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Nutrition Sensitive Food Systems in Conflict Affected Regions

A Case Study of Afghanistan

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ABSTRACT

The food systems approach can contribute to food security and reduced malnutrition levels by identifying key investments and policies throughout the food system, including production, processing, marketing, and consumption of food. However, in countries facing fragility and conflict, it has proven difficult to implement such an approach and achieve the desired results. This has been the case in Afghanistan, where high levels of malnutrition stem in part from an undersupply of nutritious food. Multi-sectoral approaches to promote nutrition sensitivity and achieve diet-based solutions have also had only limited impact. This paper reports on an analysis of the nutrition sensitivity of food systems in Afghanistan using multi-sector consultations and gap analyses to examine two key food and nutrition policies, the National Comprehensive Agriculture Development Priority Program and the Afghanistan Food Security and Nutrition Agenda. It highlights gaps in the policies and identifies investment priorities to make food systems more nutrition sensitive. The results show that instilling nutrition sensitivity into the operation of Afghanistan's food systems can only be accomplished if certain key measures are incorporated into the food system. These include addressing the absence of knowledge in the population regarding healthy diets, the lack of sufficient food for vulnerable populations, weak irrigation systems, capacity constraints at individual and institutional levels, data challenges, and weak natural resource management. In addition, the above weaknesses are compounded by the continued violence and conflict-induced insecurity, weak government, and inadequate investments. Given the role of different sectors in contributing to improved nutrition, appropriate and effective multi-stakeholder coordination and collaboration is paramount to such efforts.

Keywords: nutrition sensitive, food systems, investment, capacity, Afghanistan, investment framework, gap analysis

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ACRONYMS

AFSENA	Afghanistan Food Security and Nutrition Agenda
ARIA	Agricultural Research Institute of Afghanistan
CSA	climate smart agriculture
DRR	disaster risk reduction
FAO	Food and Agriculture Organization of the United Nations
GLOPAN	Global Panel on Agriculture and Food Systems for Nutrition
HLPE	High Level Panel of Experts
IYCF	infant and young child feeding
M&E	Monitoring and evaluation
MAIL	Ministry of Agriculture, Irrigation and Livestock
MoE	Ministry of Education
MoEW	Ministry of Energy and Water
MoPH	Ministry of Public Health
MRRD	Ministry of Rural Rehabilitation and Development
NCADPP	National Comprehensive Agriculture Development Priority Program
NPP	National Priority Program
NWP	National Wheat Program
SME	Small and medium enterprises
WASH	water, sanitation, and hygiene

1. Introduction

The United Nations' 2030 Agenda for Sustainable Development recognizes that a food systems approach can lead to better nutrition and health outcomes by increasing the availability and consumption of nutritious foods and improving dietary diversity (Headey et al. 2018; Ruel et al. 2018; Bhutta et al. 2013; Kim et al. 2017). Several countries have undertaken multisectoral approaches and integrated nutrition interventions within their food systems to meet their nutrition goals (Ruel et al. 2018; United Nations 2017; Hendriks 2018).

Despite these initiatives at the global and national level, the incidence of malnutrition remains high. As of 2019, globally 21.3 percent of children under 5 years of age were stunted and 6.9 percent of these children (47 million) were affected by wasting. Adult obesity levels have also been on the rise in recent years (FAO 2020). Food systems have failed to supply appropriate nutritious and safe foods for people (HLPE 2017; Gebru et al. 2018; Global Panel on Agriculture and Food Systems for Nutrition [GLOPAN] 2016; FAO 2020). In many countries, there are supply shortages, low levels of consumption of healthy foods, and excess consumption of unhealthy foods, such as those with added sugar and red meat (Willett et al. 2019; Imamura et al. 2015). These challenges can be attributed to rapid changes in food systems due to growing urbanization, globalization, and trade liberalization across the globe (Development Initiatives Poverty Research Ltd. 2020).

In conflict afflicted countries, such as Afghanistan, food systems failure is compounded by lack of internal security, weak governance, inadequate investments, and low institutional capacity for developing multisectoral solutions for achieving food and nutrition security. Protracted conflicts in many countries have contributed to the recent rise in global hunger— more than half of all undernourished people live in conflict-affected countries (Vos et. al. 2020). Research shows that there is a strong relationship between food insecurity, malnutrition, and violent conflict since conflict presents a "shock" that can affect the livelihoods of populations. Exposure to conflict may directly affect food security and lead to fluctuations in prices, further exacerbating the challenges vulnerable people face in accessing sufficient nutritious food (International Security and Development Center 2016; Kah 2017; Fanzo 2020). Additionally, there are adverse effects of such a shock on anthropometric outcomes of children in conflict-affected countries such as Angola, Colombia, and Mexico (Arcand, Rodella, and Rieger 2015; Duque 2017; Nasir 2016).

Afghanistan, a country marred by internal fragility and conflict, has witnessed a rise in undernutrition and food insecurity in recent years (World Bank 2019; Dureab et al. 2019; Dunn 2018). The Afghan government has undertaken several policy initiatives in the last decade to address these challenges. Despite this, the country has an unstable food supply, high prevalence of diseases, poor access to safe drinking water and sanitation facilities, suboptimal feeding and caring practices, and poor access to quality health services (Afghanistan 2018). The country's domestic policies are not nutrition sensitive due to a lack of communication among stakeholders, poor

knowledge management, and limited human and financial capacity (Poole et al. 2018).

The potential of food systems to contribute to efforts to achieve nutrition security is not captured appropriately in Afghanistan due to prolonged conflict and the resulting institutional fragility of multisectoral approach to food and nutrition security. Given this challenge, this paper focusses on enhancing the policy framework to improve the nutrition sensitivity of agriculture and food policies in the food systems context. The paper uses multi-stakeholder consultations and desk reviews to identify gaps in the current policy landscape which are constraining efforts to alleviate malnutrition in the country and provides recommendations for actions that would make food systems in Afghanistan more nutrition sensitive. The paper focuses on two policies in the country: the National Comprehensive Agriculture Development Priority Program (NCADPP) and the Afghanistan Food Security and Nutrition Agenda (AFSENA).

The following section provides a literature review of the food systems approach to nutrition outcomes and an overview of Afghanistan's food system and nutrition status. Section 3 discusses the methodology used for the study, and Section 4 presents the results of the diagnostic review of NCADPP and AFSENA. Finally, Section 5 provides policy recommendations, while Section 6 provides some concluding remarks.

2. Literature Review

Food systems approach to nutrition outcomes

Food and nutrition security have been recurring themes in the international development agenda for decades, with an emphasis on ending hunger and malnutrition (Gödecke et al. 2018; Byerlee and Fanzo 2019). In this regard, a food systems approach is often considered an important and effective approach to tackling global food insecurity and malnutrition (Fanzo, 2019; Haddad et al., 2016; Ingram, 2011).

A food systems approach can improve nutrition levels by enhancing food production and consumption. But evidence shows that such an approach does not always lead to improvements in nutrition and health outcomes (Berti et al. 2004; Webb and Block 2012; Ruel and Alderman 2013). According to Gillespie et al. (2019), in the broader food systems context, other interconnected factors such as sanitation, quality of health services, market performance, and political situations can reduce the potential contribution of agriculture to nutritional improvement. Hence, the multisectoral nature of nutrition challenges also requires multisectoral responses within the food system to make comprehensive and sustainable progress in addressing nutrition challenges.

Fanzo et al. (2020) and Drewnowski et al. (2020) argue that, while several countries are using multisectoral approaches to eliminate hunger and malnutrition, there is no consensus at either the international or the national level on what agricultural technologies are best to feed a growing global population. A key challenge is how to use effectively multi-stakeholder engagements to create sustainable agricultural production systems that improve nutrition, minimize environmental impact, and improve the incomes and livelihoods of the rural poor, while also considering social

and cultural norms.

Many countries across the world are now facing challenges of rapidly increasing rates of overweight, obesity, and diet-related non-communicable diseases alongside persistent undernutrition (Popkin et al. 2020). Hence, going forward, a drastic transformation of food systems is necessary to address the growing food insecurity and multiple forms of malnutrition in a sustainable manner (FAO 2020; Development Initiatives Poverty Research Ltd. 2020; EAT-Lancet Commission 2019; GLOPAN 2016; Haddad et al. 2016; HLPE 2017).

Food systems in Afghanistan

The South Asian region is characterized by volatile environmental and political conditions and disconnects between agriculture and nutrition policy (Balagamwala and Gazdar 2013; Kadiyala et al. 2014). In countries like Afghanistan, livelihoods and economic activity are hampered due to persistent fragility and conflict (World Bank 2019). There are high levels of malnutrition in the country, especially among children, with deleterious implications for human and economic development (World Bank 2019).

Prolonged conflict in Afghanistan has led to a large number of internally displaced people, adding strain to the food and nutrition security system (OCHA 2018). In Afghanistan, multi-stakeholder coordination across sectors to collaborate and implement policies is limited and communication for consultation from the central to provincial level is also weak. It is argued that policies often developed at the central level are not reflective of provincial conditions. A systematic and multi-sectoral approach is needed to complement location-specific initiatives on food and nutrition (Poole et al. 2016; Poole et al. 2019). Prevalence of conflict has also weakened the ability to collect data and conduct research. A recent study which aimed to understand the factors affecting household level food and nutrition security in the Bamyan province of Afghanistan had to limit the scope of research study design due to physical insecurity arising from ongoing conflict in the province (Poole et al. 2019). Insecurity and conflict result in low accountability of local and national systems. Such low accountability at all levels of the government has serious implications for multisectoral approaches needed for the development of nutrition sensitive food systems.

Dietary diversity has been a major challenge in the country but there is evidence to show that multi-stakeholder coordination linking horticulture, gender, education, and nutrition could help (Alim and Hossain 2018; Poole et al. 2019). Further, integrated and multi-stakeholder approaches in the form of public investment in infrastructure, energy, and communications technologies that are necessary for the development of viable local agribusiness and markets and integrated delivery of development services are also currently weak due to the fragile state of the country (Poole et al. 2019).

According to the Global Nutrition Report (Development Initiatives Poverty Research Ltd. 2020), as of 2013, the national prevalence of under-five stunting was 40.9 percent, which is significantly greater than the developing country average of 25 percent. Further, Afghanistan has an under-five

wasting prevalence of 9.5 percent, which is also greater than the developing country average of 8.9 percent. The report also the notes that the national prevalence of under-five overweight in Afghanistan was 5.4 percent, which has increased slightly from 4.6 percent in 2004. The report also points out that the country's adult population faces a malnutrition burden: 42 percent of women of reproductive age have anemia, and 12.2 percent of adult women have diabetes, compared to 11.6 percent of men. Meanwhile, 7.6 percent of women and 3.2 percent of men have obesity. The report further highlights that there is insufficient data on low birth weight.

A possible solution to the malnutrition challenge in Afghanistan is an effective food systems approach. According to Shankar, Poole, and Bird (2019) and Gillespie et al. (2019), there is strong evidence to show that an effective food systems approach can lead to dietary improvement in Afghanistan. For instance, in areas where rain-fed agriculture is relatively unproductive in the country, availability of irrigation was positively associated with dietary diversity. Similarly, livestock ownership was positively associated with nutrition through own-consumption of nutrient-rich foods and income-generation, leading to better diets via market access. There was also evidence from Afghanistan that higher sheep ownership and mutton consumption was associated with lower levels of anemia among adult women.

Based on the above discussion it is evident that the country is facing nutrition challenges, but research does suggest that appropriate measures using the food systems approach can improve nutrition outcomes (Shankar, Poole, and Bird 2019; Gillespie et al. 2019). Besides nutrition challenges, the country also faces challenges in its economic and environment sector which are adversely affecting its nutrition outcomes. Hence, it is crucial that the country identify gaps which need to be addressed in its current food system and undertake multisectoral measures to make the system more nutrition sensitive.

3. Methodology

The literature review indicated that due to the prevalence of conflict in Afghanistan there is a lack of active multi-stakeholder engagement and coordination. It is argued that to create and implement policies reflecting on-the-ground realities, ensure monitoring and evaluation (M&E) of all programs, warrant dietary diversity for all age groups and genders, and enhance agribusiness and service delivery, integrated multi-stakeholder approaches are an important first step to identify critical entry points to ensure nutrition sensitivity in food systems (Jaenicke and Virchow 2013).

In line with the key takeaways which emerged from the literature review on critical issues arising out of the conflict in Afghanistan, as a first step in our review process, we identified and engaged with multi-stakeholder actors who contributed to food systems to get their perspective on current challenges in those food systems. These actors included several government ministries, agencies, private sector players, and other actors—including individuals from the Ministry of Agriculture, Irrigation and Livestock (MAIL); Ministry of Rural Rehabilitation and Development (MRRD;

Ministry of Industries and Trade; Ministry of Economy; the National Statistics and Information Authority; Ministry of Public Health [MoPH]; civil society organizations; and Food and Agriculture Organization of the United Nations (FAO) staff based in Kabul, Afghanistan. We conducted capacity strengthening workshops in Kabul and Delhi, India. The workshops had two key objectives: i) to map national and regional priorities and identify relevant organizations, sectors, and documents for a nutrition-sensitive food system in Afghanistan; and ii) identify gaps in the current national policies which must be addressed to achieve stronger nutrition sensitivity. The workshops were structured to include key thematic issues such as nutrition sensitivity, dietary diversity, extension programs, trade, and production systems. Stakeholders were invited based on their expertise and work experience in each of these thematic areas. The stakeholder representation at the workshops was fairly representative of the food and nutrition policy system in Afghanistan.

The Delhi workshop was held from 2 to 7 May 2019, with a total of 16 participants from ministries (Ministry of Foreign Affairs, Ministry of Economy, Ministry of Commerce and Industry, MAIL, MoPH, and MRRD), a think tank (National Budget Advocacy Group) and a university (Kabul University). The workshop also included FAO Afghanistan staff. It included presentations on food policy and current challenges in South Asian countries, policy process mapping, and gap analysis. The Kabul workshop happened on 24 and 25 June 2019. The workshop brought together 32 participants from different line ministries including MAIL, MRRD, Ministry of Industries and Trade, Ministry of Economy, the National Statistics and Information Authority, MoPH, and civil society organizations. The workshop also included FAO staff based in Kabul, Afghanistan. The workshop included presentations on organization and individual capacities needed for implementation of NCADPP and AFSENA, the policy process, and nutrition sensitivity of current policies/national plans.

A core theme of both workshops was to introduce the participants to the "National Policy Gap Analysis" framework. This framework uses a three-step process. The first step analyzes gaps in the current policy being implemented. This includes a review of policies and regulations related to food systems, and an analysis of the extent to which each policy does or does not promote nutrition sensitivity. Once these gaps are identified, the second step identifies priority investment areas based on these gaps. This helps the country formulate an investment plan which is compatible with its existing situation. The third step tracks the progress of the investment priorities using key indicators.

Through the Kabul workshop, participants identified core issues such as food availability and access; challenges and aspirations; and objectives, goals, and targets to address food insecurity and malnutrition. They also analyzed the status of Afghanistan's food system in the broader context of issues which have come to the forefront in the international environment, including the Sustainable Development Goals, Sanitary and Phytosanitary Agreement, and Climate Resilient Agriculture. The participants were divided into small groups. Each group was assigned one national policy (including NCADPP and AFSENA) and was asked to map existing national priorities and identify the gaps in the policy. The participant responses provided a useful background for the next step of the diagnostic review discussed below.

There was a consensus among the participants that addressing food insecurity in Afghanistan will require a comprehensive strategy to deal with production, distribution, and consumption of food in the country, which will require substantial changes in the existing policies and programs and the legal and regulatory frameworks. Participants insisted that awareness programs should focus on education and health policies to promote dietary diversification, and women's empowerment will be key in preventing early-age marriages, malnutrition, and child stunting. The second step of this process of the diagnostic review included using the framework to identify analytical needs, data requirements, and investment priorities to make Afghanistan's food systems more nutrition sensitive. The results of this diagnostic review are presented below.

4. Results

The NCADPP is a government program which has identified seven strategic sector priorities and related initiatives to build a more self-sufficient agriculture sector (Afghanistan 2016). The strategic sector priorities include food and nutrition security and resilience building. The Afghan government also prepared the AFSENA, which provides strategies to achieve the goal of food and nutrition security for the country (Afghanistan 2012).

Discussed below are the key results from the diagnostic review.

From multi-stakeholder workshops

i) National Comprehensive Agriculture Development Priority Program 2016–2021

According to the stakeholders, the policy does not have a specific goal and clear targets that could address nutrition challenges. They also pointed out that there is a funding gap of around US$1.3 billion out of the total US$1.8 billion that is required to fully implement the program by 2021.

They recommended that the policy i) include specific goals, objectives, and clear targets to address malnutrition in the country; ii) address the funding gap; iii) address implementation constraints such as low institutional and staff capacity; iv) focus on improving stakeholders' coordination; v) develop a clear results-framework and identify resource requirements; vi) consider the high population growth rate and its implications for food security and nutrition; vii) address the issue of food safety; and viii) address the issue of postharvest crop losses.

ii) Afghanistan Food Security and Nutrition Agenda 2012

The policy focuses more on the availability of cereals, and the section on food accessibility is not well defined to consider livelihoods and income of the population. It was also highlighted that the policy does not cover other essential elements of the food system, such as livestock production, agriculture research, water, and natural resources management. Further, the policy had not been institutionalized and did not have a M&E system in place. The policy treats food insecurity as "caloric insecurity" but fails to analyze protein and micronutrient inadequacies or lack of dietary diversity. Furthermore, the policy does not clearly define the role of the private sector.

The stakeholders recommended that AFSENA i) needs a technical review and adjustment to address emerging needs of the country; ii) needs to be enforced as a national agenda addressing food security and nutrition; iii) needs resource and fund mobilization to implement its five-year strategic plan; iv) needs to be institutionalized within the government of Afghanistan; v) needs action areas for improving diet diversity to be covered; vi) should consider the needs of the urban poor; vii) should consider gender aspects for strategic action—discussion on gender mainstreaming should reflect female labor-force participation and female access to income-generating activities; and viii) needs to focus on providing a social safety net through graduation mechanisms and self-employment.

Overall, there was a consensus among stakeholders that Afghanistan needs a comprehensive strategy to deal with food production, distribution, and consumption challenges in the country. Substantial changes in the existing policies, programs, and legal and regulatory frameworks will be required. It was also insisted that awareness programs focus on dietary diversification and that women's empowerment should be promoted to prevent early-age marriages, malnutrition, and child stunting.

From gap analysis

i) National Comprehensive Agriculture Development Priority Program 2016–2021

The NCADPP is a strategic framework which was introduced in 2016 by the government for developing and reforming the agriculture sector in Afghanistan. It aims at moving towards a more "farmer-centric view" to enhance the productivity and growth of the agriculture sector. It has seven strategic sector priorities. These include (i) improving irrigation systems; (ii) wheat and cereal production; (iii) development of industrial and high-value horticulture crops and vegetables; (iv) livestock development; (v) climate-change sensitive natural resource management; (vi) food and nutrition security and resilience building; and (vii) institutional reforms. The nutrition sensitivity and related areas for improvement for each strategic sector are examined below.

Nutrition-sensitive food systems must contribute to improving health outcomes, including through production of diverse, safe, and nutrient-rich food; income generation that can facilitate access to health services; and reducing contamination of water sources (FAO 2017).

Given this backdrop of nutrition-sensitive food systems, a conflict-affected country like Afghanistan marred by persistent policy and system failures must focus on filling the gaps discussed below to move forward on the pathway to improved nutrition sensitivity (please refer to Annex 1). In this regard, the gap analysis of NCADPP reveals that the policy has not incorporated water, sanitation, and hygiene (WASH) considerations. Additionally, measures to undertake water management in rainfed agriculture are also absent. Besides, the policy does not address issues relating to limited knowledge of water conservation techniques and climate smart agriculture (CSA) practices amongst farmers.

The policy does not provide measures to improve individual- and institutional-level capacity in MAIL and research institutions like the Agricultural Research Institute of Afghanistan (ARIA),

even though this acts as a major constraint in conducting and collaborating on relevant wheat policy research. There is a lack of focus on improving the seed system to ensure availability of improved seeds, such as biofortified seeds, to farmers. For the horticulture sector, there is an absence of provisions on designing and monitoring programs which have nutrition-sensitive horticulture production. Even though institutional capacity in Afghanistan is exacerbated by continuous violence and conflict in the country, the focus needs to be on strengthening this capacity. This remains unaddressed, however: there is limited understanding about agriculture–nutrition linkages at different levels of MAIL.

There continues to be a lack of focus on collecting data for a livestock and fish census. The policy does not address the issue of limited research on the impact of animal product consumption on nutrition levels and limited monitoring of budget allocations for livestock and fisheries research. There also continues to be a limited research focus on stress-tolerant crop varieties. Additionally, there is an absence of initiatives on creating an efficient national early warning system to provide alerts about anticipated climate challenges in vulnerable regions. A focus on multi-stakeholder engagement through effective communication and coordination between all relevant stakeholders, including the government, farmers, and the private sector, is still not a key priority in the policy. Last, data challenges on nutrition status are also not addressed—the policy does not provide a clear procedure to collect household-level data on nutrition status.

Investment priorities

Based on the gaps identified in the previous section, here we discuss the investment priorities that NCADPP must focus on to make the food system more nutrition sensitive (please refer to Annex 2). The policy must incorporate WASH considerations in the sectoral policies to ensure that they align with and complement the food production goals. There is also a need for investing in water management strategy and groundwater development for effective use of cropping systems and to meet nutritional requirements. Additionally, investments should also be made in capacity building of the farmers to increase CSA practices. Investments should be made in building individual and institutional capacity of MAIL and ARIA to conduct wheat research in collaboration with key stakeholders and to ensure that the findings are incorporated into the policy-making process. Currently, there is a limited focus on developing physical infrastructure due to the ongoing conflict situation in the country. Going forward, there is also a need to invest in physical infrastructure to enhance productivity and enable access to markets for wheat and other nutrition-dense crops. Also, there should be focus on developing seed varieties that align with the cropping pattern and are nutrient rich and enhance diet quality.

It is important to improve agriculture-nutrition linkages at different levels of MAIL. To ensure nutrition sensitivity in this arena, investments need to be made in capacity building for all stakeholders in the value chain to reduce food loss and waste. Focusing on research and policy studies on agriculture-nutrition linkages and independent review of such linkage policies is necessary to ensure nutrient preservation across agriculture value chains. Investments should also be made to identify opportunities that improve the quality of prioritized crops. Additionally,there is a need to identify and create opportunities for social entrepreneurship and the private sector in food and nutrition security. Communities need to be informed on how they can consume part of what they produce for their own nutritional improvement.

To better understand the linkages between crops, livestock, and nutrition outcomes and the impact of animal product consumption on nutrition levels, investments need to be made in conducting research. There is also a need to invest in conducting baseline surveys and creating a database on the status of animal population, animal pastures, fodder, and feed systems. Budget allocations to crops, livestock, and fisheries research also need to be monitored to track progress. To ensure that efficient stress-tolerant varieties of crops are used, more investment needs to be made in conducting research in this arena. Investments also need to be made in extension programs to promote the adoption of sustainable and climate-resilient agriculture technologies. The focus should be on programs which incorporate built-in mitigation factors and the resilience of livestock farmers to natural disasters and other uncertainties. To deal with rapid climate challenges, investments must also be made in early warning and drought-monitoring systems.

Investment should be made in strengthening communication on nutrition outcomes between the government, farmer associations, and the private sector. Since conflict in the region has limited data collection activities both for policy creation and monitoring, going forward there needs to be a focus on ensuring data is available on household-level nutrition status as well as the impact of programs and policies focused on improving nutrition. This will be extremely helpful in strengthening nutrition security. Last, relevant institutions need to invest in increasing nutrition integration into existing policies and programs. To ensure that programs and policies are effective, regular independent reviews must be conducted to evaluate their nutrition sensitivity.

Tracking system

The next step after analyzing the gaps and identifying investment priorities is tracking the progress of the investments (please refer to Annex 3). Below is a brief overview of some of the indicators which can be used to track the progress of the investments.

- Improved household access to irrigation facilities, strengthened institutional and human capacity, and creating a database for irrigated land systems are some key indicators for improving irrigation systems.
- Improved and increased production, production technologies, and tolerant seed varieties are indicators of improved wheat production.
- For the horticulture value chain, indicators include improved agriculture-nutrition linkages at different levels of MAIL and investments in social entrepreneurship for food and nutrition security.
- Climate-sensitive natural resource management is another important investment priority for which the indicators focus on improving research and capacity to develop a more climate-resilient food system.
- To ensure food and nutrition security, include the nutrition status of households in the census and monitor the food security and nutrition status of the population on a regular basis.

ii) Afghanistan Food Security and Nutrition Agenda

AFSENA is a policy introduced by the government to address the challenges related to hunger and malnutrition in the country. The strategic objectives of the policy are (i) to assure the availability of sufficient food for all Afghans; (ii) to improve economic and physical access to food, especially

for vulnerable and food-insecure population groups; (iii) to ensure stable food supply over time and in disaster situations; and (iv) to promote better diets and adequate food utilization, particularly by women and children.

Gap analysis (please refer to Annex 4)

A key gap is a lack of relevant data and capacity due to poorly functioning institutions. AFSENA does not provide a standardized procedure to collect and analyze reliable data on food production, agriculture inputs, nutrition levels, and natural disasters and droughts in a timely fashion. Farmers have limited access to new technologies and agricultural and rural advisory services.

Coordination among different ministries and within ministries for promoting social entrepreneurship and private sector investments for food and nutrition security is limited. Additionally, there is also a lack of coordination between programs implemented by different international donors, which may lead to duplication of data collected and projects implemented.

AFSENA does not focus on creating datasets on disaster preparedness and access to relevant weather-related information for farmers. Afghanistan's local population has a limited understanding of how to be prepared to ensure nutrition security during emergencies. The issue of overlap/duplication due to a lack of coordination between the national government and agencies and international donors working on nutrition-sensitive projects has not been discussed. There is also a limited focus on creating awareness about adequate levels of nutritional intake among children, dietary diversity for the rural population, and a standardized nutrition-sensitive food basket for emergencies and humanitarian crises which meets the needs of women and children. Additionally, the lack of data and assessment about nutrient-rich products including fruits, vegetables, and livestock products remains unaddressed.

Investment priorities (please refer to Annex 5)

Investments need to be made to ensure dietary diversity in different communities and develop local recipes that are affordable and acceptable. Capacities need to be strengthened at both the producer and extension-services level to ensure that consistent messages on nutrition, including adequate dietary diversity, are promoted. Since nutrition is a multisectoral issue, investments need to be made in improving multisectoral policy advocacy, planning, and analysis to promote nutrition sensitivity across relevant ministries.

There is a need for creating guidelines for a standardized food basket, dietary diversity, adequate food utilization, and enhanced nutrition, particularly for women and children. To improve access to nutrient-rich foods for the vulnerable population, investments should be made in scaling-up plans for ongoing nutrition-sensitive home and school gardens and improving community knowledge and awareness on infant and young child feeding (IYCF). Additionally, investments are also required for building a national nutrition-security surveillance system plan, food and nutrition guidelines, and strategies and protocols which include risk analysis and risk management strategies.

Investments must also be undertaken in disaster and warning systems management to strengthen food and nutrition systems during disaster situations. There should also be a focus on developing

plans for emergency-prone areas where food and nutrition supplies are needed in the form of pre-positioned food stocks.

Tracking system (please refer to Annex 6)
Develop a monitoring household dietary diversity score and energy consumption in various parts of the country to ensure the availability of sufficient food for all Afghans. Establish a national integrated food-and-nutrition-security surveillance system, enhance early warning systems, strengthen local capacity, and ensure effective coordination of humanitarian food assistance during emergencies to ensure stable food supplies over time and in disaster situations. To ensure adequate food utilization and enhanced nutrition particularly for women and children, we need to collect data on i) the number of pregnant women, lactating women, and children with access to fortified foods, respectively, and ii) Vitamin A coverage and deworming in young and school-aged children.

5. Policy Recommendations

Below we discuss policy recommendations which have emerged directly from the diagnostic review.

Specific recommendations related to National Comprehensive Agriculture Development Priority Program policy gap analysis:

Improve capacity for evidence-based food and nutrition interventions: Improve individual and institutional capacity of MAIL and ARIA to conduct research and analysis and communicate the findings in collaboration with key stakeholders.

Invest in rural infrastructure: Improve physical infrastructure to enhance productivity, enable access to markets, and improve utilization of wheat and other nutrition-dense crops. Improvements in infrastructure, such as provision of feeder roads to reach the markets, are necessary. Tracking the investment in rural infrastructure should be part of the strategy to develop a food system that is nutrition sensitive.

Invest in technical innovation and related capacity: Incentivize farmers to use new varieties and discourage them from using less productive and susceptible varieties. Invest in technological innovations such as new seed varieties that can withstand biotic and abiotic stresses and have more nutrients through biofortification. Research investment should focus on making the food system more nutrition sensitive by studying the opportunities for fixing nutrition challenges throughout the value chains. This is particularly an opportunity for making investments in the high-value horticulture sectors.

Invest in youth entrepreneurship: The rural youth in Afghanistan present an opportunity to develop young entrepreneurs who can connect farmers to technology on the one hand and connect the farmers to the markets on the other. Investment in a youth entrepreneurship program through government programs and public-private partnership modes can promote nutrition-sensitive agribusiness.

Conduct research on the impact of animal-product consumption on nutrition level: Undertake decentralized investments in the livestock sector to improve dietary diversity, recruit trained professionals who understand the implications of livestock sector development for nutritional indicators, and adopt food safety regulations related to livestock production, marketing, and distribution.

Communicate policies and programs to the communities: Improve communication between government, farmer associations, and the private sector on nutrition outcomes. The farming communities and the private sector operating in rural areas for both input delivery and output marketing should understand government policies. Farmers' associations play a critical role in the translation of government policies at the farmer level and must be strengthened. through regular regional and state-level workshops.

Data collection and management procedures: Establish clear procedures to collect household-level data focusing on nutritional status through multisectoral consultations. This is key for tracking implementation of the interventions and refining the existing interventions.

Improve coordination and promote multisectoral initiatives on nutrition and poverty alleviation: Coordination of policy and program implementation requires continual dialogue and consultations with the relevant ministries. Additionally, policymakers must engage regularly with development partners and think tanks.

Emphasize nutrient-rich commodities: Nutritional deficiencies of the local communities need to be matched with their potential for growing nutrient-rich crops. This requires decentralized capacity to identify the cropping patterns and modify them to meet the nutritional deficiencies of the population in the local areas. Systematic mapping of such opportunities will help in the medium and long run to modify the messages that are given to the extension system for nutritional improvements.

Incorporate non-agricultural criteria, including health and nutrition, into decision making: Agricultural policies need to explicitly recognize nutrition and health as the final outcomes of their interventions.

Specific recommendations related to Afghanistan Food Security and Nutrition Agenda policy gap analysis:

Strengthen the linkage between research and extension to meet nutritional needs: Linking research and extension systems at the decentralized levels, specifically to the nutritional challenges of each region and state, would be a first step. Build farmers' capacity to equip them to adopt climate-smart agriculture practices and to improve their access to new technology, information, agricultural extension, and rural advisory services. This will further require developing the capacity of the extension system that has nutrition-sensitive content to disseminate for farming communities.

Incorporate WASH considerations while developing and considering the implications of current policies and programs: Invest in mapping out decentralized access to clean water, sanitation,

hygiene, and health facilities, along with food security and nutrition indicators in priority areas and regions for interventions. Investing in data availability for these nutrition and non-nutrition indicators and causal factors is also a priority.

Improve coordination between national and international agencies working on nutrition: Poor coordination often results in overlap of programs/interventions and duplicate data being collected. Coordination of the development partners and the international NGOs, along with the programs that are implemented by the government departments, is key for effective delivery of food and nutrition interventions. Clarity of objectives for each actor and player in the policy process and at different institutional levels, as well as interventions at community levels, can help to keep track of the interventions programs and the progress made through these interventions.

Strengthen coordination among different ministries and within ministries for promoting social entrepreneurship and private-sector investments in food and nutrition security: Invest in developing a cadre of social entrepreneurs and nurturing them to serve their communities. This will complement the government interventions carried out through extension systems and primary healthcare institutions.

Improve physical and economic access to and utilization of food, as well as social protection for vulnerable individuals and groups: While regular development interventions related to food security and nutrition can help, specific interventions are needed to leave no one behind. Monitoring social protection and safety net programs and their impact on vulnerable groups will require capacity at the national and decentralized levels. Investing in such capacity will be a priority in the ministries of health and agriculture. Such capacity will also help in vulnerable group's effective participation in the social welfare programs, to make these programs nutrition sensitive as well.

Improve coordination between programs developed and implemented by different international agencies to avoid duplication: Regular updates must be shared by the donor-government committees overseeing nutrition program implementation. An independent think-tank, such as the Afghanistan Institute for Nutrition and Home Economics, should be hired to keep track of these interventions and map the food nutrition investments made in the country.

Improve institutional and functional capacity for agricultural and administration institutions: Several food and nutrition interventions depend on effective functioning of institutions for their outcomes. Thus, capacity development for creating regulatory procedures and implementing them through effective monitoring is necessary.

Improve understanding regarding agriculture-nutrition linkages among ministry staff: Investing in regular capacity development for MAIL and MoPH officials is a priority. This capacity development should include learning about how agriculture contributes to nutrition and health and how to improve the nutritional outcomes of value-chain development and other nutrition intervention programs. Capacity development requires a multidisciplinary approach and should be implemented in a multisectoral setting for impacting the food system.

Improve the capacity of a local early warning system to forewarn about impending natural disasters: Standardize procedures to collect data on food production, agriculture inputs, nutrition levels, natural disaster and droughts, and selected indicators of food security and nutrition in a reliable and timely manner. This will help in designing emergency intervention programs. Additionally, a data-sharing system to meet the data requirements of all agencies involved can ensure that interventions to protect the vulnerable population are timely and swift.

Make the data collection system for policy and regular program development nutrition sensitive: Promotion of data collection that includes nutrition indicators and their causal factors will help to design interventions at the decentralized levels. The decentralized data collection system should start in one region to show the benefits to the policymakers of investing in such a food security and nutrition monitoring system.

Undertake socioeconomic research: Undertake analysis to inform decision making, using data from cost-of-production and marketing studies which incorporate nutrient-rich crops and a choice of various climate-resilient production techniques. The results of such research will help in designing decentralized nutrition-sensitive food systems through effective organization and production and marketing operations.

6. Concluding Remarks

Based on the literature review of the food systems approach to nutrition, it is evident that many food systems globally are not providing adequate nutritious food and unhealthy food items often are available in excess. There is also a lack of global consensus on the components of sustainable agricultural production systems to improve nutrition.

The malnutrition situation is worse in conflict-afflicted regions, which currently are home to more than half of the world's undernourished population. The governments in these countries are failing to integrate this population into nutrition-sensitive food systems. In particular, Afghanistan is witnessing high levels of malnutrition due in part to a lack of nutrition sensitivity in its food systems and in the country's policy system, as well as low-capacity levels and a lack of coordination between multiple stakeholders in those food systems.

Urgent steps must be undertaken to identify gaps in the existing policies that constrain the development of more nutrition-sensitive food systems and to undertake actions to promote healthy diets, reduce malnutrition and obesity levels, improve access to clean water and sanitation, and ensure food safety. Governments must focus on improving these indicators by strengthening local economies and rebuilding local agriculture and food value chains to help conflict-affected people move beyond subsistence agriculture, adopt climate-smart practices, and become resilient to economic and climatic shocks (Vos 2020).

This paper reports on the results of a diagnostic review of two key agriculture, food, and nutrition policies in Afghanistan – the National Comprehensive Agriculture Development Priority Program and the Afghanistan Food Security and Nutrition Agenda – with the overall aim of improving the nutrition sensitivity of food systems across the country. The review included a systematic multi-stakeholder consultation and gap analysis of key policies on food and nutrition in Afghanistan's food systems. Some key gaps that emerged from the diagnostic review included lack of information regarding healthy diets, lack of availability of sufficient food for vulnerable populations, weak irrigation systems, capacity constraints at the individual and institutional level, data challenges, and weak climate-sensitive natural resource management. While the country has some policies and programs in place, several additional steps and measures need to be undertaken to make them more effective in contributing to making food systems nutrition sensitive. Given the role of different sectors in contributing to improved nutrition, appropriate and effective multi-stakeholder coordination and collaboration is paramount to such efforts.

Going forward, similar diagnostic analyses to that described in this paper should be conducted for different sectors and policies to build more robust nutrition-sensitive food systems across Afghanistan. For example, in the Afghanistan context, this framework can be applied to policies and programs such as the National Wheat Program (NWP), the National Priority Program (NPP), or the National Public Nutrition Strategy. Additionally, to address rapidly growing nutrition constraints globally through a food systems approach, this type of analysis should be viewed as a requirement for nations to make their food systems more nutrition sensitive.

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Annexes

Annex 1: National Comprehensive Agriculture Development Priority Program diagnosis for nutrition sensitive food system

Priority sector (1)	Current plans / Evidence needed (2)	Analytical and data needs to effectively implement NCADPP (3)	Gaps for nutrition sensitive food system (4)
Improving irrigation system	• Implement the National Irrigation Program to improve production and productivity through irrigation and improved water-management practices, to achieve the pre-war level of irrigated land,3.1 million ha, in the next 10 years. • Work closely with the Ministry of Energy and Water (MoEW) and the Ministry of Rural Rehabilitation and Development (MRRD). • Improve input support, research transfers, and extension of irrigation-related technologies.	• Data on access to irrigation. • Farmers using sustainable and on-farm water management techniques. • Program to build and maintain rural water and sanitation facility. • Data on water quality and supply in both rural and urban areas. • Data on irrigated land and irrigated systems in Afghanistan and an assessment of the development capacity of existing and potential irrigation land, including monitoring of groundwater resources.	• Measures for water management in rainfed agriculture missing. • WASH considerations not incorporated into the sectoral policies. • Lack of an established program on groundwater development. • Limited knowledge of appropriate and simple water conservation techniques/technologies among farmers. • Limited understanding of climate-smart agriculture practices among farmers.
Increased wheat production	• Implement the National Wheat Program (NWP). • Align available technologies to reduce wheat yield gap. • Standardize and expand adaptative research, basic research activities to develop new varieties, and effective service delivery and sustainable wheat sector development.	• Data outcomes of existing programs and policies focusing on nutrition. • Research activities to increase the productivity of nutrient-rich crops in addition to wheat. • Short-term training on design, implementation, and analysis of wheat production trials.	• Limited individual and institutional capacity of MAIL and the Agricultural Research Institute of Afghanistan (ARIA) to conduct wheat research and food and nutrition policy research related to wheat and to analyze and communicate the findings in collaboration with key stakeholders. • Lack of physical infrastructure to enhance productivity and to enable access to markets and utilization of wheat and other nutrition-dense crops.

Priority sector (1)	Current plans / Evidence needed (2)	Analytical and data needs to effectively implement NCADPP (3)	Gaps for nutrition sensitive food system (4)
			• Weak seed system that reduces the use of current and improved wheat seeds including biofortified seeds. • Limited variety of seeds, which are often low performing, available to farmers.
Horticulture value-chain	• Re-organize the mandate of selected MAIL Directorates and develop appropriate policies and institutional arrangements to encompass relevant policy development, research, technical assistance, the regulation of required inputs, credit/financing packages, and other forms of support to farmers and stakeholders. • Adopt a strategy of rationalizing public and private sector roles, further establish regulatory frameworks, and provide training and capacity building for a variety of local institutions and private sector agents.	• Nutrition discussions included in annual meetings of MAIL and farmer organizations. • Data outcomes of existing programs and policies focusing on nutrition. • Implementation plan involving monitoring and evaluation (M&E) of the nutritional outcomes. • Increased understanding of agriculture-nutrition linkages.	• Limited understanding of agriculture-nutrition linkages at different levels of MAIL. • Weak communication between farmer organizations and MAIL staff to increase the production of nutrition-dense crops. • Low capacity to design nutrition programs using horticulture production, to monitor them for nutrition sensitivity, and to track the progress.
High-value horticulture crops and vegetables	• Expand the horticulture land-base (horizontal increase). • Increase productivity per hectare (vertical increase). • Develop promising value chains. • Develop infrastructure and markets. • Develop the nursery industry by increasing access to improved and certified seeds and planting materials. • Promote enabling environment for investment	• Capacity building program and pilot demonstrations to cover all stakeholders in the value chain for reduction of food losses and waste. • Research and policy studies focusing on agriculture-nutrition linkages. • Independent review of policies related to nutrition. • Research on nutrition preservation through value and supply chains.	• Limited individuals and institutions to conduct research and policy studies focused on agriculture-nutrition linkages. • Lack of public-private partnerships. • Weak communication between farmer organizations and MAIL staff to increase the production of nutrition-dense crops. • Limited opportunities for social entrepreneurship and private sector

Priority sector (1)	Current plans / Evidence needed (2)	Analytical and data needs to effectively implement NCADPP (3)	Gaps for nutrition sensitive food system (4)
	in SME and agro-processing. • Promote public-private partnerships.	• Identifiable opportunities to improve the quality of prioritized crops. • Identifiable opportunities for social entrepreneurship and private sector investments in food and nutrition security.	investments in food and nutrition security. • Lack of opportunities for young entrepreneurs to get engaged in the forward and backward linkages in the horticulture production systems.
Livestock development	• Update in regulations covering the import and export standards for livestock products, a more coherent and domestically driven health component, and greater outreach of extension support.	• Collect data on livestock and fish census beyond production. • Include the nutrition status of the household in the census. • Include nutrition in research priorities and the link between crops, livestock, fishers, and nutrition outcomes. • Develop animal health information system. • Develop baseline survey regarding animal population. • Develop inventory and database of animal pastures, fodder, and feed systems.	• Limited data on livestock and fish census. • Lack of research on the impact of consumption of animal products on nutrition level. • Insufficient monitoring of budget allocation needs among the crops, livestock, and fisheries research. • Specific emphasis on nutrient-rich commodities should be made policy focus using nutritional objective.
Climate-sensitive natural resource management	• Maintain and improve rangeland. • Improve production and strengthen value chains for medicinal plant cultivation. • Enforce protected areas and indigenous wildlife. • Develop links between rural and peri-urban communities to build social awareness of the value of urban eco-systems and the provision of greenery for major cities to reduce air pollution levels.	• Collect data on drought-affected areas. • Track severe damage and manage mitigation of disasters due to climate change. • Develop an extension program to increase the effectiveness of service delivery to farmers to promote the adoption of sustainable and climate-resilient agriculture. • Develop a national capacity-building program for the agriculture sector to implement climate-	• Lack of research on stress-tolerant varieties. • Absence of a national early warning system to provide alerts on impending rainfall failures, food shortages, and nutrition challenges in vulnerable regions of the country.

Priority sector (1)	Current plans / Evidence needed (2)	Analytical and data needs to effectively implement NCADPP (3)	Gaps for nutrition sensitive food system (4)
		resilient agriculture techniques.	
Food and nutrition security, and resilience building	• Focus at the central level on building institutional capacity on early warning and preparedness and adopting an agriculture-specific policy. • Work at the sub-national level (using Afghanistan's comparative advantage in agricultural practices and significant national outreach at the district level) towards establishing a multi-ministerial regional-level-designated coordination mechanism to improve the quality of response in a timely manner and activities that are anticipatory as well as mitigation oriented.	• Provide data outcomes of existing programs and policies focusing on nutrition. • Develop an implementation plan that involves M&E of the nutritional outcomes. • Collect data beyond production. • Include the nutrition status of the household in the census. • Include nutrition status/outcomes in the annual survey.	• Lack of communication focusing on nutrition outcomes between government, farmer associations, private sector. • No clear procedure to collect household-level data focusing on nutrition status. • Limited coordination and promotion of multisectoral initiatives on nutrition and poverty alleviation.
Institutional reforms	• Focus on mid-level and senior leadership positions, in addition to a functional review and re-profiling of the various positions in MAIL, leading to a smaller, more agile, and responsive institution. • Reformed management practices must reflect renewed emphasis on leadership and professional qualities that motivate and support junior staff.	• Improved understanding of agriculture-nutrition linkages throughout MAIL. • Review of existing nutrition policies/ programs. • Policy studies commissioned. • Regular independent policy review conducted.	• Lack of nutrition integration in existing plans/programs in different departments. • Limited by not incorporating nonagricultural criteria such as health and nutrition into decision making. • Institutional, legal, regulatory, and procedural framework for commercial and business operations and contracts.

Source: Author's compilation.
Note: NCADPP = National Comprehensive Agriculture Development Priority Program; SME = small and medium enterprises; WASH = water, sanitation, and hygiene.

Annex 2: National Comprehensive Agriculture Development Priority Program investment priority

Priority sector (1)	Investment priority (2)
Improved irrigation system	• WASH considerations incorporated into sectoral policies, so they align with and complement the food production goals. • Water management strategy and groundwater development for effective use of cropping system to meet nutritional requirements. • Introduction of appropriate and simple water conservation techniques/technologies for producing nutrient-rich crops in the local communities. • Capacity building of the farmers to increase climate smart agriculture (CSA) practices.
Increased wheat production	• Building individual and institutional capacity of MAIL and the Agricultural Research Institute of Afghanistan (ARIA) to conduct wheat research and to analyze and communicate the findings in collaboration with key stakeholders. • Investment in physical infrastructure to enhance productivity and enable access to markets and utilization of wheat and other nutrition-dense crops. • Developing seed varieties for improved productivity and that could fit in with the cropping pattern that increases the diet quality and nutrient availability in the food system.
Horticulture value-chain	• Improving agriculture-nutrition linkages at different levels of MAIL. Horticulture value chains need to be made nutrition sensitive by engaging with the communities to show how they can consume part of what they produce for their own nutrition improvement. • Weak communication between farmer organization and MAIL staff to increase production of nutrition-dense crops. • Investment in social entrepreneurship and private-sector investments for food and nutrition security.
High-value horticulture crops and vegetables	• Capacity building for all stakeholders in value chain to reduce food loss and waste. • Research and policy studies focusing on agriculture-nutrition linkages. • Independent review of policies related to nutrition as they relate to the high-value horticulture crop production. • Research on nutrition preservation through value and supply chains. • Identifiable opportunities to improve the quality of prioritized crops in the fruit and vegetable sector, including food safety. • Identifiable opportunities for social entrepreneurship and private sector investments in food and nutrition security.
Livestock development	• Baseline survey regarding animal population. • Research on the link between crops, livestock, fish, and nutrition outcomes. • Inventory and database of animal pastures, fodder, and feed systems. • Research on impact of animal-product consumption on nutrition level. • Monitoring of budget allocation among the crops, livestock, and fisheries research.
Climate-sensitive natural resource management	• Conduct research on stress-tolerant varieties and breeds of crops.

Priority sector (1)	Investment priority (2)
	• Develop extension program to increase the effectiveness of service delivery to farmers to promote the adoption of sustainable and climate-resilient agriculture. • Develop national capacity building program for agriculture sector to implement climate-resilient agriculture techniques. • Strengthen regular monitoring, with partners, of key indicators, for early warning on the food and nutrition security situation, including climate change effects. • Implement program to build-in mitigation factors and resilience of livestock farmers to natural disasters and other uncertainties. • Establish drought-monitoring-system to track severe damage and manage mitigation of disasters due to climate change. • Invest in extension program to increase the effectiveness of service delivery to farmers to promote the adoption of sustainable and climate-resilient agriculture/livestock/fisheries/forestry technologies.
Food and nutrition security and resilience building	• Increase communication on nutrition outcomes between government, farmer associations, and private sector. • Develop procedure to collect household-level data focusing on nutrition status. • Improve coordination and promote multisectoral initiatives on nutrition and poverty alleviation. • Provide data outcomes for existing programs and policies focusing on nutrition. • Develop an implementation plan that involves monitoring and evaluation of the nutritional outcomes. • Include nutritional status of households in the census and monitor the food security and nutrition status of the population on a regular basis.
Institutional reforms	• Increase nutrition integration in existing plans/programs in different departments. • Incorporate nonagricultural criteria such as health and nutrition into decision making. • Improve understanding of agriculture-nutrition linkages throughout MAIL. • Review existing nutrition policies/programs. • Conduct regular independent policy and program reviews for their nutrition sensitivity.

Source: Author's compilation
Note: NCADPP = National Comprehensive Agriculture Development Priority Program; WASH = water, sanitation, and hygiene.

Annex 3: Indicators for nutrition sensitive food system

Priority sector	Indicators for nutrition sensitive food system
Improving irrigation system	• Number of qualified professionals working in the intersection of irrigation and nutrition subsectors. Build and improve institutional and human resources capacity for delivery of irrigation and flood protection systems. • Survey and collect data and build database on irrigated land and irrigated systems in Afghanistan. Make assessment of development capacity of existing and potential irrigation land, include monitoring of groundwater resources. • Form and establish water users' groups and associations and train groups in resources conservation, water management, water application, and safe water use. • Number of farmers using climate-smart techniques increased by 50 percent. • Percentage of rural households with access to improved water and sanitation facilities. • Percentage of rural households with access to electricity for improving irrigation and water management. • Percentage of rural farmers with access to irrigation and growing nutrient-rich crops.
Increased wheat production	• Increase in improved farm production technologies by crop growers, including availability, access to, and use of improved farm inputs. • Increased production of wheat due to increase in production, distribution, and use of high-yielding varieties of major crops such as wheat. • New and drought-tolerant varieties of seed (for wheat but applies to other key food crops) developed and used by crop growers.
Horticulture value-chain	• Improving agriculture-nutrition linkages at different levels of MAIL. Institutional linkages established for improved communication, coordination, and interactions. • Weak communication between farmer organization and MAIL staff to increase production of nutrition-dense crops. • Investing in social entrepreneurship and private sector investments for food and nutrition security.
High-value horticulture crops and vegetables	• Capacity building for all stakeholders in value chain to reduce food loss and waste. • Research and policy studies focusing on agriculture-nutrition linkages. • Independent review of policies related to nutrition. • Research on nutrition preservation through value and supply chains. • Identify opportunities to improve quality of prioritized crops. • Identify opportunities for social entrepreneurship and private sector investments for food and nutrition security.
Livestock development	• Baseline survey regarding animal population. • Research on the link between crops, livestock, fish, and nutrition outcomes. • Inventory and database of animal pastures, fodder, and feed systems. • Research on impact of animal-product consumption on nutrition level. • Budget allocation needs to be monitored among the crops, livestock, and fisheries research.

Priority sector	Indicators for nutrition sensitive food system
Climate-sensitive natural resource management	• Conduct research on stress-tolerant varieties and breeds of crops. • Develop extension program to increase the effectiveness of service delivery to farmers to promote the adoption of sustainable and climate-resilient agriculture. • Develop national capacity building program for agriculture sector to implement climate-resilient agriculture techniques. • Establish early warning system to help prepare for any disasters. • Implement program to build-in mitigation factors and resilience of livestock farmers to natural disasters and other uncertainties. • Increased climate smart agriculture (CSA) and conservation-oriented crop, livestock, fisheries, aquaculture, and forest utilization practices and conservation farming.
Food and nutrition security, and resilience building	• Increase communication on nutrition outcomes between government, farmer associations, and private sector. • Develop procedure to collect household-level data focusing on nutrition status. • Improve coordination and promote multisectoral initiatives on nutrition and poverty alleviation. • Data outcomes of existing programs and policies focusing on nutrition. • Develop an implementation plan that involves monitoring and evaluation of the nutritional outcomes. • Include nutrition status of household in the census. Track the progress made in the survey instruments.
Institutional reforms	• Increase nutrition integration in existing plans/programs in different departments. • Incorporate nonagricultural criteria such as health and nutrition into decision making. • Improve understanding of agriculture-nutrition linkages throughout MAIL. • Review existing nutrition policies/programs. • Conduct regular independent policy reviews. Number of policy reviews conducted per year.

Source: Author's compilation

Annex 4: Afghanistan Food Security and Nutrition Agenda diagnosis for nutrition sensitive food system

Objective (1)	Current plans / Evidence needed (2)	Analytical and data needs to effectively implement AFSENA (3)	Gaps for nutrition sensitive food system (4)
Assure the availability of sufficient food for all Afghans	• Promoting appropriate land-use practices in irrigated and dry-land farming (e.g., watershed management). • Building capacities in planning, management, and technical fields, and monitoring and evaluation (M&E), at the national, provincial, and field levels. • Developing and promoting improved production technology packages, based on farming systems research, which take the specific needs, constraints, capacities, resources, livelihood conditions, and coping mechanisms of farmers and their households into consideration and local environmental conditions into account. • Increasing the diversity of food production to enhance households' resilience to disasters and enable them to maintain a more diversified and balanced diet. • Accompanying food production expansion interventions with improvements in agricultural and rural service delivery in relevant fields (i.e.,	• Establish and practice national standards on sustainable food production. • Establish food safety standards. • Conduct research on stress-tolerant varieties and breeds of crops, livestock, and fish. • Review current input policy and its impact. • Data and analysis for import of agricultural inputs. • Quality of crop inputs imported from neighboring countries and available in market. • Check if correctly identified policy focus is aligned with emerging trade policy issues and challenges.	• Limited institutional and functional capacity for agricultural land management and administration institutions. • Limited access to information and new technology among farmers. • Lack of understanding of agriculture-nutrition linkages. • No standardized procedures to collect reliable and timely data on food production, agriculture inputs, nutrition levels, natural disaster, and droughts. • Limited access to agriculture extension and rural advisory services. • No standardized procedure to manage the collected data and analyze them for policy and program development. • No clear procedure to collect household-level data focusing on nutrition status.

Objective (1)	Current plans / Evidence needed (2)	Analytical and data needs to effectively implement AFSENA (3)	Gaps for nutrition sensitive food system (4)
	extension, credit, input supply, pest and disease control). • Explore possibilities for maintaining a grain contingency and entering into futures contracts to minimize supply and price risks. • Invest in marketing infrastructure such as roads with regional trade implications as well as processing and storage facilities needed to add value to wheat and other cereals. • Improve regulatory frameworks that impact on market structure, conduct, and performance with emphasis on actions that promote greater transparency and accountability in transactions.		
Improve economic and physical access to food, especially by vulnerable and food-insecure population groups	• Improve vulnerability assessment, particularly targeting criteria and capacity, to enable appropriate identification of vulnerable people. • Ensure that current coordination mechanisms for emergency responses such as the National Disaster Management Commission (NDMC) complement institutional arrangements for the AFSENA.	• Collect data for number of food-for-work beneficiaries, number of cash-for-work beneficiaries; number of schools/students reached through school feeding programs; and number of schools with established school gardens. • Review and improve the implementation of the existing agricultural inputs subsidy policy.	• Limited coordination among different ministries and within ministries for promoting social entrepreneurship and private sector investments for food and nutrition security. • Lack of physical and economic access to and utilization of food and social protection for vulnerable individuals and groups. • Lack of coordination between programs developed and implemented by different

Objective (1)	Current plans / Evidence needed (2)	Analytical and data needs to effectively implement AFSENA (3)	Gaps for nutrition sensitive food system (4)
	• Intensify efforts, in partnership with the international community, to strengthen the capacity of local implementing partners (IPs). • Work with development partners to improve the availability and accuracy of operational (i.e., financial) data, through the establishment of clearer accounting procedures for humanitarian emergency operations, for better accountability and transparency as well as M&E.	• Establish national guidelines for social entrepreneurship and private sector investments in food and nutrition security.	international agencies (such coordination avoids duplication of data collected or projects implemented).
Ensure stable food supplies over time and in disaster situations.	• Preparation and implementation of a community-based disaster management plan that ensures the restoration of livelihoods, protection and improvement of productive assets, rebuilding of community infrastructure, and building and strengthening of community resilience to natural disasters and shocks. • Establishment of a comprehensive and consistent framework for disaster preparedness and response that incorporates the	• Improve coordination between programs developed and implemented by different international agencies (to avoid duplication of data collected or projects implemented). • Develop programs that include mitigation factors and resilience of livestock farmers to natural disasters and other uncertainties. • Collect data on the number of trainings provided to local authorities, service providers, and partners on disaster preparedness and mitigation.	• Limited coordination between national and international agencies working on nutrition, resulting in overlap of programs/interventions and duplicate data being collected. • Limited farmer access to weather-related information. • Limited data related to the number of trainings provided to local authorities, service providers, and partners on disaster preparedness and mitigation. • Limited understanding of the importance of balanced diets among consumers and increased preparedness to maintain nutrition security during emergency.

Objective (1)	Current plans / Evidence needed (2)	Analytical and data needs to effectively implement AFSENA (3)	Gaps for nutrition sensitive food system (4)
	recommended community-based disaster management plan and also clarifies conceptual ambiguities and fills gaps (i.e., specifying roles of and linkages between stakeholders, devising alternative emergency-assistance approaches and specific emergency-nutrition interventions, integrating early warning and food and nutrition security information systems, and determining institutional and operational modalities of the strategic grain reserve (SGR).	• Strengthen capacity of local authorities, service providers, and partners on disaster risk reduction (DRR) management and preparedness actions to ensure food and nutrition security in emergency and humanitarian contexts.	
Promote healthy diets and expanded access to improved water, sanitation and hygiene, and health services to ensure adequate food utilization and enhanced nutrition, particularly of women and children	• Increasing food availability for food-insecure families through food production and dietary diversification, food storage and preservation, and market availability by the Ministry of Agriculture, Irrigation and Livestock (MAIL). • Improving food access for food insecure families, which entails food transfers, food for work, food for assets, poverty alleviation programs, and community-based income generation programs by the	• Strengthen coordination among different ministries and within ministries for promoting social entrepreneurship and private sector investments in food and nutrition security. • Collect data on nutrition levels (disaggregated by type of malnutrition, gender, age) for effective targeting. • Provide data outcomes of existing programs and policies focusing on nutrition. • Develop an implementation plan that involves M&E of	• No assessment of availability (quantity and quality) of fruits, nuts, vegetables, livestock, and fishery products and other nutrition-friendly local products for processing in light of food and nutrition security status of target population. • Data collected focused on agriculture production of major cereals and not on food system diversity. • Limited capacity for multi-sectoral action, advocacy, planning, and analysis to support nutrition across relevant Ministries. • Lack of dietary diversity, especially among rural population.

Objective (1)	Current plans / Evidence needed (2)	Analytical and data needs to effectively implement AFSENA (3)	Gaps for nutrition sensitive food system (4)
	Ministry of Rural Rehabilitation and Development (MRRD) and MAIL. • Improving the quality of diets with emphasis on micronutrient supplementation and fortification by the Ministry of Public Health (MoPH) and the Ministry of Commerce and Industry (MoCI). • Improving care and feeding practices for infants and young children and self-care for pregnant women and adolescent girls, with the main actions being infant and young child feeding, maternal nutrition, preventing and treating nutritional disorders, counseling of adolescent girls, and priority operations research by MoPH and the Ministry of Education (MoE). • Assuring the healthy absorption of nutrients by preventing infection through the establishment and maintenance of community water systems, community-led promotion and construction of household latrines, counseling on hygiene and sanitation through augmented community health service	the nutritional outcomes. • Include nutrition status/outcomes in annual survey. • Establish national strategy and guidelines to control micronutrient deficiencies, including supplementation, fortification, and dietary diversification in vulnerable contexts.	• No standardized food basket for emergencies and chronic humanitarian situations, which meets the nutrient needs especially of women and children. • Limited knowledge regarding nutritional intake among children.

Objective (1)	Current plans / Evidence needed (2)	Analytical and data needs to effectively implement AFSENA (3)	Gaps for nutrition sensitive food system (4)
	provision, de-worming of children and pregnant women, and full integration of nutrition at health facilities by MRRD, MoPH, and MoE.		

Source: Author's compilation.
Note: AFSENA = Afghanistan Food Security and Nutrition Agenda.

Annex 5: Afghanistan Food Security and Nutrition Agenda investment priorities

Objective (1)	Investment priorities (2)
Assure the availability of sufficient food for all Afghans	• Promote dietary diversity through proven crops grown in different communities and develop local recipes that are affordable and acceptable. • Build capacity and equip extension workers and service providers from key sectors (agriculture, livestock, health, education) to promote consistent messages on nutrition, including adequate dietary diversity. • Train and provide information to build capacity of livestock producers on animal breeding, nutrition, disease control, management, and marketing. • Improve government policy focus on and commitment to food and nutrition security specifically addressed to the vulnerable population. • Improve multisectoral policy advocacy, planning, and analysis to support nutrition across relevant ministries.
Improve economic and physical access to food, especially for vulnerable and food insecure population groups	• Develop a scaling-up plan for ongoing nutrition-sensitive home and school gardens. • Increase the percentage of households demonstrating knowledge of diversified production benefits. • Invest in national nutrition security surveillance system plan; make nutrition surveillance operational in all states/regions. • Improve investment in food and nutrition security through innovative pilot programs designed context-specific to the local communities. • Develop national food and nutrition guidelines, strategies, and protocols which include a risk analysis and risk management strategy. • Improved community knowledge and awareness of maternal, IYCF, and family practices for nutrition.
Ensure stable food supplies over time and in disaster situations	• Develop plans for emergency-prone areas where food and nutrition supplies are needed in the form of pre-positioned food stocks. • Strengthen food stock and nutrition-supply management processes. • Define list of key food and nutrition indicators for early warning and surveillance system.
Promote healthy diets and expanded access to improved water, sanitation and hygiene, and health services to ensure adequate food utilization and enhanced nutrition, particularly of women and children	• Guidelines for standardized food basket • Increased understanding about dietary diversity and best practices in nutrition and nutrition knowledge among school children.

Source: Author's compilation.
Note: AFSENA = Afghanistan Food Security and Nutrition Agenda; IYCF = infant and young child feeding.

Annex 6: Indicators for a nutrition sensitive food system

Objective	Indicators for nutrition sensitive food system
Assure the availability of sufficient food for all Afghans	• Monitor household dietary diversity score in various parts of the country. • Monitor and track proportion of the population below minimum dietary energy consumption. • Legislation on Right to Food enacted.
Improve economic and physical access to food especially by vulnerable and food insecure population groups	• Improved multisectoral policy advocacy, planning, and analysis to support nutrition across relevant ministries. • Improved, equitable food and nutrition security policy, legislation, and regulatory frameworks. • Improved coordination, planning, monitoring and information for agriculture, livestock, fisheries, food, and nutrition. • Improved investment in food and nutrition security—track the magnitude and targets set annually. • Radio and TV spots promoting healthy food choice and nutrition practices developed. • Number of materials created for each specific channel for promoting nutrition and behavior change.
Ensure stable food supplies over time and in disaster situations.	• Establish a national integrated food and nutrition security surveillance system and enhance early warning. • Strengthened local capacity and effective coordination of humanitarian food assistance during emergencies. • Number of trainings provided to local authorities, service providers, and partners on disaster preparedness and mitigation. • Number of national food and nutrition guidelines, strategies, and protocols, which include a risk analysis and risk management strategy. • Number of emergency-prone areas where food and nutrition supplies are pre-positioned food stocks.
Promote healthy diets and expanded access to improved water, sanitation and hygiene, and health services to ensure adequate food utilization and enhanced nutrition, particularly of women and children	• Establish a monitoring system and enforcement of 'the Order of Marketing of Formulated Foods for Infants and Young Children. • Support universal coverage for Vitamin A and deworming for young children and school-aged children. Track the progress in these indicators over the years. • Number of pregnant and lactating women receiving fortified food supplementation Number of children receiving fortified food supplementation. • Establish standardized food basket for emergencies and chronic humanitarian situations, which meets the nutrient needs especially of women and children.

Source: Author's compilation.

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