Lebanon Food System Transformation Pathway

Building Back Better: The Recovery of a Fragile Food System

Headed by Dr. Inaya Ezzeddine[1], MP
National Food System Convener for Lebanon

With the support of
FAO - Lebanon[2]
WFP - Lebanon[3]

and effective participation of
UNESCWA[4]
MoA[5]
Department of Research and Studies,
Lebanese Parliament

Table of Content

1) Advancing Food System Transformation for Sustainable Development Goals: A National Process

Despite efforts to address the Sustainable Development Goal (SDG) Indicator 2.1.1 (Prevalence of Undernourishment), global hunger has shown little improvement between 2021 and 2022. Alarmingly, prevalence of undernourishment rates remains significantly higher than pre-COVID-19 levels, affecting approximately 9.2 percent of the world's population, which corresponds to an estimated 691 to 783 million people. This represents an increase of 122 million individuals compared to 2019 (FAO, IFAD, UNICEF, WFP and WHO, 2023), highlighting the persistent challenges faced in achieving SDG targets and emphasizing the urgent need for transformative action to ensure food security for all.

Undernourishment is just one of the outcomes of the global food system. The inability to provide sufficient and adequate nourishment to a significant portion of the world population highlights deep-rooted issues within agricultural production, distribution, and access to nutritious food. Addressing and eradicating food insecurity requires holistic interventions that encompass sustainable farming practices, equitable food distribution networks, and enhanced resilience to shocks and crises. Achieving food security is not only a matter of addressing immediate hunger but also of transforming the fundamental structures and dynamics of our interconnected food system to ensure a healthy and sustainable future for all.

Data on the prevalence of undernourishment in Lebanon highlights the urgency for action. Approximately 11% of the Lebanese population grappled with undernourishment and 36.5% with moderate or severe food insecurity between 2020-22. According to recent reports[6], the situation has worsened since then. During the last years, the food system in Lebanon has been under additional strain due to economic instability, political unrest, and the impact of climatic changes. These challenges have further increased food insecurity and inequality among the population, emphasizing the urgency of concerted and transformative measures.

The Food System Transformation Pathway document serves as a guiding framework for policymakers, practitioners, and stakeholders to work collectively towards achieving a more sustainable, resilient, and inclusive food system in Lebanon. It reflects the nation's commitment to address food system challenges and align with global goals, ensuring that no one is left behind through the pursuit of food security and sustainable development.

---

[6] FAO, IFAD, UNICEF, WFP and WHO. 2023. The State of Food Security and Nutrition in the World 2023. Urbanization, agrifood systems transformation and healthy diets across the rural–urban continuum. Rome, FAO. https://doi.org/10.4060/cc3017en

1.1 Pathway to a Sustainable, Resilient, and Inclusive Future for Lebanon's Food System

Box 1: Lebanese Independent Food System Dialogues 2021-2023

The Pathway document – a route to the future – provides a crucial framework for envisioning and transforming the food system towards a sustainable, resilient, and inclusive future. This document articulates a visionary perspective for Lebanon's food system, identifying priority themes and outlining specific measures and means for implementation. The national pathway document is a living document that encompasses all efforts that started form July 2021. The process commenced by the identification of challenges and action areas by UN team prior to the Food Systems Summit 2021. Independent dialogues on food system in Lebanon were organized by ESCWA in collaboration with FAO, LYPW, and WFP (Box 1). Concurrently, the Chairperson of the SDG2030 AGENDA Parliamentary Commission, Dr. Ezzeddine[7] and her team, developed a legislative process for framework analysis of the food system and SDGs in Lebanon and initiated the process for developing a draft law on the right to food in the country.

This process was sustained by the establishment of the Food System Transformation (FST) team, which brings together a diverse group of experts (Box 2). Their knowledge and dedication play a vital role in shaping the pathway

1- The Lebanon Youth Parliament for Water (LYPW), in collaboration with the Economic and Social Commission for Western Asia (ESCWA), organized the Lebanese Youth Dialogue on Food System: Water for Food Systems virtually through Teams on July 6, 2021. Around 36 people attended the meeting, representing youth from national organizations, universities, companies, and others, as well as UN agencies. The goal of the Dialogue was to gather game changing actions from Lebanese youth to improve the role of water in the food system in terms of assuring efficient use and safety across the many levels, including research, capacity building, funding, and governance. It also sought to prioritize actions, as well as identify roles and key stakeholders.

2- In preparation for the Food Systems Summit, the UNCT in Lebanon organized an independent Summit Dialogue on the 22nd of July 2021 under the patronage of MP Inaya Ezzedine. More than 80 stakeholders along the food system value chain participated in the dialogue, including women cooperatives, research centers, students from the faculties of agriculture and food sciences, smallholder farmers, and business leaders. Four separate discussions were conducted during the dialogue revolving around three tracks: ensuring access to safe and nutritious food for all, advancing equitable livelihoods, and building resilience to vulnerabilities, shocks, and stress and the role of youth in technology and innovation of the food system. Participants agreed on a number of ways that the food system in Lebanon can be strengthened including capacity building for farmers in agricultural operations. It was also recommended by most participants to promote high technology used in farming, to reduce costs and improve production.

3- On 13 March, 2023, the UN Food Systems Coordination Hub held the Arab regional preparatory meeting on the "Food Systems Stocktaking Moment", scheduled for July. The meeting, which took place on the sidelines of the Arab Forum for Sustainable Development (AFSD) at the UN House in Beirut, was organized by ESCWA and FAO in collaboration with the League of Arab States (LAS) and other partners. Countries shared the progress they made in transforming their food systems since the 2021 Food Systems Summit, and discussed best practices, capacity needs and related challenges. Participants also identified priority actions, and proposed key messages for the region to accelerate the transformation of Arab food systems in line with the 2030 Agenda.

towards sustainable change. Through ongoing dialogues and robust discussions, the FST team addresses crucial questions and tackles the challenges that hinder progress. The team's collective action contributes to the formulation of effective strategies that drive transformation.

---

[7] Dr. Inaya Ezzeddine, a Lebanese parliamentarian, was appointed as the National Convener for Food System Dialogues in Lebanon. Dr. Ezzeddine's appointment stemmed from her leadership role in the SDG2030 AGENDA Parliamentary Commission, where she spearheaded the legislative analysis of Lebanon's food system and initiated the drafting of a "right to food" law.

On May 26, 2023, Dr. Inaya Ezzeddine, a Lebanese parliamentarian, was appointed as the National Convener for Food System Dialogues in Lebanon. This appointment was based on her extensive work and expertise as the Chairperson of the SDG2030 AGENDA Parliamentary Commission, where Dr. Ezzeddine and her team developed a legislative process for framework analysis of food system and SDGs in Lebanon and initiated the process for developing a draft law on the "right to food" in the country. Her timely involvement in the national pathway for the Food Systems Summit reflects her commitment and dedication to addressing the challenges and opportunities within the food system of Lebanon. As the National Convener, Dr. Ezzeddine plays a crucial role in coordinating with various ministries, institutions, bodies, associations, and civil society organizations involved in the food system. Her responsibilities include documenting the development of national pathway document for the Food System in Lebanon and presenting the progress achieved during the upcoming 2023 Summit's Stocktaking Moment on Food Systems. Dr. Ezzeddine's position as a parliamentarian allows her to actively participate in policy and law creation related to the food system. By being directly involved in shaping legislation, she ensures that the enacted policies align with the specific needs and priorities of Lebanon. This combination of responsibilities empowers Dr. Ezzeddine to advocate for effective and impactful changes in the food system through the legislative process, contributing to the overall advancement of sustainable, inclusive and resilient food system in Lebanon.

1.2 Objectives and Methodology of the Pathway Document for Lebanon and the Current Process:

The objective of this document is to construct a comprehensive pathway for the transformation of Lebanon's food system. Furthermore, this document serves as a testament to the collective efforts undertaken through local dialogues, actions, and priorities established by various stakeholders.

The pathway document for Lebanon adopts a systematic methodology to analyze and assess the country's food system. The methodology is based on a comprehensive overview of the Lebanese food system using the food systems framework developed by Fanzo et al. (2020a) . A comprehensive document, formulated with the support of FAO Lebanon, serves as the foundation and framework for the analysis. Referred to as the "Food System Analysis of Lebanon 2024," this extensive document provides essential insights for the examination at hand. Within this pathway document, we present a summarized section of the analysis, offering key findings and insights to guide our approach towards a sustainable, inclusive, and resilient food system in Lebanon.

1.2.1 Data

Data is collected from multiple sources, including dialogues, government reports, strategies, and stakeholder and experts' solicitation.

a) Legislative Framework Analysis and SDGs:

- Under the leadership of Dr. Ezzeddine and the SDG2030 AGENDA Parliamentary Commission, a comprehensive process was initiated to assess the legislative and policy framework of Lebanon's food system with respect to its compliance with 17 Sustainable Development Goals (SDGs). The Parliament's efforts included conducting an inventory of current legislation related to food systems and nutrition, consulting with relevant parliamentary bodies, the government, and stakeholders to identify legislative gaps and priorities, advocating for a comprehensive multisectoral national plan, and drafting a framework law to ensure the right to food and nutrition for all citizens.

b) Independent Dialogues in 2021

- ESCWA, in collaboration with FAO, LYPW and WFP, facilitated independent dialogues on Lebanon's food system. These dialogues provided a platform for diverse stakeholders to contribute insights and perspectives (Box 1).

c) Primary data from the Official Dialogues Led by the Convener and her Team in 2022

- Under the adept facilitation of Dr. Inaya Ezzeddine and her team, a series of dialogues provided a robust platform for engaging a diverse array of stakeholders crucial to Lebanon's food system. These stakeholders encompassed ministries, institutions, bodies, associations, and civil society organizations, demonstrating a broad spectrum of involvement and expertise.

The **three meetings** convened a total of 51 participants representing 32 stakeholders, showcasing a significant breadth of engagement and collaboration.

- In the initial meeting, attended by representatives from the UN and the Food Security Sector Working Group, 12 participants from approximately 5 stakeholders such as the American University of Beirut (AUB), the UN Resident Coordinator Office (UNRCO), and humanitarian organizations like Caritas and CareLiban, shared insights and perspectives.
- The second meeting drew participation from the public sector and international organizations, with 19 attendees representing 11 stakeholders including ministries such as Social Affairs, Public Health, Economy and Trade, as well as international bodies like the World Health Organization (WHO) and the World Bank.
- In the third session, the focus shifted to the private sector and youth engagement, attracting 20 participants from 16 distinct stakeholders. Notable participants included initiatives like the Agricultural Revival Program (ARP), the Agricultural Movement in Lebanon, and regional networks like the Arab Network for Food Sovereignty. Additionally, various NGOs and development organizations such as Action Against Hunger, World Vision, and Solidarites contributed their expertise and perspectives (see more in Annex I).

d) Government Reports and Strategies

- This report is underpinned by key strategies that shape its focus and objectives. Firstly, the Lebanon National Agriculture Strategy (NAS) 2020-2025 serves as a comprehensive framework for the agricultural sector in the country at the farm and value chain levels. Additionally, the Ministry of Social Affairs National Poverty Targeting Program (NPTP) and AMAN Initiative play a crucial role by providing essential social assistance and cash transfers to vulnerable Lebanese households. Furthermore, the strategic actions outlined by the Ministry of Economy and Trade, Lebanon's 4th National Communication on Climate Change by the Ministry of Environment in 2022, and the Solid Waste Sustainable Policy from the Ministry of Environment collectively contribute to the holistic approach of this report.

- In addition to the key strategies mentioned earlier, this report incorporates vital insights from reputable organizations, further enriching its comprehensive approach. The Food and Agriculture Organization (FAO) contributes by offering in-depth reports and analyses, providing valuable perspectives on Lebanon's current food security status, including assessments of vulnerability, nutrition, and agricultural production. The World Food

Programme (WFP) significantly enhances the report's understanding of critical food security needs and effective intervention strategies through its expertise in emergency response and food assistance. Furthermore, the report encompasses relevant data and recommendations from various UN agencies, including UNICEF, UNESCWA, and WHO, ensuring a comprehensive understanding of the multifaceted challenges impacting the food system in Lebanon.

1.2.2 Data Organization

The FST team initiates the process by establishing strategic alignment and subsequently focuses on synergizing transformative actions. The methodology aims to ensure coherent priorities within Lebanon's food system. Through systematic synthesis and analysis, the FST team identifies key action areas, common themes, and priorities to address existing gaps and enhance the overall resilience and sustainability of the food system. After that, the team initiates the transformation process, organizing means of implementation using available data into the six elements essential for food system transformation, as delineated by Haddad (2023). This strategic organization serves as a pivotal step, providing a structured foundation for the subsequent phases of the transformation process. Emphasis is placed on inclusivity throughout this undertaking, recognizing that a collaborative approach is indispensable for achieving a robust, effective, and sustainable transformation of the food system.

1.2.3 Key Performance Indicators

The document establishes a pathway for sustainable development in Lebanon within the timeframe of 2022 to 2030. This pathway aligns with Sustainable Development Goals (SDGs), expert recommendations, and National Development Strategies. To track progress, Key Performance Indicators (KPIs) have been set, some with milestones for 2025, while others are targeted for 2030. These KPIs are recalibrated to account for SDG achievements up to 2022 and the remaining time until 2030. The aim is to demonstrate tangible advancements towards a resilient and sustainable food system within this timeframe. Selection of KPIs draws from official government reports such as the Lebanon National Agriculture Strategy (NAS) 2020-2025, the Ministry of Environment's Lebanon's National Communication to the UNFCCC, and input from UN agencies like FAO, WFP, UNICEF, UNESCWA, and WHO. Benchmarking against country pathways and regional documents further supports the process (Annex I).

2) Lebanese Food System Overview

The food system (figure 1) is a complex socio-ecological system whose operation involves interlinked biophysical and social components (the food supply chains, the food environment, individual level filters, and consumer behavior) that operate sequentially to determine human diets. They include the related resources, inputs, production, transport, processing and manufacturing industries, retailing, and consumption of food as well as its impacts on environment, health, and society (von Braun et al., 2020). The food system is driven by biophysical, political and socio-cultural determinants ("drivers") and its operation is conditioned by a set of constraints and inherent vulnerabilities. The system produces four outputs: food security and nutrition/health, economic, social and environmental outcomes. A food systems approach provides the opportunity to propose multiple entry points for actions at global, regional, national or local scales. These propositions aim to support the achievement of desirable policy goals and programmatic priorities such as improved food security and nutrition, accelerating progress to achieve 2030 Agenda and the SDGs, considering different dimensions of sustainability (economic, social, and environmental).
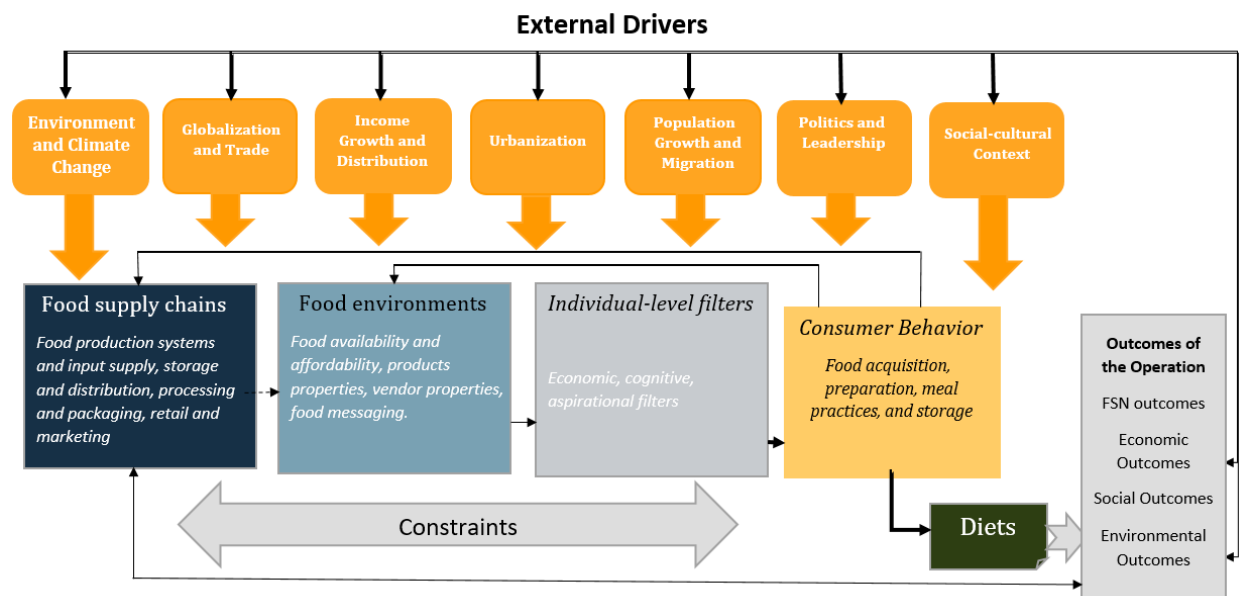
Figure 1: Food System framework modified from (Fanzo et al., 2020a)

2.1 Components of the Food System

a. **Food supply chains** encompasses a series of processes spanning from production to retail. This component allows for the examination of the journey food takes from its origin to the end consumer, shedding light on crucial stages that influence its availability and quality. It includes agricultural production, storage and distribution, processing and packaging, and retail and marketing products.

b. **Food environments** is where people interact with the food systems at different scales to purchase and consume foods (Turner et al., 2018). It is a multifaceted realm that considers physical, economic, and social determinants influencing food choices. By delving into this component, we gain insights into the contextual factors that shape dietary decisions,

encompassing aspects such as food availability, affordability, messaging, and product properties

c. **Individual-level filters (individual factors)** include consumer characteristics such as experience, knowledge, economic status, and purchasing power that determine what they buy and eat. It plays a significant role in unraveling the personal factors influencing food acquisition and consumption decisions. These filters include diverse aspects such as taste preferences, health concerns, cultural and religious beliefs, and other individual-level variables that contribute to the complexity of dietary choices.

d. **Consumer behavior** encompasses a spectrum of actions, from food acquisition and preparation to meal practices and storage (Fanzo et al., 2020b). It is the sum of the factors that decide what and how much food people purchase, cook, eat and waste.

2.2 Drivers and constraints

A number of drivers and associated constraints impact the operation of food systems and their ability to deliver positive outcomes. Seven main categories of drivers are identified in the food system framework (figure 1), and are paralleled with constraints that exert negative pressure on the system.

1. **Environmental and Climate Change Drivers:** These encompass natural resources, climate change, and vector-driven epidemics. Climate change, including rising temperatures and extreme weather events, poses a significant threat to Lebanon's food system. Environmental degradation and resource constraints further impact local food production and resilience, with vulnerabilities exacerbated by ongoing crises.

2. **Income Growth and Distribution:** Income growth and distribution dynamics, coupled with geopolitical factors, impact regional tensions and economic stability. Economic challenges, exacerbated by crises, influence the affordability and accessibility of food for the population.

3. **Urbanization**: High levels of urbanization impact natural resource utilization, alter traditional agricultural landscapes, and contribute to spatial challenges. The rise of supermarkets in urban areas introduces shifts in consumer behavior, supply chain dynamics, and food distribution networks. As urban areas and supermarkets expand, considerations for sustainable food solutions become paramount, addressing the evolving demand within the context of changing urban environments and the transforming retail landscape.

4. **Politics and Leadership:** Leadership and governance play a key role in Lebanon's food security agenda. Efforts to establish committees and networks for food security are essential, although a transition toward a comprehensive food systems approach may require explicit attention. Inclusivity in policy formulation, involving diverse stakeholders, is critical for effective governance. Political stability is pivotal, with regional conflicts influencing food system investments and consumer behavior.

5. **Globalization and Trade:** Lebanon's food availability is significantly impacted by globalization and international trade. Vulnerabilities arise from the volatility of global food prices, supply chain disruptions, and potential geopolitical challenges affecting trade routes. Attention to trade infrastructure and strategies to mitigate risks is essential for ensuring food security.

9

6. **Population Growth and Migration:** Lebanon's demographic landscape, including population growth, and spatial distribution, shapes the demand for food. A demographic shift implies a continued rise/decline in food demand, influenced by consumer choices and efforts to minimize food losses and waste. The evolving landscape underscores the imperative to adjust food production levels to meet growing demand while ensuring equitable access to food resources.

7. **Socio-Cultural Context:** The socio-cultural context, encompassing cultural practices, dietary habits, and societal norms, influences Lebanon's food system. Understanding and integrating local traditions, preferences, and social dynamics are crucial for implementing effective and culturally sensitive food security initiatives. Recognizing the socio-cultural fabric can enhance the acceptance and success of interventions within the broader context of Lebanon's diverse communities. Gender disparities in agriculture and food-related activities may impact food allocation within households and societal roles, demanding attention for a more inclusive approach.

2.3 Outcomes of the food system

Outcomes are crucial for understanding the multifaceted impacts and transformations essential for societal well-being. These definitions serve as guiding principles, delineating the core functions that contribute to transformation of food systems at all levels. From ensuring food security and equitable social outcomes to fostering economic livelihoods and environmental sustainability, these definitions provide a comprehensive lens through which we assess the resilience and effectiveness of Lebanon's food system. Recognizing the interplay of these outcomes is pivotal for orchestrating a transformative agenda that not only addresses immediate challenges but also lays the groundwork for a sustainable, inclusive, and resilient food system that aligns with the evolving needs of Lebanese communities.

1. **Food Security Outcome:** In the context of Lebanon, the food security outcome encompasses the accessibility, availability, and affordability of safe and nutritious food for all residents. This includes considerations for food safety levels to ensure the protection of public health and well-being.

2. **Economic Outcome:** The economic outcome in Lebanon's food system pertains to livelihood status and financial well-being. It involves assessing the economic impact of the food system on individuals and communities, considering factors such as income generation, employment opportunities, and overall economic sustainability.

3. **Social Outcome:** The social outcome focuses on addressing disparities and enhancing human well-being within Lebanon's diverse communities. This involves promoting social inclusivity, reducing inequalities, and improving overall societal welfare through equitable access to food resources and opportunities.

4. **Environmental Outcome:** The environmental outcome relates to the ecological impact of Lebanon's food system. This includes assessing and promoting practices that contribute to environmental sustainability, such as responsible resource use, biodiversity conservation, and minimizing ecological footprints associated with food production, distribution, and consumption.

2.4 Overview of challenges of the Lebanese Food System within its components and outcomes

The components of the food system in Lebanon faces an array of challenges stemming from historical, economic, political, and social factors. These challenges are identified for every component of the 4 main components of the food system: the food supply chain, the food environment, the individual level filters, and the consumer behavior.

At the level of the food supply chain, a substantial reliance on imports coupled with inadequate local production presents a formidable barrier to achieving self-sufficiency. The production sector grapples with obstacles arising from elevated costs and dependency on imported inputs, further complicating efforts towards a self-sustaining model. Within the food environment, safety concerns loom large due to the inadequacy of food safety practices along the value chain, posing risks to the overall integrity of the system. Aligning with global trends, the Lebanese food environment is integrated with fast food, international cuisine and supermarkets into its food system. The country experienced the impact of the third wave of supermarketization, positioning itself at the forefront in the Middle East. Individual level filters, exacerbated by the economic crisis, manifest through decreased purchasing power, limiting consumer access to essential food resources. Additionally, consumer behavior emerges as a contributing factor to the overarching issue of food waste, adding another layer of complexity to the multifaceted challenges faced by the Lebanese food system.

Food and Nutrition Security Outcomes:
The Lebanese food system grapples with weak food and nutrition security outcomes, exacerbated by economic challenges and currency devaluation. Decreased purchasing power among consumers leads to increased poverty, a surge in the prevalence of anemia and obesity. The economic crisis's impact on higher production costs, coupled with heavy dependence on imported inputs, further impedes the capacity for adequate and accessible food production. Insufficient implementation of food safety practices along the value chain exacerbates these challenges, imposing significant constraints on the national food system's ability to provide sufficient, safe, and nutritious food for all.

Economic Outcomes:
Economic outcomes within the Lebanese food system include a heavy dependence on imports, inadequate local production, and increased production costs due to the grappling economic crisis and currency devaluation. This economic instability limits consumers' access to food, leading to elevated poverty rates. Additionally, the reliance on imported inputs hampers the overall capacity for food production, contributing to the system's economic vulnerability.

Environmental Outcomes:
In terms of land use and management, the current Lebanese food system displays inadequate and inefficient practices. The adverse impact of water resource mismanagement further jeopardizes sustainability, with approximately 60% of the available water is allocated to agriculture (ESCWA, 2022). Mismanagement of water resources and land degradation heighten vulnerability to climate change. Excessive use of pesticides and agrochemicals contributes to the pollution of water resources, creating a detrimental cycle that impacts irrigation practices and perpetuates water

pollution. The unsustainable interconnection between inadequate national land use and water management underscores the urgency of adopting sustainable and nature-based production practices for a more resilient Lebanese food system transformation.

Social Outcomes:

Social outcomes encompass the concentration of power and disparities in land ownership, further compounded by Lebanon's significant refugee presence (28% of its population[8]). These factors contribute to the fragility of the system, especially in the face of not only socio-economic hurdles and political conflicts but also environmental challenges such as climate change. The lack of effective governance and proper implementation of regulations and enforcement hinder the country's ability to promote equitable livelihoods and empower communities, posing additional challenges in building resilience against vulnerabilities and shocks within the Lebanese food system.

2.5 Existing opportunities for the Lebanese Food System Transformation

Despite challenges within the Lebanese Food System, notable initiatives have been organized across five distinct tracks. These initiatives, spearheaded by various stakeholders such as the public sector, NGOs, international organizations, and the private sector, signify a collective commitment to addressing systemic challenges. The efforts within each track encompass a broad spectrum of activities aimed at tackling issues and fostering sustainable practices. Notable examples include:

TRACK 1: Ensuring Access to Safe and Nutritious Food for All

- **Ministry of Agriculture (MOA):** Developed the National Agriculture Strategy for 2020-2025 in collaboration with FAO, distributing soft wheat seeds, promoting pulses cultivation, and conducting GAP training for farmers (MoA, 2023).
- **Ministry of Public Health (MoPH):** Initiates the National Nutrition Strategy and Action Plans (2021-2026) in collaboration with WHO and UNICEF, addressing maternal, infant, and young child nutrition.
- **NGOs** and private sector are implementing short-term initiatives, including emergency assistance for small farmers, livelihood support, land reclamation, and cash transfers to poor consumers, while medium-term efforts involve leveraging currency devaluation for agricultural advantage, promoting sustainable farming practices, encouraging investments, and fostering consumer shifts to local, nutritious foods (Annex II).

---

[8] Based on projections of the latest United Nations data in 2023, the current population of Lebanon is 5,332,754 while the Syrian refugees constitute around 1,500,000 (28%).

TRACK 2: Shifting to Sustainable Consumption Patterns
- **MoPH and UNICEF:** Launch the National Newborn and Prematurity Campaign, focusing on proper healthcare for newborns and diet diversity.
- **MoET:** Monitors food safety levels of Lebanese products (consumer protection directorate).
- **MoA:** Bans colistin and antibiotics in poultry farms, implementing measures to combat fraud related to palm oil use.
- The issuance of National specifications by the government, which aim to ensure consumer access to safe food in accordance with local health regulations, the National Poverty Targeting Program (NPTP) by the ministry of social affairs, the MoPH's National Nutrition Strategy and Action Plans in collaboration with WHO and UNICEF.
- **WFP, WHO and UNICEF:** conducted nutritional awareness sessions for cash-for-food beneficiaries to improve their nutritional outcomes and to guide the consumer behaviour. These initiatives, coupled with national malnutrition assessments, contribute to addressing the immediate needs of vulnerable populations and mitigating the impact of food insecurity. The nutritional intake of children has also been a subject of significant attention in local interventions, particularly with the implementation of school meal programs. These programs offer a valuable opportunity to enhance children's nutritional status and instill healthy dietary habits during their formative years and beyond. By focusing on school-based nutrition programs, one can positively impact both the nutrition of the nation and utilize them as an economic tool, offering favorable cost–benefit ratios ranging between 1:3 and 1:8 (WFP, 2013; WHO, 2021; Al-Jawaldeh et al., 2023). This indicates that for every dollar invested in school feeding, the government would receive a return of at least three dollars in economic benefits.

TRACK 3: Boosting Nature-Positive Production

- **Ministry of Environment and Ministry of Education:** Mainstreams climate change into education and awareness activities targeted not only to schools/university students and local communities but also to government institutions, the private sector, and syndicates and associations.
- **FAO and MoA:** Establish hill lakes for rainwater harvesting, distribute vouchers for organic pesticide purchasing, and assess FLW in the apple sector.
- **WFP and AUB:** Produce a study map identifying climatic areas under stress for targeted interventions.
- **ESCWA and Litani River Authority:** Conducts impact assessments on climate change and pollution in the Litani river, promoting sustainable agriculture practices and spreading awareness on the WEF nexus.

TRACK 4: Advancing Equitable Livelihoods
- **ESCWA:** Implements the REGEND project, promoting gender equality, social inclusion, and sustainable livelihoods in rural communities.
- **Ministry of Social Affairs (MoSA):** Implements the National Poverty Targeting Program (NPTP) and AMAN initiative, providing social assistance and cash transfers to vulnerable Lebanese households.
- **NGOs and other institutions** have planned initiatives that involve empowering farmers by identifying specialized production value chains and implementing strategies to revamp

farmers' markets, ensuring increased income and fostering direct connections between producers and consumers. Moreover, efforts have been made to enhance technology adoption, build farmers' capacity, and strengthen cooperatives.

TRACK 5: Building Resilience to Vulnerabilities, Shocks, and Stress

- **Food Security Sector (FSS) Working Group (FSWG)[9]:** Plays a pivotal role in establishing robust partnerships, emphasizing comprehensive food security initiatives, with WFP and WHO UNICEF as leaders. Notable milestones include VASYR, MSNA, Perception Surveys, Integrated Phase Classification, WFP Market Monitor, and LIMA 2023. Ongoing discussions and collaborations with ministries and local organizations are focused on sustainable solutions, addressing challenges faced by NGOs, particularly in areas like Tripoli, Saida, Bekaa, and Zahle. Discussions also involve the concept of zero carbon, zero poverty, and zero exclusion in the global strategy, emphasizing long-term impact through circular economy principles, cooperation with cooperatives, and innovative approaches like rainwater harvesting systems. NGOs stress the need for technical support for farmers and updating legal frameworks, especially in irrigation and wastewater treatment.
- **Youth Involvement in Climate Action**: a critical role of youth in driving climate action within the food system transformation, encouraging their active participation in innovative and sustainable initiatives. Youth engagement can play a pivotal role in addressing climate challenges, promoting environmental sustainability, and shaping the future of the agriculture and food sectors.

---

[9] Vulnerability Assessment of Syrian Refugees (VASYR) initiative (2013-2023), the Multi-Sector Needs Assessment (MSNA) focused on Syrians, Lebanese, and migrants (2021-2023), regular Perception Surveys on Social Tensions, application of the Integrated Phase Classification for assessing food security, utilization of preliminary findings from the WFP Market Monitor, and the Lebanon Integrated Anthropometric, Micronutrient, and Child Development Survey (LIMA) in 2023

3) Identifying Action areas, Themes, Key Priorities, and Potential KPIs towards 2030

The consultative process initiated by the national convener has resulted in a preliminary list of priorities for food system transformation in Lebanon. This section contains the priorities identified during national and independent dialogues, stakeholder inputs, and other consultations that have taken place with key actors since 2021 (Annex II and III). As additional dialogues and consultations are organized in the months to come, this priority list will be revised and updated. Eventually, the priorities listed below will set the grounds for implementation plans for food system transformation, and will be integrated in national strategies and translated to specific policies, regulations, and interventions.

This document builds on the 5 main action areas identified by the UN Food Systems Coordination Hub for food systems transformation. In this section, we present the identified priorities classified under four of those areas: (I) Nourish all people, (II) Boost nature-based solutions of production, (III) Advance equitable livelihoods, decent work, and empowered communities, (IV) Build resilience to vulnerabilities, shocks, and stresses. The fifth area, (V) Means of implementation, is discussed in detail in the following section.

3.1 Strategic Alignment: Connecting Food Systems Summit Action Tracks with SDGs and Government Strategies in Lebanon

The mapping exercise presented above establishes a strategic alignment between the Food Systems Summit Action Tracks and specific Sustainable Development Goal (SDG) targets, thereby linking them to Lebanon's Government Reports and Strategies.

15

Action Tracks	SDG Targets	National Development Priorities
(I) Nourish all people	SDG 2 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture'	NAS 2020-2025: Pillar 2, 3, 5; National Nutrition Strategy and Action Plan 2021-2026: Strategy Area 3
(II) Boost nature-based solutions of production -	SDG 6 'Ensure availability and sustainable management of water and sanitation for all', Target 6.3; SDG 13 'Take urgent action to combat climate change and its impacts', Target 13.2; SDG 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', Targets 15.2, 15.3	NAS 2020-2025: Pillar 4, 5; Updated National Water Sector Strategy 2020-2025: Pillar 2
(III) Advance equitable livelihoods, decent work, and empowered communities	SDG 1 'End poverty in all its forms everywhere', Targets 1.4, 1.5; SDG 2 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture', Targets 2.1, 2.3	NAS 2020-2025: Pillar 1, 2, 5; LCRP: Strategic Objective 4
(IV) Build resilience to vulnerabilities, shocks, and stresses	SDG 2 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture', Targets 2.3, 2.4, 2.a, 2.b; SDG 5 'Achieve gender equality and empower all women and girls', Target 5.a; SDG 12 'Ensure sustainable consumption and production patterns', Target 12.3	NAS 2020-2025: Pillar 2, 3, 5

3.2 Synergizing Transformative Actions: Coherent Priorities in Lebanon's Food System

Building on the strategic alignment of Food Systems Summit Action Tracks with SDGs and Government Strategies in Lebanon, this section delves deeper into the priorities by subdividing them into common themes and recommends potential KPIs. This subdivision ensures overall coherence in the pursuit of transformative change within Lebanon's food system.

Action Area 1: Nourish All People

Theme: Food Availability and Local Producer Support
- **Priorities:**
    - Enhance food import efficiencies and increase storage capacity
    - Develop food marketing systems favoring local products.
    - Improve local animal feed production.
    - Upgrade agricultural infrastructure.
    - Support fisheries and aquaculture value chains.
    - Increase agricultural productivity.

- **Recommended and available KPIs:**

    1. Percent Contribution of the agriculture and food system to GDP (disaggregated by agriculture and agrifood):
       - Baseline data available 2020: 7%
       - Target 2025: 10%
       - Responsible institution: Central Administration of Statistics (CAS)
       - Frequency: Annual
       - Source of verification: National accounts

    2. Percent of labor force in agriculture and agrifood sector (disaggregated by gender) from total labor force:
       - Baseline 2020: 6%
       - Target 2025: 8%
       - Responsible institution: CAS
       - Frequency: Annual
       - Source of verification: Household/labor survey

    3. Employment in agrifood sector (disaggregated by gender, age):
       - Baseline 2020: Data not available (TBD with assistance of the Ministry of Labor (MoL) and International Labor Organization)
       - Target 2025: 5255 (2015 data from Associate of Lebanese Industrialists)
       - Target 2030: TBD
       - Responsible institution: CAS
       - Frequency: TBD
       - Source of verification: Household/labor survey

    4. Increase in value of agricultural production (in billion USD):
       - Baseline 2020: $1.3 billion
       - Target 2025: $1.56 billion
       - Target 2030: TBD
       - Responsible institution: Ministry of Agriculture (MoA)
       - Frequency: Annual
       - Source of verification: Annual statistics/reports

5. Proportion of agricultural area under production from total agriculture area:
   - Baseline 2020: 70%
   - Target 2025: 75%
   - Target 2030: TBD
   - Responsible institution: MoA
   - Frequency: Annual
   - Source of verification: Annual statistics/reports

6. Increase in the dairy herd size (number of dairy cattle, number of small ruminants):
   - Baseline: Dairy Cattle: 50,000
   - Target 2025: Dairy Cattle: 100,000
   - Target 2020: TBD
   - Responsible institution: MoA
   - Frequency: Annual
   - Source of verification: Annual Statistics & Agricultural Research Directorate (ARD) progress reports

Theme: Nutrition and Healthy Diets
- **Priorities:**
  - Promote the Lebanese/Mediterranean diet.
  - Boost nutrition-sensitive social protection.
  - Legislate and incentivize healthy food consumption.
  - Support and expand school meal programs.
  - Reduce the use of sweeteners and trans-fats
  - Research on micronutrient deficiencies.
  - Review and update National Food-Based Dietary Guidelines.

- **Recommended and available KPIs:**
  - Assessment of the rate of adoption of the Lebanese/Mediterranean diet in cities.
  - Assessment of effectiveness of nutrition-sensitive social protection measures implemented by the MoSA.
  - Impact assessment of school meal programs implemented by WFP.
  - Assessment of the data on micronutrient deficiencies and fortification needs.
  - Implementation rate of updated food based dietary guidelines.

SDG2[10] - Zero Hunger:

1. Prevalence of undernourishment (%):
   - Remaining progress needed from 2024 to 2030: 10.9% to zero
   - Remaining progress needed per year: 10.9% / 7 years = 1.557% per year
2. Prevalence of stunting in children under 5 years of age (%):
   - Remaining progress needed from 2024 to 2030: 7.4% to zero
   - Remaining progress needed per year: 7.4% / 6 years = 1.233% per year
3. Prevalence of wasting in children under 5 years of age (%):
   - Remaining progress needed from 2024 to 2030: 1.4% to zero
   - Remaining progress needed per year: 1.4% / 6 years = 0.233% per year
4. Prevalence of obesity, BMI ≥ 30 (% of adult population):
   - Remaining progress needed from 2024 to 2030: 32.0% to zero
   - Remaining progress needed per year: 32.0% / 6 years = 5.333% per year

Theme: Maternal and Child Nutrition
- **Priorities:**
  - Ensure essential nutrition services with coronavirus prevention.
  - Provide access to complementary and therapeutic foods.
  - Ensure continuity of essential nutrition services for pregnant and breastfeeding mothers, infants and young children, with adequate measures to prevent disease transmission.
  - Enhance school feeding programs focused on balanced nutrition.

- **Recommended KPIs:**
  - Coverage of essential nutrition services and school feeding programs per person per governorate.
  - Training programs for nutrition capacity development per person per governorate.
  - Nutritional value and variety in school feeding programs.

Theme: Food Quality and Safety
- **Priorities:**
  - Ensure food safety and quality throughout the food value chain.
  - Raise awareness and build capacity in food safety practices.
- **Recommended and available KPIs:**
  - Compliance with food safety standards as per the recent research.
  - Number of food safety training programs and participants per governorate.

1. Reduction in the quantity of fertilizers usage (in tons):
   - Baseline: 69,249 tons
   - Target 2025: 60,000 tons

---

[10] Please note that these calculations assume linear progress and may not accurately represent the actual progress trajectory. Additionally, actual progress may vary due to various factors and interventions implemented over time.

- Responsible institution: Ministry of Agriculture (MoA)/Lebanese Agricultural Research Institute (LARI)
- Frequency: Annual
- Source of verification: Progress reports from MoA and LARI

Theme: Sustainable Consumption and Food Waste Reduction
- **Priorities:**
  - Promote sustainable consumption patterns.
  - Advocate for food waste reduction.
- **Recommended KPIs:**
  - Adoption rate of sustainable consumption practices per governorate.
  - Measurable reduction in food waste by sector and per governorate.

Action Area 2: Boost Nature-Based Solutions of Production

Theme: Solutions for Sustainable Agriculture
- **Priorities:**
  - Develop incentives and programs for transitioning to nature-friendly production systems (e.g., agroforestry, integrated pest management).
  - Invest in climate-smart technologies to enhance productivity and reduce climate change vulnerability.
  - Support research and development initiatives that focus on localized solutions to agricultural challenges, particularly those exacerbated by climate change.
  - Support farmers in adopting Good Agricultural Practices (GAP).
  - Research and develop innovative approaches for sustainable food production.
  - Youth and Farmer Capacity Building in Precision Farming and Digital Agriculture

- **Recommended KPIs:**
  - Increase the percentage of farmers adopting nature-friendly production systems.
  - Increase the percentage of farmers adopting climate-smart technologies.
  - Increase the percentage of farmers implementing GAP.

Theme: Sustainable and Efficient Water Use
- **Priorities:**
  - Implement a demand-based water management policy.
  - Improve irrigation system efficiency.
  - Promote the reuse of treated wastewater for agriculture.
  - Incentivize the adoption of drought-tolerant crop varieties.
  - Enhance fertilizer and pesticide use efficiency and water quality testing.
  - Map and monitor water pollution sources.
  - Prioritize water harvesting and hydroponics in urban agriculture.

- **Recommended KPIs:**
    1. Status of Sewage Treatment Projects in the Litani River Basin:
        - Baseline: Data not available
        - Responsible Institution: The National Litani River Authority is actively engaged in coordinating with relevant stakeholders to expedite the implementation and improve the management of sewage treatment systems in the basin.
        - Frequency: As required
        - Notes: Currently, there are 11 sewage treatment projects in the upper basin and 16 in the lower basin. However, only 12 stations are operational, while the 15 remaining are still under preparation. Furthermore, the operational stations are not functioning at full capacity, indicating the need for improvements in efficiency and effectiveness. Additionally, sewage networks are incomplete, contributing to the inefficiency of existing treatment facilities.

    2. Smart water metering and water efficient household appliances adoption rate:
        - Responsible: Ministry of Energy and Water and Academia
        - Measure the percentage of households and districts adopting smart water metering systems and water-efficient appliances as prioritized technologies for water management.

    3. Crowd-sensing application engagement:
        - Responsible: Ministry of Energy and Water and Academia
        - Track the number of users and reports submitted through the crowd-sensing application for pipe bursts, indicating community engagement and technology adoption.

    4. Smart irrigation mobile application adoption rate:
        - Responsible: Ministry of Agriculture and Academia
        - Monitor the percentage of farmers adopting free mobile applications for smart irrigation, reflecting technology adoption in agriculture.

    5. Unified database for water management:
        - Responsible: Ministry of Energy and Water
        - Track the establishment and regular update of a unified database for water resources, quality, uses, and management, indicating improvements in data management and accessibility.

    6. Wastewater fee collection efficiency:
        - Responsible: Ministry of Energy and Water
        - Measure the efficiency of collecting wastewater fees proportional to water consumption, reflecting financial sustainability in wastewater management.

    7. Greenhouse Gas emissions reduction from wastewater sector:

- Responsible Ministry: Ministry of Energy and Water
- Calculate the reduction in GHG emissions from the wastewater sector under different mitigation scenarios compared to a Business-as-Usual scenario, serving as a KPI for environmental impact on the food system.

Theme: Sustainable and Efficient Energy Use
- **Priorities:**
    - Build capacity in renewable energy use along the supply chain.
- **Recommended KPIs:**
    Adoption of Energy-Efficient Technologies:
    - The enforcement of mandatory energy performance standards for heating and cooling equipment, as well as the improvement of regulations to offer incentives for energy-efficient projects, can be extended to food processing and refrigeration units. This approach can significantly reduce energy consumption in the food sector by ensuring that food storage, processing, and transportation are conducted using the most energy-efficient technologies available.
    - Responsible: Ministry of Energy and Water

Theme: Promoting Circularity in the Food System & Food Loss Reduction
- **Priorities:**
    - Reduce inefficiencies and food loss along the value chain.
    - Implement circular economy approaches in the food system.
- **Recommended KPIs:**

    1. Implementation of circular economy principles in all food system components

    2. Decrease in Organic and Food Pollutants for Circular Economy
        - Measure the reduction in organic and food pollutants as a result of the project "Reduction of Unintentional Persistent Organic Pollutants (UPOPs) Through Waste Management in a Circular Economy."
        - Responsible Ministry: Ministry of Environment
        - KPI Components:
            - Quantitative decrease in the concentration of organic and food pollutants in targeted areas.
            - Comparison of pollutant levels before and after project implementation.
            - Compliance with environmental standards and regulations regarding pollutant levels.
            - Target: Achieve a significant decrease in organic and food pollutants in targeted areas by the end of the project duration.
            - Method of Measurement: Regular monitoring and sampling of pollutant levels in affected areas, analysis of data collected, and comparison with baseline measurements.

22

Theme: Urban Food Production
- **Priorities:**
  - Promote urban agriculture and green cities.
- **Recommended KPIs:**
  - Expansion and implementation of city region food system projects.
  - Increase in measures of greening in urban areas.

Theme: Ecosystems Preservation and Restoration
- **Priorities:**
  - Manage and restore natural resources for sustainable agricultural and rural livelihoods.
  - Preserve biodiversity in the food system, including strengthening seed banks and nurseries.

- **Recommended and available KPIs:**
  - Continued success in reforestation and land restoration projects.
  - Increase growth in biodiversity conservation initiatives, including seed banks.

1. CO2 emission per agrifood output (disaggregated by sub-sector: crop, livestock, forestry, agro industry):
   - Baseline 2015:
   - Without forests: 879 Gg CO2e
   - With forests: 2,431.43 Gg CO2e
   - Animal Production emissions: 67% of agri emissions and 33% for plant production
   - Target 2025: 1100 Gg CO2 equivalent
   - Target 2030: TBD
   - Responsible institution: MoA/MoE
   - Frequency: Annual
   - Source of verification: MoA/MoE reports

Action Area 3: Advance Equitable Livelihoods, Decent Work, and Empowered Communities

Theme: Empowerment of Rural Communities
- **Priorities:**
  - Improve access to inputs, technology, finance, and land, focusing on vulnerable groups, youth, and women.
  - Encourage the development of small agri-food entrepreneurs in rural areas.
  - Provide necessary services, technology, and infrastructure for nature-friendly production to marginalized groups, with a special focus on youth.
  - Enhance accessibility to financial services, including rural credits and funding for small agri-businesses.

- **Recommended and available KPIs:**

  1. Average income of farmers and producers (in thousands USD/per hectare/year):
     - Baseline: Data not available
     - Target 2025: $3000
     - Responsible: MoA/CAS
     - Frequency: Annual
     - Source of verification: Annual Statistics/ Household/labor survey

  2. Direct support to restore livelihoods in the agri-food sector (in million USD):
     - Baseline: Data not available
     - Target 2025: $90 million
     - Target 2030: TBD
     - Responsible institution: MoA/MoF
     - Frequency: Annual
     - Source of verification: Budget law/legislative texts/Donors reports

Theme: Access to Finance and Land

- **Priorities:**
  - Facilitate access to subsidized agri-loans for farmers and SMEs in the agrifood industry.
  - Improve land access and ownership for vulnerable populations, youth, and women.
- **Recommended KPIs:**
  - Increase land ownership among small farmers that promote sustainable food production.
  1. Average income of farmers and producers (in thousands USD per hectare per year):
     - Baseline: Data not available
     - Target 2025: $3000
     - Responsible institution: Ministry of Agriculture (MoA)/Central Administration of Statistics (CAS)
     - Frequency: Annual
     - Source of verification: Annual Statistics/Household/labor survey
  2. Direct support to restore livelihoods in the agri-food sector (in million USD):
     - Baseline: Data not available
     - Target 2025: $90 million
     - Responsible institution: MoA/Ministry of Finance (MoF)
     - Frequency: Annual
     - Source of verification: Budget law/legislative texts/Donors reports

Theme: Regulations and Policies for the Vulnerable

- **Priorities:**
  - Implement policies for labor market access and economic inclusion.
  - Strengthen coherence between agriculture and social protection.
  - Enforce labor laws to protect food system workers and prevent child labor.

- Incorporate targeted programs for vulnerable groups within the national food security strategy.
- **Recommended KPIs:**
  - Assessment of the effectiveness of policies in improving labor market access. Increase the compliance rate with labor laws in the food sector by 20%.
  - Decrease child labor (50% by 2025) and unpaid women labor
  - Verification: MoA, MoL, International Labor Organization (ILO).

Theme: Community Empowerment.
- **Priorities:**
  - Enhance the role of rural cooperatives, farmer groups, and women groups.
  - Prioritize community-led initiatives.
  - Empower local communities to preserve traditional knowledge and promote sustainable practices.
- **Recommended KPIs:**
  - Engagement and increase the rate of community-led initiatives
  - Expand the adoption of sustainable and traditional practices in local communities.

Theme: Education and Training
- **Priorities:**
  - Tailor education to match the current state of the food system and available resources.
  - Build youth capacity for innovation and adaptation to climate change and food system challenges.
- **Recommended KPIs:**
  - Engaging the Ministry of Education and Higher Education
  - Alignment of educational programs with food system needs schools per governorate.
  - Increase youth engagement in innovative and adaptive practices per governorate.
  - Expansion of existing youth coalition and practices

Theme: Building Connections and Partnerships
- **Priorities:**
  - Facilitate the exchange of experiences and successful initiatives, especially those involving youth and women.
  - Build network channels between cooperatives, farmers, agricultural companies, and traders.
- **Recommended KPIs:**
  - Implementation of new and effective partnerships formed per year (one per month).
1. Increase in the percentage of active agricultural cooperatives:
   - Baseline 2019:
   - Agricultural cooperatives: 654
   - Food processing cooperatives: 150
   - Farming cooperatives: 89

- Beekeeping cooperatives: 62
- Fisheries cooperatives: 50
- Target 2025: TBD (percentage increase)
- Target 2023: TBD
- Responsible institution: Directorate General of Cooperatives, Ministry of Agriculture (MoA)/General Directorate of Cooperatives (GDC)
- Frequency: Annual
- Source of verification: MoA/GDC reports

Action Area 4: Build Resilience to Vulnerabilities, Shocks, and Stresses
Theme: Resilience to Stress and Vulnerabilities
- **Priorities:**
  - Adopt a food system approach to understand and manage vulnerabilities.
  - Strengthen early warning systems and risk analysis capabilities.
  - Implement disaster risk reduction strategies, including insurance mechanisms.
  - Enhance emergency preparedness and response.
- **Recommended KPIs:**
  - Implementation of new early warning systems (Lebanese Research Institute).
  - Implementation disaster risk reduction strategies (National Centre for Scientific Research)

Theme: Resilient Food Supply Chains
- **Priorities:**
  - Support market stability with timely information and supply chain expertise.
  - Build small producers' resilience by enhancing access to resources and markets.
  - Diversify crops and livestock to minimize failure risks.
  - Reduce import dependency by diversifying trade partners.
- **Recommended KPIs:**
  - Stability and functionality of supply chain systems.
  - Increase diversity in crop and livestock production.
  - Reduce import dependency rates.

1. Percent reduction in the import of raw material for major agri-food industries:
   - Baseline: Data not available
   - Target 2025: 10%
   - Responsible: Customs
   - Frequency: Annual
   - Source of verification: Annual reports

Theme: Climate and Disasters Resilient Development Pathway
- **Priorities:**
  - Identify and implement scalable, cost-effective climate risk reduction solutions (e.g., drought-resistant varieties, efficient farming operations).

- Promote mixed farming systems, efficient water management, and yield gap bridging.
- Encourage the use of evidence-based technologies and local innovations that enhance sustainable agricultural productivity and food systems.
- Support research and development initiatives that focus on localized solutions to agricultural challenges, particularly those exacerbated by climate change.
- **Recommended KPIs:**
  - Increase adoption rate of climate-resilient agricultural practices.
  - Integration of health considerations food system legislative framework.

Theme: Resilience to Shocks, Conflicts, and Food Crises
- **Priorities:**
  - Ensure food system functionality in conflict-prone areas.
  - Balance humanitarian response with long-term development goals.
  - Develop a post-crisis response framework for food system recovery and resilience.
- **Recommended KPIs:**
  - Increase food availability from local sources in war-affected areas.
  - Increase effectiveness of balancing humanitarian and development efforts.
  - Post-crisis recovery and resilience-building initiatives.

4) Means of Implementation: 6 key steps towards transformation

The means of implementation encompass a wide range of activities and initiatives aimed at addressing the challenges within the Lebanese food system and promoting sustainable and inclusive practices. These initiatives involve various stakeholders, including the public sector, NGOs, international organizations, and the private sector, and are designed to translate the priorities, themes, and action areas identified into specific policies, regulations, and interventions. This section emphasizes the importance of holistic interventions that encompass sustainable supply chains, equitable food distribution networks, and enhanced resilience to shocks and crises. It also stresses the need for capacity building, awareness raising, legislative measures, and the empowerment of vulnerable populations, youth, and women to achieve the goals of the food system transformation.

For a sustainable, resilient, and inclusive food system in Lebanon, means of implementation are structured to systematically address the multifaceted challenges and opportunities within the Lebanese food system. The structure is framed by Haddad who highlights the key steps required to transform national food systems. These steps include setting clear goals, identifying strengths and weaknesses, aligning policies, allocating resources effectively, developing dynamic plans, providing strong leadership, utilizing research data and evidence, addressing knowledge gaps, and securing government support (Haddad, 2023).

1. Prioritize Outcomes:

To initiate the transformation, clear and measurable goals must be set. Our focus encompasses key outcomes, including a 20% improvement in food security and nutrition indicators, 10% enhancement in environmental sustainability (biodiversity, climate resilience), 15% increase in economic viability, and a 25% boost in social resilience. Recognizing the relative importance of these outcomes within Lebanon's specific context lays the groundwork for targeted transformation efforts.

2. Develop Plans:

These plans outline strategies and actions necessary to achieve transformation goals. In this phase, we highlight the strengths and weaknesses inherent in Lebanon's food system, aiming for the identification of 15 strengths and 10 weaknesses, ensuring a strategic and informed approach to the transformation process.

Multi-stakeholder partnerships and collaborations

Building strong partnerships among government agencies, private sector entities, civil society organizations, research institutions, and communities should be a priority. Engaging stakeholders in the design and implementation of food system transformation initiatives will enhance ownership, collaboration, and collective action towards sustainability goals.

Potential KPI:

- Number and quality of partnerships formed among different stakeholders.

- Impact of collaborative projects on advancing sustainability goals in the food system.

3. Know the Food System:

Accurate and up-to-date data on the current state of Lebanon's food system is fundamental. We prioritize the collection and analysis of relevant data, drawing from government reports, UN sources, and stakeholder consultations. This wealth of data serves as a foundation for informed decision-making, allowing us to identify challenges and opportunities. Key Performance Indicators include the collection of data on 50 different food system transformation indicators as identified globally by (Schneider et al., 2023, see Annex IV). For a more detailed overview of Lebanon's food system, refer to the comprehensive document developed by National Convenor Team supported by the FAO-Lebanon in early 2024.

4. Ensure Policy Coherence:
Policy coherence is a central element in our transformation strategy. We emphasize aligning policies related to food systems at both national and regional levels.

Governance

We call for a Shared Governance model "we govern together", led by the National Food System Convenor and with close support of key UN agencies involved in food system transformation. This will ensure that food system policies are set through a consultative process and where different stakeholder's voices are heard and integrated in policy-making.

The transformation of the food system necessitates active involvement from various stakeholders. While governments traditionally assume a leadership role, the responsibility is shared among a diverse array of actors. Consequently, the governance structure requires the competent, organized, and meaningful participation of civil society, academia, citizens, and other relevant stakeholders.

In addition, fostering cooperation among the humanitarian sector and government agencies and promoting integration at all levels is key to optimize resource utilization, improve the delivery of aid to vulnerable communities, and establish a humanitarian development nexus.

Potential KPI:

- Engagement with new of stakeholders for the consultative process for policy-making.

- Increase in stakeholder satisfaction with the inclusivity and effectiveness of the governance model.

Policy and regulation

On the legislative front, the National Convenor of Lebanon has taken the helm of an initiative aimed at drafting the "right to food" law. This pivotal legislation for the "right to food" will serve as a cornerstone for establishing a legal framework encompassing various other rights such as right to clean water, clean energy among others that are essential to the transformation of the food system. These rights are indispensable in ensuring a food system that promotes healthy diets, sustainability, equity, and resilience.

Moreover, successful initiatives that have demonstrated positive impacts on sustainable agriculture, food security, and nutrition should be expanded and replicated. This involves identifying and prioritizing interventions with strong evidence of effectiveness and scalability, and allocating resources to scale them up across different regions.

Potential KPI:

- Develop an action plan to mobilize efforts, allocate resources, and raise awareness to promote the adoption of the "right to food" law at the general assembly.

- Submission of the final draft of the legislative process that supports the "right to food" law.

- New initiatives replicated or scaled up based on evidence of effectiveness in sustainable agriculture, food security, and nutrition.

5. **Develop a Coherent Ecosystem of Support:**

Acknowledging the collaborative nature of food system transformation, our strategy involves engaging diverse stakeholders. Government bodies, private sector entities, NGOs, and local communities are key players in this effort. We aim to build a coherent ecosystem of support by expanding existing collaborations and creating mechanisms for effective collaboration towards shared transformation goals.

Finance and investments

The implementation of the food system transformation priority actions will require adequate financing and investments. Ensuring sufficient resource allocation through time will be key for effective food system transformation and to achieve the SDGs commitments by 2030.

Financing of the food system transformation should be integrated in the budgeting process of different sectors, with thorough monitoring of the spending. Resource management and coordination at both the national and local levels should be enhanced. In addition, plans to increase financing sources should be put in place.

Potential KPI:

- Fund raising for financing for food system transformation.

- Monitoring metrics for the effectiveness and impact of budget allocations on food system transformation based on 50 indicators of latest global food system countdown initiative (Schneider et al., 2023). Lebanon has currently data available for 55 metrics out of a total of a suggested total of 75 metric (Schneider et al., 2023).

6. Assess Progress and Adapt:

Regular evaluations, emphasizing key indicators, allow us to track the effectiveness of transformation efforts. Flexibility and adaptability are integral, ensuring our strategy can respond adeptly to changing circumstances, a crucial element for sustained success in the long term. KPIs include conducting 10 evaluations, with a focus on measuring the impact of transformation efforts.

<u>Research, data and innovation</u>

Empiric research and robust data collection systems should be established to understand the state of the food system and assess the impact of transformation efforts. This will involve continuous collection of data on all food system areas, including agricultural production, trade, food loss and waste, nutrition indicators, socio-economic factors, and emergency preparedness and response. It might include undertaking big data collection efforts, such as the elaboration of an agricultural census in Lebanon, and partnering with academia, research centers, and other experts.

In addition, monitoring and evaluation systems should be strengthened to better track the progress and outcomes of the food system transformation. This includes developing robust indicators, collecting data on key performance metrics, and conducting regular evaluations to assess the effectiveness and impact of interventions. Early evidence of positive changes will be crucial in demonstrating the success of our transformation agenda and can guide timely course corrections when necessary.

Finally, creating and strengthening national research and technology centers related to the food system can foster the development of innovative agricultural technologies and practices suitable for local conditions and resilient to climate change, while developing national capabilities and building a pool of experts to drive future change.

Potential KPI:

- Quantity and quality of data collected on various food system areas.

- Effectiveness of monitoring and evaluation systems in tracking progress and outcomes.

- Number of innovative agricultural technologies and practices developed by national research and technology centers.

<u>Capacity building and knowledge sharing</u>

Enhancing the capacity of key stakeholders - such as farmers, policymakers, or civil society organizations and youth - is essential for effective food system transformation. Training programs, workshops, pilot projects and on-site trainings, and knowledge-sharing platforms should be established to disseminate best practices, innovative approaches, and scientific insights related to a sustainable food system.

Potential KPI:

- Number of training programs, workshops, and pilot projects conducted.

- Level of engagement and knowledge improvement among stakeholders (farmers, policymakers, civil society organizations, and youth).

Recent initiatives in the region showcase the effective alignment of Means of Implementation, serving as pivotal drivers for transformative change, as illustrated in Box 3. This alignment not only exemplifies ongoing efforts but also presents a promising framework for catalyzing Food System Transformation in the Lebanese context.

Levers for Food System Transformation

To support the food systems transformation process in Lebanon, a match exercise has been developed, aligning action areas and means of implementation with the eight levers of change identified by the Sustainable Food Systems (SFS)-Med platform and the Food and Agriculture Organization (FAO). This structured approach offers a clear path for integrating strategies and assessing progress in transforming the nation's food systems. Here's the revised matching framework:

Lever of Change: Urban Food Waste Management and Circular Economy
- **Action Area:** Promote circularity in the food system & food loss reduction (Action Area 2).
- **Means of Implementation:** Research, Data & Innovation (Potential KPI: Data on food loss and waste).

Lever of Change: Increasing Resilience through the WEFE Nexus
- **Action Area:** Sustainable and efficient water use (Action Area 2).
- **Means of Implementation:** Governance (Potential KPI: Effectiveness of policy-making in WEFE management).

Lever of Change: Linking Innovation and SMEs
- **Action Area:** Encourage small agri-food entrepreneurs (Action Area 3).
- **Means of Implementation:** Finance and Investments (Potential KPI: Financing for SMEs in the food system).

Lever of Change: The Mediterranean Diet for More Sustainable Consumption
- **Action Area:** Nutrition and Healthy Diets (Action Area 1).
- **Means of Implementation:** Capacity Building and Knowledge Sharing (Potential KPI: Knowledge improvement about sustainable diets).

Lever of Change: Women as Key Players in the Green Transition
- **Action Area:** Empowerment of Rural Communities (Action Area 3).
- **Means of Implementation:** Multi-Stakeholder Partnerships and Collaborations (Potential KPI: Impact of women-focused projects).

Lever of Change: Green Growth
- **Action Area:** Solutions for Sustainable Agriculture (Action Area 2).
- **Means of Implementation:** Research, Data & Innovation (Potential KPI: Sustainable agricultural practices development).

Lever of Change: Blue Transformation
- **Action Area:** Support to fisheries sector (Action Area 1).
- **Means of Implementation:** Policy and Regulation (Potential KPI: Policies for sustainable marine resources).

Lever of Change: Integrated Land Use Planning
- **Action Area:** Improve agricultural infrastructure (Action Area 1).
- **Means of Implementation:** Governance (Potential KPI: Stakeholder satisfaction with land use policies).

*Box3: **Matching Framework for Food Systems Transformation in Lebanon as per SFS-Med Platform and FAO***

5) Next Steps

The present document aims to lay the ground for the food system transformation in Lebanon from now until 2030, providing a shared vision - or "Pathway"- for all stakeholders involved. It is a living document, which will continue to be discussed, modified, and updated as additional dialogues and consultations take place.

We reaffirm Lebanon's commitment to the food system transformation and the need to seize the momentum to accelerate it. In the months to come, a series of actions will be taken to refine this document and begin the implementation process:

A. Discussing and reviewing the draft Pathway document with key stakeholders: refining the list of priorities list and means of implementation, and defining a clear vision of the food system transformation in Lebanon.
B. Formalizing conveners' advisory team and decide on format and frequency of progress reviews.
C. Integrating the pathway's food system transformation vision into national strategies and sectoral plans.
D. Developing a roadmap for implementation plan: including clear interventions, milestones, and timelines. The document will allocate responsibilities and map the actors involved in each milestone. It will incorporate detailed budgets and financial needs.
E. Identifying sources of financing for the implementation of food system transformation, based on the budget needs identified in the elaboration of the roadmap.
F. Developing a monitoring and evaluation strategy with defined KPIs mapped to interventions.
G. Encouraging more systematic work across sectors, at multiple levels (national, sub-national and local), and with different actors. It includes the organization of additional dialogues and consultations with a broader range of stakeholders.
H. Increasing regional and international cooperation for the food system transformation, sharing lessons learned and approaches to common challenges.

ANNEX I:

I.1 Regional Pathway Documents and Stocktaking Exercises – Benchmarking Exercise

Regional pathway documents and stocktaking exercises elucidated critical action areas and transformation themes. However, these documents often lack a specific format, due to the challenging governance structure of the food system in each nation. Nonetheless, progress is being made in this regard, as evidenced in Sultanate Oman, UAE, and Jordan's pathway document. Sultanate Oman proposes several solutions to address the challenges facing the growth of different tracks of the food system. Oman's report utilizes the five key tracks of the Food Systems Summit 2021 as a framework to address the challenges facing the food system in the Sultanate of Oman. These tracks serve as important pillars to guide the proposed solutions and recommendations. The report further highlights the importance of reviewing value chains, analyzing challenges, and finding optimal solutions at every stage. Whilst UAE's food system pathway document used its Vision 2021, UAE Centennial Plan 2071, and National Food Security Strategy 2051, along with national dialogue consultations, as the foundations for its approach and roadmap towards transforming food systems. To guide their efforts, UAE's food system pathway document established five strategic directions, each designed to achieve specific outcomes aligned with their vision. These strategic directions are complemented by a set of key performance indicators (KPIs) that will help in measuring progress and ensure accountability. Furthermore, a range of initiatives and activities(enablers) have been identified to support the implementation of these strategic directions. Last but not least, Jordan's pathway document lists the priorities for transformation and sets key milestones along the pathway to include conducting a diagnostic report, preparing a roadmap for transformation, holding national dialogues, restructuring institutions and the legal framework, implementing interventions, continuously monitoring and evaluating progress, and sharing experiences and lessons learned with other countries.

Furthermore, regional documents such as FAO's recent stocktaking exercise identifies common challenges, priorities, and opportunities that emerged from the FSSDs in the Mediterranean. These include eight thematic areas such as green and circular economies, sustainable land and water management, the Mediterranean diet, rural-urban food system, and resilience. It acknowledges that Mediterranean countries are at different stages of their food systems transformation journey, with some developing roadmaps and strategies, while others have clear action plans in place. However, they all recognize the urgency to address food and agriculture-related issues. The report emphasizes the importance of regional collaboration and identifies enablers that can drive transformative change in the Mediterranean's food systems. These include multi-stakeholder collaboration, finance and investments aligned with social and environmental standards, knowledge sharing and capacity building, and research and innovation. To maintain momentum and progress towards food systems transformation, the report suggests several next steps. These include organizing continued food systems Dialogues at various levels, finalizing national pathways or roadmaps, promoting inclusive governance, and fostering cross-national and regional collaboration.

I.2 : STAKEHOLDERS/ATTENDEES

Stakeholders

3 meetings – 51 participants – 32 stakeholders*[1]

1st meeting:

UN and Food Security Sector Working Group – 12 Participants – around 5 stakeholders

Example of stakeholders:

· **American University of Beirut (AUB)**

· **UN Resident Coordinator Office (UNRCO)**

· **Food and Agriculture Organization (FAO)**

· **World Food Program (WFP)**

· **Caritas** (provides economic development, livelihoods, health and social care, education, service to foreign refugees, emergency and crisis intervention)

· **CareLiban** (relief efforts in Lebanon for people affected by conflict)

2nd meeting:

Public Sector (Ministries and International organizations) – 19 participants – 11 stakeholders

Example of stakeholders:

·   **Ministry of Social Affairs**

·   **Ministry of Public Health**

·   **Ministry of Economy and Trade**

·   **Ministry of Environment**

·   **LIBNOR (The Lebanese Standards Institution)**

·   **WHO (World Health Organization)**

·   **FAO (Food and Agriculture Organization)**

·   **UNESCWA** (**Economic and Social Commission for Western Asia)**

·   **World Bank**

·   **UNRCO (UN Resident Coordinator Office)**

·   **UNICEF (UN International Children Emergency Fund)**

·   **WFP (World Food Program)**

·   **World Benchmarking Alliance** (represents organizations working at global, regional, and local levels to shape the private sector's contributions to achieving the SDGs.)

·   **Lebanese University**

3rd meeting:

Private sector and Youth– 20 participants – 16 Stakeholders

Example of stakeholders:

· **Agricultural Revival Program (ARP)** launched in July 2020 in response to the severe economic turmoil in Lebanon.

· **Agricultural Movement in Lebanon** (a movement that aims to achieve food sovereignty and improve the livelihood of citizens especially in marginalized areas, manages agricultural development projects, encourages the establishment of municipal nurseries, and preserves biodiversity)

· **Arab Network for Food Sovereignty** (over 30 NGOs and unions of framers, fishermen, shepherds, workers, women, and youth, in addition to consumer associations located in 13 different Arab countries)

· **Lebanese Private Sector Network** (a group of business leaders and practitioners of liberal professions from the private sector, working to respond to the economic collapse and its impacts and to lobby towards long-term positive change within the Lebanese economy.)

· **Mansouri** (a development foundation seeking to develop the society and increase its resilience through various programs and projects.)

· **National Development Committee** (civil organization that endeavors to enhance the productive and equal role of women in the society and its ranks are free of any gender limitations, acts with the belief that for agricultural development to be sustainable, it has to involve a large coalition of organizations and co-ops, to reach at the grassroots level, a broad network of partner farmers to integrate their efforts into a common long-term plan).

· **Action Against Hunger** (An international non-governmental organization that fights hunger by working to prevent malnutrition, provide access to clean water and sanitation,and strengthen vulnerable communities.

· **LOST** (A Lebanese non-governmental organization that aims to provide social and economic support to marginalized and disadvantaged communities in Lebanon).

· **GVC** (Gruppo di Volontariato Civile, or GVC, is an Italian non-governmental organization (NGO) that engages in humanitarian and development initiatives).

· **ANERA** (The American Near East Refugee Aid is a non-governmental organization that provides humanitarian assistance and development aid to Palestinian refugees in the Middle East).

· **Solidarites** (A French non-governmental organization that works to promote human rights and social justice in Lebanon and the Middle East).

· **World Vision (**An international Christian humanitarian organization that works to alleviate poverty and injustice around the world).

· **Thought for Food** (the world's leading innovation engine for food systems & climate impact)

ANNEX II: Outcome report of stakeholder meetings

This Annex provides a brief summary of the three national dialogues held in Lebanon as part of the stocktaking moment in 2023. This summary highlights the efforts and initiatives undertaken by stakeholders to transform the food system, and the other addresses the challenges identified during the meetings. Both are organized according to the five action tracks: ensuring access to safe and nutritious food (Track 1), shifting to sustainable consumption patterns (Track 2), boosting nature-positive production (Track 3), advancing equitable livelihoods (Track 4), and building resilience to vulnerabilities (Track 5).

Implemented local efforts and initiatives:

TRACK 1 Ensure access to safe and nutritious food for all:

The Ministry of Social Affairs has implemented programs to support the poorest and most vulnerable Lebanese households through the National Poverty Targeting Program (NPTP) and the AMAN initiative. The Ministry of Public Health has launched the National Nutrition Strategy and Action Plans, focusing on maternal and child nutrition and addressing non-communicable diseases. The Ministry of Agriculture promotes soft wheat cultivation, pulses production, and capacity-building on Good Agricultural Practices (GAP). Other efforts by various organizations and NGOs included cash transfers, nutritional awareness sessions, and the distribution of safe food. The national convener was also provided with a dashboard by the Lebanese Food Security Sector, in addition to information on what has been done under the LCRP.

TRACK 2 Shift to sustainable consumption patterns:

Initiatives included raising awareness of proper healthcare for newborns and premature babies, monitoring the safety of Lebanese products, decreasing trans fatty acid consumption, banning certain antibiotics in poultry farms, and promoting the use of national seed varieties. Measures were also taken to combat fraud related to palm oil use and enhance nutritional knowledge among vulnerable populations.

TRACK 3 Boost nature-positive production:

Projects involved rainwater harvesting, greenhouse renovation, capacity-building on GAP, distribution of vouchers for organic pesticide purchasing, assessment of climate change impact on agricultural and water sectors, and efforts to reduce pesticide use near water sources. Attention was also given to preserving water quality, assessing food loss and waste, and promoting the WEF nexus.

TRACK 4 Advance equitable livelihoods:

Initiatives aimed to enhance livelihoods, gender equality, and social inclusion through renewable energy projects, training programs, microgrants, and community-led approaches. Efforts also focused on empowering women, supporting SMEs and startups, and promoting youth engagement in reducing food loss and waste.

TRACK 5 Build resilience to vulnerabilities, shocks, and stress:

Activities included cash transfers to enhance recipients' resilience, training programs to empower rural women in food production, and initiatives on biogas extraction from cow waste. Efforts were also made to strengthen the economic empowerment of farming communities and increase their resilience to shocks.

Local challenges hindering local food system transformations

TRACK 1 Ensure access to safe and nutritious food for all:

The challenges mentioned included a reliance on seed imports and the inability of farmers to purchase high-quality seeds. The composition of distributed food parcels mainly consists of imported goods rather than locally produced ones, hindering the promotion of local agriculture. There is also a lack of education on healthy diets and inadequate control and monitoring mechanisms for the transportation aspect of the supply chain. Inconsistent standards and enforcement pose risks to food safety.

TRACK 2 Shift to sustainable consumption patterns:

Challenges include the globalization-driven shift towards Westernized diets in Lebanon and insufficient recognition of consumer influence in shaping the food system. Siloed work and a lack of horizontal integration of initiatives hinder progress. Testing imported foods for chemicals is not consistently implemented, and the absence of local strategies and funding for food loss and waste pose additional challenges. Lack of marketing for local products and high competition from imports further complicate sustainable consumption efforts.

TRACK 3 Boost nature-positive production:

Challenges involve heavy and widespread pesticide utilization influenced by cultural factors and the import of banned pesticides on the black market. The application of band-aid solutions and the lack of future vision pose obstacles. Data collection is scarce regarding local production, and undefined interministerial powers and responsibilities hinder decision-making. Lack of control in remote areas for food safety, conflicts of interest in pesticide registration, and neglect of chemical safety in food are additional challenges. Inequalities in assistance to farmers and environmental concerns such as uncontrolled gravel extraction and excessive use of solar panels also need to be addressed.

TRACK 4 Advance equitable livelihoods:

Challenges include the higher cost of healthy foods compared to unhealthy ones, limited youth involvement and support, and a lack of innovative initiatives. Proper farmer access to markets and the ratification of new guidelines on the decent work of farmers are also important considerations.

TRACK 5 Build resilience to vulnerabilities, shocks, and stress:

Farmers transitioning from illicit crops to consumable crops show resilience. Ensuring accountability and effectiveness in resource utilization for NGOs and international organizations working in the food system is crucial. These challenges need to be addressed to foster equitable livelihoods and build resilience in the face of vulnerabilities, shocks, and stress.

ANNEX III: Outcome matrix of the pathway process prior to the Food Systems Summit 2023

Action Area	Theme	Priorities
1- Nourish all people	Ensure sufficient food availability and support local producers	Implement food import strategies that facilitate efficiencies in the food chains, and increase the quantity in storage and stockpiling capacity to reduce vulnerability to economic shocks
		Adopt food marketing systems and supply chain development approaches that favor local products and improve market and input access for small farmers. Includes improving sorting facilities, packaging and labeling for proximity products
		Secure local production of animal feed
		Improve agricultural infrastructure: better access to water to agricultural lands, rehabilitation of agricultural roads and assets, etc.
		Emphasize the importance of the fisheries sector and provide adequate support to the fish/aquaculture value chain.
	Improve nutrition and promote healthy diets for children and all	Revive the traditional Lebanese/Mediterranean diet from a consumption and production perspective
		Boost nutrition-sensitive social protection
		Legislate and provide incentives to increase consumption of healthy foods, especially by

		children. Raise awareness on the effects of malnutrition (diabetes, obesity, health-related cost, etc.) while promoting healthy diets and lifestyles.
		Support school meals programs
		Conduct research and surveys on micronutrient deficiencies to assess the need for a universal fortification strategy.
		Review the National Food-Based Dietary Guidelines (FBDG) to ensure that the specific needs of children and adolescents are properly reflected.
		Continue to place a high priority on promoting maternal, infant and young child nutrition. Proposed actions include: - Ensure continuity of essential nutrition services for pregnant and breastfeeding mothers, infants and young children, with adequate measures to prevent coronavirus transmission. - Ensure timely access to complementary and, where appropriate, therapeutic foods for infants and young children, as well as micronutrient supplements and other essential nutrition commodities for pregnant women, infants, and young children. - Capacity development at different levels of nutrition for pregnant lactating women based on national guidelines. - Support school feeding programmes, while ensuring all nutrients are considered,

		increasing intake of fruits and vegetables and decreasing the amount of unhealthy fat intake, and increase kids' exposure to whole foods and unflavored milk
	Food quality and safety	Focus on food safety and quality, in all steps of the food value chain. Raise awareness and capacity building on food safety practices, collect monitoring data, and implement strict auditing procedures.
	Sustainable consumption & food waste reduction	Raise awareness on sustainable consumption patterns
		Promote food waste reduction
2- Boost nature-based solutions of production	Solutions for sustainable agriculture	Develop incentives schemes, entrepreneurial programs, and capacity-building programs to transition towards nature-friendly production systems, including the adoption of practices such as agroforestry, sustainable land management, integrated pest management, precision agriculture, or organic farming.
		Adopt and invest in climate-smart technologies to reduce vulnerability to climate change, reduce emissions from agriculture, increase water use efficiency, and enhance local productivity. Raise awareness and capacity building in the use of those technologies.
		Provide adequate support for farmers in adopting good agricultural practices (GAP).
		Research and develop innovative approaches for sustainable food production, considering localized manufacturing and research perspectives.

	Sustainable and efficient water use	Pursue a demand-based water management policy that has the potential to reallocate water to more socially vital and economically viable applications, while reducing conflicts among sectors. Adopt sustainability criteria for the water system allocation.
		Improve efficiency of irrigation systems. Invest in irrigation technology, optimize irrigation scheduling, collect data on irrigation efficiency, and ensure proper maintenance and rehabilitation of existing irrigation networks.
		Reuse of treated wastewater for agriculture. Explore the use of non-conventional water sources for agriculture.
		incentivize the adoption of drought tolerant varieties.
		Improve efficiency of fertilizer and pesticide use and test the water quality. Take appropriate measures to prohibit misuse of fertilizers and pesticides.
		Map and identify main sources of water pollution and implement a comprehensive water quality monitoring program. Update related guidelines on water quality. Implement proper accountability measures for the illicit use of polluted water in agricultural practices.
		Prioritizing water harvesting in addition to using hydroponics farming as part of urban agriculture.

	Sustainable and efficient energy use	Capacity building on renewable energy use along the supply chain.
	Promote circularity in the food system & food loss reduction	Reduce inefficiencies and food loss along food value chains.
		Implement circular economy approaches in food system
	Urban food production	Promote urban agriculture and green cities
	Ecosystems preservation and restoration	Encourage the proper management and restoration of natural resources necessary for agricultural and rural livelihoods sustainability, such as water source preservation, reforestation, or land restoration.
		Take further steps to preserve biodiversity in food system, such as strengthening seed banks and nurseries of local wild flora and domesticated species in the country.
3- Advance equitable livelihoods, decent work, and empowered communities	Improve access to inputs, technology, finance, and land for vulnerable rural communities, especially youth and women	Encourage the emergence of a new dynamic class of small agri-food entrepreneurs as a cornerstone of creating inclusive livelihoods in rural areas
		Provide services, technology, and infrastructure necessary for nature-friendly production to marginalized rural groups with special focus on the youth

		Enhancing financial services' accessibility by incentivizing rural credits, micro credit and funding small agri-businesses.
		Facilitate access to subsidized agri-loans for farmers and small and medium enterprises (SMEs) working in the agrifood industries to revive the sector.
		Facilitate land access and ownership for vulnerable populations, youth and women
	Regulations and policies for the most vulnerable	Adopt policies and programs that facilitate access to the labor market and economic inclusion, and foster self-reliance to address social and economic barriers to food access, such as unemployment, poverty, and forced migration.
		Strengthen the coherence between agriculture and social protection, including farm workers and smallholders
		Enforce labor laws to protect food system workers and prevent child labour
		Incorporate targeted programs within the national food security strategy for vulnerable groups such as refugee communities.
	Empower rural communities and groups	Enhance the role of rural cooperatives, farmer groups and women groups to improve producers' access to markets, technology adoption, and higher resilience to shocks.

		Whenever possible, prioritize community-led initiatives.
		Empower local communities to preserve traditional knowledge, and promote fair trade practices, and the consumption of sustainable, culturally appropriate, and locally sourced food.
	Enhance education and training	Prepare colleges and schools for specialties that match the current state of affairs in the food system and available natural resources
		Build the capacity of youth to innovate and adapt to climate change and other food system challenges
	Build connexions and foster partnerships	Facilitate exchange of experiences and successful innovative initiatives in the food system, especially those related to youth and women, through twining of local institutions, adopting management approaches, and networking
		Help building network channels between cooperatives, farmers, agricultural companies and traders.
4- Build resilience to vulnerabilities, shocks, and stresses	Resilience to stress and vulnerabilities	Adopt a food system approach to understand drivers and vulnerabilities and enable the development of a resilient food system.
		Strengthen early warning and risk analysis, through increased forecasting capacity and active monitoring.

		Implement disaster risk reduction strategies, including risk transfer mechanisms such as insurance.
		Strengthen emergency preparedness and response
	Resilient food supply chains	Supporting market stability by providing governments and private sector actors with timely market information and leveraging our supply chain and procurement expertise to sustain and strengthen market functions.
		Build small producers' resilience to shocks by strengthening their capacities and resources; enhancing their access to inputs, assets, services and markets.
		Diversify crops and livestock to reduce the risk of crop failure or livestock disease.
		Reduce vulnerability to import dependency by diversifying trade partners.
	Climate and disasters Resilient Development Pathway	Identify most appropriate, scalable, and cost-effective solutions for climate risk reduction, such as drought resistant varieties, smart crop management, mixed farming systems, blue and green water management, efficient farm operations and mechanization, bridging yield gaps, efficient fertilizer production.
		Ensure functionality of the food system in areas that are prone to conflict.

	Resilience to shocks and violent conflicts and food crisis	Ensure balance and coherence among the humanitarian response and longer-term development goals, strengthening the humanitarian-development nexus.
		Build post-crisis response framework to help the food system recover and build inclusive, sustainable and resilient sector.

ANNEX IV: Main indicators under five thematic area of the Food System Count Down Initiative 2030:

Thematic Area 1: Diets, nutrition, and health

1. **Food Environments:**

   - Cost of a healthy diet

   - Availability of fruits and vegetables

   - Retail value (total sales) of ultra-processed foods

   - Percent population using safely managed drinking water services

2. **Food Security:**

   - Prevalence of Undernourishment (SDG 2.1.1)

   - Percent population experiencing moderate or severe food insecurity (SDG 2.1.2)

   - Percent population who cannot afford a healthy diet

3. **Diet Quality:**

   - MDD-W: Percent adult women meeting minimum dietary diversity

   - MDD (IYCF): Percent children 6-23 months meeting minimum dietary diversity

   - All-5: Percent adult population consuming all 5 food groups

   - Zero fruit or vegetable consumption

- NCD-Protect

- NCD-Risk

- Sugar-sweetened soft drink consumption

Thematic Area 2: Environment, natural resources, and production

1. **Greenhouse Gas Emissions:**

   - Food systems greenhouse gas emissions

   - Greenhouse gas emissions intensity, by product group

2. **Production:**

   - Food product yield, by food group

3. **Land:**

   - Cropland expansion

4. **Water:**

   - Agriculture water withdrawal as percent of total renewable water resources

5. **Biosphere Integrity:**

   - Functional integrity: Percent agricultural land with a minimum level of natural habitat

   - Fishery health index progress score

6. **Pollution:**

   - Total pesticides per unit of cropland

   - Sustainable nitrogen management index

Thematic Area 3: Livelihoods, poverty, and equity

1. **Poverty and Income:**

   - Share of agriculture in GDP

2. **Employment:**

   - Unemployment rate, rural

   - Underemployment rate, rural

3. **Social Protection:**

49

- Social protection coverage

- Social protection adequacy

4. **Rights:**

   - Percent children 5-17 engaged in child labor

   - Female share of landholdings

Thematic Area 4: Governance

1. **Shared Vision and Strategic Planning:**

   - Civil society participation index

   - Percent urban population living in cities signed onto the Milan Urban Food Policy Pact

   - Degree of legal recognition of the right to food

   - Presence of a food system transformation pathway (from the UNFSS)

2. **Effective Implementation:**

   - Government effectiveness index

   - International Health Regulations State Party Assessment report (IHR SPAR), Food safety capacity

   - Presence of health-related food taxes

3. **Accountability:**

   - V-Dem accountability index

   - Open budget index score

   - Guarantees for public access to information (SDG 16.10.2)

Thematic Area 5: Resilience

1. **Exposure to Shocks:**

   - Ratio of total damages of all disasters to GDP

2. **Dietary Sourcing Flexibility:**

   - Dietary sourcing flexibility index

3. **Infrastructure and Social Capital:**

- Mobile cellular subscriptions

- Social capital index

4. **Agro- and Food Diversity:**

   - Proportion of agricultural land with a minimum level of species diversity (crop and pasture)

   - Number of (a) plant and (b) animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities (SDG 2.5.1)

5. **Resilience Responses/Strategies:**

   - Coping strategies index

6. **Long-term Outcomes:**

   - Food price volatility

   - Food supply variability