promoting Good Agricultural Practices (GAPs) through the support of organic farming and quality certification. 	<ul style="list-style-type: none"> - Capacity building to mainstream climate change into development plans, and ensure sustainable, inclusive, and rapid economic growth; and to support technology for climate adaptation; - Improved irrigation infrastructure to make the agricultural sector more productive, efficient and sustainable.

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
SDG 10: Reduced Inequalities <ul style="list-style-type: none"> Equity Inclusion 	<ul style="list-style-type: none"> “MoA adopts the principles of good governance for the development of the agricultural sector in view of ensuring food security including food safety, reducing poverty and rural-urban migration, creating job opportunities, and increasing efficiency and sustainable use of natural resources”; At the level of enhancing the socio-economic living conditions: <ul style="list-style-type: none"> Stabilize and prevent the decrease in farmers’ income; Increase household income deriving from agricultural and fishing activities in rural areas; Stabilize the rural population; Increase the share of the labor force in agriculture; Decrease the rate of food poisoning cases in hospitals. 	<ul style="list-style-type: none"> Capacity building to mainstream climate change into development plans, and ensure sustainable, inclusive, and rapid economic growth; Provision of social safety nets, access to emergency response and disaster relief goods and services help cope with economic losses from extreme events, dampen impact on the vulnerable, therefore preventing further inequality; Strengthened institutional capacity can help create agricultural educational opportunities for women and youth, and provide support to small-scale farmers and producers; Reducing the impact of extreme weather damages means less disproportional impact on the poor and vulnerable, particularly women, children, elderly; Creating opportunities for girls and women through increased education; More efficient use of irrigation systems can have beneficial economic impacts especially on the poor and vulnerable, particularly women, children, elderly; A forest resource assessment can help to determine economic potential of forest products; Sound policies and plans to expand agricultural areas and expand international trade can bolster economic opportunity particularly for low-income earners.
SDG 11: Sustainable Cities and Communities <ul style="list-style-type: none"> Cities Communities Urban Urbanization Fuel efficient vehicles Modal share shift Public transportation 	<ul style="list-style-type: none"> In addition, the development of the sector contributes to decreasing urban sprawl and limiting overutilization of natural resources in response to climate change impacts; Encouraging youth to engage in agriculture-related investments, increasing job opportunities and generating income in rural areas, and reducing rural-urban migration in the framework of an integrated rural development approach; 	<ul style="list-style-type: none"> Putting in place disaster risk management to increase city resilience; Increased water efficiency can increase agricultural productivity thus increasing or sustaining farmer income stemming rural to urban migration.

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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"> · Accessibility · Mobility 	<ul style="list-style-type: none"> - Steady loss of workforce and aging population in rural areas (figures of Index Mundi show that urban dwellers are about 87.2 percent of the total population in 2011, with a net migration rate from rural to urban areas of 83.82 migrants / 1,000 population according to 2014 estimation); - This loss of forest cover, which is the cause of landslides with disastrous environmental, economic and social effects, is due to several factors: urban sprawl, rising energy prices forcing people living in altitude to find alternative solutions such as wood for heating during the winter, and forest fires; - Several laws have been adopted providing for the establishment of seven natural reserves. This is a major step forward towards the protection of forest areas facing urbanization and other human activities, and a tool to enhance the natural and historical heritage and develop the local community; - The share of water used by agriculture will be challenged due to the increasing urban and industrial demand; - Agricultural lands suffer from small and fragmented holdings, high cost of land, urban sprawl and land use competition, contributing to the reduction of the agricultural area; - Animal health and production: The sector suffers as well from small and fragmented farms and production units; the urban sprawl; irrational use of antibiotics and chemicals; the continuous decrease in rangelands and pastures (area and productivity); and contract farming which in most cases come in favor of traders. 	
<p>Highly Relevant SDG</p> <p>SDG 12: Sustainable Consumption and Production</p> <ul style="list-style-type: none"> · Consumption · Production · Output 	<ul style="list-style-type: none"> - This sector could be developed through the increase in the production of specific products of animal origin, increase in forage production, and innovation in agro-industry processing devising new products with high demand at the local and export markets, helping therefore the export into Gulf markets where the Lebanese diaspora is established; - Upgrading agricultural infrastructure and increasing efficiency of natural resources use; 	<p>In addition to SDG 12 in Table 2:</p> <ul style="list-style-type: none"> - Disseminate information about the use and maintenance of renewable energy projects in irrigation; - A forest resources assessment will inform the efficient use of natural resources;

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
<ul style="list-style-type: none"> · Productivity · Efficiency 	<ul style="list-style-type: none"> - Enhancing domestic marketing channels through strengthening the wholesale markets, developing farmers and agricultural cooperatives markets, promoting contract farming, and carrying out advertising campaigns to promote the consumption of Lebanese agricultural products; - Increase in domestic production of milk and dairy products from 35% of domestic consumption in 2013 to 40% in 2019; - Assess the consumption and demand for fishing and aquaculture products and means to increase their added value; - “MoA adopts the principles of good governance for the development of the agricultural sector in view of ensuring food security including food safety, reducing poverty and rural-urban migration, creating job opportunities, and increasing efficiency and sustainable use of natural resources”; - New irrigation technologies that increase water use and distribution efficiency at farm level are available in the market; - Improving the value chains and increasing the added value for products of plant origin through: Strengthening the management of agricultural inputs; Improving the performance of agricultural inputs producers; Implementation of development programmes for a number of agricultural value chains in order to increase their comparative advantage, modernize the Lebanese agriculture and increase its added value, use of new technologies, and increase its efficiency and specialization; and Promoting Good Agricultural Practices (GAPs) through the support of organic farming and quality certification. 	<ul style="list-style-type: none"> - Increasing awareness on environmental protection can change behavior towards resource conservation, demand for products that cause deforestation; promotion of nature based and sustainable tourism; - Improve water efficiency through expanding catchment areas and rehabilitation of irrigation canal; - Reduction in use of inputs through efficiency measures (e.g., water efficiency and recycling, better soil management); - Promoting the use of alternative sources of water and energy in agriculture; - Extension programs can support learning that promotes the sustainable use of natural resources.

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
SDG 13: Climate Change <ul style="list-style-type: none"> Climate Change GHG emissions Resilience Mitigation Adaptation Nationally Determined Contribution (NDC) 	<ul style="list-style-type: none"> Course of Action VIII: Responding to climate change impacts Proposed actions: mainstreaming of the Ministry of Agriculture activities related to climate change; introducing adaptation measures; conducting studies to estimate greenhouse gas emissions from the agricultural sector, land use changes and forestry. This strategy will contribute through its various courses of actions/areas of intervention to reducing impacts of climate change and GHG emissions in the agricultural sector; Climate changes have a direct and a significant impact on the agricultural sector and natural resources such as forests, pastures, water and biodiversity. Therefore, the Ministry of Agriculture opted for the introduction of “Responding to climate change impacts” as one of the central courses of action for the next five years. External threats include the climate change and its impact on agriculture, and globalization and trade liberalization, all demanding new adaptive measures, structural changes and capacity development in the management of the agricultural sector. Through its three interrelated dimensions (economic, social and environmental), the agricultural sector plays a vital role in the management of natural resources and contributes to sustainable development; “To improve the performance of the agricultural sector contributing to the economic, social, environmental and sustainable rural development of Lebanon”. 	<ul style="list-style-type: none"> Reference how the Agriculture Strategy directly contributes to climate change mitigation and adaptation; Reference role of water policy in the NDC; Align policy targets with the NDC.
SDG 14: Life Below Water <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"> Furthermore, improper practices in the ports and the maintenance of vessels are adversely affecting the surrounding aquatic environment; In addition, the chaotic deployment of ports and landing sites all along the coast is hindering the management and control, and destructing the habitats through illegal rubbles and constructions, and water pollution is rendering many areas unsuitable for aquaculture; The strengths of the sector resides in the existence of a legislative framework and the presence of active fishermen cooperatives and syndicates. In addition, there is a number of projects researching and 	<ul style="list-style-type: none"> Improved coastal and fisheries resources through non-destructive fishing techniques ensures sustainable food production system; R&D and demonstrations on sustainable fishing and water tourism can help protect biodiversity under water.

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>developing specific aspects of fishing, the availability of research and development centers in the high education institutes (Marine and Fishing Sciences Institute buildings need rehabilitation), and national expertise capable of keeping up with the development of the sector;</p> <ul style="list-style-type: none"> - Despite the presence of 44 ports and landing sites all along the 200 Km of Lebanese coasts, there are only 6,000 registered fishermen in MoA records who are socially unsecured. The fishery sector has never been among national priorities and programmes, which is translated in a weak governmental support to fishing and aquaculture; - Increase household income deriving from agricultural and fishing activities in rural areas. 	
<p><u>Highly Relevant SDG</u></p> <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"> - Agriculture can have a significant impact - positive or negative - on natural resources (water, forests, biodiversity, etc.) and on the environment in general depending on agricultural practices used, the techniques applied to agriculture, and the extent to which sustainable development principles are integrated; - On the other hand, the environmental impact resulting from agricultural activities should be addresses, including the increased agricultural wastes, depletion of natural resources (irrigation water, genetic resources, biological diversity...), the irrational use of agro-chemicals (fertilizers, pesticides) and energy, and the climate change impact resulting from the poor management of natural resources; - Hence, the civil society and the non-governmental organizations are active in environmental related work, and many villages are aware about the importance of the conservation of green areas. 	<p>In addition to SDG 15 in the Table 2:</p> <ul style="list-style-type: none"> - Organic food production means a large reduction of fertilizer and pesticides into the soil and water; - Increasing awareness on environmental protection can change behavior towards resource conservation, demand for products that cause deforestation, and unsustainable practices such as slash and burn; - Expanding catchment areas and rehabilitation of irrigation canals can helps combat desertification; - Reduce the degradation of natural habitats and halt the loss of biodiversity by using water resources more sustainably & efficiently (wastewater reuse in agriculture); - Studies on the biodiversity in ecosystems of pastoral lands and exploited forests to be conducted.
<p>SDG 16: Peace, Justice & Strong institutions</p> <ul style="list-style-type: none"> · Capacity · Legislation · Regulation · Legal framework · Policy 	<ul style="list-style-type: none"> - Contribution to the formulation of a food safety policy based on strategic principles for coordinated and harmonized efforts among concerned institutions, aiming to create an integrated and comprehensive food safety system (from farm to fork) that responds to both producers and consumer's needs, in order to provide safe and nutritious food of high quality, to develop a cost-effective control system, to enhance access to markets of the Lebanese agricultural and 	<ul style="list-style-type: none"> - More effective and accountable institutions through strengthened institutional capacity; - More effective institutions through public private partnerships.

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
<ul style="list-style-type: none"> · Participatory · Inclusive (decision-making) 	<p>food producers, that adopt the risk analysis approach, and to develop common or shared regulations, standards and certification programmes;</p> <ul style="list-style-type: none"> - Axis I – Updating the regulatory/policy framework: A number of legislative texts (laws, decrees, decisions and regulations) have been issued to regulate the handling of the different production inputs such as fertilizers, seeds, agricultural pesticides, veterinary drugs, etc. Food products control, including locally manufactured or imported, has been activated according to international food safety standards in collaboration with various local partners; - Updating the organizational structure and reinforcing the role of MoA and its affiliated institutions (General Directorate of Cooperatives and LARI) and updating the existing legislation and regulations governing the agricultural sector and MoA; - Reviewing, updating and adopting new legislation and internal regulation of the General Directorate of Cooperatives. 	
<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"> - Fostering partnerships with various stakeholders from the private and public sectors; - Activating partnerships with the private sector and related administrations including the National Sectoral Committees; - The activation of the Public-Private Partnerships has led to the introduction of new technologies, especially that the Lebanese investor is educated and characterized by the private initiative, increasing therefore the investment opportunities in agriculture even from non-farming communities; - Activation of the official technical agricultural education according to market demand through the formulation of a policy for the development of the official technical agricultural education. 	<ul style="list-style-type: none"> - Updating the organizational structure for better policy coherence; - Fostering partnerships with various stakeholders from the private and public sectors; - Disaster management plans establishes a transparent and cohesive means to respond to extreme events.

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 agendas' 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, B., Harmeling, S. & Schulz, N-S., 2018). Therefore, in addition to utilization of the SDG global indicator framework, additional indicators are needed to effectively and cohesively monitor both agendas.

The Agriculture Strategy includes sets of verifiable indicators for each area of intervention, however, there is not a strong alignment with the existing SDG framework. This is mostly due to the fact that the SDG indicators are more associated with the demand (hunger) as opposed to agricultural production. Further, many of the indicators contained in the Agriculture Strategy are more goal focused, or too granular for a bigger picture NDC/ SDG integrated approach. That said, there may be some indicators that could be modified and/ or refined to better align with the SDG indicator framework. Therefore, the strategy indicators could be utilized as good starting point in developing an integrated set of NDC/SDG indicators.

As part of this research, a preliminary identification of the targets, goals, data points and/or indicators within the NDC, Third National Communication, and NDC factsheets 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. As previously stated, the final product should be a combined list of indicators that incorporates the SDG global framework complemented by additional indicators that are nationalized, climate focused, and germane to the goals of each specific plan/policy. Example indicators are identified in Annex II 'other potential indicators' for the SDG targets that are relevant to climate change.

Annex II: SDG Indicator Framework and Other Potential Indicators

SDG	Indicator
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	2.1.1: Prevalence of undernourishment (percent)
	2.1.1: Number of undernourished people (millions)
	2.1.2: Total population in severe food insecurity (thousands of people)
	2.1.2: Prevalence of severe food insecurity in the adult population (percent)
	Other potential indicators:
	<ul style="list-style-type: none"> - Amount of food exports returns due to safety and quality of food (Ag strategy) - Non-conformity ratio of samples of domestic inspection (Ag strategy) - Level of contaminants in the follow-up monitoring survey analysis (Ag strategy) -Total food poisoning cases in hospitals annual (ag strategy) - Food production loss due to extreme weather (\$) - Total number of people food insecure due to extreme weather - Change in price of food due to extreme weather
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	2.3.1: Productivity of small-scale food producers (agricultural output per Labor Day, PPP) (constant 2011 international \$)
	2.3.2: Average income of small-scale food producers, PPP (constant 2011 international \$)
	Other potential indicators: <ul style="list-style-type: none"> -Agricultural production in constant \$ (Ag strategy) -Annual deficit in the trade balance between exports and imports (Ag strategy) -Household income derived from fishing and agricultural activities (Ag strategy) -Proportion of labor force in agriculture (Ag strategy) -Change in agricultural income due to extreme weather -Economic loss in agriculture due to extreme weather
2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity	2.4.1 Proportion of agricultural area under productive and sustainable agriculture

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	<p>Other potential Indicators:</p> <ul style="list-style-type: none"> -MOA expenditure on implementation of sustainable management plans of natural resources (Ag strategy) -Number of legislative provisions related to the sustainable management of natural resource (Ag strategy) -Number of hectares producing low emissions crops compared to total agricultural hectares -Hectares of agricultural land implementing water efficiency -Agricultural water demand annual (YOY) -Percentage of agricultural land following pesticide and fertilizer guidelines -FAO/OMS (1993) has published maximum permissible residue levels (MRLs) for pesticides -Number of certified organic farms -Total hectares of certified organic farms -Hectares impacted by extreme weather -Number of irrigation canals of small springs and water sources rehabilitated -Ratio of conversion to modern irrigation over the total irrigated
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	<p>2.5.1 Number of plant and animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities</p> <p>2.5.2 Proportion of local breeds classified as being at risk, not at risk or at unknown level of risk of extinction</p>


Annex III: SDG List

PEOPLE	 <p>Goal 1. End poverty in all its forms everywhere</p>	<p>1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day</p> <p>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</p> <p>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</p> <p>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</p> <p>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</p> <p>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</p> <p>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>
PEOPLE	 <p>Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture</p>	<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</p> <p>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</p> <p>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</p> <p>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</p> <p>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</p> <p>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</p> <p>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</p> <p>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</p>

PEOPLE	<div data-bbox="178 365 336 527"> <p>3 GOOD HEALTH AND WELL-BEING</p>  </div> <p>Goal 3. Ensure healthy lives and promote well-being for all at all ages</p>	<p>3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births</p> <p>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</p> <p>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</p> <p>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</p> <p>3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol</p> <p>3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents</p> <p>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</p> <p>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</p> <p>3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination</p> <p>3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate</p> <p>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</p> <p>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</p> <p>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</p>
PEOPLE	<div data-bbox="178 933 315 1096"> <p>4 QUALITY EDUCATION</p>  </div> <p>Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</p>	<p>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</p> <p>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</p> <p>4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university</p> <p>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</p> <p>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</p> <p>4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy</p> <p>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</p> <p>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</p> <p>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</p> <p>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</p>

PEOPLE	<p>5 GENDER EQUALITY</p>  <p>Goal 5. Achieve gender equality and empower all women and girls</p>	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	<p>10 REDUCED INEQUALITIES</p>  <p>Goal 10. Reduce inequality within and among countries</p>	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	<div> <div>6</div> <div>CLEAN WATER AND SANITATION</div> <div>  </div> </div> <div> Goal 6. Ensure availability and sustainable management of water and sanitation for all </div>	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	<div> <div>7</div> <div>AFFORDABLE AND CLEAN ENERGY</div> <div>  </div> </div> <div> Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all </div>	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	<p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p>  <p>Goal 12. Ensure sustainable consumption and production patterns</p>	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	<p>13 CLIMATE ACTION</p>  <p>Goal 13. Take urgent action to combat climate change and its impacts</p>	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	 <p>Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p>	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	 <p>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</p>	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	<p>8 DECENT WORK AND ECONOMIC GROWTH</p>  <p>Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p>	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
PROSPERITY	<p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>  <p>Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	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	<div>11 SUSTAINABLE CITIES AND COMMUNITIES</div>  <div> Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable </div>	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	<div>16 PEACE, JUSTICE AND STRONG INSTITUTIONS</div>  <div> 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 </div>	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

Annex IV: Ministry of Agriculture Strategy 2015–2019

Areas of intervention & Means of Implementation	Primary SDG Targets	SCAN Tab	SDG	SDG Target (blue = primary target alignment)	SCAN Category	Action	Link +/-	Description of Link	Source Primary	Secondary Source
<p>2.1 Improving the value chains and increasing the value-added for products of plant origin</p> <p>2.1.4 Promoting Good Agricultural Practices through the support of organic farming and obtaining quality certificates (Related to the Course of Action 8 – Responding to climate change impacts)</p> <ul style="list-style-type: none"> - Identification of quality certificate requirements and conditions (Expert for 3 months) - Training of inspectors and extension agents (50 a person for 5 days) - Training of farmers (6 sessions per year in each Regional Service) - Incentives for organic and farmers lined in the quality programme (100 farms) 	<p>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</p> <p>12.2 By 2030, achieve the sustainable management and efficient use of natural resources</p> <p>12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature</p>	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	Technological improvement to increase resilience		Protecting income of poor households and resiliency of livelihood through drought-tolerant crop varieties	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	Technological improvement to increase resilience		Protecting income of poor households and resiliency of livelihood through more sustainable agricultural practice	MODIFIED	
		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	Technological improvement to increase resilience		Protecting income of poor households and resiliency of livelihood through more sustainable agricultural practice	MODIFIED	
		Agriculture	2.1	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	Vulnerability	Technological improvement to increase resilience		Protecting income of poor households and resiliency of livelihood through more sustainable agricultural practice	MODIFIED	
		Agriculture	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	Vulnerability	Technological improvement to increase resilience		Protecting income of poor households and resiliency of livelihood through more sustainable agricultural practice	MODIFIED	
		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	Vulnerability	Technological improvement to increase resilience		Climate-smart agriculture practices, which improve food security with farming techniques has led to an increase in small-holder profitability	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	Technological improvement to increase resilience		Climate-smart agriculture practices, which improve food security with farming techniques has led to an increase in small-holder profitability;	SCAN	Nyasimi et al. (2016); Hammill and Price-Kelly (2017)
		Agriculture	3.2	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	Vulnerability	Technological improvement to increase resilience		If adaptation option is biotechnology and genetically modified crops, there is a perceived risk to public health. Perceived risk is not necessarily an actual physical mechanism, and options can have positive or negative effects; therefore source above should be qualified.	SCAN	Expert judgement; Klein et al. (2014)
		Agriculture	3.2	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	Vulnerability	Technological improvement to increase resilience		Reducing the harmful effects of fertilizers and pesticides to humans through organic farming	LOCAL EXPERT	
		Agriculture	3.4	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	Vulnerability	Technological improvement to increase resilience		Application of climate-smart agriculture through the use of site-specific nutrient management to increase yield also reduce the likelihood of overusing chemical fertilizers that are not absorbed by crops, but instead add to air, water, and soil pollution.	SCAN	Sarkar, D. et al. (2017); Richards, M. et al. (2015); Expert judgement
		Agriculture	3.9	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Vulnerability	Technological improvement to increase resilience		Application of climate-smart agriculture through the use of site-specific nutrient management to increase yield also reduce the likelihood of overusing chemical fertilizers that are not absorbed by crops, but instead add to air, water, and soil pollution.	SCAN	Sarkar, D. et al. (2017); Richards, M. et al. (2015); Expert judgement
		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	Technological improvement to increase resilience		Increase resilience for crops increase agriculture value added and gdp (less damage on extreme weather, more yields on normal weather)	SCAN	Nyasimi et al. (2016); Expert judgement
		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	Vulnerability	Technological improvement to increase resilience		Reducing the impact of extreme weather damages means less disproportional impact on the poor and vulnerable, particularly women, children, elderly	SCAN	Hallegatte et al. (2016); Expert judgement
		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	Technological improvement to increase resilience		Developing rural livelihood resilience and enhancing connectivity to prevent excessive rural to urban migration	SCAN	Expert judgement
		Agriculture	12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Vulnerability	Technological improvement to increase resilience		Sustainable management of natural resources	LOCAL EXPERT	

- sensitise farmers about the plans
- Link the expansion of agricultural lands and investments with other existing incentive programmes

particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round

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

15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

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	Change of livelihood or physical location		Relocation of households that may cause a loss sense of cultural identity may be beneficial to alleviating poverty. Culture sometimes acts as a major barrier to embracing four of the most successful livelihood strategies: labour migration, working for development projects, gardening, and the engagement of women in economic activities.	SCAN	Nielsen and Reenberg (2010)
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	Change of livelihood or physical location		Protecting income of poor agricultural households through shifting of products to higher value added, naturally more CC resilient agricultural produce	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	Exposure	Change of livelihood or physical location		Expanding agricultural lands can cause competing land uses and real estate speculation thus driving up the price of land and potentially food prices	LOCAL EXPERT	
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	Change of livelihood or physical location		Relocation of households that may cause a loss sense of cultural identity may be beneficial to alleviating poverty. Culture sometimes acts as a major barrier to embracing four of the most successful livelihood strategies: labour migration, working for development projects, gardening, and the engagement of women in economic activities.	SCAN	Nielsen and Reenberg (2010)
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	Change of livelihood or physical location		Protecting income of poor agricultural households through shifting of products to higher value added, naturally more CC resilient agricultural produce	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	Exposure	Change of livelihood or physical location		Expanding agricultural lands can cause competing land uses and real estate speculation thus driving up the price of land	LOCAL EXPERT	
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	Change of livelihood or physical location		Relocation of households that may cause a loss sense of cultural identity may be beneficial to alleviating poverty. Culture sometimes acts as a major barrier to embracing four of the most successful livelihood strategies: labour migration, working for development projects, gardening, and the engagement of women in economic activities.	SCAN	Nielsen and Reenberg (2010)
Agriculture	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	Exposure	Change of livelihood or physical location		Developing national plans for the conservation and expansion of agriculture and irrigated areas can support income generation for low-income workers	LOCAL EXPERT	
Agriculture	2.1	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	Exposure	Change of livelihood or physical location		Expansion of agricultural land can expand food supply thus decrease the number of people suffering from hunger and ensure food security	LOCAL EXPERT	
Agriculture	2.1	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	Exposure	Change of livelihood or physical location		Expanding agricultural lands can cause competing land uses and real estate speculation thus driving up the price of land and potentially food prices	LOCAL EXPERT	
Agriculture	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	Exposure	Change of livelihood or physical location		Expansion of agricultural land can expand food supply thus decrease the number of people suffering from hunger and ensure food security	LOCAL EXPERT	
Agriculture	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	Exposure	Change of livelihood or physical location		Expanding agricultural lands can cause competing land uses and real estate speculation thus driving up the price of land and potentially food prices	LOCAL EXPERT	
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	Change of livelihood or physical location		Expanding agricultural land can lead to an increase in productivity and incomes especially when linked to other incentive programs	LOCAL EXPERT	
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	Change of livelihood or physical location		Shift in agricultural produce ensures sustained food production and income that affords for better nutrition	SCAN	Expert judgement

			Agriculture	6.6	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Exposure	Change of livelihood or physical location		Increasing agricultural land can increase demand for water impacting water related ecosystems	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	Change of livelihood or physical location		Expanding agricultural land can contribute to an increase in GDP	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	Exposure	Change of livelihood or physical location		Expanding agricultural land can lead to an increase in productivity and incomes especially when linked to other incentive programs	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	Change of livelihood or physical location		Developing rural livelihood resilience and enhancing connectivity to prevent excessive rural to urban migration	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	Exposure	Change of livelihood or physical location		Expansion of agricultural land can adversely impact terrestrial and inland freshwater ecosystems	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	Exposure	Change of livelihood or physical location		Expansion of agricultural land can adversely impact biodiversity and ecosystems	LOCAL EXPERT	
3.1 Strengthening good management and sustainable use of forests	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Forestry	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 assets of poor households through reduction of economic losses during extreme events such as forest fires; and providing natural shade against heat extremes which cause lower labor productivity and other heat related stress	SCAN	Kjellstrom et al. (2016); Expert judgement	
3.1.1 Promotion of good governance in forest management (Related to Course of Action 8 – Responding to climate change impacts) - Update the legislations to be in line with international standards (legal expert for 3 months) - Enactment and enforcement of legislation - Build the capacities of concerned departments (human, infrastructure and equipment) for 40 Centres - Activate the local participation in the management and conservation of forests and afforestation (8 meetings/zones, 5 topics twice a year) - Increase the awareness on the economic and environmental importance of forests (media and extension material)]	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 12.2 By 2030, achieve the sustainable management and efficient use of natural resources 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	Forestry	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 assets of poor households through reduction of economic losses during extreme events such as forest fires; and providing natural shade against heat extremes which cause lower labor productivity and other heat related stress	SCAN	Kjellstrom et al. (2016); Expert judgement	
		Forestry	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 assets of poor households through reduction of economic losses during extreme events such as forest fires; and providing natural shade against heat extremes which cause lower labor productivity and other heat related stress	SCAN	Kjellstrom et al. (2016); Expert judgement	
3.1.2 Afforestation and reforestation in order to increase the forested area (Related to Course of Action 8 – Responding to climate change impacts) - Complete the national master plan for afforestation and reforestation that identifies the places and methods of afforestation - Raise tree nurseries productivity to 2 million seedlings by 2017 - Provide extension to public and private nurseries to produce drought resistant trees - Afforest and/or reforest a total area of 6,000 hectares by 2019, within the national master plan and the 40 million trees programme - Coordinate and steer all afforestation and reforestation initiatives implemented by public and private sector and related fund raising - Monitor and evaluate the afforestation and reforestation operations(engineers: 3 visits per year– Forest guards: 12 visits per year in three years to 100 locations)	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 15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	Forestry	2.1	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	Exposure	Physical protection		Increases protection against extreme events that cause crop loss and food inflation, which leads to a difficulty in acquiring nutritional needs	SCAN	Expert judgement	
		Forestry	2.1	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	Exposure	Physical protection		May have trade-offs on agricultural land use, which make affordable food prices harder to achieve	SCAN	Kissinger et al. (2012)	
		Forestry	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	Exposure	Physical protection		Increases protection against extreme events that cause crop loss and food inflation, which leads to a difficulty in acquiring nutritional needs	SCAN	Expert judgement	
		Forestry	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	Exposure	Physical protection		May have trade-offs on agricultural land use, which make affordable food prices harder to achieve	SCAN	Kissinger et al. (2012)	
3.1.3 Protection from risks and pests that threaten forests (Related to Course of Action 8 – Responding to climate change impacts) - Implement the forest fire fighting strategy (equipment for preparedness and response and risk reduction) - Tender the clearing forest and roads (Annual tenders for 100 hectares) - Apply the forest integrated pest management		Forestry	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	Exposure	Physical protection		Protection against flooding prevent spread and breeding of water-borne diseases	SCAN	Smith et al. (2014)	
		Forestry	3.9	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Exposure	Physical protection		Protection against flooding prevent spread and breeding of water-borne diseases	SCAN	Smith et al. (2014)	
		Forestry	4.1	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	Exposure	Physical protection		Protection from soil erosion, flooding ensure continued access to educational facilities	SCAN	Expert judgement	
		Forestry	4.2	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	Exposure	Physical protection		Protection from soil erosion, flooding ensure continued access to educational facilities	SCAN	Expert judgement	
		Forestry	4.3	4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	Exposure	Physical protection		Protection from soil erosion, flooding ensure continued access to educational facilities	SCAN	Expert judgement	

		Forestry	4.4	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	Exposure	Physical protection		Protection from soil erosion, flooding ensure continued access to educational facilities	SCAN	Expert judgement
		Forestry	4.5	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	Exposure	Physical protection		Protection from soil erosion, flooding ensure continued access to educational facilities	SCAN	Expert judgement
		Forestry	4.6	4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy	Exposure	Physical protection		Protection from soil erosion, flooding ensure continued access to educational facilities	SCAN	Expert judgement
		Forestry	6.6	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Exposure	Physical protection		Strengthening good management and sustainable use of forests supports the protection of water-related ecosystems	LOCAL EXPERT	
		Forestry	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		Protecting assets of poor households through reduction of economic losses during extreme events such as forest fires; and providing natural shade against heat extremes which cause lower labor productivity and other heat related stress	SCAN	Kjellstrom et al. (2016); Expert judgement
		Forestry	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	Exposure	Physical protection		Protecting assets of poor households through reduction of economic losses during extreme events such as forest fires; and providing natural shade against heat extremes which cause lower labor productivity and other heat related stress	SCAN	Kjellstrom et al. (2016); Expert judgement
		Forestry	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	Exposure	Physical protection		Reducing urban heat island effect through more trees and vegetation; reduces likelihood of flooding due to water flowing from high to low lying areas	SCAN	Expert judgement
		Forestry	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	Exposure	Physical protection		Limiting expansion of urban areas to accommodate growing population	SCAN	Expert judgement
		Forestry	12.2	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	Exposure	Physical protection		Good forest management promotes the efficient use of natural resources	LOCAL EXPERT	
		Forestry	12.8	12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	Exposure	Physical protection		Increase the awareness on the economic and environmental importance of forests	LOCAL EXPERT	
		Forestry	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		Good governance in forest management promotes the conservation and restoration of ecosystems	LOCAL EXPERT	
		Forestry	15.2	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	Exposure	Physical protection		Use of natural means (afforestation) to protect against flooding, storms, and erosion that also supports biodiversity	SCAN	Expert judgement
		Forestry	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	Exposure	Physical protection		Use of natural means (afforestation) to protect against flooding, storms, and erosion that also combats desertification	SCAN	Expert judgement
		Forestry	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	Exposure	Physical protection		Use of natural means (afforestation) to protect against flooding, storms, and erosion that also supports biodiversity	SCAN	Expert judgement
		Forestry	15.9	15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	Exposure	Physical protection		Integration of ecosystem and biodiversity values into agricultural planning	LOCAL EXPERT	
3.1 Strengthening good management and sustainable use of forests	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 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	Forestry	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 assets of poor households through reduction of economic losses during extreme events such as forest fires; and providing natural shade against heat extremes which cause lower labor productivity and other heat related stress	SCAN	Kjellstrom et al. (2016); Expert judgement
3.1.4 Rationalize the harvest and investment of wood and non-wood forest products (Related to Course of Action 8 – Responding to climate change impacts) - Train MoA engineers and Forest Guards (20 days for 10 people - International experts for 20 days, local experts for two months) - Roll-out trainings to producers		Forestry	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 assets of poor households through reduction of economic losses during extreme events such as forest fires; and providing natural shade against heat extremes which cause lower labor productivity and other heat related stress	SCAN	Kjellstrom et al. (2016); Expert judgement

	<p>levels</p> <p>12.2 By 2030, achieve the sustainable management and efficient use of natural resources</p> <p>12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature</p> <p>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</p> <p>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</p> <p>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</p>	<p>Forestry</p> <p>1.5</p> <p>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</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>Protecting assets of poor households through reduction of economic losses during extreme events such as forest fires; and providing natural shade against heat extremes which cause lower labor productivity and other heat related stress</p> <p>SCAN</p> <p>Kjellstrom et al. (2016); Expert judgement</p>
		<p>Forestry</p> <p>2.1</p> <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</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>Increases protection against extreme events that cause crop loss and food inflation, which leads to a difficulty in acquiring nutritional needs</p> <p>SCAN</p> <p>Expert judgement</p>
		<p>Forestry</p> <p>2.1</p> <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</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>May have trade-offs on agricultural land use, which make affordable food prices harder to achieve</p> <p>SCAN</p> <p>Kissinger et al. (2012)</p>
		<p>Forestry</p> <p>2.2</p> <p>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</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>Increases protection against extreme events that cause crop loss and food inflation, which leads to a difficulty in acquiring nutritional needs</p> <p>SCAN</p> <p>Expert judgement</p>
		<p>Forestry</p> <p>2.2</p> <p>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</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>May have trade-offs on agricultural land use, which make affordable food prices harder to achieve</p> <p>SCAN</p> <p>Kissinger et al. (2012)</p>
		<p>Forestry</p> <p>8.4</p> <p>Improve progressively, through 2030, global resource efficiency in consumption 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</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>Strengthening forest management can contribute to more sustainable production and consumption of forest products</p> <p>LOCAL EXPERT</p>
		<p>Forestry</p> <p>11.b</p> <p>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</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>Reducing urban heat island effect through more trees and vegetation; reduces likelihood of flooding due to water flowing from high to low lying areas</p> <p>SCAN</p> <p>Expert judgement</p>
		<p>Forestry</p> <p>11.b</p> <p>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</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>Limiting expansion of urban areas to accommodate growing population</p> <p>SCAN</p> <p>Expert judgement</p>
		<p>Forestry</p> <p>12.2</p> <p>12.2 By 2030, achieve the sustainable management and efficient use of natural resources</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>Rationalize the harvest and investment of wood and non-wood forest products</p> <p>LOCAL EXPERT</p>
		<p>Forestry</p> <p>12.8</p> <p>12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>Develop knowledge on good management and sustainable use of forests</p> <p>LOCAL EXPERT</p>
		<p>Forestry</p> <p>15.1</p> <p>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</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>Develop knowledge on good management and sustainable use of forests</p> <p>LOCAL EXPERT</p>
		<p>Forestry</p> <p>15.2</p> <p>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</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>Use of natural means (afforestation) to protect against flooding, storms, and erosion that also supports biodiversity</p> <p>SCAN</p> <p>Expert judgement</p>
		<p>Forestry</p> <p>15.3</p> <p>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</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>Use of natural means (afforestation) to protect against flooding, storms, and erosion that also combats desertification</p> <p>SCAN</p> <p>Expert judgement</p>
		<p>Forestry</p> <p>15.5</p> <p>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</p> <p>Exposure</p> <p>Physical protection</p> <p></p> <p>Use of natural means (afforestation) to protect against flooding, storms, and erosion that also supports biodiversity</p> <p>SCAN</p> <p>Expert judgement</p>
3.1 Strengthening good management and sustainable use of forests	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	<p>General</p> <p>1.a</p> <p>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</p> <p>Avoiding potential impacts</p> <p>Institutional development</p> <p></p> <p>A forest resource assessment will increase capacity to mobilize resources</p> <p>LOCAL EXPERT</p>
3.1.5 Forest Resources Assessment (Related to Course of Action 8 –Responding to climate change impacts) - Train MoA technical staff - Survey of the forests - Analyse the results - Compute the quantity and value of forest crops in 2016 and 2019	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	<p>General</p> <p>1.b</p> <p>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> <p>Avoiding potential impacts</p> <p>Institutional development</p> <p></p> <p>A forest resource assessment will increase capacity to create sound policy frameworks based on gender sensitive and pro-poor development strategies</p> <p>LOCAL EXPERT</p>
	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	<p>General</p> <p>2.1</p> <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</p> <p>Avoiding potential impacts</p> <p>Institutional development</p> <p></p> <p>A forest resource assessment will provide an understanding of how to sustainably rationalize the harvest and investment of wood and non-wood forest products potentially increasing food security</p> <p>LOCAL EXPERT</p>
	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	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		A forest resource assessment will provide an understanding of how to sustainably rationalize the harvest and investment of wood and non-wood forest products potentially increasing food security	LOCAL EXPERT	
		General	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	Avoiding potential impacts	Institutional development		Ensure sustainable food production systems through sustainable forest management and use of resources	LOCAL EXPERT	
		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		A forest resource assessment will provide an understanding of potential food and non-food forest related commodities	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		A forest resources assessment can contribute to early warning system and risk reduction knowledge base	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		A forest resources assessment can contribute to the sustainable management of ecosystems and help to maintain biodiversity	LOCAL EXPERT	
		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		A forest resource assessment can help to determine economic potential of forest products	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	Avoiding potential impacts	Institutional development		A forest resource assessment can help to determine economic potential of forest products	LOCAL EXPERT	
		General	12.2	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	Avoiding potential impacts	Institutional development		A forest resources assessment will inform the efficient use of natural resources	LOCAL EXPERT	
		General	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	Avoiding potential impacts	Institutional development		A forest resources assessment provides essential baseline information that supports conservation and restoration of ecosystems	LOCAL EXPERT	
		General	15.2	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	Avoiding potential impacts	Institutional development		A forest resources assessment provides essential baseline information that supports sustainable forest management	LOCAL EXPERT	
		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		A forest resources assessment provides essential baseline information that supports combating desertification	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		A forest assessment can help to provide the basis to work toward developing the capacity to help in the protection of critical habitat and vulnerable species	LOCAL EXPERT	
		General	15.7	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	Avoiding potential impacts	Institutional development		A forest assessment can help provide the basis to work toward developing the capacity to help in the protection flora and fauna	LOCAL EXPERT	
		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		A forest assessment can help provide the knowledge to influence policy and planning, and integration of biodiversity and ecosystems	LOCAL EXPERT	
3.2 Promoting sustainable investment and management of pasturelands	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	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	Awareness raising programmes		Sustainable planning and management of pasture lands can increase productive and income potential	LOCAL EXPERT	
3.2.1 Promotion of good governance in rangeland management (Related to Course of Action 8 – Responding to climate change impacts) - Update the legislations to be in line with international standards (legal expert for 2 months) - Enactment and enforcement of legislation - Build the capacities of concerned departments (human, infrastructure and equipment) for 40 Centres - Activate the local participation in the management and conservation of rangelands (8 meetings/zones, twice a year) - Increase the awareness on the economic and environmental importance of rangelands and pastures (media and extension material)	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	General	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	Avoiding potential impacts	Awareness raising programmes		Promotion of good governance of pasturelands can increase productivity and support income of small-scale producers	LOCAL EXPERT	
	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	General	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	Avoiding potential impacts	Awareness raising programmes		Promoting sustainable investment and management of pasturelands	LOCAL EXPERT	
	12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	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	Awareness raising programmes		Good governance in pastureland management will ensure proper functioning of food commodity markets	MODIFIED	

	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	General	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	Avoiding potential impacts	Awareness raising programmes		Activating local participation and proper pastureland management can improve water use efficiency through assuring sustainable water are utilized for grazing	LOCAL EXPERT	
	15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	General	6.b	6.b Support and strengthen the participation of local communities in improving water and sanitation management	Avoiding potential impacts	Awareness raising programmes		Activating the local participation in the management and conservation of rangelands can lead to improved water and sanitation management	LOCAL EXPERT	
		General	12.5	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	Avoiding potential impacts	Awareness raising programmes		Increasing awareness on environmental protection can change behavior towards resource conservation, demand for products that cause deforestation ; promotion of nature based and sustainable tourism	SCAN	Expert judgement
		General	12.8	12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	Avoiding potential impacts	Awareness raising programmes		Increasing awareness on environmental protection can change behavior towards resource conservation, demand for products that cause deforestation ; promotion of nature based and sustainable tourism	SCAN	Expert judgement
		General	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	Avoiding potential impacts	Awareness raising programmes		Awareness raising and local participation in pastureland management can support the conservation and restoration of ecosystems	LOCAL EXPERT	
		General	15.2	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	Avoiding potential impacts	Awareness raising programmes		Increasing awareness on environmental protection can change behavior towards resource conservation, demand for products that cause deforestation, and unsustainable practices such as slash and burn	SCAN	Expert judgement
		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	Awareness raising programmes		Good management of pastureland values are included in development planning to safeguard ecosystems and incomes through more sustainable practices	LOCAL EXPERT	
3.2 Promoting sustainable investment and management of pasturelands	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	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)
3.2.2 Assessment of rangelands and pastoral plants on a national level (Related to Course of Action 8 – Responding to climate change impacts) - Identify pastures, their forage and carrying capacities, in collaboration with LARI - Identify pastoral/grazing systems and pathways - Develop a plan to manage and improve the rangelands (rehabilitation of nurseries to produce pastoral seedlings and rehabilitation of existing pastures) - Implement an integrated management of rangelands in three different climatic zones and provide extension to the concerned stakeholders	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	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)
	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	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)
	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	Agriculture	2.1	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	Vulnerability	Increase resource efficiency		Conservation agriculture offers farming families a more nutritious diet	SCAN	Nyasimi et al. (2016)
	12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	Agriculture	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	Vulnerability	Increase resource efficiency		Conservation agriculture offers farming families a more nutritious diet	SCAN	Nyasimi et al. (2016)
	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	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	Vulnerability	Increase resource efficiency		Plans to manage and improve rangelands can increase productive capacity and incomes	LOCAL EXPERT	
	15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	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		Integrated and sustainable management of pasturelands can support more sustainable production and increase productivity	MODIFIED	
		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		Improvement in water efficiency (e.g. through use of treated water for irrigation purposes)	SCAN	Expert judgement

			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 (e.g. through use of treated water for irrigation purposes)	SCAN	Expert judgement
			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 (e.g. through use of treated water for irrigation purposes)	SCAN	Expert judgement
			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	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	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		Improved pastureland management can increase productivity through use of same agricultural area, but more productive	MODIFIED	
			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		Farmer-managed natural resources promotes biodiversity	MODIFIED	
			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		Farmer-managed natural resources promotes biodiversity	MODIFIED	
			Agriculture	15.9	15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	Vulnerability	Increase resource efficiency		Implement an integrated management of rangelands	LOCAL EXPERT	
3.5 Modernizing the irrigation system in Lebanon and promoting the use of alternative sources of water and energy in agriculture	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	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)	
3.5.1 Increasing irrigation water storage quantity and improvement of the distribution (Related to Course of Action 8 – Responding to climate change impacts) - Study and identify hill lakes sites and their order of priority in correlation with the area of intervention 2.7.2 - Construct 30 hill lakes (a total of one million cubic meters) with low establishment and operational cost, and easy maintenance - Connect the hill lakes to water distribution networks to the level of the agricultural exploitation - Establish a committee/association for each hill lake to improve the management and distribution of water in coordination with the concerned stakeholders (municipalities, cooperatives, farmers groups, etc.) - Construct 500 individual hill lakes and water tanks annually - Rehabilitate the irrigation canals of small springs and water sources	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	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)	
	6.b Support and strengthen the participation of local communities in improving water and sanitation management	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)	
	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	Agriculture	2.1	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	Vulnerability	Increase resource efficiency		Conservation agriculture offers farming families a more nutritious diet	SCAN	Nyasimi et al. (2016)	
	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Agriculture	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	Vulnerability	Increase resource efficiency		Conservation agriculture offers farming families a more nutritious diet	SCAN	Nyasimi et al. (2016)	
	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	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	Vulnerability	Increase resource efficiency		Modernization of the irrigation system can increase agricultural productivity and incomes	LOCAL EXPERT		
	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	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		Increased water storage capacity and distribution will increase productivity and production and help maintain important ecosystems	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	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		Improvement in water quality through construction of hill lakes and hill lake tanks, rehabilitation of irrigation canals and more efficient distribution methods	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 the construction of hill lakes and hill lake tanks, rehabilitation of irrigation canals and more efficient distribution methods	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 expanding catchment areas and rehabilitation of irrigation canals	LOCAL EXPERT	
		Agriculture	6.6	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Vulnerability	Increase resource efficiency		Water efficiency can support the conservation of water-related ecosystems	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		Improvement in water efficiency through expanding catchment areas and rehabilitation of irrigation canals can result in higher productivity	LOCAL EXPERT	
		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		Improvement in water efficiency through expanding catchment areas and rehabilitation of irrigation canals can result in higher productivity	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	Vulnerability	Increase resource efficiency		Reducing the impact of climate change by using natural means to increase water supply	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		Improvement in water efficiency through expanding catchment areas and rehabilitation of irrigation canals	LOCAL EXPERT	
		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		Expanding catchment areas and rehabilitation of irrigation canals can help TO combat desertification	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		Expanding catchment areas and rehabilitation of irrigation canals can help combat desertification through more efficient use of natural resources - decreases water extraction from rivers, lakes and springs	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		Expanding catchment areas and rehabilitation of irrigation canals can help combat desertification through more efficient use of natural resources - decreases water extraction from rivers, lakes and springs	LOCAL EXPERT	
3.5 Modernizing the irrigation system in Lebanon and promoting the use of alternative sources of water and energy in agriculture	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	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)
3.5.2 Using new technologies and raising the efficiency of irrigation at farm level (Related to Course of Action 8 – Responding to climate change impacts) - Elaborate an extension programme and prepare the extension material - Conduct extension seminars (5 seminars annually in each of the 28 centres) - Promote the conversion of 1000 hectares annually to modern irrigation networks with high efficiency through 50% support on new equipment	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	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)
	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	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)
	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	Agriculture	2.1	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	Vulnerability	Increase resource efficiency		Increased water efficiency can increase agricultural productivity thus potentially increasing access to more affordable local food	LOCAL EXPERT	
	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	Agriculture	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	Vulnerability	Increase resource efficiency		Increased water efficiency can increase agricultural productivity thus potentially increasing access to more affordable local food	LOCAL EXPERT	
	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	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		More efficient use of water resources can increase productivity and production and build resilience to extreme weather events	LOCAL EXPERT	

<p>use of natural resources</p> <p>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</p> <p>12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse</p>		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		Improvement in water efficiency (e.g. through use of treated water for irrigation purposes)	SCAN	Expert judgement
		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 (e.g. through use of treated water for irrigation purposes)	SCAN	Expert judgement
		Agriculture	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	Vulnerability	Increase resource efficiency		Water- and sanitation-related activities and programmes that support capacity building and technology upgrading	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 (e.g. through use of treated water for irrigation purposes)	SCAN	Expert judgement
		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	9.4	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	Vulnerability	Increase resource efficiency		Improved irrigation infrastructure to make the agricultural sector more productive, efficient and sustainable	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 - use of treated wastewater	MODIFIED	
		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- use of treated wastewater	MODIFIED	
		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- use of treated wastewater	MODIFIED	
		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 treated wastewater (expanding water supply)	MODIFIED	
		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 tree planting and farmer-managed natural resources promotes biodiversity	SCAN	Nyasimi et al. (2016); Expert judgement
		Agriculture	15.5	15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2030, protect and prevent the extinction of threatened species	Vulnerability	Increase resource efficiency		Reduce the degradation of natural habitats and halt the loss of biodiversity by using water resources more sustainably & efficiently (wastewater reuse in agriculture)	LOCAL EXPERT	
3.5 Modernizing the irrigation system in Lebanon and promoting the use of alternative sources of water and energy in agriculture	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	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 the use of alternative water and energy sources	MODIFIED	
<p>3.5.4 Promoting the use of renewable energy in agriculture and irrigation (Related to Course of Action 8 – Responding to climate change impacts)</p> <p>Elaborate and implement a plan for the use of alternative energy in agriculture</p> <p>- Establish 28 demonstration plots for renewable energy use in irrigation (1 in each agricultural centre)</p> <p>- Conduct field days to disseminate information about the use and maintenance of renewable energy projects in irrigation</p>	<p>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</p> <p>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</p>	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 the use of alternative water and energy sources	MODIFIED	
		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 the use of alternative water and energy sources	MODIFIED	
		Agriculture	2.1	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	Vulnerability	Increase resource efficiency		Increased water efficiency can lead to higher productivity	LOCAL EXPERT	

<p>7.2 By 2030, increase substantially the share of renewable energy in the global energy mix</p> <p>7.3 By 2030, double the global rate of improvement in energy efficiency</p> <p>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</p> <p>12.2 By 2030, achieve the sustainable management and efficient use of natural resources</p> <p>12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature</p>	Agriculture	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	Vulnerability	Increase resource efficiency		Conservation agriculture offers farming families a more nutritious diet	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		Combating desertification through tree planting and farmer-managed natural resources improve yields	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		Agroforestry system improves efficiency in input requirements	SCAN	Nyasimi et al. (2016)
	Agriculture	2.a	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	Vulnerability	Increase resource efficiency		Promoting the use of renewable energy in agriculture and irrigation	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		Improvement in water efficiency (e.g. through use of treated water for irrigation purposes)	SCAN	Expert judgement
	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 for irrigation through the use renewable and alternative energy sources	MODIFIED	
	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 for irrigation through the use renewable and alternative energy sources	MODIFIED	
	Agriculture	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	Vulnerability	Increase resource efficiency		Promoting the use of renewable energy in agriculture and irrigation	LOCAL EXPERT	
	Agriculture	7.2	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	Vulnerability	Increase resource efficiency		Promoting the use of renewable energy in agriculture and irrigation	LOCAL EXPERT	
	Agriculture	7.3	7.3 By 2030, double the global rate of improvement in energy efficiency	Vulnerability	Increase resource efficiency		Promoting alternative sources of energy to agricultural sector	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		Improvement in water efficiency for irrigation through the use renewable and alternative energy sources	LOCAL EXPERT	
	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		Improvement in water efficiency for irrigation through the use of renewable and alternative energy source	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	Vulnerability	Increase resource efficiency		Reducing the impact of extreme weather damages means less disproportional impact on the poor and vulnerable, particularly women, children, elderly	SCAN	Hallegatte et al. (2016); Expert judgement
	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		Increased water efficiency can increase agricultural productivity thus increasing or sustaining farmer income stemming rural to urban migration	MODIFIED	
	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 renewable and alternative energy sources	MODIFIED	
	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 renewable and alternative energy sources	MODIFIED	
	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 renewable and alternative energy sources	MODIFIED	
	Agriculture	12.8	By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	Vulnerability	Increase resource efficiency		Disseminate information about the use and maintenance of renewable energy projects in irrigation	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	Vulnerability	Increase resource efficiency		Increased agricultural productivity through use of same agricultural area, but more productive produce	SCAN	Expert judgement
4.1 Development of a pluralistic extension system	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	General	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	Avoiding potential impacts	R&D		Extension programs to enhance crop/animal/human resiliency to climate change can protect the livelihood and productive capacity of the poor	MODIFIED		
4.1.1 Activating the partnership between the public sector, universities, research centres and associations providing extension services (Related to Course of Action 8 – Responding to climate change impacts) - Establish a Committee for Agricultural Extension - Elaborate an extension plan with a shared vision and an integrated approach to education, research and extension that responds to the needs and provide technical information to farmers, introduces the conservation agriculture, good production practices, and responds to climate change effects on agriculture (agricultural extension expert for a period of 5 months) - Identify means of two-way information flow between farmers and research - Establish a national network for the management and sharing of extension knowledge under the auspices of the Ministry of Agriculture, and managed by the Service of Education and Extension	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.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 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	General	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	Avoiding potential impacts	R&D		Extension programs to enhance crop/animal/human resiliency to climate change can protect the livelihood and productive capacity of the poor	MODIFIED		
4.1.2 Quality Assurance and control of extension services provided by all the parties (Related to Course of Action 8 – Responding to climate change impacts) - Improve the existing legislation which allows quality assurance and control of extension services (legal expert 2 months) - Elaborate a system for monitoring and evaluation of extension activities and train the Education and Extension Service on the system (expert for one month) - Recurrent review of extension material and develop new ones, in collaboration with LARI (5 reviews and 5 new materials per year) - Coordinate with stakeholders - Control the quality of extension services and their geographical distribution (Weekly visits, 40 weeks per year)	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 12.2 By 2030, achieve the sustainable management and efficient use of natural resources 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	General	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	Avoiding potential impacts	R&D		Extension programs can help women increase incomes from farming and promote inclusion in economic activities	LOCAL EXPERT		
4.1.3 Strengthening Agricultural Extension Centres (Related to Course of Action 8 – Responding to climate change impacts) - Elaborate annual or seasonal extension plans at the regional level based on the shared extension plan in 4.1.1 (extension expert for a period of 3 months) and related to the M&E system in 4.1.2. - Coordinate and create linkages with the LARI's stations - Train technical staff in a number of areas and communication (5 experts for 2 months each and training workshops of 4 days) according to the needs identified in the extension plans - Provide financial and human resources - Provide the centres with needed equipment and materials, and provide modern extension and communication tools and technologies based on social networking - Implement, monitor and evaluate the extension plan (Weekly visits, 40 weeks per year)		General	1.4	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	Avoiding potential impacts	R&D		Providing farmers with better extension services can help to break the cycle of low input, low output subsistence agriculture	MODIFIED		
		General	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	Avoiding potential impacts	R&D		Build the resilience of the poor through improved extension services that provide technical information to farmers, introduces the conservation agriculture, good production practices, and responds to climate change effects on agriculture	LOCAL EXPERT		
		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	R&D		Extension programs can provide training programs to diversify livelihoods (e.g. from fisheries to tourism) may be designed to be gender sensitive and targeted to poor communities living in coastal areas	MODIFIED		
		General	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	Avoiding potential impacts	R&D		Extension program training in climate-smart agriculture practices, which improve food security with farming techniques has led to an increase in small-holder profitability; Increasing farmers resilience through developing skills, strengthening links to markets, and improving access to financial services leads to an increase in productivity and incomes;	MODIFIED		
		General	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	Avoiding potential impacts	R&D		Extension program training to enhance crop resiliency to climate change help ensure climate resiliency of food production, therefore protecting against food insecurity and inflation	MODIFIED		
		General	2.5	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	Avoiding potential impacts	R&D		Knowledge sharing and spill-overs that support resilient seed proliferation	SCAN	Nyasimi et al. (2016)	
		General	2.a	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	Avoiding potential impacts	R&D		Extension program training in climate-smart agriculture practices, which improve food security with farming techniques has led to an increase in small-holder profitability; Increasing farmers resilience through developing skills, strengthening links to markets, and improving access to financial services leads to an increase in productivity and incomes;	MODIFIED		
		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	R&D		Increasing farmers resilience through developing skills, strengthening links to markets, and improving access to financial services leads to an increase in productivity and incomes;	SCAN	Nyasimi et al. (2016)	
		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	R&D		Demonstrations on proper hygiene practices reduce the likelihood of spread of communicable diseases	SCAN	Expert judgement	

		General	3.4	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	Avoiding potential impacts	R&D		Demonstrations in the work place on self regulation during heat waves can prevent non communicable diseases	SCAN	Expert judgement
		General	4.3	4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	Avoiding potential impacts	R&D		Extension programs can help to create opportunities for women and men through affordable and quality agricultural education services	MODIFIED	
		General	4.4	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	Avoiding potential impacts	R&D		Ensure youth, women and adults have the necessary education and skills for sustainable and productive farming	LOCAL EXPERT	
		General	4.7	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	Avoiding potential impacts	R&D		Extension programs provide knowledge and skills training in sustainable development and livelihoods and can empower farmers to better respond to climate change and promote sustainable development	MODIFIED	
		General	5.1	5.1 End all forms of discrimination against all women and girls everywhere	Avoiding potential impacts	R&D		Inclusion of women in extension programs can increase adaptive capacity; creating opportunities for girls and women through increased education	MODIFIED	
		General	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	Avoiding potential impacts	R&D		Extension programs can promote more sustainable agricultural practice thus potentially reducing run-off pollution, the overuse of pesticides and fertilizers and the use of untreated wastewater for irrigation	LOCAL EXPERT	
		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	R&D		Extension programs can enhance skills and agricultural practice thus increasing productivity, economic growth and GDP	LOCAL EXPERT	
		General	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	Avoiding potential impacts	R&D		Extension programs can improve technical skills and application resulting in increased economic productivity	LOCAL EXPERT	
		General	8.8	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	Avoiding potential impacts	R&D		Extension programs can help promote safe and secure workplaces for all involved in agriculture	LOCAL EXPERT	
		General	8.9	8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	Avoiding potential impacts	R&D		Extension programs can help to promote nature based and sustainable tourism	MODIFIED	
		General	10.2	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	Avoiding potential impacts	R&D		Can create skills and opportunities for farmers (which are the lowest wage earners) through increased education	MODIFIED	
		General	12.2	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	Avoiding potential impacts	R&D		Extension programs can support learning that promotes the sustainable use of natural resources	LOCAL EXPERT	
		General	12.8	12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	Avoiding potential impacts	R&D		Extensions programs expand educational opportunities and awareness around sustainable development	LOCAL EXPERT	
5.2 Enhancing agricultural scientific research	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	General	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	Avoiding potential impacts	R&D		R&D programs to improve irrigation and increase water efficiency can enhance resiliency to climate change and protect the livelihood and productive capacity of the poor	MODIFIED	
5.2.4 Launching research on irrigation (- Complements component 3.5: Modernizing the irrigation system in Lebanon and promoting the use of alternative sources of water and energy in agriculture, -Related to the Course of Action 8: Responding to climate change impacts) - Conduct research on the safety of crops irrigated with treated wastewater and grey water - Conduct research on Deficit Water Irrigation - Conduct research on Water productivity (increasing crop productivity by cubic meter of water) - Cooperate with the National Council for Scientific Research for conducting research to calculate water requirements through remote sensing techniques - Conduct research on water harvesting and management	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 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	General	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	Avoiding potential impacts	R&D		R&D programs to increase water efficiency can enhance resiliency to climate change and protect the livelihood and productive capacity of the poor	MODIFIED	
		General	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	Avoiding potential impacts	R&D		R&D programs on irrigation can eventually increase agricultural productivity and income; "Providing support to small-scale farmers and producers, and encouraging youth and women to engage in agriculture-related investments, bringing new blood in the agricultural sector through: the support of the small and fruit trees farmers soft loans and guarantee fund in collaboration with KAFALAT; and the preparation and dissemination of feasibility studies for a number of agricultural projects."	LOCAL EXPERT	

<p>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</p> <p>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</p>		General	1.4	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	Avoiding potential impacts	R&D		Water efficiency R&D programs can help inform how to provide farmers with better services and can help to break the cycle of low input, low output subsistence agriculture; and contribute to the improvement of SDG indicator 1.4.1 Proportion of population living in households with access to basic services	LOCAL EXPERT	
		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	R&D		Enhancing agricultural research will help to inform sound policy frameworks for improved agricultural productivity and sustainability which predominantly impacts the lowest-income (farmers)	LOCAL EXPERT	
		General	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	Avoiding potential impacts	R&D		Researching and modernizing the irrigation system will improve food security, small-holder profitability; and farmers resilience; "Providing support to small-scale farmers and producers, and encouraging youth and women to engage in agriculture-related investments, bringing new blood in the agricultural sector through: the support of the small and fruit trees farmers soft loans and guarantee fund in collaboration with KAFALAT; and the preparation and dissemination of feasibility studies for a number of agricultural projects."	LOCAL EXPERT	
		General	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	Avoiding potential impacts	R&D		R&D programs to enhance water efficiency, deficient water irrigation, and crop productivity can help ensure climate resiliency of food production, therefore protecting against food insecurity and inflation	MODIFIED	
		General	2.a	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	Avoiding potential impacts	R&D		R&D programs to enhance water efficiency, modernize irrigation, deficient water irrigation, and crop productivity can help ensure climate resiliency of food production, therefore protecting against food insecurity and inflation	MODIFIED	
		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	R&D		Increasing farmers resilience through enhanced agricultural research that leads to improved water efficiency, modernized irrigation and climate resilient crops, can increase in productivity and incomes and a functioning food commodity market	MODIFIED	
		General	4.3	4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	Avoiding potential impacts	R&D		Encouraging youth and women to engage in agriculture-related investments.	LOCAL EXPERT	
		General	4.7	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	Avoiding potential impacts	R&D		R&D programs for enhanced agricultural scientific research can lend to the body of knowledge on sustainable development and livelihoods	LOCAL EXPERT	
		General	4.7	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	Avoiding potential impacts	R&D		Demonstration programs included in school programs can empower children to better respond to climate change and promote sustainable development	SCAN	Expert judgement
		General	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	Avoiding potential impacts	R&D		R&D on water technology can improve water quality and supply	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	R&D		Capacity-building support to enhance agricultural irrigation scientific research	LOCAL EXPERT	
		General	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	Avoiding potential impacts	R&D		Research that supports obtaining higher levels of sustainable agricultural productivity	LOCAL EXPERT	
5.2 Enhancing agricultural scientific research	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	General	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	Avoiding potential impacts	R&D		Early warning programs to enhance crop/animal/human resiliency to climate change can protect the livelihood and productive capacity of the poor	MODIFIED	

<p>Responding to climate change impacts)</p> <p>- Widen the scope of work of the early warning system for agricultural pests, climatic conditions and agricultural extension to include an additional number of risks analysis and means of communication</p> <p>- Upgrade the communication with the beneficiaries to include a feedback system</p> <p>- Link the early warning system with the agricultural centres</p>	progressively improve land and soil quality	General	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	Avoiding potential impacts	R&D		Early warning programs to enhance crop/animal/human resiliency to climate change can protect the livelihood and productive capacity of the poor	MODIFIED	
	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	General	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	Avoiding potential impacts	R&D		Early warning programs to enhance crop/animal/human resiliency to climate change can protect the livelihood and productive capacity of the poor	MODIFIED FROM 1.1	
	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	General	2.a	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	Avoiding potential impacts	R&D		Early warning programs to enhance crop/animal/human resiliency to climate change can protect the livelihood and productive capacity of the poor	MODIFIED FROM 1.1	
	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	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	R&D		Early warning systems can increase farmers resilience to climate events thus ensuring the proper functioning of the food commodity markets and limiting price volatility	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	R&D		Early warning system for agricultural pests, climatic conditions and agricultural extension to include an additional number of risks analysis and means of communication mitigates health risks	LOCAL EXPERT	
		General	15.8	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	Avoiding potential impacts	R&D		Early warning systems to prevent the introduction and spread of invasive species	LOCAL EXPERT	
		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	Building Early Warning Systems		Conducting risk assessments, vulnerability mapping, and strengthening early warning systems reduce possible economic losses from extreme events	SCAN	
		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	Avoiding potential impacts	Building Early Warning Systems		Creation of an early warning system provides information for proper functioning of food markets, including ample food reserves to prevent price volatility	SCAN	
		General	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	Avoiding potential impacts	Building Early Warning Systems		Information in understanding rainfall, meteorology and hydrology has led to better management of water resources	SCAN	Northrop et al. (2016)
		General	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	Avoiding potential impacts	Building Early Warning Systems		Conducting risk assessments, vulnerability mapping, and strengthening early warning systems reduce possible economic losses from extreme events	SCAN	Expert judgement
5.3 Improving the conservation of biodiversity and genetic resources	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	General	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	Avoiding potential impacts	R&D		Studying the biodiversity in ecosystems of the pastoral lands and exploited forests can protect the livelihood and productive capacity of the poor	MODIFIED	
5.3.1 Studying biodiversity in unprotected ecosystems (Related to the Course of Action 8: Responding to climate change impacts)	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	General	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	Avoiding potential impacts	R&D		Studying the biodiversity in ecosystems of the pastoral lands and exploited forests can protect the livelihood and productive capacity of the poor	MODIFIED	
- Study the biodiversity in ecosystems of the pastoral lands and exploited forests in collaboration with Forests and Natural Resources Service at MoA	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	General	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	Avoiding potential impacts	R&D		Improved research on biodiversity of pastoral lands and exploited forests can help to determine agricultural practices that help to maintain ecosystems and strengthen the capacity for climate change adaptation	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	General	2.5	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	Avoiding potential impacts	R&D		Biodiversity research and knowledge sharing and spill overs that support resilient seed proliferation	MODIFIED	

	<p>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</p> <p>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</p> <p>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</p>	General	2.a	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	Avoiding potential impacts	R&D		Improved research on biodiversity of pastoral lands and exploited forests can help to determine agricultural practices that help to maintain ecosystems and strengthen the capacity for climate change adaptation	LOCAL EXPERT	
		General	2.a	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	Avoiding potential impacts	R&D		Biodiversity R&D programs can lead to enhanced crop resiliency to climate change and help ensure climate resiliency of food production, therefore protecting against food insecurity and inflation	MODIFIED	
		General	4.7	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	Avoiding potential impacts	R&D		Biodiversity research of unprotected ecosystems can lend to the overall body of knowledge on sustainable development and climate adaptation	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	R&D		Studies on biodiversity in ecosystems of pastoral lands and exploited forests can help support their protection	LOCAL EXPERT	
		General	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	Avoiding potential impacts	R&D		Studies on biodiversity in ecosystems of pastoral lands and exploited forests can help support their protection	LOCAL EXPERT	
		General	15.4	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	Avoiding potential impacts	R&D		Studies on biodiversity in ecosystems of pastoral lands and exploited forests can help support their protection	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	R&D		Studies on biodiversity in ecosystems of pastoral lands and exploited forests can help support the protection of natural habitats	LOCAL EXPERT	
		General	15.8	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	Avoiding potential impacts	R&D		Studies on biodiversity in ecosystems of pastoral lands and exploited forests can help support their protection	LOCAL EXPERT	
5.3 Improving the conservation of biodiversity and genetic resources	<p>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</p> <p>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</p> <p>6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes</p> <p>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</p> <p>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</p> <p>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</p>	General	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	Avoiding potential impacts	R&D		Strengthening the research on biodiversity and plant genetic resources can protect the livelihood and productive capacity of the poor in terms of capacity to adapt to climatic change and resistance to harsh environmental conditions	MODIFIED	
		General	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	Avoiding potential impacts	R&D		Strengthening the research on biodiversity and plant genetic resources can protect the livelihood and productive capacity of the poor in terms of capacity to adapt to climatic change and resistance to harsh environmental conditions	MODIFIED	
		General	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	Avoiding potential impacts	R&D		Strengthening the research on biodiversity and plant genetic resources can protect the livelihood and productive capacity of the poor in terms of capacity to adapt to climatic change and resistance to harsh environmental conditions	LOCAL EXPERT	
		General	2.5	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	Avoiding potential impacts	R&D		Awareness campaign to farming communities on the importance of conservation and good use of plant genetic resources	LOCAL EXPERT	

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	General	2.a	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	Avoiding potential impacts	R&D		Training in climate-smart agriculture practices, which improve food security with farming techniques has led to an increase in small-holder profitability; Increasing farmers resilience through developing skills, strengthening links to markets, and improving access to financial services leads to an increase in productivity and incomes;	SCAN	Nyasimi et al. (2016)
	General	2.a	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	Avoiding potential impacts	R&D		Strengthening the research on biodiversity and plant genetic resources can protect the livelihood and productive capacity of the poor in terms of capacity to adapt to climatic change and resistance to harsh environmental conditions	LOCAL EXPERT	
	General	4.7	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	Avoiding potential impacts	R&D		Strengthening the research on biodiversity and plant genetic resources adds to the knowledge base for learners on sustainable development	LOCAL EXPERT	
	General	5.1	5.1 End all forms of discrimination against all women and girls everywhere	Avoiding potential impacts	R&D		Inclusion of women in skills training programs to increase adaptive capacity; creating opportunities for girls and women through increased education	SCAN	Expert judgement
	General	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	Avoiding potential impacts	R&D		R&D on water technology can improve water quality and supply	SCAN	Expert judgement
	General	6.6	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Avoiding potential impacts	R&D			LOCAL EXPERT	
	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	R&D		Creating opportunities for girls and women through increased education supports accelerated economic growth	SCAN	Expert judgement
	General	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	Avoiding potential impacts	R&D		Creating opportunities for girls and women through increased education supports accelerated economic growth	SCAN	Expert judgement
	General	8.9	8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	Avoiding potential impacts	R&D		A better understanding of biodiversity assets can lead to the promotion of nature based and sustainable tourism	MODIFIED	
	General	14.6	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	Avoiding potential impacts	R&D		Improved coastal and fisheries resources through non-destructive fishing techniques ensures sustainable food production system	SCAN	Expert judgement
	General	14.a	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	Avoiding potential impacts	R&D		R&D and demonstrations on sustainable fishing and water tourism can help protect biodiversity under water	SCAN	Expert judgement
	General	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	Avoiding potential impacts	R&D		Improving the conservation of biodiversity and genetic resources can support efforts to conserve and restore terrestrial and freshwater ecosystems	LOCAL EXPERT	
	General	15.4	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	Avoiding potential impacts	R&D		Strengthen the research on biodiversity and plant genetic resources	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	R&D		Strengthened research on biodiversity and plant genetic resources can support the protection of natural habitats	LOCAL EXPERT	

[illegible]

7. Work in order to provide assistance in support from the national budget) to the mutual fund for the insurance of the agricultural sector from natural disasters

6.4.2 Review and assessment of the financial mechanism of Mutual fund for the insurance of the agricultural sector against natural disasters (Related to the Course of Action 8: Responding to climate change impacts)
- Assess the financial mechanism of the Mutual Fund (Expert in financial assessment or insurance expert for mutual funds for one month)
- Implement the proposals formulated in the report

4.3 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

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

General	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	Strengthening adaptive capacity	Financial support		Climate insurance particularly on poor households engaged in agriculture and other climate sensitive industries help cope with economic losses from extreme events and prevent falling into poverty	SCAN	Hallegatte et al. (2016); Nyasimi et al. (2016)
General	1.4	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	Strengthening adaptive capacity	Financial support		Providing climate insurance to women promotes inclusion and equal rights to economic resources; Providing farmers with better services can help to break the cycle of low input, low output subsistence agriculture	MODIFIED	
General	1.4	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	Strengthening adaptive capacity	Financial support		Climate insurance particularly on poor households engaged in agriculture and other climate sensitive industries help cope with economic losses from extreme events	SCAN	Hallegatte et al. (2016); Nyasimi et al. (2016)
General	1.4	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	Strengthening adaptive capacity	Financial support		If adaptation option is subsidized drought assistance/crop insurance, this can create moral hazard and distributional inequalities if not appropriately administered	SCAN	Klein et al. (2014)
General	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	Strengthening adaptive capacity	Financial support		Climate insurance particularly on poor households engaged in agriculture and other climate sensitive industries help cope with economic losses from extreme events	SCAN	Hallegatte et al. (2016); Nyasimi et al. (2016)
General	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	Strengthening adaptive capacity	Financial support		If adaptation option is subsidized drought assistance/crop insurance, this can create moral hazard and distributional inequalities if not appropriately administered	SCAN	Klein et al. (2014)
General	2.1	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	Strengthening adaptive capacity	Financial support		Climate insurance particularly on poor households engaged in agriculture and other climate sensitive industries help cope with economic losses from extreme events that lead to change in diet and nutritional behavior	SCAN	Expert judgement
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	Strengthening adaptive capacity	Financial support		Climate insurance particularly on poor households engaged in agriculture and other climate sensitive industries help cope with economic losses from extreme events that lead to change in diet and nutritional behavior	SCAN	Expert judgement
General	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	Strengthening adaptive capacity	Financial support		Innovative insurance schemes protect farmers against catastrophic losses, and help them plan for the future	SCAN	Nyasimi et al. (2016)
General	4.1	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	Strengthening adaptive capacity	Financial support		Climate insurance particularly on poor households engaged in agriculture and other climate sensitive industries help cope with economic losses from extreme events and support investments in education	SCAN	Expert judgement
General	4.6	4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy	Strengthening adaptive capacity	Financial support		Climate insurance particularly on poor households engaged in agriculture and other climate sensitive industries help cope with economic losses from extreme events and support investments in education	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	Strengthening adaptive capacity	Financial support		Climate insurance particularly on poor households engaged in agriculture and other climate sensitive industries help cope with economic losses from extreme events	SCAN	Expert judgement
General	8.3	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	Strengthening adaptive capacity	Financial support		Climate insurance particularly on poor households engaged in agriculture and other climate sensitive industries help cope with economic losses from extreme events	SCAN	Expert judgement
General	8.10	8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all	Strengthening adaptive capacity	Financial support		Climate insurance particularly on poor households engaged in agriculture and other climate sensitive industries help cope with economic losses from extreme events	SCAN	Expert judgement
General	9.a	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	Strengthening adaptive capacity	Financial support		Infrastructure required for energy access and inclusive and sustainable industries depend on financial services and markets, knowledge	SCAN	Nerini et al. (2017)

		General	10.3	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	Strengthening adaptive capacity	Financial support		Climate insurance particularly on poor households engaged in agriculture and other climate sensitive industries help cope with economic losses from extreme events	SCAN	Hallegatte et al. (2016); Nyasimi et al. (2016)
		General	10.3	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	Strengthening adaptive capacity	Financial support		If adaptation option is subsidized drought assistance/crop insurance, this can create moral hazard and distributional inequalities if not appropriately administered	SCAN	Klein et al. (2014)
7.1 Updating the organizational structure and reinforcing the role of MoA and its affiliated institutions (General Directorate of Cooperatives and the Lebanese Agricultural Research Institute) and updating the existing legislations and regulations governing the agricultural sector and MoA	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	General	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	Avoiding potential impacts	R&D		Strengthening institutional capacity to enhance crop/animal/human resiliency to climate change can protect the livelihood and productive capacity of the poor	MODIFIED	
7.1.6 Strengthening the agricultural statistics and capacity development in economic research in the General Directorate of Agriculture (Related to the Course of Action 8: Responding to climate change impacts)	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	General	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	Avoiding potential impacts	R&D		Strengthening institutional capacity to enhance crop/animal/human resiliency to climate change can protect the livelihood and productive capacity of the poor	MODIFIED	
- Manage and update the farm register - Prepare and publish economic studies including impact of food price volatility on food security in cooperation with the Ministry of Economy and Trade and the Council of Ministers	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	General	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	Avoiding potential impacts	R&D		Providing support to small-scale farmers and producers, and encouraging youth and women to engage in agriculture-related investments.	LOCAL EXPERT	
- Establish an Information and Early Warning System on food prices (local and international) - Strengthen the statistics GIS unit - Conduct training on Agricultural Statistics and Economic Studies - Implement the national strategy for the development of the agricultural statistics:	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	General	1.4	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	Avoiding potential impacts	R&D		Strengthening institutional capacity to provide farmers with better services can help to break the cycle of low input, low output subsistence agriculture; and food help manage food price volatility	MODIFIED	
Elaborate a methodology and guidelines for collection, entry, analysis and reporting/publishing of agricultural statistics data Conduct production surveys	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	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	R&D		Providing support to small-scale farmers and producers, and encouraging youth and women to engage in agriculture-related investments.	LOCAL EXPERT	
	17.14 Enhance policy coherence for sustainable development	General	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	Avoiding potential impacts	R&D		Providing support to small-scale farmers and producers, and encouraging youth and women to engage in agriculture-related investments.	LOCAL EXPERT	
		General	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	Avoiding potential impacts	R&D		Strengthening institutional capacity to enhance crop resiliency to climate change help ensure climate resiliency of food production, therefore protecting against food insecurity and inflation	MODIFIED	
		General	2.5	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	Avoiding potential impacts	R&D		Strengthened institutional capacity and legislation will assist in the development of a gene bank and maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species,	LOCAL EXPERT	
		General	2.a	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	Avoiding potential impacts	R&D		Strengthening the agricultural statistics and capacity development in economic research to can enhance crop resiliency to climate change help ensure climate resiliency of food production, therefore protecting against food insecurity and inflation	MODIFIED	
		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	R&D		Updating the existing legislation and regulations governing the agricultural sector can include adoption of sound policy measures supporting the food commodities market	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	R&D		R&D that supports the development of early warning systems and health risk reduction	LOCAL EXPERT	
		General	4.3	4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	Avoiding potential impacts	R&D		Strengthened institutional capacity can help create agricultural educational opportunities for women and youth, and provide support to small-scale farmers and producers	LOCAL EXPERT	

		General	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	Avoiding potential impacts	R&D		Creating opportunities for girls and women through increased education supports accelerated economic growth	SCAN	Expert judgement
		General	8.9	8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	Avoiding potential impacts	R&D		Promotion of nature based and sustainable tourism	SCAN	Expert judgement
		General	10.2	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	Avoiding potential impacts	R&D		Strengthened institutional capacity can help create agricultural educational opportunities for women and youth, and provide support to small-scale farmers and producers .	LOCAL EXPERT	
		General	16.6	Develop effective, accountable and transparent institutions at all levels	Avoiding potential impacts	R&D		More effective and accountable institutions through strengthened institutional capacity	LOCAL EXPERT	
		General	17.14	17.14 Enhance policy coherence for sustainable development	Avoiding potential impacts	R&D		Updating the organizational structure for better policy coherence	LOCAL EXPERT	
7.2 Developing MoA capacities in negotiation skills	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	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		Increase in international trade, particularly on food exports to lessen waste and improve global food security	SCAN	Expert judgement
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		Developing institutional capacity in negotiation skills will lead to the formation of sound policy frameworks	LOCAL EXPERT		
General		2.1	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	Avoiding potential impacts	Institutional development		Increase capacity for engaging in international trade, particularly on food exports to lessen waste and improve global food security	SCAN	Expert judgement	
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		Increase capacity for engaging in international trade, particularly on food exports to lessen waste and improve global food security	SCAN	Expert judgement	
General		2.b	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	Avoiding potential impacts	Institutional development		Increase capacity for engaging in international trade, particularly on food exports to lessen waste and improve global food security	SCAN	Expert judgement	
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		Increase capacity for engaging in international trade, particularly on food exports during lean seasons to prevent extreme food price volatility; Ensuring widespread access for agricultural inputs support increasing food security and limiting extreme food price volatility	SCAN	Nyasimi et al. (2016)	
General		3.4	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	Avoiding potential impacts	Institutional development		Increase in capacity to collect and analyse data for monitoring of pollution levels help reduce communicable diseases caused by water and air pollution (e.g., respiratory disease, vector borne and water borne disease outbreaks)	SCAN	Smith et al. (2014)	
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		Increase in capacity to collect and analyse data for monitoring of pollution levels help reduce communicable diseases caused by water and air pollution (e.g., respiratory disease, vector borne and water borne disease outbreaks)	SCAN	Smith et al. (2014)	
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 negotiation skills can enhance capacity for international trade thereby increasing economic output	LOCAL EXPERT		
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	Avoiding potential impacts	Institutional development		Improved negotiation skills can enhance capacity for international trade thereby increasing economic output	LOCAL EXPERT		
General		14.4	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	Avoiding potential impacts	Institutional development		Increase institutional capacity to monitor illegal fishing by local and foreign commercial boats (boundaries based on UNCLOS)	SCAN	Expert judgement	
General		16.6	16.6 Develop effective, accountable and transparent institutions at all levels	Avoiding potential impacts	Institutional development		Developing institutional capacity supports more effective institutions	LOCAL EXPERT		

<p>7.3 Fostering partnerships with various stakeholders from the private and public sectors</p> <p>7.3.1 Activating partnerships with the private sector and related administrations including the National Sectoral Committees within MoA (Related to the Course of Action 8: Responding to climate change impacts)</p> <ul style="list-style-type: none"> - Review and amend the decisions of the establishment of National Sectoral Committees and propose a legal formula that defines the powers and functions of the committees and the privileges and incentives that will be given to their respective members - Prepare an action plan for the committees - Carry out meetings (4 yearly) - Elaborate and implement participation frameworks - Provide recommendations for the development of the respective sectors <p>7.3.2 Coordination with the local partners, municipalities, civil society working in the field of rural and agricultural development (Related to the Course of Action 8: Responding to climate change impacts)</p> <ul style="list-style-type: none"> - Survey the local partners according to geographical coverage and areas of intervention - Establish a communication network between the local partners - Elaborate and implement participation frameworks - Carry out meetings 	<p>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</p> <p>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> <p>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</p> <p>12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature</p> <p>15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts</p> <p>16.6 Develop effective, accountable and transparent institutions at all levels</p> <p>17.17 Systemic issues - Multi-stakeholder partnerships: Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships</p>	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		Increase in international trade, particularly on food exports to lessen waste and improve global food security	SCAN	Expert judgement
		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		Capacity building to mainstream CC into development plans, and ensure sustainable, inclusive, and rapid economic growth	SCAN	Expert judgement
		General	2.1	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	Avoiding potential impacts	Institutional development		Increase capacity for engaging in international trade, particularly on food exports to lessen waste and improve global food security	SCAN	Expert judgement
		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		Increase capacity for engaging in international trade, particularly on food exports to lessen waste and improve global food security	SCAN	Expert judgement
		General	2.b	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	Avoiding potential impacts	Institutional development		Increase capacity for engaging in international trade, particularly on food exports to lessen waste and improve global food security	SCAN	Expert judgement
		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		Increase capacity for engaging in international trade, particularly on food exports during lean seasons to prevent extreme food price volatility; Ensuring widespread access for agricultural inputs support increasing food security and limiting extreme food price volatility	SCAN	Nyasimi et al. (2016)
		General	5.c	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	Avoiding potential impacts	Institutional development		Ensuring inclusion of women in climate change adaptation programs	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		Capacity building to mainstream CC into development plans, and ensure sustainable, inclusive, and rapid economic growth	SCAN	Expert judgement
		General	9.3	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	Avoiding potential impacts	Institutional development		Increase in international trade, particularly on food exports to lessen waste and improve global food security	SCAN	Expert judgement
		General	9.b	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	Avoiding potential impacts	Institutional development		Capacity building to mainstream CC into development plans, and ensure sustainable, inclusive, and rapid economic growth, and to support technology for climate adaptation	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	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	10.2	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	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	10.3	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	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	11.3	11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Avoiding potential impacts	Institutional development		Capacity building to mainstream CC into development plans, and ensure inclusive and sustainable urbanization	SCAN	Expert judgement
		General	12.2	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	Avoiding potential impacts	Institutional development			LOCAL EXPERT	
		General	12.3	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	Avoiding potential impacts	Institutional development		Increase in international trade, particularly on food exports to lessen post-harvest losses and waste and improve global food security	SCAN	Expert judgement
		General	12.8	12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	Avoiding potential impacts	Institutional development			LOCAL EXPERT	
		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	Expert judgement
		General	16.6	16.6 Develop effective, accountable and transparent institutions at all levels	Avoiding potential impacts	Institutional development		More effective institutions through public private partnerships	LOCAL EXPERT	

- Train a group of MoA staff
- Conduct the study and provide recommendations

General	5.c	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	Avoiding potential impacts	Institutional development		Ensuring inclusion of women in climate change adaptation programs	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		Capacity building to mainstream CC into development plans, and ensure sustainable, inclusive, and rapid economic growth	SCAN	Expert judgement
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	9.2	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	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	9.b	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	Avoiding potential impacts	Institutional development		Capacity building to mainstream CC into development plans, and ensure sustainable, inclusive, and rapid economic growth, and to support technology for climate adaptation	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	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	10.2	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	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	10.3	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	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	11.3	11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Avoiding potential impacts	Institutional development		Capacity building to mainstream CC into development plans, and ensure inclusive and sustainable urbanization	SCAN	Expert judgement
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; Nerini et al. (2017)
General	12.2	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	Avoiding potential impacts	Institutional development		Achieve the sustainable use of natural resources through mainstreaming climate change into agricultural policy and plans	LOCAL EXPERT	
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	Expert judgement

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