Food and Agriculture Organization
of the United Nations

MAXIMIZING NUTRITION IN THE CROP PRODUCTION **SECTOR IN GHANA**

IN BRIEF

The crop sector is the largest of all the food sectors, providing sustenance for all 7.8 billion people in the world, as well as 1.3 billion of the 2.5 billion agricultural jobs worldwide. Women make up 43 percent of these 1.3 billion workers. The sector has traditionally focused on providing calories and reducing famine by maximising productivity. This choice has come to the detriment of production diversity, resulting in many consumers being unable to access the full range of crops, including fruits and vegetables (F&Vs), needed to achieve dietary diversity. The resulting crop supply chain imbalance is strongly associated with the prevalence of malnutrition: poor access to fruits and vegetables means poor access to the wide range of vitamins and minerals that are needed for a healthy diet. Due to its critical role, supporting the crop sector from both a food and nutrition security and economic perspective is essential to achieving the 2030 Sustainable Development Goals.

Integrating nutrition into the crop production system remains critical to addressing the unacceptably high global prevalence of malnutrition and micronutrient deficiencies. However, uncertainty over what practical approach to adopt remains a challenge for policymakers and practitioners at all levels due to a lack of proven methodological tools. To help address this challenge the Food and Agriculture Organization of the United Nations (FAO), with support from World Vision (WV), has developed an innovative stepwise approach that combines theory and practice by establishing a **theory of change and associated impact pathways**. This work was carried out as part of a consultative process involving expert stakeholders from Ghana.
The results obtained demonstrate the utility of this methodological process in helping political decision-makers and technicians **formulate and evaluate nutrition-sensitive policies, programmes and interventions**.

World Vision

THE KEY STEPS OF THE METHODOLOGICAL PROCESS

STEP 1. SITUATIONAL ANALYSIS

- Scientific literature review
- Identify key participants from the sector in the selected country
- Identify sector challenges using the food system framework
- Validate the situational analysis findings

STEP 2. DEVELOP THE THEORIES OF CHANGE

- Prioritise the challenges to be addressed by the theories of change
- Develop theories of change for each identified priority

STEP 3. DEFINE IMPACT PATHWAYS BASED ON PRACTICAL EXPERIENCES

- Identify the relevant sub-sectors
- Map policies and actions from selected sub-sectors
- Define practice-based impact pathways for each sub-sector based on existing activities

STEP 4. VALIDATION OF THE THEORIES OF CHANGE AND IMPACT PATHWAYS

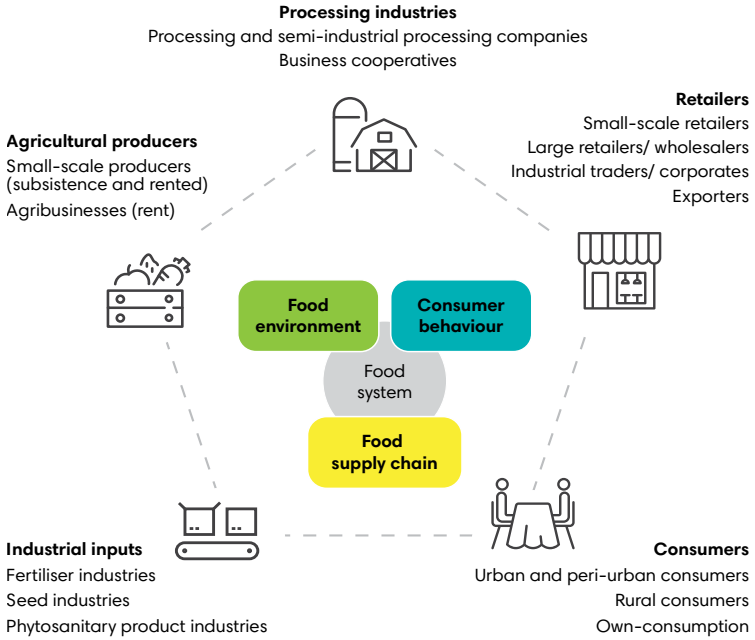
- Assess critical hypotheses and trade-offs
- Consolidate the theories of change based on the impact pathways
- Provide indicators to measure the expected changes
- Consult stakeholders and validate findings

I. Entry point: a food systems approach

Why is it necessary for the crop sector to integrate nutrition into food systems?

One key step in tackling malnutrition in Ghana is to increase the integration of fruits and vegetables in the crop sector. In Ghana, there is increasing consumer demand for greater quantities of high quality fresh produce due to the emergence of a large middle class (MoFA, 2019). However, studies conducted in Ghana by Rousham *et al.* (2020) and the Bill & Melinda Gates Foundation (2019) have revealed that only 51 percent of Ghanaians consume fruits, vegetables and legumes as part of their diet. A large proportion of the population either do not have access to or choose not to consume fruits and vegetables (Amo-Adjei and Kumi-Kyereme, 2014). To address these issues, increasing consumption, safe production and awareness of underexploited indigenous fruit and vegetables is key (Florkowski, 2012).

The key players in the crop sector and their relation to the three key components of the food system



Source: the authors.

II. Identification of challenges and issues in relation to addressing nutrition in the crop sector

Carry out a contextual analysis using a food systems approach to prioritize sector specific challenges and issues related to nutrition and to contribute to more diverse diets.

According to FAO's 2019 State of Food Security and Nutrition report, around two billion people in the world experience moderate or severe food insecurity (FAO, 2019). Although the current prevalence of malnutrition in Ghana is lower than the West African sub-regional average, it is still far from global targets (Global Nutrition Report, Government of Ghana, 2020). According to the Ghana Statistical Service's 2017–2018 Multiple Indicator Cluster Survey, one in every five children under five years of age is stunted, while one in every ten children under five is underweight. Malnutrition in Ghana is recognised as a major impediment to socioeconomic development at both the individual and national levels, and women and children under five continue to be most affected (National Nutrition Policy for Ghana, 2013).

Many factors contribute to these trends, with one of the most significant being the low diversity in Ghana's agricultural sector. Ghana's crop production system focuses on producing staple grains and only provides a limited range of other foods such as fruits and vegetables. Due to the limited supply of diverse crops, many Ghanaians are unable to access or afford the micronutrient-rich foods required for a diverse diet. Almost half of Ghana's population do not consume sufficient fruits, vegetables and legumes as part of their diet, and only 27.2 percent consume vitamin A-rich fruits and green leafy vegetables. Furthermore, there is a lack of nutrition

education on food preparation and the importance of eating a diverse range of foods. Aggressively marketed highly processed foods, which are less expensive and attractive to low-income earners and children, have undermined efforts to address malnutrition. At the household level – especially in rural locations – women are most likely to spend more on nutrition but have limited control over household income and limited access to the land, agricultural extension services and inputs needed to produce food. To ensure the crop production system contributes significantly to improved nutrition, deliberate focus must be directed towards increasing the production of fruits and vegetables (including African leafy vegetables), providing information on food preparation and dietary diversity at all levels, and increasing women's access to land and agricultural inputs (including extension services).

III. Overarching theory of change for the crop production sector

Establish key assumptions that identify the sectoral changes needed to contribute to more diverse diets.

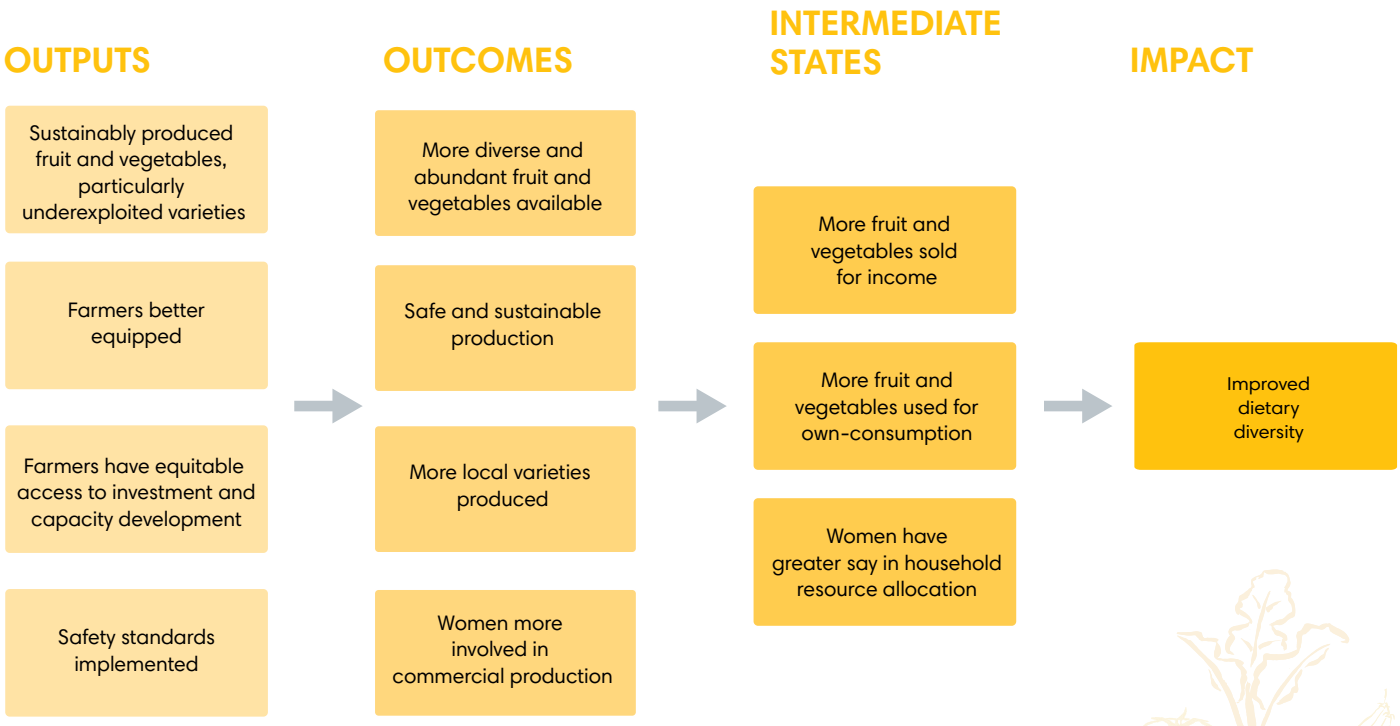
The theory of change for mainstreaming nutrition into Ghana's crop production system is the following: if there is greater investment in productive, safe and sustainable inputs and production and processing techniques, and an enabling institutional and policy framework for fruit and vegetable production, and improvements in Ghanaians' knowledge of, attitudes towards and practices in relation to fruit and vegetable consumption, then there will be (a) greater fruit and vegetable production, (b) better access to modern markets, (c) better adaptation to climate change, and (d) improved public awareness of the nutritional benefits of fruit and vegetables, leading to (a) crop farmers having a higher income allowing them to purchase a diverse diet, (b) crop farmers consuming more fruits and vegetables themselves, and (c) increased public demand for fruit and vegetables (thus improving dietary diversity).

IV. Illustrative food system impact pathways for the crop sector aimed at improving nutrition outcomes

Develop impact pathways based on sub-sector specific practices to identify existing gaps and opportunities that may contribute to more diverse diets.

This impact pathway seeks to increase the availability of fruits and vegetables by increasing household production and farmer income. Higher income is expected to increase the purchasing power of farmers and thus their ability to access a healthier and diverse diet. The pursued outcomes of this pathway are greater availability and accessibility of both indigenous and exotic fruits and vegetables, increased involvement from women in production, and a safe and sustainable production process. These outcomes are expected to increase farmers' income from the sale of fruit and vegetables, increase their own consumption, and empower women to have a greater say in the allocation household income.

Impact pathway example: the supply chain pathway



Source: the authors.

V. Recommendations and evidence gaps

Consolidate theories of change on the impact pathways findings, and provide recommendations for improving nutrition in the sector/ sub-sector.

Recommendation 1

- The government should support production system diversification and the cultivation of underexploited traditional F&Vs.
- Researchers should prioritise the improvement vegetable varieties and their promotion.
- Government and civil society should take women's empowerment and gender issues into consideration when formulating production programmes and policies.
- Government fiscal support for the crop production system should prioritize the F&Vs value chain.
- Processors should improve processing techniques to retain nutritional value, increase shelf life, improve food safety and ensure healthy foods are convenient to prepare.
- The government should support investment in F&Vs processing systems and quality standards.
- A steady supply of F&Vs should be ensured by improving post-harvest storage and processing.
- The processing and packaging of fruits and vegetables should be improved, using modern technologies to increase shelf life.

Recommendation 2

- Storage, preservation, transport and distribution technologies and infrastructure (including local and easily adaptable technologies) should be improved.
- The government should increase market access and opportunities, especially in relation to micronutrient-rich foods, which smallholders may have a comparative advantage in producing.
- The government should increase investment in infrastructure to promote access to markets.

Recommendation 3

- Beneficiaries of nutrition interventions should be targeted through existing community-level associations (e.g. farmer-, faith-based and/or community-based organizations).
- Policies and programmes to promote food should include nutrition education, especially for children.
- Include nutrition education in the primary schools syllabus.

Evidence gaps

- The public perception of and willingness to adopt bio-fortified crops could be explored.
- Further studies could be conducted on the socio-cultural barriers to improved nutrition in Ghana.
- As this report did not fully document the impact of COVID-19 on the food system in Ghana, further research on this topic would add to the value of this work.

For more information check also:

- Maximizing nutrition in crop production using a food systems approach. An evidence-based literature review
- Maximizing nutrition in crop production. A guidance note on impact pathways for mainstreaming nutrition based on a case study from Ghana

To access to all the publications on maximizing nutrition, go to:
www.fao.org/nutrition/policies-programmes