



Australian Government
Department of Foreign Affairs and Trade

Nutrition-Sensitive Agriculture and Food Systems

Guidance Note

August 2023



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Purpose

The purpose of this guidance note is to support DFAT investment managers and program implementors (managing contractors, NGOs etc) to integrate nutrition into agriculture programming and facilitate a food system approach to achieving nutrition impacts. It provides a framework for understanding nutrition and guidance is included to support practical integration of nutrition interventions in all aspects of the programming cycle.

This guidance document has been developed to:

- Highlight the importance of integrating nutrition objectives in agriculture programming.
- Support a more standardized approach to design, monitoring and reporting on nutrition-sensitive agriculture programming; and
- Provide some standard indicators for use in related nutrition sensitive agriculture programs.

This guidance should be updated periodically to reflect emerging global evidence and practice.

This guidance note does not focus on the aspect of measuring food security – however in projects that have a higher-level food security objective, diet quality could be positioned as an intermediate outcome indicator.

DFAT program managers are able to access support from the Agriculture Development and Food Security Section (AFS). AFS have a Nutrition-Sensitive Agriculture Advisor available to provide technical and capacity development support regarding program design, implementation, monitoring and evaluation. Requests for support should be directed to the Director of AFS or emailing AgAndFoodSec@dfat.gov.au.


Understanding agriculture, food systems and nutrition

The food system is highly vulnerable to climate change, disasters, disease outbreaks, biosecurity threats, supply chain disruptions and conflict. These, and other external shocks, can all affect agricultural production and yields. Production challenges are compounded by changes in consumer demand for food, driven by population growth, increasing incomes, and urbanisation. The result is a nutrition transition, characterised by a deteriorating diet quality from a shift away from traditional foods, towards overconsumption of more energy dense, nutrient poor and often highly processed foods. This is combined with concerns around food safety and non-communicable diseases. The overconsumption and increased waste associated with the nutrition transition mean agriculture and food systems are increasing pressure on natural resources and resulting in less diverse production system to accommodate for homogenising dietary preferences. The result is a less resilient and highly vulnerable food system.

Globally, 1 in 5 deaths are associated with poor diet quality, specifically with suboptimal diets characterised by insufficient consumption of key food groups (whole grains, fruit, vegetables, nuts and seeds, milk and legumes), and excessive intake of salt, processed meat, sugar sweetened beverages. Nutrition-Sensitive Agriculture (NSA) projects can target improving the availability and access of those foods we need more of, whilst providing nutrition education to disincentivise the consumption of those foods that are in excess consumption.

Agriculture is a direct way to improve food security and nutrition outcomes of the rural poor and has the potential to improve nutrition through multiple pathways. Agriculture can directly contribute to improving the quality of the diet through either providing direct access to nutritious and safe foods through production and value chain approaches, and/or through the utilisation of income generated from the sale of agricultural products to purchase nutritious foods.

Agriculture's most direct contribution to nutrition is through improving the availability and accessibility to sufficient, safe and nutritious foods, contributing to an improved diet. Malnutrition refers to deficiencies, excesses or imbalances in a person's dietary intake and covers 'undernutrition' – which includes stunting (low height for age), wasting (low weight for height),



underweight (low weight for age) and micronutrient deficiencies – and ‘overnutrition’ – referring to overweight, obesity and diet-related non communicable diseases (WHO 2020). Operationalising agriculture projects and interventions that address the underlying causes of malnutrition has been coined ‘Nutrition-Sensitive Agriculture’ (Ruel and Alderman 2013).

Nutrition-Sensitive Agriculture (NSA) is a food-based approach to agricultural development that puts nutritionally rich foods and dietary diversity at the focus of program design. The overall objective of this approach is to produce good nutritional outcomes for people over the long-term, whilst minimising any unintended negative nutrition consequences of agriculture interventions and policies.

For decades *agriculture* research has been focused on increasing yields of commodity crops, which are often energy rich but often lacking in some essential nutrients. At the same time, global efforts to improve *nutrition* have been undertaken in isolation - often medically oriented with a focus on single micronutrients such as vitamin A supplementation, food fortification, and/or therapeutic foods. The last decade has seen a paradigm shift to recognising that nutrition can and must fit within the scope of agricultural development, with a renewed focus on improving diet diversity and quality.

Changing diets is complex, and multiple aspects of the food system need to be considered to create change. Australia sees agriculture as being a key part of an integrated multisectoral response to the nutrition challenge that includes health, education, water, sanitation and hygiene (WASH), and social protection, amongst others. Agriculture programs alone are not able to tackle the nutrition challenges in partner countries given the complexity associated with improving high level nutrition outcomes such as stunting and wasting, which have multiple drivers. However, agriculture has a critical role to play.

Globally, the donor community is challenged by the scarcity of evidence on the nutritional impact of agricultural and food security interventions. Australia is committed to working with others through the Scaling Up Nutrition Donor Network¹ and the Global Donor Platform for Rural Development² to build an evidence base on nutrition-sensitive agriculture.

Theory of change

DFAT program managers are encouraged to include nutrition considerations from the program design phase, and to carefully plan how nutrition will be improved through the theory of change. Figure 1 presents an example of a widely used framework for NSA and can be helpful in identifying the overarching theory of change for the NSA program.

Agriculture can improve nutrition through several core pathways:

Agriculture as a source of food.

This is the most direct route to improving the diet (quantity and quality) by ensuring year-round access to adequate, safe, nutrient-rich food. It is based on two generalised assumptions: (1) that increases in production diversity of a range of foods, including dairy, fish, fruits, grains, livestock, root crops and vegetables can enhance food availability and access to a diverse diet; and (2) that increased food availability and access will lead to greater intake and improved nutrition outcomes at the individual level.

However, there is not always a positive correlation between increased quantity and diversity of production of nutritious foods and improved nutrition. In many cases, nutritious foods have a higher market value – households will often sell these foods in order to buy more starchy staple foods (i.e. more of the same) and as a result the quality of the diet doesn’t improve (still not enough nutrient rich foods). In other cases, the increased income is spent on non-food expenditures, although if

¹ <https://scalingupnutrition.org/about-us/our-governance/our-networks/sun-donor-network>

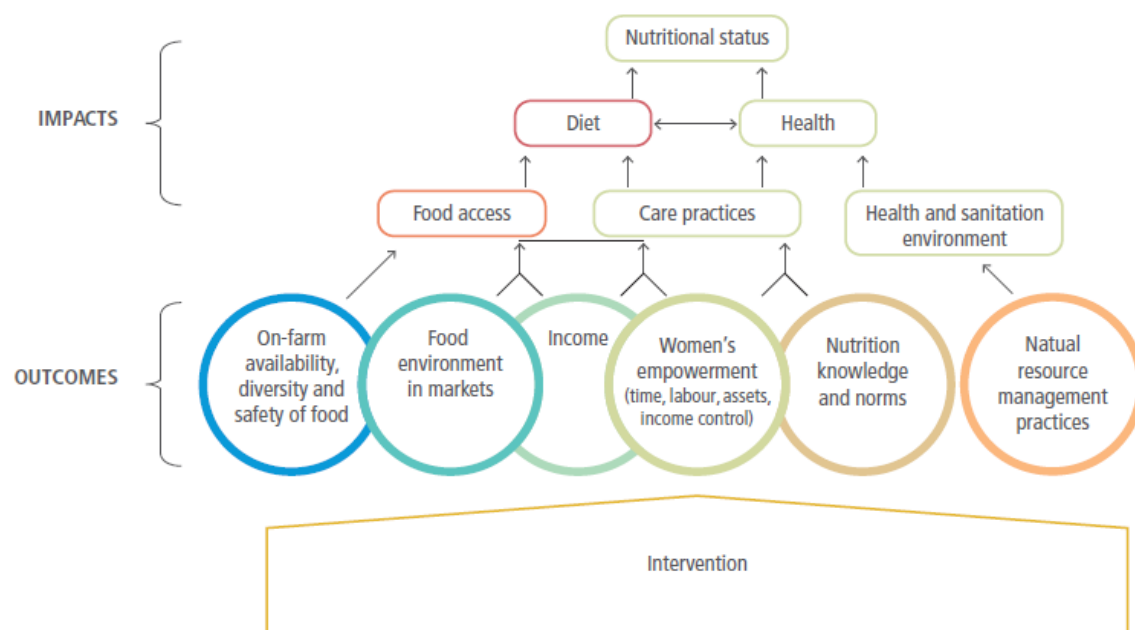
² <https://www.donorplatform.org/>

allocated to health care then this can also contribute to nutrition. Nutrition knowledge, education and positive attitudes need to be included to improve the utilisation and uptake of these foods into diets and attempt to negate unintended consequences.

Agriculture as a source of income.

This assumes that an increase in income from agriculture-related activities (including processing and sale of agricultural products or wages earned) can be used to access health services or purchase higher quality, nutrition-rich food that is consumed by individual household members. This pathway can only be effective if local food environments are conducive to supporting households to be able to utilise income to purchase nutrition foods – that is diverse, safe and nutritious foods need to be available at an accessible price at local markets. When these markets do not exist, households tend to buy more starchy staple foods (i.e. more of the same) and the quality of the diet does not improve (still not enough nutrient rich foods). In other cases, the increased income is spent on desirable, but less healthy foods (such as ultra-processed foods that are high in sugar, salt and fat). Income could also be spent on non-food or health related expenditures.

Figure 1 - Nutrition Sensitive Agriculture Impact Pathway



Source: (Herforth and Ballard 2016)

Nutrition knowledge, education and positive attitudes need to also be included into programming in order to improve the utilisation of income generated through agriculture projects to be used to purchase nutritious foods, inputs that allow them to produce more nutritious foods, and/or healthcare related expenditures that can contribute to improving nutrition. This could be done by:

- Understanding the barriers to healthy food choice (e.g. time) and at designing program activities to overcome these
- Looking for opportunities to add on generalised nutrition and diet diversity in line with country and/or regional messaging into agriculture or other extension services
- Design specific capacity building interventions targeting women’s groups
- Integrate community level ‘nutrition champions’

- Include nutrition and meal planning in household budgeting and financial literacy training.

Agriculture as a driver of food prices.

Increased availability of food through more efficient production techniques, improved technologies (for post-harvest storage, processing, and distribution) and domestic and trade policies affects a range of supply and demand factors and influences the price of food (fresh and processed). Improving post-harvest, processing and preservation can also increase the availability of nutritious foods throughout the year – which can help to stabilise prices during lean seasons and maintain diet quality. Reducing post-harvest and food waste can have multiple benefits throughout the food system. Higher product volume available for sale can reduce unit price for consumers, as well as increase income for farmers and vendors due to having to account for less waste.

Agriculture to empower women.

Worldwide, 43 per cent of agricultural workers are women. While women are largely responsible for the food on farms and on tables, they often do not have access to the same resources as men. Without access to land, finance, agriculture training, inputs and equipment, women cannot produce crops effectively, achieve financial stability, or expand their businesses. If women farmers had the same access to productive resources as men, 100–150 million people worldwide would be lifted out of hunger, which would also make them more resilient to climate shocks. Agriculture programs that both educate and enhance women’s involvement in agriculture can strengthen their capacity, increase their access to and control over resources and assets. This will enhance their power to make decisions on the purchase and allocation of nutritious food, health, and care within their households to improve diet quality and nutrition.

Agriculture to contribute to macroeconomic growth.


Agriculture is the dominant productive sector in many developing countries. Increasing agricultural productivity raises national revenue, increasing the funds available to invest in improving essential basic social services, such as education, health, safe water supply, sanitation, and safety-net programs, all of which have been shown to improve nutrition outcomes. However, in many countries there has been an increase in malnutrition – especially overnutrition – associated with increasing GDPs. It is important that multi-sectoral policies are considered that encourage governments and households to invest economic growth to pro-nutrition investments that support healthy food systems and food environments that enable people to make healthy food choices.

Agriculture to ensure sustainable food and nutrition security and resilience.

Protecting and promoting biodiversity is essential to support dietary diversity and the preservation of ecosystems. Agricultural practices that promote the sustainability of natural resources (biodiversity, forestry, soil, and water) ensure the long-term future and resilience of agricultural production and build resilience to climate change. In doing so, food systems and livelihoods are more resilient and other external shocks that can affect the availability, accessibility and utilisation of sufficient and nutritious foods.

How to identify opportunities to improve food system efficiency for better nutrition

1. Identify how an agriculture program can be nutrition sensitive is to understand the nutrition and dietary gaps in the project area. This can be done through secondary data when available, or by investing in primary data collection including a situational analysis with dietary intake assessments (see Box 1).
2. Once the dietary gaps are identified, the activity manager can identify what opportunities exist across the food system to increase the availability, access and eventual consumption of nutritious foods to improve diet quality and ‘fill the gap’ (Bose, et al. 2019). Addressing multiple barriers to the availability and access to nutritious foods could increase the



likelihood of a successful outcome on improving diet quality. Examples of possible activities are provided in Attachment 1.


3. Taking a food system approach can mean working on both encouraging consumer demand for nutritious healthy foods ('pull' mechanism), together with promoting increased availability and accessibility of these foods through production and markets ('push' mechanism). Engaging programming activities that enable both push and pull mechanisms that traverse the food system, including using innovative nutrition education and engagements techniques, can create sustainable incentives for the agriculture sector to invest in providing and improving access to nutritious foods to households.
4. When implemented in collaboration with other sectors, including health, education, WASH and social protection, agriculture can address the basic, underlying, and immediate determinants of malnutrition, and contribute to improving nutrition status indicators such as stunting and wasting.
5. DFAT program managers can shape agriculture investments to:
 - clearly define the nutrition target group and their nutritional needs
 - identify opportunities to work with agriculture across the food system to fill these nutrition needs
 - articulate clear impact pathways to achieve them; and
 - select nutrition objectives and indicators.

Whilst not all agriculture programs need to have a primary or secondary objectives to improve nutrition, program managers should at a minimum strive to ensure that a 'do no harm' approach is implemented – that is no negative impact on nutrition results from program implementation.

How to embed nutrition outcomes in agriculture interventions

Within Australia's agriculture development portfolio, there are a range of opportunities for agriculture and food security interventions to lead to positive nutrition outcomes. Nutrition sensitive agriculture programs are most effective and avoid negative nutrition impacts when the following design and implementation considerations for nutrition are applied:

1. Ensure explicit nutrition objectives and indicators are included into the design, and track and mitigate potential negative outcomes or unintended consequences (such as the use of income from the sale of cash crops to purchase ultra-processed unhealthy foods). Examples of possible NSA indicators to use are included at Attachment 2.
2. Assess the context at the local level, and design appropriate activities to address the types and causes of malnutrition and how current agriculture or food system practices may be contributing to this.
3. Target the vulnerable and improve equity through participation, access to resources and decent employment. Whilst it is important to empower women, this should not be done at the exclusion of others and interventions should aim to improve the diets and nutrition of all household members.
4. Maintain or improve the natural resource base through sustainable, climate-smart agriculture practices.
5. Facilitate diversification and production of nutrient-dense crops and small-scale livestock.
6. Improve processing, storage and preservation to retain nutritional value and food safety, to reduce seasonality and post-harvest losses, and to make healthy foods convenient to prepare.
7. Expand market access for vulnerable groups, particularly for marketing nutritious foods.

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8. Incorporate nutrition education and awareness activities that create incentives and foster positive attitudes that encourage households to make decisions that support the consumption of nutritious foods and better nutrition.
 9. Collaborate with other sectors and programs when wanting to achieve higher level nutrition status indicators such as micronutrient deficiency, stunting and wasting.

While nutrition might not be a priority goal or end of strategy outcome for all agriculture programs, DFAT program managers can follow the above recommendations to shape programs to focus on improving access and consumption of high-quality diets for all household members rather than (only) on reducing child malnutrition. Contextual, cultural, economic, and food environment factors need to be taken into account when designing and implementing NSA programs.

At a minimum, DFAT program managers should ensure that a ‘do no harm’ approach is implemented with DFAT’s agriculture investments. For nutrition-sensitive agriculture, this could mean including basic monitoring and evaluation related to diet quality to ensure deterioration of diets is not occurring. The most common negative impact of income focused agriculture programs can be the utilisation of income to purchase more desired but less healthy foods which can deteriorate diet quality and increase risk factors for NCDs.

Project staff capacity requirements to achieve effective nutrition-sensitive agriculture programs

A review of the effectiveness of NSA programs on nutrition emphasised the need to ensure at least one person on the team has capacity to design, implement and monitor the nutrition aspects of the project (Ruel, Quisumbing and Balagamwala 2018). This may require formal nutrition training or at a minimum, related nutrition experience.

Considering the importance of NSA projects to improve diet quality, it is important to consider sufficient capacity related to dietary intake assessments as part of monitoring and evaluation. In particular, due to NSA programs often having an end of program outcome related to improving diet quality, it is important to have sufficient capacity to both design programs that will achieve this impact, but also the technical skills to measure and report the program progress.


The key considerations when identifying which dietary intake assessment method to utilise for program monitoring and evaluation are:

- Quantitative recalls (non-nutrition specialist tool available)
 - 24-hour recalls
 - Semi-quantitative recalls
 - Food frequency questionnaire
- Quantitative recall (higher nutrition specialist capacity needed)
 - 24-hour recalls
 - Food frequency
 - Food diary
- Household vs individual
- Administered vs self-administered

The qualitative 24-hour diet recall (a method that asks respondents to recall all foods and drinks consumed in the past 24 hours), such as the Diet Quality Questionnaire (DQQ³) and the assessment method used to develop the Women’s Minimum Diet Diversity indicator (M-DDW⁴), have been developed in mind so that non-technical nutritionists can apply dietary intake assessments and analyse the results. These tools help evaluate diet quality via food group consumption and proxy

³ <https://www.dietquality.org/>

⁴ <https://www.fao.org/nutrition/assessment/tools/minimum-dietary-diversity-women/en/>



indicators for micronutrient adequate diets (such as M-DDW). More complex survey methods including quantitative 24-hour recalls and food frequency questionnaires can be used to calculate nutrient intake, which can be useful when specific nutrient deficiencies are of known concern in a project area. These tools require a nutritionist with sound understanding of data collection, entry and analysis to implement.

From a program perspective, one member of the team needs to have sound knowledge and comprehension of local foods, their basic nutrition profiles and ideally, agronomic knowledge around nutritious foods. When this is not possible, it is critical to ensure that an agriculture specialist is working closely with the nutrition lead to ensure that nutrition and agriculture activities are integrated, and not running in parallel.

Additional Resources and Tools

- FAO. 2018. Dietary Assessment: A resource guide to method selection and application in low resource settings. Rome. <https://www.fao.org/3/i9940en/i9940EN.pdf>
- FAO. 2016. Compendium of nutrition-sensitive indicators in agriculture. FAO, Rome. <http://www.fao.org/3/i6275en/i6275en.pdf>
- Global Alliance for Improved Nutrition. 2020. Indicators of Food Safety Performance: A Review. A USAID EatSafe Project Report. <https://www.gainhealth.org/resources/reports-and-publications/review-measures-and-indicators-food-safety-performance>
- HLPE. 2019. Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome <https://www.fao.org/3/ca5602en/ca5602en.pdf>
- HLPE. 2017. Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome. <https://www.fao.org/3/a-i7846e.pdf>
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- SPRING. 2014. Linking Agriculture and Nutrition: A Guide to Context Assessment Tools. Arlington, VA: USAID Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) Project. <https://www.spring-nutrition.org/publications/tools/user-guide-context-assessment-tools-linking-agriculture-and-nutrition>

References

- Bose, I., G. Baldi, L. Kiess, and S. de Pee. 2019. “The “Fill the Nutrient Gap” analysis: An approach to strengthen nutrition situation analysis and decision making towards multisectoral policies and systems change.” *Maternal & Child Nutrition*. doi:<https://doi.org/10.1111/mcn.12793>.
- Herforth, A, and T. Ballard. 2016. *Nutrition Indicators in Agriculture Projects: Current measurements, priorities, and gaps*. EU-FAO Improved Global Governance for Hunger Reduction Programme.
- Ruel, M, A Quisumbing, and M Balagamwala. 2018. “Nutrition-sensitive agriculture: What have we learned so far?” *Global Food Security*. doi:<https://doi.org/10.1016/j.gfs.2018.01.002>.
- Ruel, M., and H. Alderman. 2013. “Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition?” *The Lancet*. doi:[https://doi.org/10.1016/S0140-6736\(13\)60843-0](https://doi.org/10.1016/S0140-6736(13)60843-0).
- WHO. 2020. *Malnutrition*. <https://www.who.int/news-room/questions-and-answers/item/malnutrition>.

Attachment 1: Examples of nutrition sensitive agriculture impact pathways

Table 1 presents possible impact pathways for examples of nutrition sensitive agriculture activities. The table can be used to identify which food system pillar may be the best entry point to start nutrition-sensitive activities. In many situations, activities will span across multiple food system pillars (e.g. a production project will also increase marketing activities and may also promote consumption). Having an NSA program that tackles multiple dimensions of the food system can help to create synergistic effects and may be more successful in achieving outcomes. Activity managers can use the examples in these tables to help conceptualise what NSA program impact pathways may be, which can help both with designing work and activity packages, as well as identify key indicators to be applied for monitoring and evaluation.

Table 1: Possible Nutrition-Sensitive Agriculture and food system impact pathways

Food System Domain	Examples of Agriculture-based interventions and their nutrition impact pathways
<p>Domain 1: Production: Innovating for climate resilience, productivity and sustainable resource use</p> <p>To improve productivity across the food system and promote more efficient and sustainable use of natural resources, using research and technical expertise.</p>	<ul style="list-style-type: none"> • Introduce agricultural labour-saving devices → decrease the amount time that women spend on agriculture → women have more time to feed and care for young children → improve childcare practices including nutrition • Introduce technologies that improve resilience of food crops to extreme weather events and changing climates → increase year-round availability of food → improve food access → improve diet • Support dry season production of nutrient-rich foods (e.g., through small scale irrigation) → increase year-round availability of food → improve food access → improve diet • Reduce post-harvest food loss and waste → increase year-round availability of food → increase consumption of nutrient-rich foods • Mitigate risks from water-borne and zoonotic enterobacterial infection diseases in agriculture reduced prevalence of chronic diarrhoea → improved nutrient absorption in gastrointestinal tract → better health and nutrition • Promote improved biofortified crops that are climate resilient → increases micronutrient availability → increased yield → improved consumption of nutrients
<p>Domain 2: Markets</p> <p>To help increase small-scale farmers' participation in markets and address constraints to agri-food business, including by leveraging private-sector investment and innovation (with an emphasis on women's economic empowerment).</p> <p>Improve nutrient availability throughout the value chain at different</p>	<ul style="list-style-type: none"> • Increase household incomes from agriculture-related activities (including cash cropping and agricultural labour) → increase purchasing power → improve food access or increase access to health services → improve diet or childcare practices • Improve production of nutrient-rich foods → increase the year-round availability and diversity of food in the household and in markets → increase food access → improve diet • Implement nutrition-sensitive value chains approach → Improve production of nutrient rich food → improve

Food System Domain	Examples of Agriculture-based interventions and their nutrition impact pathways
<p>parts (e.g. nutrition-sensitive value chains)</p>	<p>post-harvest storage and processing to improve nutrient retention → improve cold chain storage to retain nutrients and reduce waste → increased micronutrient intake and diet quality</p> <ul style="list-style-type: none"> • Invest in small/micro enterprises that sell value-added nutritious food (targeting women) → women’s empowerment → increased income → increased purchase of nutritious foods in markets → availability of nutritious foods at households → improved diet quality and income generation • Improve access to agriculture inputs including quality planting material of nutritious species/varieties that are climate change resilient → sustainable and reliable source of inputs → decreased cost of inputs → easier farmer participation and profits → increased availability of nutritious foods in local markets and households for consumption → improved diets
<p>Domain 3: Consumption: Increasing demand for nutritious foods</p> <p>To increase the consumer demand for nutritious foods to create incentive for households to allocate resources that improve availability and access to nutritious foods, and also for their consumption.</p> <p>Increased demand then supports market stability and market chain actors and farmers confidently re-invest in these nutrition-sensitive value chains.</p>	<ul style="list-style-type: none"> • Provide improved cooking guidance to retain nutrients and diversify diets using project promoted agriculture products → increased micronutrient intake → improved diet quality • Include men and women in nutrition education activities → men and women both prioritise nutrition → men support women to grow nutritious foods in home gardens, and to use income to purchase these foods → improved diet quality • Promote agriculture and nutrition through media (such as TV) → increased visibility and awareness of nutritious food and preparation methods → increase demand from consumers for nutritious foods → consumers have better quality diets → farmers respond and produce more nutritious and diverse foods
<p>Domain 4: Improving food Environments</p> <p>To improve the availability of and accessibility to nutritious and healthy foods at the home, schools and other institutions and retail outlets and markets.</p>	<ul style="list-style-type: none"> • Invest in school gardens and nutrition education in schools → produce used to generate food and income to supply students with nutritious foods → student attitudes and knowledge improve → diet quality improved • Invest in smallholder agriculture to supply school feeding programs → households generate more nutritious foods for own consumption and additional income → use to purchase nutritious foods → diet quality improved • Local market infrastructure improved including through providing ramps, providing adequate security and shelter from the elements → to facilitate accessibility by all, especially vulnerable people → improved access to nutritious foods → improved diet quality • New market established in areas where people have limited access to a variety of healthy and affordable food

Food System Domain	Examples of Agriculture-based interventions and their nutrition impact pathways
	<p>(i.e. a food desert) → allows opportunity for income generation and purchase of nutritious foods → improve food and nutrition security</p> <ul style="list-style-type: none"> Supporting the development of policies that support the production, sale, marketing of nutritious locally produced fresh foods → improved availability and accessibility to nutritious foods in retail outlet settings → increased consumption and improved diet quality
<p>Domain 5: Enabling Environment: Promoting effective policy, governance, and reform</p> <p>To assist partner countries achieve more effective policy settings through: increasing incentives (and decreasing disincentives) for improving the availability, access and consumption of diverse, nutritious and safe foods; promoting environmentally sustainable production, trade and distribution with a focus on nutritious rich foods such as horticulture, legumes and small-scale livestock and fish.</p>	<ul style="list-style-type: none"> Promote sustainable and efficient agriculture sector → contribute to macroeconomic growth → increased number of jobs in the sector → increase household incomes → increase purchasing power → improve food access → improve diet Generate evidence to inform the development of, and promote policies that support multisectoral approaches to improve nutrition → build capacity in human resources and institutions to improve nutrition through the food and agriculture sector → facilitate multi-sector collaboration (especially between agriculture and health) → increase effectiveness of nutrition actions Support safety nets during shocks or lean seasons → people can access nutritious foods → resilience maintained

Attachment 2: Examples of NSA Indicators

Agriculture investments should select nutrition-relevant indicators to benchmark progress (along the articulated impact pathway, see Table 1 examples) towards a nutrition outcome. Whilst stunting, wasting and other nutrition status indicators are often the default nutrition indicator assigned to nutrition projects, these are complex indicators that have multiple drivers including WASH, education, poverty and gender empowerment and can be difficult to change even when multi-sectoral interventions are applied.

Given that nutrition status indicators are complex, and that agriculture’s most direct contribution to nutrition is through food, focusing on diet quality as one of the main outcome indicators is recommended for NSA programs.

NSA projects can often also be targeting food security, as food security cannot exist in the absence of good diet quality. This guidance note does not focus on the aspect of measuring food security – however in projects that have a higher-level food security objectives, diet quality could be positioned as an intermediate outcome indicator.

Some examples of potential nutrition sensitive outcome indicators (output, intermediate outcomes and end of project outcomes) for agriculture and food system programs are presented, below in Tables 2, 3 and 4.

Table 2 High level nutrition sensitive agriculture and food system end of project outcome indicators by domain

Domain	High Level End of Project Outcome Indicators	Broader Goal Indicators
Domain 1: Production: Innovating for climate resilience, productivity and sustainable resource use	Improved Diet Quality indicators e.g. 1. Increased diversity of healthy and nutritious foods consumed 2. Improved quantity of healthy and nutritious foods consumed 3. Improved nutrient adequacy of healthy and nutritious foods consumed 4. Improved food safety Improved Health and Care Practices indicators	Improved Nutrition Status indicators e.g. 1. Stunting Prevalence 2. Wasting Prevalence 3. Micronutrient Deficiency Prevalence 4. Anaemia prevalence 5. Adult BMI or Body Fat Composition
Domain 2: Markets and Income		
Domain 3: Consumption: Increasing Demand For nutritious foods		
Domain 4: Improving Food Environments		
Domain 5: Enabling Environment: Promoting effective policy, governance, and reform		

Table 3 Detailed Nutrition sensitive agriculture and food system end of project outcome indicators to measure


End of Project Outcomes	Example of Specific Indicator to measure
<i>Improved Diet Quality</i>	
<ul style="list-style-type: none"> Increased diversity of healthy and nutritious foods consumed 	<ul style="list-style-type: none"> Minimum dietary diversity for women (MDD-W) Individual dietary diversity score (IDDS) Minimum acceptable diet for children (MAD-C) Consumption of specific target foods such as Vitamin A or iron-rich foods Food Biodiversity (Dietary Species Richness)
<ul style="list-style-type: none"> Improved quantity of healthy and nutritious foods consumed 	<ul style="list-style-type: none"> Consumption of 400g fruits and vegetables per day Reduction in ultra-processed food consumptions (% of daily energy intake from Ultra processed foods) Total daily energy intake (Kj/day)
<ul style="list-style-type: none"> Improved nutrient adequacy of healthy and nutritious foods consumed 	<ul style="list-style-type: none"> Macronutrient intake (g/day) Micronutrient intake (mg/day)
<ul style="list-style-type: none"> Improved food safety 	<ul style="list-style-type: none"> Reduced incidence of foodborne disease Use of hand-washing facility with soap and water prior to meal preparation Washing fruits or vegetables with safe water before eating
<i>Improved Health and Care Practices</i>	<ul style="list-style-type: none"> Minimum acceptable diet for children (MAD-C) Minimum meal frequency for children (MMF) Breastfeeding indicators



Table 4 Nutrition sensitive agriculture and food system output and Intermediate outcome indicators by domain

Pillar	Output Indicators	Intermediate Outcome Indicators
Pillar 1: Production: Innovating for climate resilience, productivity and sustainable resource use	<ul style="list-style-type: none"> • Number of individuals trained in water management and safe agrochemical application • Number of agriculture extension workers or professionals trained in nutrition elements per 100 000 population • Proportion or number of villages/areas where nutrition programs that are implemented include an agriculture element • Proportion or number of villages/areas with high prevalence of acute malnutrition targeted by agriculture activities • Proportion or number of villages/areas with high prevalence of stunting targeted by agriculture activities • Proportion of households with children enrolled in acute malnutrition treatment programs receiving minimum package of services that include an agriculture element • Proportion of targeted organisations that have modified follow-up supervision and monitoring to include agriculture elements • Seeds and planting materials for nutritious foods distributed to X households 	<ul style="list-style-type: none"> • Home gardens/production systems are diversified with X different types of nutritious foods produced on average • Production Diversity Increases (species richness) • Targeted Nutritious foods are produced by X% of households • Physical, natural environment is conducive to good health • Water quality improved • Number of Climate smart nutritious varieties available • Proportion of staple crop production that is biofortified • Contamination from water or environment in food supply reduced
Pillar 2: Markets and Income	<ul style="list-style-type: none"> • Number of improved post-harvest storage infrastructure established • Number of SMEs established that focus on nutritious foods • Number of new markets established • Number of children under 5 years of age (indirectly) reached by joint nutrition and agriculture programs • Food Safety regulations developed and enforced in wet-markets 	<ul style="list-style-type: none"> • Local markets have diverse foods available that are affordable (species richness) • Seed/ planting material suppliers offer inputs for nutritious species/varieties at affordable prices together with nutrition information on their benefits • Women's control of income increases (Income, disaggregated by gender, to reflect intra-household income control) • Income generated from the sale of specific agriculture products • Wealth indices such as household asset scores • Income and/or consumption data (and specifically, identifying how income generated from agriculture projects is spent and if it is spent on acquiring nutritious foods)

Pillar	Output Indicators	Intermediate Outcome Indicators
Pillar 3: Consumption: Increasing Demand For nutritious foods	<ul style="list-style-type: none"> • Number of women and men trained in climate smart management practices of nutritious foods • Number of women and men trained on food processing and preservation techniques • Number of women and men trained in nutrition • Number of nutrition professionals trained in agriculture elements per 100 000 population 	<ul style="list-style-type: none"> • % reduction of mycotoxins or chemical contamination (e.g. from agrochemicals) • Women and men’s’ nutrition knowledge and attitudes improve • Improved skills related to food preparation and storage • People are willing to spend income on purchasing nutritious foods from markets (% of income spent increases) • People are willing to spend income on purchasing inputs (seeds, planting material) to cultivate nutritious vegetables (% of income spent increases)
Pillar 4: Improving Food Environments	<ul style="list-style-type: none"> • Proportion of households in target areas participating in activities where both nutrition and agriculture messages were delivered • New market built • Accessibility ramps built in local markets • Ultra-processed foods removed from school menus • Local market provides security for X days / X hours • Advertising for ultra-processed foods • Incentives for selling/buying local healthy foods introduced (e.g. traditional food day at canteen) 	<ul style="list-style-type: none"> • Number of new Food Preparation methods that retain more nutrients are used by X% of households • School feeding programs consider nutrition in meal programming and planning and use locally available nutritious foods in meals • Households use food preservation methods to increase availability of nutritious foods • Availability of specific foods in markets increases • Prices of specific nutritious foods • Cost of a healthy nutritious diet • Markets are more accessible to all people • Household Food Access is improved (Food InsecurityFood Insecurity Experience Scale (FIES) • Household diet Diversity Score (DDS) • Food Consumption Score Nutrition (FCS-N)
Pillar 5: Enabling Environment: Promoting effective policy, governance, and reform	<ul style="list-style-type: none"> • Number of children under 5 years of age (indirectly) reached by joint nutrition and agriculture programs • Number of strategies, initiatives and/or partnerships/agreements advocating for integrating agriculture and nutrition programs • Multisectoral Government Agency Roundtable on Nutrition established (e.g. Ministry of Agriculture and Ministry of Education, Ministry of Health) 	<ul style="list-style-type: none"> • Governments include nutritious foods in policy (e.g. agriculture policy, school agriculture and nutrition policy, education, food security policy) • Governments include policy for agriculture extension that includes nutritious foods for consumption (not just income) • Country has developed a national nutrition plan that includes agriculture • National agriculture plans include explicit targeting of areas with high rates of malnutrition and food insecurity



Pillar	Output Indicators	Intermediate Outcome Indicators
		<ul style="list-style-type: none"> • Proportion of targeted institutions with (increased) expenditures for integrated agriculture–nutrition programming • Proportion of targeted institutions reporting collaboration between nutrition and agriculture programs (e.g., joint documents, decisions/policies, work plans)
Cross-cutting and Women's empowerment	<ul style="list-style-type: none"> • Number of women trained in financial management • Number of hours women engage in project and/or agriculture activities 	<ul style="list-style-type: none"> • Women's nutrition knowledge and attitudes • Women's control of income increases • Women's workload and labour does not impede care practices or other priorities for women • Women's participation in economic activities (e.g. gender gap in crop/livestock sales)