

Nutrition-Sensitive Agriculture Training Resource Package

Complete Guide for Sessions 1-7



May 2018



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SPRING
Strengthening Partnerships, Results,
and Innovations in Nutrition Globally

Nutrition-Sensitive Agriculture Training Resource Package

Complete Guide for Sessions 1-7

ABOUT SPRING

The Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project is a seven-year USAID-funded cooperative agreement to strengthen global and country efforts to scale up high-impact nutrition practices and policies and improve maternal and child nutrition outcomes. The project is managed by JSI Research & Training Institute, Inc., with partners Helen Keller International, The Manoff Group, Save the Children, and the International Food Policy Research Institute.

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SPRING

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Acronyms and Abbreviations

AIN	Aquaculture for Income and Nutrition
BMI	body mass index
CSA	climate-smart agriculture
GDP	gross domestic product
JSI	John Snow, Inc.
NGO	nongovernmental organization
SBC	social and behavior change
SBCC	social and behavior change communication
SPRING	Strengthening Partnerships, Results, and Innovations in Nutrition Globally
USAID	U.S. Agency for International Development
WASH	water, sanitation, and hygiene

Preparing Your Nutrition-Sensitive Agriculture Training

Introduction to the Nutrition-Sensitive Agriculture
Training Resource Package

Getting Started

This **Nutrition Sensitive Agriculture Training Resource Package** is designed to provide guidance, recommendations, and ideas for individuals charged with training others on nutrition-sensitive agriculture. From 2013 to 2017, SPRING developed a variety of trainings on nutrition-sensitive agriculture. These trainings addressed a multitude of audiences across diverse contexts. However, across trainings there was one common goal: catalyze participants toward improving nutrition outcomes. We hope that these training materials help you to do the same.

We have organized the sessions based on what we have found most effective. For example, over the years we have learned that participants must have a basic understanding of maternal, infant, and young child nutrition to understand the concept of nutrition-sensitive agriculture. We have also learned that building a seasonal calendar is an excellent method for examining the impact that the environment plays on community members' access to food, health, and care. Throughout the training, we will mention lessons learned such as these, as well as provide tips to the facilitator. It is important to remember that although this training package has been molded by SPRING's years of experience implementing similar trainings across contexts, the training is best delivered by someone who is knowledgeable in nutrition and agriculture. It is also best if the facilitator tailors the content of the training to the context in which he or she will be presenting.

The materials here are designed to be used in several ways:

- As a full nutrition-sensitive agriculture training, progressing from Session One through Session Seven. The content can be covered in about three days and is available online at <https://www.spring-nutrition.org/nutrition-sensitive-ag-training>.
- [Session One: Strengthening Agriculture-Nutrition Linkages: Why it Matters](#)
- [Session Two: Essential Nutrition Concepts for Nutrition-Sensitive Agriculture Activities](#)
- [Session Three: Essential Concepts in Agriculture and Food Systems](#)
- [Session Four: Agriculture-to-Nutrition Pathways](#)
- [Session Five: Developing a Seasonal Calendar](#)
- [Session Six: Behavior Change Concepts for Nutrition-Sensitive Agriculture](#)
- [Session Seven: Designing for Nutrition-Sensitive Agriculture](#)
- As stand-alone presentations to brief stakeholders on a specific aspect of nutrition-sensitive agriculture.
- As add-in content for training on another topic—for example, within a general agriculture training, a session or two could be inserted with a nutrition-sensitive agriculture focus.

Each session in this series includes several components to assist the facilitator in delivering an effective session: a session guide, a PowerPoint set, and other materials, along with a list of additional resources for those who desire more background on certain concepts. Session guides also include notes on the lessons learned by the SPRING facilitation teams as they have delivered these sessions in a range of settings with different target audiences.

This introductory guide includes key information for planning the workshop and adapting materials to your audience.

Crafting the Workshop Goal and Objectives

The first step in adapting these materials to your audience is to reflect on the overall training goal and objectives, keeping in mind the needs of the specific audience who will participate in the workshop. Here are a few questions to consider as you refine your goal and objectives:

- How much exposure has this group already had to agriculture, nutrition, and nutrition-sensitive agriculture? What concepts may be new for them? Which are likely to be a review?
- Is this group of participants accustomed to working together? What approaches will facilitate understanding and cooperation during the workshop and afterward?
- What actions do we want participants to take when the workshop is finished? What do we want individuals to **do** with the information they have learned?
- Are there barriers to action that can be addressed in the workshop? What resources can be leveraged to make it easier for participants to take action?

Below are several sample workshop goals and objectives that SPRING has used.

Drafting the Agenda

The seven sessions in this *Training Resource Package* are presented in the recommended order, progressing from core concepts to more complex ones. If your group of stakeholders already has a strong background in some areas, you may decide to shorten or remove some sessions. However, in our experience, reviewing essential concepts is worthwhile in creating the common ground needed for successful crossover discussions about nutrition and agriculture.

These sessions may be delivered consecutively over 3 days or delivered in smaller increments of 2–3 hours over 5 days. Participants may benefit from shorter training days, allowing them adequate time to reflect and process what they have learned. The seven sessions include:

1. **Strengthening Agriculture-Nutrition Linkages: Why It Matters (0.5 hours).** This session includes a review of evidence demonstrating that strengthening the linkages between agriculture and nutrition is essential to ensure that every child grows up healthy and productive. The economic effects of malnutrition are discussed, alongside several concrete steps that agriculture programs can take to strengthen their nutritional impact.
2. **Essential Nutrition Concepts for Nutrition-Sensitive Agriculture (1.5 hours).** Foundational concepts in nutrition are introduced to ensure that all participants (nutritionists and non-nutritionists alike) can effectively discuss the problem of malnutrition, its forms and the importance of the first 1,000 days. A solid foundation in nutrition is essential before discussing the pathways.
3. **Essential Concepts in Agriculture and Food Systems (2 hours).** This session creates a foundation in agriculture and food systems that helps participants effectively discuss nutrition-agriculture linkages. The content can be used to introduce nutritionists to these ideas or to review essential concepts with agriculturalists. A solid understanding of these concepts is essential before the pathways can be discussed.
4. **Agriculture-to-Nutrition Pathways (1.5 hours).** In this session, participants explore the pathways themselves, looking more closely at the steps along each of the three main pathways and their interconnecting nature. Specific actions that help ensure agriculture activities lead to nutrition outcomes are discussed in detail.

5. **Developing a Seasonal Calendar (1 to 1.5 hours).** This exercise-based session focuses on techniques to deepen participants' understanding of the context in which they are working. As the exercise progresses, participants reflect on the months of the year, key activities that take place, and how these affect the community (e.g., growing seasons, shifting food availability, increased demands on time and labor, weather changes and seasonal illnesses).
6. **Behavior Change Concepts for Nutrition-Sensitive Agriculture (2 hours).** This session deepens participants' understanding of how social and behavior change (SBC) can be used to design effective activities and support the desired behavior change.
7. **Designing Effective Nutrition-Sensitive Agriculture Activities (7 hours).** This session guides stakeholders through the process of incorporating appropriate nutrition-sensitive outcomes and interventions into their current program activities in such a way that agriculture, economic growth, and nutrition objectives are met. Participants leave this session with clear next steps for ensuring appropriate nutrition-sensitive agriculture outcomes and indicators are added to their results frameworks, work plans, and program monitoring plans (PMPs).

Sample Workshop Goals and Objectives

SPRING/Senegal

Goal: Prepare and equip SPRING/Senegal staff to engage partners and develop nutrition-sensitive agriculture strategies and action plans.

Objectives: By the end of the workshop, participants will be able to—

- i. explain nutrition-sensitive agriculture and the SPRING/Senegal context
- ii. explore tools that apply nutrition-sensitive agriculture and social and behavior change communication (SBCC) messages and practices to the SPRING/Senegal partner context
- iii. use a field-tested tool and offer recommendations for next steps
- iv. develop ideas for nutrition-sensitive agriculture practices that can be implemented with at least two partners.

SPRING/Bangladesh and local partner Aquaculture for Income and Nutrition (AIN)

Goal: Develop participants' understanding of nutrition-sensitive agriculture and behavior change.

Objectives: By the end of the workshop, participants will be able to—

- i. identify the nutrition-sensitive aquaculture practices AIN is promoting across all four intermediate results
- ii. identify opportunities to enhance the nutrition-sensitivity of practices through project activities
- iii. introduce behavior change approaches which can help AIN promote the identified nutrition-sensitive aquaculture practices
- iv. identify opportunities to apply behavior change approaches via project activities, and to document AIN's contribution to nutrition-sensitive outcomes.

SPRING/Guinea and local partners *Institut Supérieur Agronomique et Vétérinaire de Faranah*, Winrock International, and other local NGOs

Goal: Build understanding of nutrition-sensitive agriculture concepts and strategies.

Objectives: By the end of the workshop, participants will be able to—

- i. explain nutrition-sensitive agriculture within the context of Faranah, Guinea
- ii. develop skills in identifying nutrition-sensitive agriculture practices relevant to Faranah, Guinea
- iii. examine current activities and identify strategies for making them more nutrition-sensitive.

Sample Agenda:

DAY 1		
Session #	Content	Duration
	<i>Arrival and introductions</i>	45 minutes
Session 1	Strengthening Agriculture-Nutrition Linkages: Why it Matters	30 minutes
Tea Break		15 minutes
Session 2	Essential Nutrition Concepts for Nutrition-Sensitive Agriculture	90 minutes
Lunch Break		60 minutes
Session 3	Essential Concepts in Agriculture and Food System	120 minutes
Tea Break		15 minutes
Session 4	Agriculture-to-Nutrition Pathways	90 minutes
	<i>Closing</i>	15 minutes
DAY 2		
	<i>Arrival and review</i>	30 minutes
Session 5	Developing a Seasonal Calendar	60 minutes
Tea Break		15 minutes
Session 5	Developing a Seasonal Calendar <i>Continued</i>	30 minutes
Lunch Break		60 minutes
Session 6	Behavior Change Concepts for Nutrition-Sensitive Agriculture	120 minutes
Tea Break		15 minutes
Session 7	Designing Effective Nutrition-Sensitive Agriculture Activities	120 minutes
	<i>Closing</i>	
DAY 3		
	<i>Arrival and review</i>	30 minutes
Session 7	Designing Effective Nutrition-Sensitive Agriculture Activities <i>Continued</i>	60 minutes
Tea Break		15 minutes
Session 7	Designing Effective Nutrition-Sensitive Agriculture Activities <i>Continued</i>	120 minutes
Lunch Break		60 minutes
Session 7	Designing Effective Nutrition-Sensitive Agriculture Activities <i>Continued</i>	120 minutes
Tea Break		15 minutes
Session 7	Designing Effective Nutrition-Sensitive Agriculture Activities <i>Continued</i>	60 minutes
	<i>Making a Plan</i>	30 minutes
	<i>Closing</i>	30 minutes

Adapting Exercises and Session Content

Exercises are an essential component of the workshop that will need to be tailored to the specific audience and purpose of the workshop. Effective training includes exercises that promote participation, analysis, reflection, and application of the concepts discussed.¹

In each session guide, there are recommended discussion questions and exercises throughout the session. As you review the proposed approaches, reflect on the following questions:

- Will the audience have enough knowledge and background to complete the exercise successfully?
- What local examples can be used to make the exercise more directly applicable to the local context?
- Will participants find the exercise engaging and challenging enough to hold their attention? Can any part of the exercise be deepened to create more opportunities for analysis and reflection?
- Is the time allocated sufficient to allow for discussion and decision-making?

While planning and adapting session content, ensure that you take the time to reflect and consider:

- What is the specific perspective that participants bring? What are their biases?
- What terms are they accustomed to using? What are they least familiar with?
- What challenges regarding attitude and perspective might exist for this group?
- What are their unique advantages? How can I leverage what they know during this training? [or, how can I leverage what they know to persuade others?]
- What do they know already about nutrition-sensitive agriculture? Where are their blind spots?
- What kinds of programs do they work on? What activities are they used to doing? What may be new to them?
- How can I open their minds to a new way of doing things?

In addition to adapting exercises, it is also helpful to review the session content in-depth, looking for opportunities to cite local examples, use local photographs and illustrations and prompt participants to reflect on the places where they live and work. The facilitator should work toward making the concepts specific to the local context and appropriate to the background of participants. Adapting materials to the context where stakeholders are working will help ensure that the workshop is meaningful and drives participants to action.

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Establishing Local Support

In many places, opening words from a dignitary are expected at the beginning of any workshop. This opening can be an opportunity to establish a sense of commitment to nutrition-sensitive agriculture at the highest levels. At their best, these opening remarks acknowledge the country's economic and nutrition challenges, while highlighting the ambitions of the coming several years. The dignitary can play an important role in breaking down sector-specific approaches that can lead to limited progress and create an openness for new approaches.

Ultimately, the purpose of this training is to bring people together, inspire them to improve nutrition outcomes, and empower them with tangible actions to improve nutrition in their context by acting as a catalyst for positive change.

Creating the Right Atmosphere

A nutrition-sensitive agriculture workshop can bring together individuals from different sectors. Participant introductions are the first opportunity that participants have to know meet each other and understand the unique background and perspective that their colleagues bring to the workshop. Effective introductions create a foundation for understanding that is essential later in the course. These introductions can also facilitate strong relationships that motivate participants to encourage one another to affect nutrition outcomes long after this training course.

Aside from sharing a bit about their role and background, participants may also be asked to reflect on:

- Successes and challenges related to malnutrition (especially as they relate to national trends)
- What they are most interested to learn from the training
- What they could learn that would make their work more effective.

As the training begins, it can be helpful to share some background about the planning process. Consider including details such as:

- How did nutrition-sensitive agriculture come up in early discussions?
- Who were the strongest supporters of this training and why?
- What is the larger context for our discussions and what actions are expected of participants afterward?

As you highlight the context in which the training was created, mention that as important issues are discussed, there may be disagreement among members of the group. Disagreement is expected as part of discussions, so long as everyone agrees to listen and respect the views of others.

Effectively Training Groups in Nutrition-Sensitive Agriculture

Lessons Learned from Previous Trainings

Over the past five years, various stakeholders interested in strengthening links between agriculture and nutrition have requested technical assistance from SPRING. In response to these requests, we have started discussions, contributed to debates, and shared our unique mix of agriculture-nutrition-SBC expertise with groups of donors, government ministries, implementing partners, and other stakeholders in countries where we work.

As you develop your nutrition-sensitive agriculture training strategy, we have included some reflections on the lessons we have learned in a range of contexts.

- There is something inherent in nutrition-sensitive agriculture that asks practitioners to change the way they work—in any sector. This change has provoked rich discussions, debates and reflections as development experts grapple with the challenges of integrated programming. As your workshop strategy takes shape, build in time for rich discussions that allow participants to explore their plans and concerns about nutrition-sensitive agriculture.
- Diverse stakeholders (working in food security, livelihoods, agriculture, nutrition, and other fields) need to develop a common understanding of nutrition-sensitive agriculture before they can begin discussing issues related to program design and implementation. Stakeholders come from very different perspectives and often have difficulty understanding the priorities, terms, and approaches of others.
- Agriculture and nutrition experts are different in their approaches, thinking, and vocabulary. Building a shared understanding of essential nutrition-sensitive agriculture concepts, including underlying causes and the pathways, helps the two groups find common ground and discuss potential solutions more effectively. It can be challenging to break down those sector-specific siloes because often there is little incentive to collaborate. To address this issue, the SPRING Training Resource Package was designed with a strong emphasis on why nutrition-sensitive agriculture matters, followed by orientation sessions that cover the basics of nutrition and agriculture. This structure was a strategic decision to create a shared understanding and emphasize that **we each have a responsibility to address malnutrition if we want to see real change.**
- We experimented with the length and level of detail that would be appropriate for a given audience—with some of our workshops lasting five days (Senegal) and others two days (Kyrgyz Republic). It was clear that almost every group needed a foundation in agriculture, nutrition or both to really understand nutrition-sensitive agriculture. We found that providing a solid foundation for everyone created more fruitful discussions and analysis later in the workshop.
- For trainings with national-level participants (government, nongovernmental organizations (NGOs) leaders, and managers), two days provided just enough time to achieve the requisite depth. In rare cases, three days were allocated. Given that one cannot cover all topics, prioritizing content according to what participants can apply immediately made the workshop more effective.

Strengthening Agriculture-Nutrition Linkages: Why It Matters

Session Guide One of the Nutrition-Sensitive
Agriculture Training Resource Package

Preparing to Present this Session

Purpose

This is Session One of seven included in the *Nutrition-Sensitive Agriculture Training Resource Package*.

This session lays the foundation for why nutrition-sensitive agriculture is important for a range of stakeholders working in livelihoods, food security, economic growth, nutrition, and maternal and child health. The content included here can be used to begin a training focused on nutrition-sensitive agriculture or as a stand-alone session for a group of high-level stakeholders. It explains why nutrition-sensitive agriculture is important and how nutrition outcomes can be reached through agricultural interventions.

By the end of this session, participants should be able to—

1. articulate key information on the social and economic impact of malnutrition
2. explain why a multi-sectoral approach is needed to address malnutrition
3. introduce the concept of nutrition-sensitive agriculture
4. outline specific ways that agriculture can support improved nutrition.

Estimated Duration

30 minutes

Materials

This session includes a presentation guide, designed with an accompanying slide set. The session guide provides detailed suggestions for how the facilitator can explain each slide, and activities to accompany each session. Before presenting this content, the facilitator should adapt the session to the specific context and audience with attribution to the SPRING project. All materials needed to deliver the session, including handouts and illustrations for activities, can be found on the SPRING website at <https://www.spring-nutrition.org/nutrition-sensitive-ag-training/session1>. They include:

- PowerPoint presentation: 1. Strengthening Agriculture-Nutrition Linkages: Why It Matters
- Handout: 5 Ways to Improve Nutrition through Agriculture

Core Content

Slide 1 (cover) Strengthening Agriculture-Nutrition Linkages: Why It Matters

- The linkages between agriculture and nutrition are increasingly being recognized as important for achieving global nutrition goals.
- More and more donors and programs are focusing on multi-sectoral strategies that bring together established principles, standards, and practices from agricultural market systems development and nutrition. Today, we will look at why those linkages matter.



Discuss: Ask the group what they have heard about nutrition-sensitive agriculture and what they consider to be the most important links between agriculture and nutrition. Spend a few minutes letting participants share and take several responses. If possible, clarify which of the concepts mentioned will be addressed at greater length during the workshop and which are outside the scope of what you plan to present.



Facilitator Note: *If you are using this session to open a longer training about nutrition-sensitive agriculture, be sure to add a few slides here that outline your course goals. Explain why these particular participants have been selected for the workshop and what actions participants will be expected to take after the training is finished.*

This session can also be used as a stand-alone presentation to help stakeholders understand why they should buy in to the idea of nutrition-sensitive agriculture. If this is your purpose, be sure to remove slide 2.

Slide 2 Nutrition-Sensitive Agriculture: The Full Program

- Today, we have brought together a diverse group of stakeholders to discuss the linkages between nutrition and agriculture. As we begin, it is important to recognize that our respective backgrounds, experiences, disciplines, and sectors give us different approaches and perspectives.
- This set of seven sessions was designed to give all stakeholders a shared vocabulary and solid understanding of key concepts underlying nutrition-sensitive agriculture. This foundation helps to ensure that we have a productive conversation that leads to concrete actions.
- Nutrition-sensitive agriculture is an approach that harnesses the best practices of agriculture and food security programs to more directly address malnutrition.
 - Before we begin, everyone involved needs to be familiar with essential nutrition and agriculture concepts.
 - After that, we introduce the Agriculture-to-Nutrition Pathways, which lay out a more detailed set of steps that link the two sectors.
 - Using the seasonal calendar, we begin to apply the pathways to a specific country context and illustrate how the pathways can be used in practice.
 - As we begin to think more strategically about the application of the pathways to real contexts, we discuss the important role of behavior change in meeting our goals.
 - Lastly, we will work together to design nutrition-sensitive agriculture programs that are aligned with the scope of our existing activities, our organizational mission(s) and the context in which we are working.
- The sessions that make up this workshop will provide us with strategies for making our agriculture work more nutrition-sensitive.



Facilitator Note: *Completing all 7 sessions is estimated to take 2½ to 3½ days, including a full day and a half for the design session. After you have adapted the materials for your audience, you can determine how much time is appropriate to spend on each session. The recommended length of time is noted at the beginning of each session guide, and there is a full sample agenda in the introduction session.*

Slide 3 **Session Objectives**

By the end of this session, participants will be able to—

5. articulate key information on the social and economic impact of malnutrition
6. explain why a multi-sectoral approach is needed to address malnutrition
7. introduce the concept of nutrition-sensitive agriculture
8. outline specific ways that agriculture can support improved nutrition.

Slide 4 **Why Should the Agriculture Sector Care About Nutrition?**

- Forty-five percent of child deaths are due to undernutrition (IFPRI 2016). The impact of that malnutrition—especially for a child or a pregnant woman—lasts for years and may be irreversible.
- Agriculture programs are well-positioned to have an important impact on nutrition outcomes.

Slide 5 **Cost of Malnutrition**

- Malnutrition causes child and maternal mortality. Malnutrition also causes illness, with underweight being the number one contributor to the burden of disease in sub-Saharan Africa.
- Because malnutrition leads to an overall lower intelligence quotient (IQ) and reduced school performance, malnutrition can have significant economic ramifications in the form of reduced work productivity and earnings.
- Countries across Asia and Africa lose 11 percent of gross national product every year because of poor nutrition.

(Black et al. 2013; Lim et al. 2012; Steckel 2013; IFPRI 2016.)



Facilitator Note: *These slides give a focused overview of the costs of malnutrition. More resources that explore malnutrition in greater depth are available. You will find a selection of useful articles and documents included with Session Two (Essential Nutrition Concepts) of this Training Resource Package. A list of additional resources can be found at the end of each session guide.*

Slide 6 **Improved Nutrition Drives Economic Growth**

- Improving nutrition can drive economic growth for the family and for the country.
- In several African countries studied, every US\$1 invested in reducing chronic undernutrition in children, yields an estimated US\$16 return in increased capacity and productivity (Hoddinott 2016).

Slide 7 What Works to Reduce Undernutrition? Nutrition-Specific Interventions

- Decades of programming and research have led to a consensus about approaches that work best to address the immediate causes of undernutrition across countries and contexts.
- These activities and interventions include things like promoting correct breastfeeding practices and providing micronutrient supplements to pregnant women and young children. These are referred to as nutrition-specific interventions. Session Two explores nutrition-specific interventions in more detail.
- Estimates show that even if we can scale up nutrition-specific interventions to cover 90 percent of the at-risk population, it would only address about 20 percent of chronic malnutrition (Black et al. 2013). So, what more is needed?



Lessons Learned: *Be sure to plan enough time to allow diverse stakeholders to get on the same page about nutrition-sensitive agriculture—it may take longer than you expect. Agriculture experts need to understand some basic nutrition concepts to discuss nutrition-sensitive agriculture effectively, while nutrition experts may need more background in agriculture. We have found that Sessions 2 and 3 are very helpful in doing this. When you bring these two groups together, you will be helping these two groups understand each other's thinking and gain a common language that will facilitate the development of context-specific nutrition-sensitive agriculture solutions.*

Slide 8 What Works to Reduce Undernutrition? Nutrition-Sensitive Interventions

- Nutrition-sensitive interventions, which address the deeper causes of malnutrition, are important for addressing the remaining 80 percent of chronic malnutrition (Black et al. 2013; Lim et al. 2012; Steckel 2013; IFPRI 2016).
- These **nutrition-sensitive** interventions address the **underlying causes** of undernutrition—**food, care, and health**.
 - We are talking about interventions that increase household access to diverse, nutritious foods, year-round.
 - Interventions that enable access to health services and ensure a healthy environment through appropriate water, sanitation and hygiene (WASH) strategies and activities.
 - Interventions that enable caregivers, primarily women, to provide proper care to their families, including ensuring age-appropriate feeding practices.

Slide 9 How does Agriculture Affect Nutrition?

- There are three essential linkages between agriculture and nutrition—food production, income, and gender (how women's time and energy are spent).
 - The most obvious linkage between agriculture and nutrition is the production of nutritious foods. This is one way agriculture can contribute positively to nutrition—by making more diverse, nutritious foods available in local markets and in farmer households.
 - Households also depend on income, which they use to purchase food, health services and hygiene-related goods that are necessary to maintain good health and nutrition. It is important to note that not all household income derives from agriculture related-activities. One way to promote resiliency is to assist households with both on-farm and off-farm income-earning opportunities.

- Women are highly engaged in agricultural activities. How women use their time and energy can have significant implications for their health and nutrition as well as the health and nutrition of their children. Women who have some control over how household income is spent tend to ensure that household income is spent on things that improve the health of the family (USAID 2017).



Facilitator Note: *Hand out copies of the document, “Five Ways to Improve Nutrition through Agriculture.”*

Slides 10–11 Five Ways to Improve Nutrition through Agriculture *(animated slides)*

- Simple answers and practices are not easy to come by in nutrition-sensitive agriculture work. Nevertheless, there are some things that we can do right now.
- These possible solutions cut across country-specific contexts and target groups. Nonetheless, any proposed interventions will need to be based on detailed context assessments.
- There will be opportunities in other sessions of this training to dig into context-specific solutions, factoring in the particular expertise and resources your activity brings to bear. This includes interactive exercises you can do as an activity team.

Slide 12 Key Points from this Session

- Good nutrition is essential for children to survive and thrive. The consequences of malnutrition are serious—45 percent of child deaths are a result of undernutrition.
- Countries pay a high price for malnutrition with decreased educational activity, productivity and earnings. Nutrition is a good investment, with a US\$16 return for every dollar spent.
- Nutrition-sensitive approaches address underlying causes of malnutrition, such as food security and quality, child/family care, health services, and WASH.
- Agriculture affects nutrition in several important ways: It influences which food is consumed, how farm income is spent, how women spend their time and energy, and women’s ability to control household income.

References

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Additional Resources

The following resources provide further information about why agriculture-nutrition linkages matter:

- SPRING. 2015. *Context Assessment for Linking Agriculture and Nutrition*. Online. <https://www.spring-nutrition.org/publications/series/context-assessment-linking-agriculture-and-nutrition>.
- United States Agency for International Development (USAID). 2017. *Multi-sectoral Nutrition Strategy 2014-2025, Technical Guidance Brief: Gender Considerations for Achieving Nutrition Outcomes through Agriculture*. Washington, DC: USAID. <https://www.usaid.gov/sites/default/files/documents/1864/gender-sensitive-ag-tech-guidance-brief-edit-508.pdf>.

Essential Nutrition Concepts for Nutrition-Sensitive Agriculture Activities

Session Guide Two of the Nutrition-Sensitive
Agriculture Training Resource Package

Preparing to Present This Session

Purpose

This is Session Two of seven that are included in the *Nutrition-Sensitive Agriculture Training Resource Package*.

This session creates the foundation in nutritional principles and practices that is necessary to understand the root causes of malnutrition. The concepts here focus on the importance of the “first 1,000 days,” maternal and young child nutrition, and how to break the cycle of malnutrition. This session is most comprehensive when it is delivered by a nutritionist or someone with extensive knowledge in nutrition.

The content included here explains nutrition concepts in detail, and can be used either as a review of essential information for experienced nutritionists or as a foundation in nutrition for agriculturalists.

Objectives

By the end of this session, participants will be able to—

1. describe five forms of malnutrition
2. analyze the essential needs of infants, children and mothers, especially during the period from conception to the child’s second birthday (the “first 1,000 days”)
3. identify strategies for interrupting the cycle of malnutrition.

Estimated Duration

1.5 hours, additional time may be needed if the additional exercises are used

Materials

All documents needed to deliver the session can be found at <https://www.spring-nutrition.org/nutrition-sensitive-ag-training/session2>.

- PowerPoint presentation: 2. Essential Nutrition Concepts
- Tape or other method for fixing paper to the wall
- Other Materials
 - Handout: Five forms of malnutrition- summary sheet
 - Handout: UNICEF framework
 - One copy to post on the wall: First 1,000 days cards (choose Guinea or India, whichever is more appropriate for your audience)
 - For the facilitator: First 1,000 days answer key
 - Handout: Breaking the cycle of malnutrition- summary sheet
- The following are for optional exercises:
 - One copy to post on the wall: Illustrations of mother, baby, and care practices
 - One copy of each illustration for posting on the wall: Illustrations of other important practices

Core Content

Slide 1 (cover) Essential Nutrition Concepts for Nutrition-Sensitive Agriculture

- The impact of nutrition on every society is significant: Children who do not receive good nutrition early in life are at risk for early mortality and poor growth and development.
- Improving nutrition can drive economic growth for the family and for the country. In several African countries studied, every \$1 investment in reducing chronic undernutrition in children yields an estimated \$16 return in increased capacity and productivity (Hoddinott 2016).

Slide 2 Nutrition Elements of the Pathways

- In Session One (Strengthening Agriculture-Nutrition Linkages: Why It Matters), we discussed key evidence about the importance of nutrition and outlined how agriculture activities can become more nutrition-sensitive.
- We highlighted the three main linkages between agriculture and nutrition—food produced, income generated and the use of women’s time and energy.
- In later sessions, we will discuss these three pathways in greater detail and focus on specific agriculture-nutrition linkages.
- This session will focus specifically on the nutrition elements of these pathways. Creating a solid foundation in nutrition, we will explore what women and children need to have well-nourished bodies and healthy, productive lives.



Lessons Learned: *In several countries, participants expressed concerns about working across sectors, often describing their concerns in this way: “I am a livestock specialist, focused on creating economic growth—let’s leave nutrition to the nutritionists.” To overcome this sector-specific thinking, we designed content that focuses on guiding participants to more clearly see agriculture-nutrition links and identify gaps. Specifically, exercises that prompt participants to “draw your activity,” or “draw your community,” and then guides them to analyze nutrition links that may be missing. This results in a more concrete understanding of how activities within a given context can be made more nutrition-sensitive.*

Slide 3 Objectives

- Describe five forms of malnutrition.
- Analyze the essential needs of infants, children, and mothers, especially during the period from conception to the child’s second birthday (the “first 1,000 days”).
- Identify strategies for interrupting the cycle of malnutrition.

Slide 4 Nutrition Is Critical for Growth and Development

- Nutrition has an important impact worldwide, especially on children. Globally, 45 percent of all child deaths are due to malnutrition (IFPRI 2016).
- There are many other short-term and long-term consequences for children who experience nutrition problems at some point in their lives:
 - Children who are under-nourished are more likely to become ill, and are less able to fight off infection. *The Lancet* series on undernutrition found that 11 percent of the global disease burden is due to maternal and child undernutrition (Black et al. 2008).

- Malnutrition leads to lower human capital. Stunting among children at two years of age is associated with lower school performance and reduced earnings later in life (Victora et al. 2008).
- Countries with high rates of malnutrition suffer reduced economic growth and development. Across Asia and Africa, countries lose 11 percent of gross national product every year due to poor nutrition (Black et al. 2013; Horton and Steckel 2013; IFPRI 2016; Lim et al. 2012).
- Overweight and obesity, in both children and adults, increases the risk of chronic diseases such as heart disease and diabetes.
- By addressing malnutrition, we can not only **decrease** child mortality, but also **increase** cognitive, motor, and socio-emotional development of children; **increase** school performance and learning capacity; **increase** adult stature; **decrease** adult obesity; and **increase** work capacity and productivity.

Slide 5 Five Forms of Malnutrition

- Malnutrition is a general term that includes nutrient deficiencies, undernutrition, and over nutrition. Undernutrition and over nutrition are usually defined by comparing an individual's height, weight, or other measurement with the average height or weight for a healthy population of the same age and sex.
 - **Wasting** (acute undernutrition) refers to weight that is too low for an individual's height, and may sometimes be described as *thinness*. Wasting is what we typically see among communities experiencing famine and among families who struggle to get enough food.
 - **Stunting** (chronic undernutrition) refers to height too low for age, and can also be described as *short stature*. Stunting can be much harder to see—a stunted child may look healthy, but is noticeably short for his age.
 - **Underweight** refers to weight too low for age. This measure is not recommended as a measure for nutrition programs, as it can include children who are stunted, wasted, or just small for their age.
 - **Overweight or obesity** refers to weight that is too high compared to an individual's height. It is typically measured using body mass index (BMI), a measurement that compares weight with height and determines a set BMI value. An individual with a BMI greater than 25 is considered overweight, while someone with a BMI greater than 30 is classified as obese.
 - **Micronutrient deficiency** means that an individual is receiving insufficient amounts of the vitamins and minerals that are essential for growth and health. Globally, iron deficiency, Vitamin A deficiency, and iodine deficiency are the most common types of micronutrient malnutrition.



Facilitator Note: Hand out “Five Forms of Malnutrition” summary sheet.

Slide 6 Five Forms of Malnutrition (images)

- Remember: malnutrition doesn't “look” one specific way. When we look at children who are malnourished, their appearance can vary.

- In many cases, we wouldn't know that a child is malnourished unless we ask the right questions, such as, "How old is this child?" In the case of micronutrient deficiency, there may be no visible signs, and a blood test or other physical assessment may be needed to identify the problem.



Lessons Learned: *Some stakeholders may have difficulty recognizing nutrition problems that exist in their own country or community, either because they are unaware or because they hold misconceptions about what malnutrition "looks like." By using locally relevant statistics, the facilitator can highlight the most common types of malnutrition in a stakeholder's zone of influence. Such research can be used throughout this session to ensure that participants understand and see the evidence for specific nutrition-related problems that their programs should be focusing on. Grounding nutrition concepts in facts helps drive action.*

For example, some stakeholders in the Kyrgyz Republic did not realize that malnutrition—particularly anemia—was a significant problem. When they looked at what children were eating (colorful, diverse foods, and meat), they doubted that there was a nutrition problem to solve.

Focusing on locally specific nutrition problems helps each stakeholder more clearly see the issues our activities strive to address.

Slide 7 **What Works to Reduce Undernutrition?**

- We have a solid understanding and clear evidence base of what is referred to as **nutrition-specific** interventions—those that address **immediate causes** of undernutrition

Slide 8 **What Works to Reduce Undernutrition?** *(animated slide)*

- The interventions that address the immediate causes of undernutrition—the nutrition-specific interventions—include:
- Infant and young child feeding and essential nutrition actions. (e.g., breastfeeding, complementary feeding.)
- Providing micronutrients that are most commonly deficient (e.g., iron/folate for pregnant women, vitamin A to young children where contextually appropriate.)
- Integrated management of childhood illness. This community-based approach to addressing less serious childhood illnesses empowers communities to understand and respond to sick children's needs.
- Community management of acute malnutrition. This community-based approach seeks to address severe acute malnutrition, or wasting, through the community rather sending the child to a hospital.
- Even if we can scale up these interventions to cover 90 percent of the at-risk population it would ONLY address 20 percent of chronic malnutrition (stunting). So, what more is needed?

Slide 9 **The UNICEF Framework: Reducing Malnutrition** *(animated slide)*

- This UNICEF (2015) framework was designed to describe the causes of malnutrition. Under this framework, two immediate causes of malnutrition are identified: inadequate nutrient intake and health status.

- As we just saw, there are a range of approaches to address the immediate causes of malnutrition—the nutrition-specific interventions.
- Approaches that address the underlying causes of malnutrition—problems related to food, health and care—are referred to as *nutrition-sensitive*.
- At the base of the framework, we see the basic causes of malnutrition, which include the policy and legal framework that nutrition interventions operate in, and the cultural and gender norms that influence behaviors.
- If we are to comprehensively address malnutrition, we need approaches that target both immediate and underlying causes. Nutrition-sensitive agriculture is one intervention in a range of responses needed to reduce malnutrition.
 - A review of countries that have successfully reduced stunting found that a combination of nutrition-specific and nutrition-sensitive improvements (such as safe water, women's education, and access to food) played important roles, combined with income growth and better governance (Smith and Haddad 2015).
 - We will discuss the underlying causes of malnutrition and nutrition-sensitive agriculture in greater detail in Session Four (Agriculture-to-Nutrition Pathways).



Facilitator Note: *Hand out "UNICEF Framework."*



Lessons Learned: *In a 2017 SPRING training workshop for community workers, we avoided using structured frameworks and models like these. But we found ourselves drawing this UNICEF nutrition framework freehand on the flipchart, because it was the clearest and most succinct way to talk about the causes of malnutrition.*



Lessons Learned: *As one discusses the UNICEF framework, it is important to acknowledge that some agriculture activities have been doing nutrition-sensitive agriculture (and addressing basic and underlying causes of malnutrition) for a long time, without using that terminology. The aim of this discussion is to make explicit linkages between agriculture activities and nutrition outcomes that focus on underlying and basic causes. Using a workshop activity to help participants understand the differences between direct, underlying, and basic causes of malnutrition might be helpful.*

Slide 10 Reaching Children at the Right Time *(Note that slide is animated)*

- This graph represents the average height-for-age from 54 countries (Victora et al. 2010).
 - The horizontal line represents the standard normal average for each age.
 - The blue line represents the average height-for-weight at each age from studies in 54 countries.
- Looking at the blue line, **what do you notice?**

- During gestation and the first two years of life, nutritional requirements are very high to support rapid growth and development of the infant.
- In many regions of the world, average height-for-age (z-scores) are already low at birth and then decline sharply during the first 24 months of life.
- After two years, these children show no further decline, nor any improvement.
- The most effective interventions to prevent stunting take place during the window of opportunity: the first 1,000 days of life (conception to 24 months of age). After that point, most of the effects of stunting are irreversible.
 - If we can prevent stunting before 24 months of age, then the child has a much greater chance of succeeding at school and at earning a living as an adult.



Facilitator Note: *Participants may notice a steep increase in stunting between months 0 and 1 on the graph. That is because these graphs are based on household survey data, so the earliest measurements are from when a child is already a few weeks to a month old. Some children are, in fact, stunted at birth (i.e., small for gestational age), but do not appear on this graph, due to the lack of birthweight measurements.*

Slide 11 **Good Nutrition for the Mother and the Infant Is Critical**

- Remember: throughout the first 1,000 days, the mother's nutrition is essential for the child's survival.
- Her health affects the child's during pregnancy and breastfeeding, and her ability to care for the infant depends on her good health. When a mother is malnourished, she is less able to support the nutrition of her infant.

Slide 12 **Recommended Exercise:** *The First 1,000 Days*

Designed to encourage reflection on correct feeding and care practices from conception to two years of age, this 20-minute, small group activity is built around illustrations of the stages of infant feeding and care. The activity is well-suited for community-level and national-level participants in a range of cultural contexts. (Sample illustrations are from India and Guinea. Feel free to replace them with images relevant to your local context).

For more detailed activity instructions, click the link above.



Lessons Learned: *Interactive facilitation methods (role play, competition) help participants think about nutrition-sensitive agriculture concepts more concretely. Additionally, specific activities can help draw out contextually specific information. For example, when we created daily activity charts for each member of the household in India, assumptions about how men and women spend their days helped reveal how local beliefs and practices affect family members' nutrition.*

Slide 13 **Recommended Exercise:** What Mothers and Children Need

Designed to focus on essential care practices for mother and child, this 20-minute activity uses illustrations to create a care map that details their needs, followed by an analysis of common practices in the community. This activity is well-suited for community-level and national-level participants. For more detailed activity instructions, click on the link above

Slide 14 **The Cycle of Malnutrition** (animated slide)

- In addition to the overall health of the infant and mother, we see another nutrition issue that is important. Malnutrition can be cyclical.
- It can start with an undernourished pregnant woman. What are the consequences of being undernourished at this stage?
 - The mother does not get the nutrition her body needs, so very often, we find that ...
- Her infant is also undernourished. What are the consequences here?
 - All too often, that undernourished infant grows up to become ...
- An undernourished child. And the consequences here?
 - This child grows up to become an undernourished adolescent. What are the consequences of being undernourished during adolescence? The adolescent may grow up to become ...
- An undernourished adult woman, who may continue to be undernourished through her own pregnancy.
- When an undernourished adolescent becomes pregnant, the cycle can be shortened even more:
 - The teenage mother and the growing baby compete for nutrients.
 - The teenager is at risk for a more difficult labor and higher rates of maternal mortality.
- We are here to work together to explore the many opportunities to break this cycle at each stage.



Facilitator Note: Hand out the “Breaking the Cycle of Malnutrition” summary.



Lessons Learned: Context-specific examples are especially important for explaining nutrition. Current research on malnutrition in the activity area is essential for appropriately illustrating nutrition-sensitive agriculture concepts. For example, during a SPRING training workshop in Guinea, participants mentioned cowpeas as a nutrient-rich, locally available food that many pregnant and lactating mothers already consume and find appealing. The facilitator incorporated this locally available nutritious food into the training sessions by talking about methods of incorporating more cowpeas into the regular diets of pregnant and lactating women.

Exercise: Breaking the Cycle of Malnutrition

About this Exercise

- **Goal:** Discuss strategies for breaking the cycle of malnutrition at each stage of life.
- **Duration:** 30 minutes
- **Materials:** Flipchart paper
- **Preparation:** On three pages of flipchart paper, write the headings (one heading per page): Infants and Young Children, Adolescence, and Adult Woman.

Exercise Instructions

- Divide the training group into three teams. Assign one stage of life to each group.
- Give the following instructions:
 - Consider the stage of life that you were given. What can be done at this age to ensure that the child/adolescent/adult woman is well nourished?
 - Take about 10 minutes to brainstorm key practices. Note these key practices on your sheet of flipchart paper.
- As teams brainstorm, the facilitator should circulate among the groups, encouraging them to consider practices related to diet, preventing illness, addressing illness, and other practices that could help or harm a woman's health.
- Give each group five minutes to share their responses. Ensure that the items in the answer key below are mentioned for each group.

Answer Key

Breaking the Cycle: Infants and Young Children

- Encourage early initiation of breastfeeding, within one hour of birth. This helps establish breastfeeding practices early on, and ensures that babies receive colostrum, the "first milk" which is full of nutrients and antibodies to give babies the best start in life.
- Practice exclusive breastfeeding until the child is 6 months of age. Exclusive breastfeeding means that no other foods or fluids are given to the baby, except for needed medicines.
- Encourage timely introduction of complementary foods at 6 months of age, with continuation of breastfeeding up to 2 years or beyond. (No other food is needed in the first 6 months.)
- Sick children require extra food and fluids to help them recover, and should be fed frequently during illness, and for 2 weeks after recovery.
- Children with severe acute malnutrition are at immediate risk of mortality and should be taken to a health facility for assessment and treatment. Most of these children can then be treated at home using special therapeutic foods.
- For the mother, using iodized salt in place of regular (non-iodized) salt helps ensure that the breastfeeding infant gets iodine, which is important for cognitive development.
- The mother should attend growth monitoring, promotion and immunization sessions.
- Pregnant women and children should use insecticide-treated nets in areas where malaria infection occurs.
- Regular clinic visits are important for prevention and timely detection and treatment of common illnesses, such as pneumonia, diarrhea, and malaria, and for deworming.
- Vitamin A supplementation is recommended in areas where vitamin A deficiency is a public health problem.

Exercise: Breaking the Cycle of Malnutrition

Breaking the Cycle: Adolescence

- Increase food intake: Teenage girls need to eat at every meal.
- Encourage parents to give girls and boys equal access to education. Malnutrition decreases when girls and women receive more education.
- Encourage families to delay marriage for young girls.
- Delay first pregnancy until the mother's own growth is completed (usually 20–24 years of age) will help to reduce complications for the infant and mother. This may relate to delaying the age of marriage.

Breaking the Cycle: Adulthood

- Visit a family planning center to discuss which family planning methods are available and most appropriate for the individual's situation. Using a family planning method is important to adequately space births for the health of the mother and children. It is recommended that women space pregnancies two years apart.
- Ensure eight health system antenatal contacts. Updated WHO guidelines increased the recommended number of contacts a pregnant woman should have during her pregnancy from four to eight because of evidence that additional visits/contact reduces the risk of stillbirth. Antenatal care is a critical opportunity for health providers to deliver care, support, and information to pregnant women (WHO 2016).
- Increase food intake during pregnancy and breastfeeding. During pregnancy, this means eating one extra meal or "snack" (food between meals) each day; during breastfeeding, it means eating two extra meals or "snacks" each day.
- A pregnant woman should take iron/folate supplementation (or other recommended supplements for pregnant women) as soon as she knows she is pregnant and continue for at least three months **after** delivery of the child, according to national recommendations.
- Deworm and giving antimalarial drugs to pregnant women at 4+ months of pregnancy.
- Prevent, educate, and test for sexually transmitted infections, including HIV.
- Let other members of the family help with the pregnant woman's workload.
- Rest more, especially during late pregnancy.

Slide 15 A Diverse, Healthy Diet is Needed at all Stages of Life

- Steps can be taken at each stage of life to break the cycle of malnutrition. Each stage is important for healthy development.
- This includes eating a diet from a diverse range of sources. Families should aim to provide children with foods from **four or more food groups** each day, and eat a range of healthy foods throughout the week.
 - Animal-source foods, such as chicken, fish, liver, eggs, milk, and milk products.
 - Staples: grains, such as maize, rice millet, and sorghum; roots and tubers, such as cassava and potatoes.
 - Legumes, such as beans, lentils, peas, and groundnuts; seeds, such as sesame.
 - Fruits and vegetables rich in vitamin A, such as mango, papaya, passion fruit, oranges, dark-green leaves, carrots, sweet potato, pumpkin; and other fruits and vegetables, such as banana, pineapple, watermelon, tomatoes, avocado, eggplant and cabbage.

- Oil and fats, such as oil seeds, margarine, ghee, and butter added to vegetables, and other foods will improve the absorption of some vitamins and provide extra energy. Infants need only a very small amount (no more than half a teaspoon per day).
- Can a malnourished mother still breastfeed her infant?
 - Yes – the mother’s body is still able to create breastmilk of good quality, even to the detriment of her own health. The benefits of breastfeeding still outweigh alternative feeding sources for the infant, though our goal is to have well-nourished mothers *and* infants.
- Practice appropriate hygiene, such as using latrines, keeping food and water containers clean, and washing hands before eating or preparing meals.
- Prevent and seek treatment for infections early.



Facilitator Note: *The image on the previous slide should reflect the context in which participants work, especially the food on the plate. Some images are available for use in the SPRING Image Bank (<https://iycf.spring-nutrition.org/>), which has some context-specific diverse diet and meal images.*

Slide 16 Other Family Members Help Break the Cycle

Discuss: How can husbands/partners help break the cycle of malnutrition? [Take several responses.]

- Provide extra food for their wives/partners during pregnancy and lactation.
- Help with household chores to reduce wives’/partners’ workload.
- Encourage their wives/partners deliver the baby at health facility.
- Arrange for safe transportation to a facility (if needed) for delivery.
- Encourage their wives/partners to breastfeed immediately after birth and to give breastfeeding precedence over other household and agriculture responsibilities
- Prioritize giving diverse foods, including small amounts of animal source foods, to children older than 6 months of age on a regular basis.
- Discuss options for family planning together with their wives/partners.
- Encourage equal access to education for girls and boys.
- Accompany their wives/partners to antenatal care; remind them to take iron/folate tablets.

Discuss: How can **female elders** (mothers, grandmothers, in-laws) participate in breaking the malnutrition cycle for women and children? **[Take several responses.]**

- Accompany the pregnant woman to antenatal care and remind her to take iron/folate tablets.
- Provide extra food for the pregnant woman/new mother during pregnancy and lactation.
- Help with the pregnant woman/new mother with household chores to reduce her workload.
- Encourage the pregnant woman to deliver at health facility.
- Encourage breastfeeding immediately after birth, and provide continued support to mothers to exclusively breastfeed for the first six months.

Slide 17 Suggested Exercise: Other Important Practices

Designed to promote reflection on non-feeding practices that impact nutrition, this 20-minute exercise uses illustrations to prompt local examples related to WAS), safe food handling, and use of health services.

For more detailed exercise instructions, click the link above.

Slide 18 Other Important Practices

- In our discussions about maternal and child health, and particularly maternal and child *nutrition*, we have focused mostly on practices that relate to food quantity and quality—eating the right foods, in the right amounts, at the right time.
- Other essential practices can also contribute to the nutritional status of mothers and children, including:
 - WASH
 - Food safety
 - Health and health services.

Slides 19-20 Key Points from this Session

- Five common forms of malnutrition include: wasting, stunting, underweight, overweight, and micronutrient deficiency.
- The most critical time in a child's development is from conception to 2 years of age—this is referred to as “the first 1,000 days.”
- Addressing the cycle of malnutrition can be challenging. A malnourished child may become a malnourished adolescent. That adolescent may become a malnourished woman who becomes pregnant and gives birth to a malnourished baby.
- Everyone in a family has a role to play in breaking the cycle of malnutrition.
- Even when food is scarce, it is critical to make sure that infants and mothers eat. Good nutrition early on will have a life-long impact.

Additional Exercises

Exercise 1: The First 1,000 Days

About this Exercise

- **Goal:** Explain correct feeding and care practices during the first 1,000 days.
- **Duration:** 20–30 minutes
- **Materials:** First 1,000 days cards + Answer key—one copy for the whole group; tape or other method for fixing illustrations to the wall
- **Preparation:** During this exercise, be aware that there are many food taboos, conceptions/misconceptions, beliefs, and practices that drive the behavior of pregnant women and their family members during the first 1,000 days.
 - Encourage participants to correct one another, discuss viewpoints, and provide justifications for their thinking. Try to let participants figure it out themselves, but be sure to pay attention and address any misconceptions directly.
 - If you have time to discuss beliefs in greater depth, additional activities are available in the Maternal, Infant, and Young Child Nutrition Facilitator Guide, Session Eight: Beliefs and Food Taboos during Pregnancy and Breastfeeding. The document can be found here: https://www.spring-nutrition.org/sites/default/files/publications/series/cvng_appendix_3_facilitator_guide.doc



Facilitator Note: You can find the images for this exercise online at <https://www.spring-nutrition.org/nutrition-sensitive-ag-training/session2>. These images are context-specific, and there are two versions: Guinea and India. You may need to change them to reflect the country, culture, and common practices of the area where they will be used.

This exercise complements the participants' understanding of the following core concept:

- [Reaching Children at the Right Time](#)

Exercise Instructions

- Divide the training group into six teams. Give each group one card with an illustration on it. Ask them to discuss the picture in their teams and decide:
 - What is happening in the scene? Why do you think it is important?
 - Where do you think your photo fits in the first 1,000 days—from conception until age 2?
- Together with the other teams, create the correct sequence on the wall, taping the pictures in the correct order. Once this is done, ask each group to explain:
 - What is happening on your card? Why do you think it is important? Why did you choose this location for the card?
- Explain that the first 1,000 days are very important: this is the period when the most critical brain and physical growth happens for an infant. Good health, nutrition, and care practices are very important during this period to make sure babies grow and reach their full physical and mental potential.
- The facilitator should add the remaining cards (words that describe each stage) over the correct images. If participants have made any errors in the order, be sure to explain and move the images

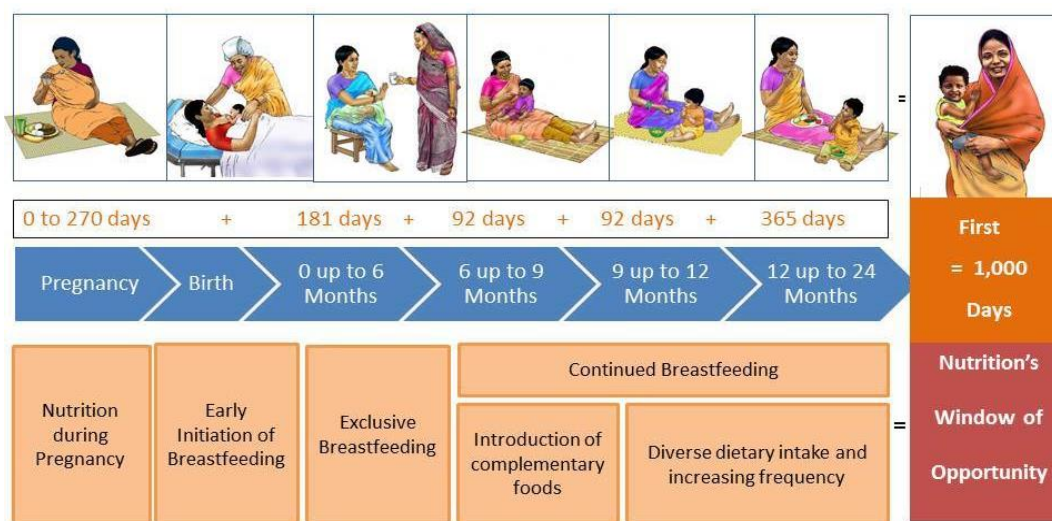
Exercise 1: The First 1,000 Days

into the correct order.

- These stages may not be well understood in the communities where we work. Correct feeding and care practices during the first 1,000 days are essential.

Answer Key

- Review the correct answers to the exercise below.
- Emphasize that understanding when to switch from one type of food to another is not intuitive or easy—especially when well-intentioned family members may offer the wrong advice.
- However, the actions a mother takes in this period are critical for her child. The first 1,000 days are nutrition's window of opportunity.



Lessons Learned: Across contexts, this exercise has prompted discussion on norms and practices at each stage of the first 1,000 days. Facilitators have found it extremely important to listen to groups' discussion during this exercise. Facilitators will play a key role in intervening to address misconceptions, discuss drivers of these misconceptions, and share the rationale behind key practices in each stage of the first 1,000 days. Listening to these conversations will also provide facilitators with an opportunity to learn more about the context of the training's participants.

Exercise 2: What Mothers and Children Need

About this Exercise

- **Goal:** Discuss essential care practices for a well-nourished mother and child.
- **Duration:** 20–30 minutes
- **Materials:** Illustrations of mother, baby, and care practices, two large blank pieces of flipchart paper, tape or other method for fixing illustrations to the wall
- **Preparation:**
 - Print copies of the illustrations and identify a clear space on the wall to stick the images and to tape a large flipchart-sized blank paper.
 - Tape an illustration of a healthy, well-nourished mother on a large piece of paper in the center of the page, leaving room to add pictures below and around the picture.
 - Tape the illustration of the baby on another large sheet of blank paper in the same manner.
 - Be prepared to encourage participants to correct one another, discuss viewpoints, and provide justifications for their thinking. Try to let participants figure it out themselves, but be sure to pay attention and address any misconceptions directly.



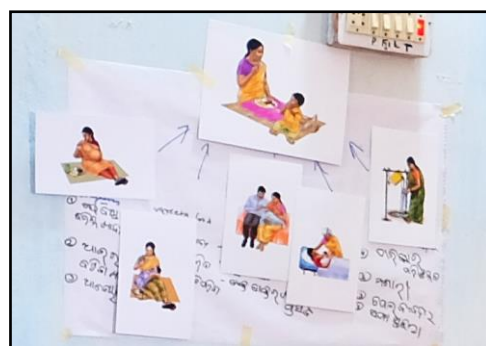
Facilitator Note: You can find the images for this exercise online at <https://www.spring-nutrition.org/nutrition-sensitive-ag-training/session2>. These images are context-specific, and there are two versions: Guinea and India. You may need to change the images to reflect the country, culture, and common practices of the area where they will be used.

This exercise complements the participants' understanding of the following core concepts:

- [Good Nutrition for the Mother and Infant is Critical](#)

Exercise Instructions

- Explain that we will start by talking about the mother. Ask participants:
 - What kinds of care and support are needed to have a healthy mother who will give birth to, and breastfeed, a healthy baby?
- Participants should mention things such as:
 - Good diet, including additional food and a range of diverse food groups
 - Supportive health services and counseling
 - Supportive family
 - Time to rest and to care for the new baby
 - Clean water, hygiene, and sanitation
 - Micronutrient supplementation.
- As participants mention an item, show the corresponding illustration and tape it to the wall around the healthy mother. When all the pictures are taped to the page, draw arrows from the pictures to the healthy, well-nourished women (see the example photo as well as images below).
- Ask participants:



Mother care map from training in India

Exercise 2: What Mothers and Children Need

- How does this “care map” compare to what is happening in your communities?

Discussion

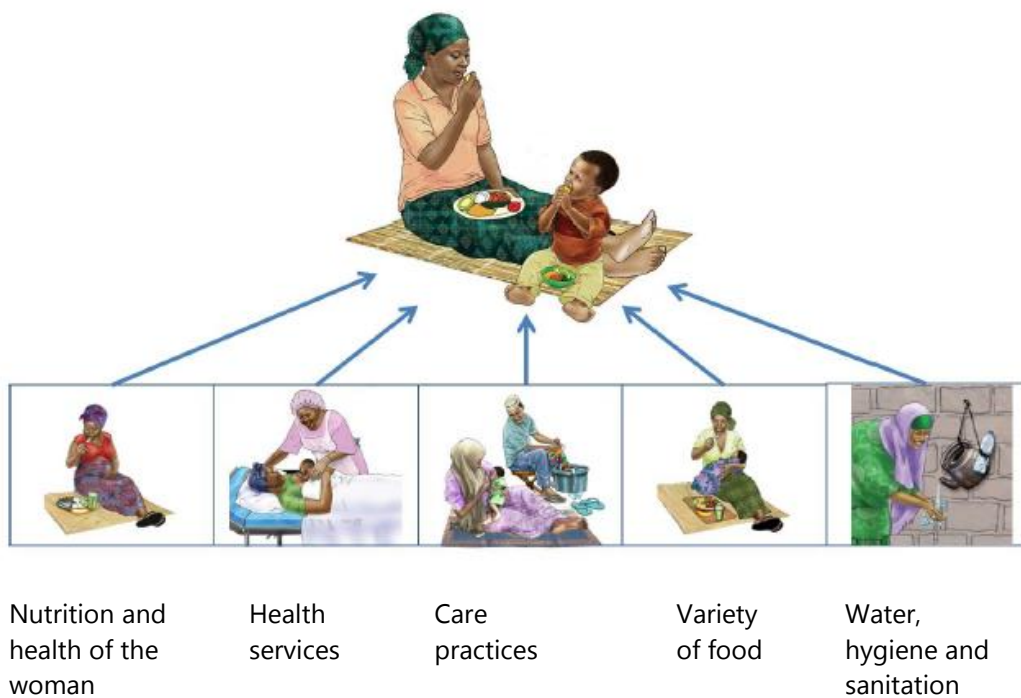
- As a group, discuss and summarize the nutrition and care needs of mothers and children and their importance.
- Additionally, mothers need adequate rest to protect their health. When a mother has enough time to care for herself and her baby, both are healthier. Family members can play a role in supporting a mother’s physical and emotional needs, helping with household tasks, gardening, and working in the fields. This support helps ensure that a pregnant or nursing woman gets the rest and nutrients she needs to be healthy.
- Explain that having a healthy mother is important, and she will want to do the right things to ensure that her baby is also healthy.
- Explain that now we will talk about the baby. Ask participants:
 - What kinds of care and support are needed to ensure that the child is healthy?
- Participants should mention things such as:
 - Healthy, well-nourished pregnant woman
 - Healthy well-nourished mother breastfeeding
 - Supportive family
 - Variety of foods
 - Care practices and health services
 - Clean water/hygiene/sanitation.
- As participants mention an item, show the corresponding illustration and tape it to the wall around the healthy baby. If participants miss something important, probe for the answer.
- When all the pictures are taped to the page, draw arrows from the pictures to the healthy, well-nourished baby (see the example photo as well as images below).
- Ask participants:
 - How does this “care map” compare to what is happening in your communities?
- Discuss as a group and summarize.
- In addition to nutrition, healthy babies need regular care and attention from the mother and other members of the family. Care is not just about what the infant eats; it is also about the amount of time she is held and played with and how well her needs are met.



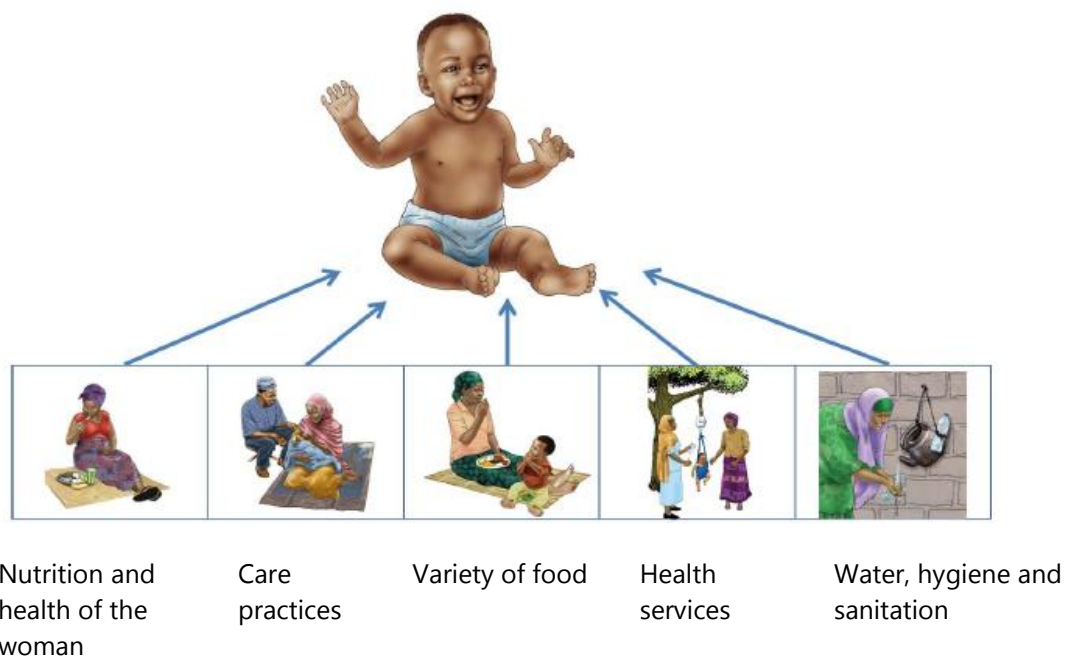
Child care map from training in Guinea

Finished Care Maps (Examples)

The Mother



The Baby





Lessons Learned: Similar to the first 1,000 days exercise, these activities are important to elicit discussions of norms surrounding each of the key practices that support maternal and infant health. The facilitator should listen closely to participants' discussion throughout this exercise and ensure that any misconceptions about maternal or child health are discussed.

Exercise 3: Other Important Practices

About this Exercise

- **Goal:** Discuss specific practices that contribute to safe food handling and hygiene.
- **Duration:** 20–30 minutes
- **Materials:** Illustrations of other important practices; tape or other method for fixing illustrations to the wall
- **Preparation:** Choose illustrations that you would like for the exercise. Print one copy of each illustration. Divide the group into four teams, giving each team one illustration.
 - Encourage participants to correct one another, discuss viewpoints, and provide justifications for their thinking. Try to let participants figure it out themselves, but be sure to pay attention and address any misconceptions directly.



Facilitator Note: The images you need for the following exercise can be found online at <https://www.spring-nutrition.org/nutrition-sensitive-ag-training/session2>. These images are from various contexts. You may need to change the images that you use in your training to reflect the country, culture, and common practices of the area where they will be used. Images from other contexts that are relevant to this activity can be found online: <https://iycf.spring-nutrition.org/>.

This activity complements the participants' understanding of the following core concepts:

- [Other Important Practices](#)

Exercise Instructions

- Instruct the groups to review the illustration they have received. Ask:
 - What are the recommended practices illustrated in each photo?
 - What instructions would you give a family to ensure that each practice is done well?
- When every group has finished discussing their illustration, they can place it on the wall. Call on each group to present its practice in turn, ensuring that all key points (below) are mentioned.

Exercise 3: Other Important Practices

Answer Key

WASH

Good hygiene (cleanliness) is important to avoid diarrhea and other illnesses.

- Wash your hands with soap and clean running water before preparing foods and feeding your baby.
- Wash your hands and your baby's hands before eating.
- Wash your hands with soap and clean water after using the toilet and after washing or cleaning your baby's bottom.
- Feed your baby using clean hands, clean utensils, and clean cups.
- How to wash your hands:
 - Wet your hands with clean running water and apply soap.
 - Rub your hands together to make a lather and scrub them well.
 - Scrub the backs of your hands, between your fingers and under your nails.
 - Continue rubbing your hands for at least 20 seconds.
 - Rinse your hands well under running water.
 - Dry your hands using a clean towel, or air-dry them.
- Use safe water and ensure good compound hygiene. Drinking water needs to be boiled or treated so it is clean and safe and does not cause diarrhea. To ensure that water is safe to drink, do one of the following:
 - Boil it and let it continue boiling for 1 minute after large bubbles appear, and then keep it covered as it cools down.
 - Use water purification tablets or other water purifying additive as directed.
- Store water in clean, covered containers.
- Wash hands before collecting water from containers.
- Wash hands with soap before preparing the food and before touching the food.

Safe Food Handling

Contaminated food and water cause many diseases, such as diarrhea, typhoid, cholera, and hepatitis. Foods can become contaminated by contact with dirty hands, flies and other insects, mice and other animals, and dirty utensils. Young children and sick people are most vulnerable to food-related illness.

- Store utensils and food correctly:
 - Wash utensils with soap and keep them in the kitchen's utensil cabinet.
 - Keep the cooked food in the safety net/cabinet to protect it from flies, dust, and other germs.
 - Keep dry foods such as rice and legumes in a dry cool place where they are protected from insects, rats, mice, and other pests.
- Prepare food safely:
 - Keep food preparation surfaces clean.
 - Cover any wounds on the hands before preparing food.
 - Do not spit near food and water.

Exercise 3: Other Important Practices

- Wash vegetables and fruits well before cooking or eating; if clean water is not available, peel when possible.
 - Prevent raw meat, offal, poultry, and fish from touching other foods. Wash surfaces touched by these foods with hot water and soap.
 - Give only freshly cooked food to children.
 - Cook fish and meat well to kill any germs or parasites. For infants and small children, cook the food until it is soft and mash it or chop it into very small pieces.
 - Do not eat raw or cracked eggs, because they may contain harmful germs that can cause illness.
 - Always reheat leftover food before eating.
- Choose the freshest foods for consumption. Do not eat moldy or rotten foods.
- Use proper approaches for feeding infants and children.
 - The use of bottles, teats, or spouted cups for babies and young children is not recommended since they can be easily contaminated and are difficult to clean.
 - Use a clean spoon or cup to give foods or liquids to your baby.
- It is crucial to keep the home and the compound clean and free of feces and rubbish.
 - A child's feces can spread illness, just like an adult's. Before a child is old enough to use a latrine, you need to throw the child's feces into the latrine or bury it.
 - Keep animals in a separate place, away from the family living area. Animals should not sleep in the same house with the family.
 - Latrines should not be constructed close to the family living area. The latrine should be kept clean and the pit must be kept covered.

Health Care

- If the mother or child shows sign of illness, s/he should go to the clinic right away. Infant maladies can worsen quickly, and getting immediate advice from a clinician can ensure that problems are treated.
- Promote savings to make sure that the family has money for planned and emergency visits to the clinic.

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- WHO. 2016. *WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience*. Geneva: World Health Organization.

Additional Resources

For more information about the role of nutrition in growth and development:

- United Nations Children's Fund (UNICEF). 2015. *Nutrition: The case for support*. <https://www.unicef.org/publicpartnerships/files/NutritionTheCaseForSupport.pdf>.
- IACS Global Nutrition Cluster. 2011. *Harmonized Training Package, version 2*. <http://www.ennonline.net/ourwork/capacitydevelopment/htpversion2>

- Global Health E-Learning Center. *Nutrition: An Introduction*.
<https://www.globalhealthlearning.org/course/nutrition-introduction>
- International Food Policy Research Institute (IFPRI). 2016. *Global Nutrition Report 2016: From Promise to Impact: Ending Malnutrition by 2030*. Washington, D.C.: IFPRI
<http://www.globalnutritionreport.org/the-report-2016//>

For further training resources on maternal, infant, and young child nutrition trainings:

- IYCF Image Bank: <https://iycf.spring-nutrition.org/>
- Community-based IYCF: https://www.unicef.org/nutrition/index_58362.html

Essential Concepts in Agriculture and Food Systems

Session Guide Three of the Nutrition-Sensitive Agriculture Training Resource Package

Preparing to Present This Session

Purpose

This is Session Three of seven in the *Nutrition-Sensitive Agriculture Training Resource Package*.

This session introduces the learner to essential concepts in agriculture and food systems. These concepts create a foundation for understanding the intersection between agriculture and nutrition, which is fully explained in Session Four: Agriculture-to-Nutrition Pathways.

Designed for nutritionists with little exposure to agricultural development concepts, this session describes the increasing need for food because of population growth, the goals of agriculture programs, and approaches to agriculture that address challenges such as degrading natural resources and climate change.

Objectives

By the end of this session, participants should be able to—

1. explain the importance of agriculture in food production, income generation and women's lives
2. articulate the overarching goals of most agriculture programs
3. explain the relationship between agricultural value chains and food systems
4. identify challenges and opportunities for agriculture programs today.

Estimated Duration

About 2 hours (may take less time if participants already have some background in agriculture)

Materials

All documents needed to deliver the session can be found at <https://www.spring-nutrition.org/nutrition-sensitive-ag-training/session3>.

- PowerPoint presentation: **3. Essential Concepts in Agriculture and Food Systems**
- Index cards with headings written on them (see exercise below)
- Blank index cards (30–50 cards in total)
- Large sticky notes

Core Content

Slide 1 (cover) Essential Agriculture Concepts for Nutrition-Sensitive Activities

- Good nutrition is the foundation on which a country's future is built—children who experience periodic or chronic malnutrition before their second birthday struggle to catch up with their peers developmentally.
- In the previous sessions (*Why Nutrition-Sensitive Agriculture Matters* and *Essential Nutrition Concepts*), we reviewed relevant available evidence and outlined a set of interventions that can work to address nutrition. As a reminder:
 - Estimates show that even if we scale up nutrition-specific interventions to cover 90 percent of the at-risk population, it would only address about 20 percent of chronic malnutrition (Black et al. 2013).
 - Nutrition-sensitive interventions, which address the deeper causes of malnutrition, are important for addressing the remaining 80 percent of chronic malnutrition.
- Before we can understand how to design and leverage nutrition-sensitive agriculture interventions to address deeper causes of malnutrition, we need to have a strong understanding of agriculture and food systems.
- A thriving agriculture industry is essential for improving nutrition, promoting economic growth, and eradicating poverty. Understanding how agriculture functions within a market economy, including the people involved and affected, is essential for our work in nutrition-sensitive agriculture.

Slide 2 Agriculture Elements of the Pathways *(animated slide)*

- In Session One (Strengthening Agriculture-Nutrition Linkages: Why It Matters), we discussed key evidence about the importance of nutrition and outlined how nutrition-sensitive agriculture addresses the basic causes of malnutrition.
- We highlighted the three main linkages between agriculture and nutrition—food produced, income generated, and the use of women's time and energy.
- In later sessions, we will discuss these three pathways in greater detail and focus on specific agriculture-nutrition linkages.
- This session will focus specifically on the agriculture elements of these pathways. We will explore how agriculture programs work and the challenges inherent to producing food today.

Slide 3 Objectives

- This session gives participants an understanding of basic agriculture and food systems concepts. By the end of this session, participants will be able to—
 - explain the importance of agriculture in food production, income generation, and women's lives
 - articulate the overarching goals of most agriculture programs
 - explain the relationship between agricultural value chains and food systems
 - identify challenges and opportunities for agriculture programs today.



Lessons Learned: *It is important to take time and create a strong foundation on both nutrition and agriculture before discussing nutrition-sensitive agriculture. This step helps ensure that all participants have enough information to discuss the pathways linking agriculture and nutrition. Bringing together agriculture and nutrition experts can result in tension, some of which may stem from the lack of a shared vocabulary and common understanding of how agriculture and*

nutrition are linked. Ensuring a strong foundation in both sectors helps to create that shared vocabulary and develop the mutual understanding needed to work together effectively. To learn more about this, see the “Convergence and Tension in Nutrition-sensitive Agricultural Market Development Activities: Discussion Paper” in the Additional Resources section.



Facilitator Note: A source is included for all statistics included in this session. These sources provide information specific to other regions and countries. Since local statistics usually have more impact than global statistics, it is recommended that you review the sources referenced and replace or add data relevant to your context throughout this session.

Slide 4 Understanding Agriculture *(animated slide)*

- Discuss: When we talk about agriculture, what activities come to mind? [Take several responses, and note them on a flipchart]
 - **[Explain]** Growing food, gardening, cultivating crops, working the land, raising livestock, and harvesting are all terms that quickly come to mind. Agriculture includes these components and more.
 - **[click]** Agriculture is the science and practice of farming— cultivating the soil for growing crops and raising animals to provide food, wool, and other products.
 - When we talk about agriculture, we are also talking about things like: processing, packaging, buying, and selling.
- **[click]** Agriculture impacts the world’s population in critical ways: through food production, as a source of livelihoods and income and, for a large percentage of the world’s population, it is how individuals (especially women) spend most of their time and energy. As the global community looks to feed a growing population, increasing attention has been placed on the role of agriculture (United Nations Department of Economic and Social Affairs 2017).



Facilitator Note: There are many terms that are important to understanding agriculture, food security, and food systems. We have included only the most basic terms in this presentation, with a focus on creating a foundation in agriculture for those stakeholders who may have limited exposure to these concepts. See the ‘Additional Resources’ section for further information.

Slide 5 Enough Food is Produced to Feed Everyone

- Today, enough food is produced to feed the world’s population—yet, hunger continues to be one of the most urgent development challenges because there are many people who cannot access or afford adequate amounts of food throughout the year.
- Food waste is also particularly high in developed countries where the poor cannot afford sufficient nutritionally-adequate food.
- Roughly one third of food is lost in the food supply chain around the world.
 - Food losses in low-income countries occur primarily at storage, transport, and processing levels. In higher-income countries, food losses occur at the retail and consumer level (CCAFS 2018).
- Recovering just half of what is lost or wasted could feed the world.

Slide 6 Agriculture and Food Production *(animated slide – to see all text, view in presentation mode)*

- **[click]** Today, there are an estimated 815 million hungry people in the world (FAO 2017).
 - Poor people spend between 50 and 80 percent of their income on food, including smallholder farmers who grow or produce a portion of the food they eat.
 - **Food security** means having, at all times, both physical and economic access to enough food to meet dietary needs for a productive and healthy life. According to the [USAID Feed the Future website](#), a family is food secure when its members do not live in hunger or fear of hunger.
- Looking to the future, population growth suggests that food security is likely to worsen. If we do not think carefully about how we produce and consume food, we could face a global food crisis by 2050.
- **In general, population growth is highest where income levels are low.** This is especially true in cities where land is scarce, and since 2008, there have been more people living in cities than in rural areas.
 - There are about half a billion small farms in the world, and they support around 2 billion people.
 - **[click]** However, with projected population growth by 2050, food production in developing countries will need to **nearly double** to continue supporting the population.

Slide 7 Agriculture as a Source of Income

- As of 2012, 1 in 3 workers globally is engaged in the agriculture sector. In sub-Saharan Africa, 60 percent of the entire workforce is involved in agriculture (FAO 2013).
- A large share of the working poor is involved in agriculture; thus, developments in this sector have a major impact on welfare throughout much of the world.
 - Most workers in these regions do not enter formal wage employment, but instead are engaged in self-employment or unpaid family work, such as agriculture and especially subsistence farming.
 - The agriculture industry profoundly affects the people who are involved in it.
- Growth in gross domestic product (GDP) generated by agriculture is up to four times more effective in reducing poverty than growth generated by other sectors. Therefore, continued investments in agriculture make sense for governments and the private sector (FAO 2016).

Slide 8 Farming Is Not Easy

- Farmers rely on the food they produce to feed their families and to sell at the market for income. These are essential needs that must be met, but **farming is complex and the outcomes can be unpredictable.**
- Making decisions about what to farm, how to grow, when to harvest, and how to sell food produced are all part of the challenge that comes with farming. Most farmers learn how to cultivate crops and raise animals from other family members.
- However, shifts in weather and a changing natural resource base present new and ongoing challenges—in addition to unpredictable weather and changing markets.
- For farmers who rely on crops for food and income, there are many factors to consider.

Slide 9 Agriculture in Women's Lives (time and energy)

- An additional challenge to successful farming is meeting the labor demand required. As families struggle to decide who will perform this labor, they need to consider the specific needs of women.
- At the global level, women are more active in the agriculture sector than men—overall, 38 percent of people working in agriculture are women, compared with 33 percent of men (FAO 2013).

- In India, for example, agriculture is the source of employment for at least 60 percent of all employed women (compared with 45 percent for men). The same is true in Bhutan, where the percentages are close to 80 percent for women and less than 50 percent for men (FAO 2015).
- To clarify these numbers, the agricultural labor force includes people who are working or looking for work in formal or informal jobs and in paid or unpaid employment in agriculture. That includes self-employed women as well as women working on family farms. It does not include domestic chores, such as fetching water and firewood, preparing food, and caring for children and other family members (FAO 2011).
- Agriculture impacts women's lives in important ways.
 - Agriculture is hard work. For both men and women, the physical demands of agriculture are significant—from tilling fields to weeding to harvesting. The body burns a significant number of calories while performing this hard labor.
 - Since much of agricultural labor needs to be performed at the right time, women who are mothers face difficult choices. It is not unusual to see women who are pregnant or carrying a small infant plowing fields or harvesting crops. These responsibilities multiply the physical demands on the body, and require that women consume food in greater quantity and of better quality to ensure that their infants are born healthy.
 - Too often, older children are either taken to the fields or left with other caregivers, limiting the time women have to care for their children. When they are old enough, children may also be expected to work on the family farm, limiting their opportunities for education.
 - Additionally, women are more likely than men to perform unpaid labor (as part of a family plot or subsistence farming), but they tend to have little control over how money earned from agriculture is spent.
- Women's disproportionate involvement in agricultural labor often has a negative impact on the health and well-being of the entire family.



Discuss: What are examples of agricultural tasks that you have seen women perform where you work? How do these tasks affect the women's health? Does it affect their children? **[Take several responses.]**



Lessons Learned: *When discussing gender equality and female empowerment, we sometimes face resistance, especially around sensitive cultural issues like women handling money. It is important to understand that many of these beliefs are deeply embedded in the cultural fabric. We should encourage change, but it will not happen quickly.*

Slide 10 Agriculture Programs Have Two Overarching Goals

Discuss: How many of you have worked on an agriculture activity? What were the main objectives? **[Take several responses.]**

- There are typically two major interdependent and overarching components in an agricultural livelihoods system: 1) increased production (or yields) and productivity and 2) increased income. Generally, you will see one or two objectives in an activity proposal focused on:

- Increased production and productivity (for example, through *improved land management and production practices*)
- Increasing income (for example, as a result of livelihoods and value chain investments).

Slide 11 **Agriculture Programs Work on Multiple Levels**

- Agriculture programs are designed to work on multiple levels, both *on the farm* and among *the systems* that affect the supply of food and demand for specific products.
- Agricultural activities support everything from home gardens to agricultural estates, including production for the farmer's own family and production for purchase by consumers, through local, national, and international markets.
- When agriculture programs look for opportunities to make improvements and add value, we are looking at the whole system surrounding food: production, processing, marketing, distribution, utilization, and trade—in other words, the whole system that encompasses growing food, buying food, and consuming food.
- We also look at the people involved at many stages in that food system: farmers, consumers, buyers, traders, processors, suppliers, government agents, researchers, bankers.



Facilitator Note: *The following activity is designed to set the stage for a broad discussion of food systems, production systems, and value chains. Note that we avoid introducing those specific terms until after the activity. This allows participants to explore and explain agricultural activities that they already know about, without being overwhelmed by new terminology, concepts, and frameworks. The lists that participants generate during this activity are likely to be a mix of concepts, which will be clarified later in the session.*

Exercise: Mapping a Food System

About this Exercise

- **Goal:** To better understand the network of agricultural activities and actors
- **Duration:** 30–45 minutes
- **Materials:** Index cards with headings written, blank index cards (10–15 per group), large sticky notes
- **Preparation:** Choose 2–4 agricultural products for participants to discuss during this activity—the examples given here are **onions, fish, eggs, and rice**. You may use these, or choose any agricultural products that are produced locally and represent a range of production, processing, storage, trade, and marketing opportunities.
 - Prepare the following four index cards with heading labels, one set for each group: Activities, Actors, External Factors, Product (e.g., onions).
 - Divide the group into 2–4 teams.
 - Give each group 10–15 index cards and a pad of sticky notes.
 - Assign each group a location in the room, where they have an adequate amount of space on the wall to post their work.

Exercise Instructions

- Explain that we will be creating a map of agricultural activities on the wall. We will begin by exploring the range of activities that are involved at multiple levels—*on the farm* and including the *systems that affect supply and demand*. To focus our thinking, each group will work through an example using a single agricultural product. Assign each group one locally produced product; for example: **onions, fish, eggs, or rice**.
 - If I buy an **onion** at the supermarket (a large store in the capital city), what are the activities that have taken place to get this product here, in my hand?
 - Imagine all the activities that take place from the moment a farmer decided to grow or raise this **onion** to the moment when I (the consumer) decided to buy it.
 - As you identify activities, write each one on a separate index card and attach it to the wall in a column.
- Give participants about 10 minutes to generate their list.
- As teams work, the facilitator should circulate the room and ensure that the lists generated have enough depth. As needed, ask questions like: “What happens before the farmer plants the seed?” (e.g., buying seed, producing seed); and “As a consumer, what attracts me to a store to buy this onion?” (e.g., advertising, marketing); and “Are there both local and international markets for this onion? How does it get from one place to another?” (e.g., transport, trade).
 - Now, as we look over this set of activities, think about the people involved in food production. Who is involved in each activity?
 - For example, one of our activities is transporting the onions—the people involved in that activity include the owners of the transportation company and the drivers of transportation vehicles.
 - As you identify groups of people involved in each activity, write them on a sticky note and post them to the right of the relevant activity.
 - Write the name of each group on a separate sticky note.
- Give the teams about 10 minutes to generate a list of actors involved in food-related activities.
- As teams work, the facilitator should circulate and ensure the lists of actors cover a broad range of people, including consumers, buyers, traders, processors, farmers, government, researchers, suppliers, and

Exercise: Mapping a Food System

bankers. If needed, ask participants: “who else is involved in the activities and actors that are already listed?” This can help groups consider both primary and secondary actors.

- Now, looking over your list of activities and actors—what external factors could affect whether this onion successfully makes it into the store where I bought it?
- Write each factor on a separate sticky note and post it to the left of your activities.
- For example, if external factors like weather, prices or environmental regulations are not favorable for onions, production is low and there may be a shortage of onions in the store. Write “unfavorable weather” on the sticky note and place it to the left of the activity.
- Give the teams about 10 minutes to generate a list of external factors.
- As teams work, the facilitator should circulate and ensure the lists of actors cover a range of external factors, especially those in the enabling environment and supportive services, including water supply, quality of seeds, laws and regulations that support or hinder business, training for farmers, grants or loans to buy equipment, and equipment repair services.
- When participants have finished, invite them to walk around the room and look at the maps that other groups have created.

Discuss

- Ask participants to return to the large group for a plenary discussion. The facilitator should choose one team’s work for discussion. (Choose the one that has the most depth.)
- Choose 2–3 activities that participants have outlined and talk briefly about the related actors and other factors. Avoid reading every item on the wall, as a few examples are enough to ensure everyone is on the same page.
- Explain that this exercise gets us thinking about the range and depth of agricultural activities, the people involved and affected by those activities, and other factors that affect the success of that agricultural product.
- Ask the following discussion questions and take 2–3 responses for each.
- Looking at your list of actors:
 - How could an agriculture activity increase income for one of these actors?
 - How could an agriculture activity increase productivity for one of these actors?
- Looking at your list of external factors:
 - How could an agriculture activity address one of these factors to increase income?
 - How could an agriculture activity address one of these factors to increase production or productivity?
 - How could an agriculture activity save time and labor for both women and men?
- As our discussion continues, we will examine how an agriculture activity looks at this range of activities from a few different angles, with the goal of increasing production, productivity, and income.

Slide 13 Food System

- At the beginning of this session, we discussed the linkage between agriculture and food security. We need to also look at the food that the consumer is buying and eating—and how to influence healthier practices.
- A food system is the path that food takes from the field to consumers (The Lancet 2017). This process includes a set of activities ranging from production to consumption. This illustration is the Food and Agriculture Organization of the United Nations model for a food system.
 - In the center, we have the consumer’s diet and nutrition. What the consumer eats is dependent on what foods are available, which are affordable, and which can be prepared in a convenient way.
 - This, in turn, depends on the food system that surrounds them:

- **[click] Consumer demand, food preparation, and preferences:** consumer demand shapes decisions on what foods to produce, process, and trade. The main drivers of demand at the household level are purchasing power and preferences.
- **[click] Food production:** which foods are produced, including fisheries and forestry. This also includes managing the natural resource base (land, water, soil, plants, seeds, animal breeds) and supporting infrastructures (water supply).
- **[click] Food handling, storage, and processing:** focused on preserving food, extending shelf life and limiting food losses—to help stabilize food supply and prices. These may take place at the household, community, or commercial level.
- **[click] Food trade and marketing:** bringing food to consumers from locations where it is produced—regionally, nationally, or internationally.
- Agriculture programs may work to impact any part of this food system: at the farm level, along a specific value chain, or at the consumer level.

Slide 14 Actors in the Food System

- In our activity, we mapped out the people involved the range of agricultural activities—this set of actors can be looked at as groups of beneficiaries, partners who support implementation of an activity, and influencers who encourage a desired change.
- These actors determine what foods are grown. They also influence the ways in which foods are processed, stored, distributed, sold, prepared, and consumed.
 - For example, consumers influence which foods are grown—it is in the farmer’s interest to grow products that will sell.
 - Government officials also influence what is grown, since specific agricultural policies might create incentives or disincentives for certain products.
- Service providers (e.g., bankers who provide financing and loans; researchers studying water, soil, and agricultural practices; mechanics who service farm equipment) are an essential group of actors. They are important to the effectiveness and efficiency of agricultural activities and a well-functioning food system.

Slide 15 Value Chains—Product Specific

- Agriculture programs also look at activities through the lens of a single product or commodity—such as wheat, milk, or chicken. **A value chain** is a general term (not specific to agriculture) that refers to a type of supply chain where activities are performed to deliver a product or service to the market efficiently and competitively, adding value for the actors engaged at each step of the chain.
- An agriculture program may include **value chain activities** that invest anywhere along the chain, from input supply to promotion, preparation, and consumption.
- Value chain actors represent important target groups in value chain-based activities. These include: input suppliers, producers (large, small; wealthy, poor; male, female), service providers, transporters, wholesalers, retailers, caterers, and consumers.



Lessons Learned: *Developing value chains. To increase the availability, affordability, and desirability of nutritious foods, interventions can focus on strengthening key relationships among actors in the value chain. Finding the links that can be strengthened to produce the desired changes may require formative research to understand what consumers want and will accept, alongside observing the markets and actors to understand what is necessary to create change.*

We have seen, in a range of contexts, the important role that markets play in increasing affordability and availability of nutritious foods. Market systems need to be well-understood and appreciated for effective nutrition-sensitive agriculture activities to work.

Slide 16 How can we do it?

- Agriculture programs may focus on any part of the food system: the farm level, a specific value chain, or at the point of sale; agriculture programs may aim to increase production and/or incomes.
- The critical question, however, is how do we increase production and income while anticipating and avoiding negative impacts on other actors and the environment?
- In other words, how can agricultural programs help farmers survive today, without making environmental problems worse, thus compromising food production in the future?
- We will first examine a few of the most urgent environmental challenges that agriculture programs need to consider. Then we will discuss approaches that work.

Slide 17 Challenge 1: Limited Natural Resources—Land

- First, we recognize that land is necessary for sustainable agricultural development, essential ecosystem functions, and food security. However, the natural resource base needed to support a growing population is shrinking.
- Currently, about 12 percent of the world's land area is used for agriculture (shaded blue in the graph). At first glance, we might be tempted to increase production and income by helping to expand farms onto additional land—after all, 12 percent may not sound like much.
- However, about 30 percent of the remaining land available is forest (shaded in yellow, in the graph). Forests make vital contributions to biodiversity and act as a source of food, medicine, and fuel for more than a billion people.
 - The impact of deforestation and land use intensification, especially on soil degradation, has been significant (FAO 2015).
 - Already, agriculture is responsible for 75 percent of global land deforestation (CCAFS 2018). Therefore, agriculture should not look to land already covered by forests for further expansion.
- A large part of the land that remains (shaded in red) is covered by cities or is non-arable land, such as desert, swamp, or rocky mountain. While this includes some land with the potential to be used for agriculture, that land is concentrated in certain regions.
 - Almost 90 percent of land *available to support the needed expansion* is in Latin America and sub-Saharan Africa, with almost none in Southern Asia, Western Asia, and Northern Africa.
- The bottom line: In most regions of the world, production cannot be increased by expanding agricultural land use.

Slide 18 Challenge 1: Limited Natural Resources—Water

- We know that water is a limited resource—and yet, global demand for it has risen sharply over the last century.
- Take a guess: What percentage of the world's water supply is used for agricultural purposes?
 - **[click]** Approximately 70 percent of total freshwater withdrawal in the world is used in agriculture, mostly through irrigation (red line).

- Regionally, the percentage of water used for agriculture (yellow area on the chart) is highest in Africa and South Asia. Irrigation has been crucial for gains in food production, since it reduces drought risk and encourages crop diversification, thus enhancing rural incomes.
- A large percentage of the world's water supply is already being used for agriculture—particularly in the global south, where food insecurity tends to be heaviest.
- In the future, water is likely to become scarcer and more needed.
 - While irrigated agriculture represents only about 20 percent of cultivated land, it contributes to 40 percent of global food production. As the demand for food expands, water use will need to increase as well.
 - Additionally, agriculture tends to have a negative impact on water quality, due to pesticide and fertilizer use. This puts the sustainable supply of water for both agriculture and human consumption at risk.
 - The effects of climate change will also affect how much water is available for use.
 - Water availability is expected to worsen by 2050, with global water consumption increasing by 19 percent. This would leave about 52 percent of the world's population living in areas where freshwater supply is under pressure
- The bottom line: Agriculture consumes large amounts of water that is also needed for peoples' everyday use and across industries. In places where irrigation is essential, this high demand for water threatens to dry up whole ecosystems.

Slide 19 Challenge 1: Limited Natural Resources—Climate Change

- Agriculture is a major contributor to climate change—responsible for 75 percent of deforestation and 20 percent of greenhouse gas emissions.
- The effects of this climate change, in turn, are making agriculture more difficult and many cropping systems will no longer be viable.
 - For example, by 2050 in Africa—the continent with the fastest population growth rate—maize cultivation will no longer be viable across up to 3 percent of the continent. These areas currently support 35 million people. By as early as 2030, there could be challenges in meeting demand for this staple crop (Jones and Thornton 2009). This will lead many farmers to transition to livestock-only farming systems, which are less efficient and feed fewer people (CCAFS 2018).
- The bottom line: Agriculture is a major contributor to climate change—and severely affected by it. With current pressures on land and water use, we need new practices that address our future needs.



Lessons Learned: *Tying the training concepts to local examples throughout each session adds depth and immediacy to stakeholders' understanding. In Guinea, for example, we used examples from the cowpea value chain to illustrate how nutrition can be improved through a local product. Using a local example is more encouraging because it shows that the changes required will be feasible in the stakeholders' country and context.*

Slide 20 Challenge 2: Shifts in What is Grown and Eaten—Cereals

- Globally, there has been a steady increase in production of cereal crops (FAO 2015). Cereal crops include: wheat, rice, barley, maize, rye, oats, and millet.
 - In some areas, this increase has been driven by *gains in yield on the land already under production*—as with increases in wheat and rice production in Asia and North Africa.
 - However, throughout Latin America and sub-Saharan Africa, higher yields have resulted from an *expansion of agricultural land*.



Discuss: This might seem like good news for feeding a growing population. However, this increase in cereal crops has not done much to reduce food insecurity. Why? **[take several responses]**

- Much of the harvest is used for animal feed and ethanol, which are likely to grow faster than grains for human consumption.
- Globally, diets are shifting toward those higher in protein, fats, and sugar.
- A sufficient *diet* (as compared to sufficient calories) also requires micronutrients and protein that must be from diverse food sources. Cereals tend to be calorie-heavy, but nutritionally weak.

The bottom line: Cereals are an important resource, but larger issues of how cereals are used (food vs. biofuel, animal feed) must be addressed. In addition, an over-reliance on cereals in the poorest parts of the world cannot adequately address people's needs, as it is nutritionally weak.

Slide 21 Challenge 2: Shifts in What is Grown and Eaten—Animal Source Foods

- Globally, there is a shift toward animal-based products such as meat, milk, and dairy—and more meat is being consumed than ever before.
- However, there is an extreme imbalance in animal products consumed regionally—North America and Europe significantly over-consume, while poorer regions in Africa and Asia do not consume enough animal source foods to get the nutrients they need.
- This leads to a few notable problems:
 - Livestock production is the largest user of agricultural land and therefore has a significant environmental impact (FAO 2015), including both deforestation and production of greenhouse gas emissions.
 - It takes 2.5–10 times more energy to produce food energy and protein from livestock compared to grain. In simple terms, it takes roughly 5 pounds (2.2kg) of grain to get 1 pound (0.5kg) of beef.
 - One third of the world's cereal supply is used for livestock feed, which results in lower energy efficiency (de Fraiture et al. 2007).
 - At the same time, animal products needed to achieve basic nutrition remain out-of-reach for many people in Africa and Asia, due to limited availability, cost, and incentives to sell—rather than consume—animal products.
 - If all regions of the world consumed animal products at current North American and European levels, by 2050 the production of animal protein would need to **more than triple** (PBL 2009). If that happened, demands on natural resources and the effect on the environment would be devastating.
 - The bottom line: Consumption needs to be re-balanced to reflect a healthy diet, both in wealthy and poorer countries. Continuing to over-consume animal source foods has a high environmental cost.



Facilitator Note: *Animal-source foods include the following groups: dairy products (milk, yogurt, cheese), fish, eggs, organ meats, meat, flesh foods, and other miscellaneous small animal protein (e.g., grubs, insects).*

Slide 22 A Smarter Approach to Agriculture

- The challenges of our changing world are significant—a growing population will be relying on a limited resource base for food, which is exacerbated by shifts in what is grown and eaten and food loss and waste.

- These challenges require a smarter approach to agriculture—one that provides real solutions, addressing the challenges of our world today such as malnutrition (under- and over-nutrition), while still increasing production/productivity and income.

Slide 23 Solutions: Create Shifts in Consumer Demand

- Agriculture is a business. Consumer demand for certain products will always be the strongest driver of what is produced. In many places, market demand does not match the dietary needs for a healthy, growing population.
- How do we create shifts in market demand?
 - First, we can harness the power of advertising to influence what people buy and eat. Advertising is already widely used within the private sector—promoting the right foods can benefit both sellers and consumers.
 - We can educate consumers about what should be included in a healthy, diverse diet, including information about the consequences of malnutrition for women and children.
 - Emphasize that getting enough calories is not sufficient to address food insecurity and to feed the hungry. Cereals are important, but should not be the only source of food. Animal-source foods also have an important role in diet, but should not be over-consumed.
 - Design packaging and marketing to help consumers understand which products have greater nutritional quality, especially fortified and biofortified foods.
 - Recognize the challenges of a growing urban population—since many urban dwellers do not have home gardens and may work long or irregular hours, many are drawn toward cheap processed foods, which may also be marketed toward children.
- Population growth means each person needs to eat the right things, in the right amount, to ensure a healthy diet. Reducing personal food waste is also important for making sure there is enough food for everyone.

Slide 24 Solutions: Supportive Government Policies

- Government policies have an important effect on availability and access to healthier foods.
- Policy can affect prices that farmers receive for goods produced and can encourage both the production and supply of nutrient-rich foods.
- Government policies can also affect prices for consumers—lower costs can help build demand for nutrient-rich products.
- Policies might also affect market systems by reducing trade barriers to nutritious foods or by providing incentives to private sector companies to improve the diversity of foods available in markets through storage, processing, and preservation.
- Finally, policies can also mandate certain positive requirements, such as micronutrient fortification, that suppliers are required to include.

Slide 25 Solutions: Support for Farmers

- First, we need to recognize that farming is not easy. Growing food is essential for humans to survive and thrive, and therefore, farming is essential, but it is also one of the most complex activities. Farmers benefit from a dependable and sustainable system of support.
- Agricultural extension
 - Agriculture extension agents (both private and public) share knowledge regarding improved farming practices to build skills and promote new technologies in farming communities.

- There are proven agricultural extension approaches, such as farmer-to-farmer peer learning models, farmer field schools, and more recent *pluralistic approaches* in which multiple actors provide services through a blend of public and private approaches.
- Improve access to agricultural inputs
 - Adequate access to agricultural inputs, including land, pesticides, and fertilizers, is vital for agricultural production and growth. Additionally, financing to purchase these items is essential.
 - Throughout Asia and in parts of Latin America, expanding seed and fertilizer use has been accompanied by investments in irrigation, rural roads, marketing infrastructure, and financial services, paving the way for dynamic commercial input markets.
 - In other regions, such as sub-Saharan Africa, the uptake of agricultural inputs is relatively low because it is often cheaper to expand cropland to have higher production (FAO 2015).

Slide 26 Solutions: Climate-Smart Agriculture (1 of 2)

- Climate-smart agriculture (CSA) focuses on increasing production, while helping farmers strengthen their resilience to shocks and reducing greenhouse gas emissions (FAO 2013).
 - Productivity: CSA aims to sustainably increase agricultural productivity and incomes from crops, livestock, and fish, without having a negative impact on the environment.
 - Adaptation: CSA aims to reduce the exposure of farmers to short-term risks, while also building their capacity to adapt and prosper in the face of shocks and long-term stresses.
 - Mitigation: Wherever and whenever possible, CSA should help to reduce and/or remove greenhouse gas emissions. This implies that we reduce emissions for each calorie or kilogram of food, fiber, and fuel that we produce; that we avoid deforestation from agriculture, and that we manage soils and trees in ways that maximize their potential to absorb carbon dioxide from the atmosphere.

Slide 27 Solutions: Climate-Smart Agriculture (2 of 2)

- Examples of CSA include:
 - No till planting: Using this technique, farmers minimize plowing or tilling the soil. Crops are planted directly into a seedbed that has not been tilled after harvesting the previous crop.
 - Rainwater retention: In low till planting, at least 30 percent of the soil surface is covered by plant residues to increase water infiltration and to cut down on soil erosion and runoff.
 - Climate-appropriate crops: Crops should be suitable for the climate, reducing the need for irrigation and reducing vulnerability to weather changes. Stronger varieties, such as drought-resistant maize, can be introduced to improve resilience.
 - Improved irrigation and water use: Introducing efficient irrigation technologies to reduce runoff and wasted water and improve irrigation schedules (to reduce evaporation).
 - Waste reduction: Agricultural inputs can help improve the ability to store and process foods, leading to reduced waste. For example, improved ability to process and store animal-source foods, safe storage of grains (for consumption or sale during drought or shock).



Facilitator Note: *The Seasonal Calendar exercise—Session Five in the Training Resource Package—can be used immediately following this session. The seasonal calendar encourages participants to examine agricultural activities specific to their context and these activities' effects on nutrition. This exercise helps participants discuss the context in which agricultural activities take place in greater depth by looking at the specific growing season and local agricultural practices.*

Slides 28–29 Key Points from this Session

- Agriculture is the main source of employment for rural families in the developing world.
- GDP growth through agriculture is four times more effective in reducing poverty than growth generated by other sectors. **However...**
- Farming is a risky business that requires markets, sustainable natural resources, capital, labor, knowledge, and technology.
- Global climate change, food loss and waste, decreasing soil and water quality, and markets driven by changing dietary preferences must be considered when promoting agricultural development.
- **Therefore...** Using approaches that build consumer demand for high-quality products, providing support for farmers, and focusing on CSA will have the best results, leading to increased production, income, and sustainability of agricultural livelihoods.

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Additional Resources

For further information on agriculture and food systems, visit:

- USAID Feed the Future website: <https://www.usaid.gov/what-we-do/agriculture-and-food-security/increasing-food-security-through-feed-future>
- SPRING Linking Agriculture and Nutrition website: <https://www.spring-nutrition.org/technical-areas/ag-nut>
- *Convergence and Tension in Nutrition-Sensitive Agricultural Market Development Activities: Discussion Paper*: <https://www.usaid.gov/what-we-do/global-health/nutrition/technical-areas/convergence-and-tension-nutrition-sensitive>
- Food and Agriculture Organization (FAO) of the United Nations, *Improving Nutrition through Agriculture and Food Systems* course: <http://www.fao.org/elearning/#/elc/en/course/NFS>
- The Big Facts project website: <https://ccafs.cgiar.org/bigfacts/#>. The Big Facts project is led by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).
- Basic Knowledge 101, Farming – Agriculture website: <http://www.basicknowledge101.com/subjects/farming.html>

Agriculture-to-Nutrition Pathways

Session Guide Four of the Nutrition-Sensitive
Agriculture Training Resource Package

Preparing to Present This Session

Purpose

This is Session Four of seven that are included in the *Nutrition-Sensitive Agriculture Training Resource Package*.

After developing a solid foundation in both nutrition and agriculture in previous sessions, this session introduces participants to the Agriculture-to-Nutrition Pathways. The Agriculture-to-Nutrition Pathways show how agriculture activities can improve nutrition by influencing the underlying causes of malnutrition (e.g., by improving household incomes or strengthening women's control of resources). Discussions throughout this session focus on how each pathway is influenced by the enabling environment—the context and systems that can affect the likelihood that agricultural activities will lead to improved nutrition.

Before starting the session, participants need to understand key concepts for nutrition and agriculture, as covered in Session Two (Essential Nutrition Concepts) and Session Three (Essential Agriculture Concepts) of the *SPRING Nutrition-Sensitive Agriculture Training Resource Package*. These two sessions create a shared vocabulary and perspective that allow a diverse group of stakeholders to effectively discuss the pathways.

Objectives

By the end of this session, participants should be able to—

1. effectively describe the three main pathways and how they overlap.
2. explain the enabling environment in which all pathways operate.
3. identify steps along each main pathway to ensure that agriculture activities meet nutrition outcomes.

Estimated Duration

1.5 hours

Materials

All documents needed to deliver the session can be found at <https://www.spring-nutrition.org/nutrition-sensitive-ag-training/session4>.

- PowerPoint presentation: 4. Agriculture-to-Nutrition Pathways
- Masking tape or other method for fixing printed images to the wall
- Other Materials
 - One copy for every 7–10 participants: Images representing the Agriculture-to-Nutrition Pathway. (These images were designed to be universal, but you may wish to change them to ensure that they resonate with your audience.)
 - Handout: Agriculture-to-Nutrition Pathways
 - Handout: Additional Resources

Core Content

Slide 1 (cover) Agriculture-to-Nutrition Pathways

- We know that agriculture has an impact on nutrition: It can improve it, worsen it, or have a neutral effect. As we work to strengthen the positive effects of agriculture on nutrition, it is important to have a deeper understanding of **how** agriculture affects nutrition.
- Once we better understand the linkages between agriculture and nutrition, we can ensure that efforts to strengthen agricultural practices have a positive effect on the family's nutrition.
- In this session, we focus on some specific steps that can be taken to strengthen the linkage between agriculture and nutrition. These steps are illustrated using the Agriculture-to-Nutrition Pathways framework.

Slide 2 Objectives

8. Effectively describe the three main pathways and how they overlap.

Explain the enabling environment in which all pathways operate.

Identify steps along each main pathway to ensure that agriculture activities meet nutrition outcomes.

Slide 3 The Child's Health is Closely Linked to the Mother's Health.

- We know that every child's health and nutrition is closely linked to the mother's health and nutrition—especially while she is pregnant, during breastfeeding, and through the first two years of the child's life.
- Why are the first 1,000 days so important?
 - This is the period of life with the greatest growth and brain development, including many key developmental milestones. What happens with the child's body now will affect him for life.
 - Children who fall behind developmental milestones during this period may never be able to catch up. Severe malnutrition during the first 1,000 days can lead to stunting, which is hard to reverse.
 - Collectively, investments to improve nutrition have an important economic impact over the long-term, with well-nourished children becoming more productive adults (Hoddinott 2016).
- The mother's diet, health status, and capacity to care for the child during the first 1,000 days have a long-term effect on the child's development.
- The essential question at the core of every nutrition-sensitive agriculture activity is:
 - What is the best way to strengthen agricultural practices so that they lead to better nutrition for children and mothers?

Lessons Learned: Increased Income or Increased Food Production ≠ Better Nutrition.



Evidence for nutrition-sensitive agriculture is limited. The central learning that drives our shift toward cross-sectoral approaches is knowing that increased income does not directly lead to better nutrition for children and mothers. Nutritious food is necessary for good nutrition, but availability of nutritious food alone is not enough to improve nutrition. A range of factors affect that outcome, including an individual's health status, the cleanliness of the surrounding environment, the preparation and storage of food, and personal choices regarding foods. The Agriculture-to-Nutrition Pathways give us a deeper view of the relationship between income and nutrition.

Slide 4 **Getting Enough Nutritious Food All Year** *(animated slide)*



Discuss: In every season, it is important for families to have enough nutritious food. What do we mean by “enough good food”? **[Take several responses.]**

- When we look at the food that a family has available, we need to think about not just how much food is available for eating, but also other essential aspects of that food.
 - **SAFETY:** Food that is healthy to eat and will not cause illness—it should be fresh, in good condition, and prepared in a hygienic way. Avoiding food that is moldy, spoiled, or contaminated by dirt, bugs, or animal feces.
 - **VARIETY:** Ensuring that the family gets food from all food groups: animal protein (eggs, chicken, meat), pulses (nuts, grains), fruits, and a range of vegetables. *Note that appropriate foods will vary by context; for example, sources of protein other than meat need to be sought in places where vegetarian diets are common.*
 - **QUALITY:** Food that looks and smells appealing and fits with what most people eat locally.
 - **QUANTITY:** Having enough food for several meals each day, while storing enough to last throughout the year.

Slide 5 **Getting Enough Good Food All Year: Seasonality** *(animated slide)*



Discuss: What can a family do, in an ideal situation, to get enough nutritious food year-round? **[Take several responses.]**

Ensure that the discussion includes the following ideas:

The family can try to ...

- Grow, raise, and collect enough nutritious food, including raising livestock and growing crops. In some contexts, this includes gathering wild foods seasonally.
- Harvest, process, and store that food carefully so they do not waste it. Food that is not stored properly can become unhealthy to eat.
- Sell and buy food wisely so they can earn money and afford to buy good food. For households that do not produce any of their food, it is important to ensure income diversification and good household budgeting to purchase foods of sufficient quantity and quality.

Slide 6 Exercise: Building the Agriculture-to-Nutrition Story



Facilitator Note: *The following exercise is typically used with community-level participants or in cases where complex frameworks and diagrams may be confusing. Read through the instructions and decide if it is suitable for your audience. Higher-level participants may benefit from working through this exercise, especially if they facilitate training with community-level audiences.*

Exercise: Building the Agriculture-to-Nutrition Story

About this Exercise

- **Goal:** *to have participants generate key points on the agriculture-to-nutrition pathway, linking these concepts to their experiences.*
- **Duration:** *45 minutes*
- **Materials:** *Two or three sets of printed icons (one set for each group of 10 participants)*

Exercise Instructions

- Explain that in this exercise, we will discuss how agriculture and nutrition are connected. We will start by looking at a set of activities that take place at the household level.
 - Imagine a small farm, not very far from here, where a family raises crops and livestock.
 - The icons that are printed on these pages represent activities that take place daily on and around the farm.
 - In groups, you will arrange these pages on the wall, with the goal of telling a story about how agriculture and nutrition are linked.
 - Some of the icons may be very clear (for example, handwashing) while others may be interpreted in different ways by different groups (for example, the man and woman with joined hands). Groups should feel free to interpret the images in whatever way makes sense for their story.
 - Start with the image of the field/crops and end with the family (see the photo example below). The remaining icons can be arranged in any way that fits with your story.
- Divide participants into groups of 5–10. Give each group one set of images and explain that they will have 15 minutes to construct their story.

The following photo shows an example of how the images could be arranged on the wall. Other arrangements are acceptable, as long as participants can explain their thinking.



Debrief Group Work

- After all stories have been assembled on the wall, give each group 3–5 minutes to present the thinking behind their arrangement.
- Discuss common themes across participants' work and allow participants to make observations about each diagram.
- Highlight the ways in which each group has begun to articulate the individual pathways: food production, agricultural income, and women's empowerment—and how they overlap and interconnect.
- Emphasize that the group will spend some time discussing these three pathways in more detail throughout the session, using a conceptual framework to capture how the agriculture-to-nutrition pathways connect.



Lessons Learned: The best way to learn about the Agriculture-to-Nutrition Pathways is through interactive and participatory methods. The activities in this session help ground the pathways in activities that stakeholders are already doing, connecting the pathways directly to their own life or work. When the Pathways resonate with participants, you can see that "Aha!" moment.



Facilitator Note: Hand out copies of the document: *Agriculture-to-Nutrition Pathways*. (This handout will help participants follow along as the text on the coming slides may be too small for participants seated far from the projected image to read.)

Slide 7 **Agriculture-to-Nutrition Pathways** (animated slide)

- This framework describes the Agriculture-to-Nutrition Pathways.
 - On the left side, we have the three main pathways—food production, agricultural income, and women’s empowerment.
 - On the far-right side, we have our desired outcomes—better nutrition (and overall health) for children and mothers.
 - The rest of this diagram focuses on how we get from our starting point (agriculture) to our ending point (nutrition).
- This Agriculture-to-Nutrition Pathways framework was originally developed by a team of researchers at the International Food Policy Research Institute (Headey, Chiu, and Kadiyala 2011; Kadiyala et al. 2014). SPRING has simplified it to focus on three main pathways and the enabling environment in which the pathways operate.
- The Agriculture-to-Nutrition Pathways exist in a specific context.
 - We refer to this context as the enabling environment—which consists of the elements that influence whether and how agricultural practices can have a positive impact on nutrition. These factors may affect each pathway and each step of the pathway.
- Lastly, we see how improved child and maternal nutrition links to other important national issues.
 - As maternal and child nutrition improves, it affects the national nutrition profile and national economic growth—as we discussed in Session One (Strengthening Agriculture-Nutrition Linkages: Why It Matters).
 - Improved nutrition also has an impact on household assets and livelihoods, along with agricultural livelihoods specifically. In Session Two (Essential Concepts in Agriculture and Food Systems), we discussed the systems that affect agricultural success and women’s important role in agriculture.
- It is important to note that despite the appearance of the diagram, the pathways are not linear or distinct, but interconnected in a variety of ways.



Lesson Learned: As a tool, the *Agriculture-to-Nutrition Pathways* help make agriculture-nutrition linkages more explicit and clear. The diagram tends to resonate with stakeholders, who may struggle to break away from traditional “increased income = better nutrition” thinking.

The pathways thinking is not new—experienced agriculturalists will have recognized better nutrition as a result of their work for a long time. We are asking them to find small, incremental nutrition-sensitive adjustments to their work to help increase the likelihood of contributing to larger nutrition outcomes.

Slide 8 The Main Agriculture-to-Nutrition Pathways

- First, we will review the steps that can be taken along the three main Agriculture-to-Nutrition Pathways. Then we will discuss the enabling environment.
- Improved agricultural practices can have a positive, negative, or neutral impact on nutrition. **The steps along the pathways help ensure that agricultural practices have a positive impact.**

Slide 9 Agriculture as a Source of Food

- Production decisions are made based on many factors: market prices, relative costs and risks, productive assets of the family (including land, labor, and capital), needs for cash versus food, and, of course, preferences and cultural norms/expectations.
 - What are some of the relative costs? (seeds, machinery)
 - What are some of the risks? (loan, inadequate water, risks to children or health)
 - What are productive assets? (land, livestock, machinery)
 - Preferences?
 - Cultural norms that affect agriculture? (Women doing the work, women's/men's crops)
- Processing and storage can affect shelf-life, safety, and nutrient content of foods. It has a direct impact on timing and duration of household food access.
 - Think for a moment about processing and storage—what is the impact if a food producer cannot process/store excess food?
 - If one does not have the capacity to store the excess, then it must be sold during the season when prices are low. Later, during lean times when prices are highest, the family must buy back that food.
- Some rural families live in areas where agriculture is extremely difficult due to climate, soil, weather conditions, or vulnerability to shocks. These families may be better off seeking income sources that are not based in agriculture to improve the family's health, nutrition, and chances of survival. Alternatively, they could diversify their income to increase resiliency for the family.
- In these cases, increased income from non-agricultural work (alternative livelihoods) may be a better strategy for promoting resiliency and ensuring the family's survival during lean times.



Facilitator Note: As we discuss each pathway, we have included an example from one country where SPRING has worked. Before presenting your session, review these examples and assess whether they will resonate with your participants. If not, feel free to replace them with a local example that participants will connect with.

Slide 10 Doña Brito in Guatemala: An Example of the Food Production Pathway *(animated slide)*

- Here is an example of how the production pathway and nutrition can be improved by refining agriculture practices to have a stronger nutrition outcome. This activity was funded by USAID and implemented by Save the Children.
- Doña Fidelia Brito and her family live in the Western Highlands of Guatemala.
- As part of their participation in the activity, the family received goats and guidance on how to care for them.
- In exchange, the family provided milk to undernourished children in the community (it was given for free, not sold).
- The participating families consumed the milk.

- Many were able to sell excess milk and milk products to augment their income.
- The integrated activity educated families on the importance of consuming milk and animal-sourced protein. Technicians from the activity showed the Brito family how to use goat droppings to fertilize their maize. This resulted in both a 10 percent reduction in fertilizer costs and an increase in maize production, which meant more maize for consumption the following year.



Lesson Learned: *When we began the discussion of the pathways by guiding stakeholders to look at a specific nutrition problems and their causes, the pathways diagram resonated more deeply.*

Slide 11 Steps on the Food Production Pathway

Discuss: When we think of the example with Doña Brito, we can see a range of strategies at work to ensure that those agriculture activities led to improved nutrition. What are some of the steps on the pathway that you see engaged in this example? **[Take several responses]**

Sample answers include:

- Food production: Goat milk was produced and maize yields increased.
- Food prices: We did not mention this specifically in the earlier example, but prices can also factor in household decision-making about what should be produced and how much will be useful. Depending on the size and scale of the activity, interventions can affect local food prices.
- Processing and storage: The family learned to how to properly store and process the milk.
- Food access: The activity increased the available milk in the community and the household. Some activities may also affect the year-round availability of food.
- Diet: The integrated activity educated families on the importance of consuming milk and animal-sourced protein.
- Health status: We did not mention this specifically in the earlier example, but infections and other health problems should be addressed so that the nutrients consumed result in improved health.

Ensure that you finish the conversation with the group by making the point that it is important to remember that increased production—and even getting to the increased consumption (diet) along the pathway—does not necessarily translate into improved nutritional outcomes.



Discuss: In one activity, the family was consuming a significantly improved diet, but it did not result in improved mother/child nutrition—what do you think happened? **[Take several responses]**

Ensure that the conversation includes the following points:

- Problem with sanitation or illness that reduced the absorption of nutrients
- Extra earnings that the family had were quickly spent on health care costs



Slide 12 Agriculture as a Source of Income



Discuss: Next is the Agricultural Income Pathway. A common goal of many programs is to increase household income through agriculture. What can be done to increase agricultural income? **[Take several responses.]**

Ensure that the discussion includes the following points:

- Improve storage, sell rice to a co-op; provide farmers with a line of credit
- Improve crop varieties that grow well in off-seasons; diversify production; encourage off-farm labor during non-farming season

- Improved year-round income and cash flow can be used for immediate or future household needs to support a healthy diet and life. Income may be used for food or non-food items that improve health, such as medicines, clinic visits, and agricultural supplies like plastic sheeting to protect the harvest from being contaminated with dirt.
- This pathway assumes that nutritious, diverse foods are available and affordable in local markets—a huge and often unrealized assumption.
- **The pathway reminds us to question that assumption.** Purchasing power can drive demand, and if people begin to demand more diverse, nutritious foods, then the increased demand can support the relationship between agriculture and nutrition in the food market.
- To move along this pathway toward nutrition outcomes, household investments in health are crucial, including investments in potable water sources and toilets, preventive care, and other necessities. Rural farm households are constantly balancing spending between farm production and marketing investments and the immediate purchases of food, health, and care necessities.
- The effect of income on nutrition is not direct or easily predictable. Many factors influence decision-making.

Slide 13 Netsanet in Ethiopia: An Example of the Agricultural Income Pathway *(animated slide)*

- Here is an example of the income pathway.
- Netsanet lives in Duna Woreda of the Southern Nations, Nationalities, and Peoples' Region (SNNPR) in Ethiopia. Her household was enrolled in a value chain activity to help them increase yields from their coffee trees and to successfully export quality coffee.
- Ethiopia is the home of coffee, and Netsanet loves growing it.
- With help from the Ministry of Agriculture and the Agribusiness and Markets Development (AMDE) project, Netsanet and her family have increased the amount of coffee they have grown by 30 percent.
- Coffee is being exported.
- And their household income is increasing.



Discuss: You cannot “eat” coffee. So, does this mean this activity cannot be “nutrition-sensitive” or contribute to nutrition? **[Take several responses.]**

Ensure that you finish the conversation with the group understanding that a crop such as coffee's value to nutrition comes from the increased income that can be used to purchase foods for a diverse, nutritious diet or for health care.

- One of the key questions about income generation is: **Within the family, who decides how income is used?**
 - If Netsanet does not have influence over how the money is spent, she may be disadvantaged by this approach.
 - When we work to increase income, we also want to look for ways to give women access to and/or control over it, since they are more likely to use it to benefit the health of mothers and children.

Slide 14 Steps on the Agricultural Income Pathway

- Again, looking at this along the pathways, you can see how families like Netsanet's can use the increased income to move toward improved nutrition outcomes.
 - Food and non-food expenditure: To access a diverse, nutritious diet and meet health care needs, families need to be supported to look at decision-making in the household.
 - Food access and diet: Increased demand for nutritionally-rich products can lead to more products available in markets. Greater access can lead to the consumption of higher quality foods.
 - Health care and health status: When health needs arise, expenditures on health care are possible and overall health status may improve.
- These examples take place at the household level, but there are ways to make the **value chain** more nutrition-sensitive—for example, looking at how to incorporate women in various stages of a value chain activity, or improve storage or processing to better retain nutrients and/or increase profits.

Slide 15 Agriculture as a Means to Women's Empowerment



Discuss: Finally, we reach the Women's Empowerment Pathway. What can we do to maximize women's control of income? **[Take several responses.]**

- Evidence shows that women are more likely to spend additional income on the health and nutrition needs of the household (SPRING 2014).
- However, women's empowerment is not just about income. If our goal is to improve nutritional status, we must also consider time and energy use, which have a very direct impact on the health of unborn children and women's ability to care for families.
- When thinking through income and time, it is important to emphasize that although this pathway is labeled as "women's empowerment," it involves all household members (the husband, mother-in-law, or any other key decision makers at the household level).
- We have learned that involving each of these key decision makers in programming—both to alleviate the heavy workload that comes with agriculture and to increase women's control of income—leads to much more effective programming and a greater likelihood that promoted practices will be adopted.



Lesson Learned: *Women's roles in the household (time spent laboring in the fields and caregiving; managing income) are deeply embedded in the fabric of a society. We need to be prepared to acknowledge that creating change in this area may take time. Additionally, advocating women's empowerment may come with unintended consequences, including increased tensions in the household, less time for women to care for their children and themselves, and possibly even domestic violence.*

Slide 16 **Pakhtakor Village in Tajikistan: An Example of the Women's Empowerment Pathway** *(animated slide)*

- This example is from a family farming activity in Pakhtakor Village in Tajikistan.
- The women are earning money through a group activity in which they share the cost and labor related to growing, harvesting, and processing fruits (especially apricots, plums, and peaches) as jams and jellies for sale at local markets.
- They are using the money generated from this activity to address family health needs and purchase needed foods.
- They are part of a savings group. (These groups provide financing for short-term household needs and give women a source of capital for small-scale, income-generating activities.)
- Control over income and savings, in combination with strengthened social networks, has led to leadership opportunities for these women and increased status in their communities.
- Additionally, these groups are a platform to layer training in other topics, such as food preservation, nutrition education, soil management, and growing practices that are appropriate for nutrient-dense household garden crops.

Slide 17 **Steps on the Women's Empowerment Pathway**

- Returning to the framework, we can see how participating in the activity led to:
 - Food expenditure: More money to spend on nutritious foods, which they were learning about with complementary nutrition education plus social and behavior change activities. As with the other two pathways, this can lead to greater food access and an improved diet.
 - Non-food expenditure: They could also spend their savings on health care for themselves and their children, which can contribute to improved nutrition. As with the income pathway, this can lead to greater use of health care and improved health status.
 - Women's time and energy expenditure: We need to consider these women's agricultural workloads and balance this with the benefits of participation in groups and programs. Carefully considering their time and energy expenditure can ensure that they also have the time and capacity to give their children the care and attention they need.
 - Lastly, women's energy expenditure has a direct connection with their own nutritional needs. Greater energy expenditure means that women need greater food intake to get enough nutrients, especially if pregnant or breastfeeding.
- Importantly, empowering women—whether through savings groups, increases in income and control of resources, or improved education—will not lead to maximized nutrition outcomes if multi-sectoral barriers are not also addressed.
- For example, if women in savings groups are forced to spend a large portion of that savings buying clean water, as was the case here, or traveling long distances for emergency medical care,

they will not be able to reinvest in nutrition-sensitive agriculture activities or in nutritious food for their families.

- When you look at this pathway you can see the overlapping and interwoven nature of the pathways. Several steps on the women's empowerment pathway overlap with both agricultural income and food production.

Slide 18 Pathways in Context: Enabling Environment

- At this point, we have discussed the three main Agriculture-to-Nutrition Pathways—food production, agricultural income, and women's empowerment—and the steps along each pathway.
- A positive enabling environment can increase the likelihood that agricultural activities will lead to improved nutrition.

Slide 19 The Enabling Environment

- Getting from agriculture to nutrition is not just about pathways. Wrapped around the pathways is the enabling environment, which exerts tremendous influence at every step.
- The four components of the enabling environment include:
 - The food market environment
 - The natural resources environment
 - Health, water and sanitation
 - Nutrition/health knowledge and norms
- Here are some examples of how aspects of the enabling environment can have an influence along the pathways:
 - Local markets determine what kind of foods are available for households to purchase. Availability and affordability drive food choices and preferences. (Food market environment)
 - Lack of rainfall during a growing season determines crop yield available for sale and consumption. (Natural resources environment)
 - Unsafe food due to contamination during storage or processing can lead to an increase in disease, which is another cause of malnutrition. (Health, water and sanitation)
 - Cultural practices around which foods to feed young children impact feeding and care practices and can affect household nutritional status (Nutrition/health knowledge and norms)
 - Finally, government policies and legal frameworks are a part of all the components, determining what commodities are subsidized in the markets or how natural resources are managed.



Facilitator Note: Hand out the document titled “Additional Resources.” This resource is for participants who want additional detail about each of the pathways and how they can be applied in practice. This comprehensive resource list may not be appropriate for every audience, so share it only if your stakeholders will find it useful. Notice that this handout is also included in the Facilitator Guide, as this may be a helpful reference to answer participants' questions throughout this session.

Slide 20 Linking Agriculture and Nutrition



Discuss: What have we learned from the Agriculture-to-Nutrition-Pathways that we can apply to our work? **[Take several responses.]**

- The goal of the pathways is to help us understand what activities contribute to better nutrition outcomes. Additionally, we can use the pathways to guide our thinking as we design programs and activities, ensuring that agricultural activities are nutrition-sensitive.
- The Agriculture-to-Nutrition Pathways framework guides us to:
 - design nutrition-sensitive agriculture activities
 - drive toward nutrition-based outcomes
 - use indicators that connect with a range of steps along the pathways (including both agriculture and nutrition indicators).

The pathways can be used to consider which nutrition-sensitive interventions might work, given the activity's focus, and identify ways to better link with or coordinate with the nutrition-specific work of other organizations.

Lesson Learned: *Nutrition-sensitive agriculture cannot be boiled down to a 2-minute summary or a list of essential practices. Effective approaches vary greatly across geographical zones due to changing factors particular to each area, including soil properties, weather, foods available in the local market, agricultural practices, dietary practices, infant-feeding practices, and a community or family's willingness to try new things. Effective nutrition-sensitive agriculture practices always depend on the context in which they are applied.*



Nutrition stakeholders may be looking for an "essentials" list as they try to understand nutrition-sensitive agriculture: "What are the 15 most important nutrition-sensitive agriculture practices?" We have identified 6 nutrition-sensitive agriculture outcomes that may help identify top-priority practices. These are covered in Session Seven (Design).

Agriculture requires a highly contextual set of good practices, whereas biological processes related to nutrition (how the human body functions) are standard across many contexts.



Facilitator Note: *The Seasonal Calendar exercise—Session Five in the Training Resource Package—can be used immediately following this session. The seasonal calendar encourages participants to examine agricultural activities specific to their context and these activities' effects on nutrition.*

This exercise helps to anchor the pathways in the context in which participants work by applying the pathways to the specific growing season and agricultural practices locally.

Slides 21-22 Key Points from this Session

- Good nutrition includes getting the right quantity of good quality, diverse foods all year. These foods must be handled and stored safely to avoid causing illness.
- The Agriculture-to-Nutrition Pathways describe actions that lead to better maternal and child health.
- The three pathways: food production, agricultural income, and women's empowerment are overlapping and intertwined.
- Each pathway is impacted by the enabling environment, which includes the food market environment, natural resource environment, health/water/sanitation, and nutrition/health knowledge and norms.

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Additional Resources

In addition to the "Pathways: Additional Resources" handout, these resources provide further information on conceptual pathways between agriculture and nutrition:

- SPRING Improving Nutrition through Agriculture Technical Brief Series: <https://www.spring-nutrition.org/publications/series/improving-nutrition-through-agriculture-technical-brief-series>
- International Food Policy Research Institute (IFPRI) discussion paper (2017), *Nutrition-Sensitive Agriculture: What Have we Learned and Where do we go from Here?* <https://www.ifpri.org/publication/nutrition-sensitive-agriculture-what-have-we-learned-and-where-do-we-go-here> by Marie T. Ruel, Agnes R Quisumbing, and Mysbah Balagamwala.



Facilitator Note: This is a handout, included in the online resources at <https://www.spring-nutrition.org/nutrition-sensitive-ag-training/session4>. For ease of reference, the text for this handout is also included in the facilitator's guide.

Pathways: Additional Resources

The SPRING project has written a series of briefs that elaborate on the agriculture-to-nutrition pathways. Throughout these briefs, short vignettes from agricultural activities highlight how the pathways and principles can be applied in diverse contexts. The conceptual frameworks of the pathways and principles for improving nutrition through agriculture are described in Brief 1. Each subsequent brief explores a different route between agriculture and nutrition: food production, income generation, and women's empowerment. Read the briefs at:

<https://www.spring-nutrition.org/publications/series/improving-nutrition-through-agriculture-technical-brief-series>

Additionally, SPRING has compiled several resources that are building the evidence base in support of the pathways.

Household food production

Some examples shared at the Leverhulme Centre for Integrative Research on Agriculture and Health (LCIRAH) conference in June 2015:

- In Ghana, children in households that kept chickens, ducks, or other birds were twice as likely to have minimum dietary diversity as compared to those in households that did not. (Saaka, referenced in LCIRAH 2015).
- In Burkina Faso, households collecting wild foods, as well as those producing food rather than cash crops, had better dietary diversity compared to those that did not (Ruiz, Dury, and Prevel 2015, cited in LCIRAH 2015).
- Also in Burkina Faso, a homestead food production program that promoted micronutrient-rich food consumption saw improvements in child dietary diversity; production of and consumption of fish, seafood, meat, poultry and/or fruit; and women's thinness decreased (Olney 2014/2015, cited in LCIRAH 2015).
- HarvestPlus found that Rwandan students consuming high-iron beans had improved hemoglobin ($P < 0.01$) and serum ferritin ($P = 0.015$) (De Moura 2014, referenced in LCIRAH 2015).

Processing and storage

In addition to producing nutritious foods, the way that we harvest, process, and store foods can also impact nutrition. The following studies have noteworthy findings:

- Micronutrient fortification is considered a nutrition-specific intervention, but it is incorporated into agricultural commodities, and it improves nutrition (Eichler et al. 2012; Martorell et al. 2015).

- Per some SPRING and World Bank reviews, education about and access to better processing and storage can increase year-round access to nutrient-rich foods (Du 2014; Herforth et al. 2012).
- Poor harvesting, processing, and storage can make individuals ill and perhaps even cause stunting. Aflatoxin exposure starts in utero and continues as complementary foods are introduced. Major studies demonstrate strong relationships between aflatoxin, birthweight, stunting, and/or underweight (Turner et al. 2013).
- Reducing levels of aflatoxin in the first year of life can improve stunting by about 1 standard deviation, which is significant for a child (Turner et al. 2007).
- In Guinea, aflatoxin was controlled through improved post-harvest handling, such as rapid collection of nuts at harvest, proper drying, and storage in breathable bags raised off the ground (Turner et al. 2013).
- Foods that are not produced, processed, or stored properly are often consumed by the poor, who cannot afford not to eat them. In Kenya, aflatoxin levels in women from the lowest socioeconomic group were 4 to 7 times higher than those in the highest (Leroy and Sununtnasuk 2015).
- In Mali, milk that did not meet a required quality standard ended up in the small-scale producers' own homes or communities (Roy 2013).

Beyond risks related harvesting and storage, food production has occupational risks that can impact nutrition. For example:

- In a 2013 Agriculture and Nutrition Global Learning and Evidence Exchange, Jeff Griffiths from Tufts University talked about increased malaria where irrigation water is stored. He also talked about rotavirus, hepatitis, E. coli, shigella, and salmonella in agricultural wastewater (Griffiths 2012).
- Certain value chains, such as livestock value chains, have risks, such as zoonosis from contact with livestock, infection during slaughter, and cancer from smoking meat (Grace et al. 2015).

Income

What does the literature tell us about the linkages between income and nutrition?

- In a macro analysis of 29 countries, Webb and Block (2012) positively associate support for agriculture, increased income (GDP per capita), and reduced stunting and wasting. This positive result unfortunately is also associated with increased obesity, even in rural areas.
- In Ghana, farm production diversity and access to markets are associated with household dietary diversity and household wealth, suggesting an income pathway to better diets (Delaporte et al. 2015). Greater income from agriculture is also associated with food purchases (Jones and Moffitt 2015).
- In Ethiopia, a national survey showed a positive association between income from agricultural sales, cash crop production diversity, and household dietary diversity, especially for female-headed households (Coates and Galante 2015).
- During the lean season in Burkina Faso, women's non-agricultural income is strongly associated with food diversity (Ruiz, Dury, and Martin-Prevel 2015, referenced in LCIRAH 2015).

It is important to note that these studies show correlation and not causation, and only between income and dietary diversity, not nutrition.

Women's Empowerment

Control over assets and income

- Income controlled by women has a greater effect on children's nutrition than income controlled by men. The same is likely true for other productive assets. For example:
 - In a Burkina Faso homestead food production program, positive intermediate results included increased control of gardens, produce, and income by women; increased production of certain animal products and fruit as well as increased consumption of those items by households and women; and improvements in children's dietary diversity. Ultimately, there were positive impacts on reduction of women's thinness, children's diarrhea, and anemia (Olney 2014, referenced in LCIRAH 2015).
 - In Ethiopia, dietary diversity was greater in households where a woman owned at least one large asset (Coates and Galante 2015).

Time Use and Child Care

- Time constraints can be a barrier to participating in agriculture interventions or adopting a new technology (Webb 2013), and agriculture interventions tend to increase participants' time burdens (Grace et al 2015).
- Time burdened women face tradeoffs that could affect their children's health and nutrition (e.g., they might switch to purchased food and reduce time for feeding and preparing food) (Johnston et al. 2015).
- A systematic review found that a reduction in women's reproductive work time was detrimental to nutrition in poor households, but women's and children's nutrition was less sensitive to these same reductions in non-poor households. Long hours in agriculture revealed mixed results: Women in Ghana and non-poor women in Mozambique experienced reductions in their dietary diversity score (DDS), whereas poor women and children in Mozambique and Nepal experienced increases (Komatsu, Malapit, and Theis 2015).
- The age of a child may affect the relationship between work, childcare, and nutrition (Ukwuauni and Suchindran 2003). A breastfeeding age child and a 6–8 months-old child starting complementary foods may require more care time (Leslie 1988; Balagamwala 2015).
- In Kenya, a study found that a lower percentage of mothers working in medium- and high-intensity dairy production were breastfeeding children ages 12–24 months and were introducing supplemental foods at an increasingly earlier age than mothers from low-intensity production households (Micere Njuki et al. 2015).
- Despite increasing their income, women's paid employment reduced expenditure on healthcare, as the opportunity cost of the time required in seeking health care increased (Berman et al. 1988, cited in Gillespie et al. 2012; Blackden and Wodon 2006, cited in Herforth et al. 2012).
- The risk of infant mortality can be 50 percent higher if the mother works in agriculture. This may be because their children have been found to be more likely to contract diarrhea and respiratory diseases, and are less likely to be treated and immunized (Kadiyala 2014). Moreover, taking a child to the field can expose him to dangerous conditions (Balagamwala 2015).
- In India, a mother's participation in agricultural activities had negative effects on her child's health (Bhalotra et al. 2010, cited in Gillespie et al. 2012).

- Another tradeoff working women face is providing alternative childcare, which often involves tasking other household members, including children and other women, with childcare and domestic work (Johnston et al. 2015).
- One study found no difference in wasting (yet a moderate connection with stunting) in children cared for by their mothers versus those cared for by others (Headey et al. 2011; Balagamwala 2015).

Female energy expenditure

- *Impact on women's body mass index (BMI):*
 - Women agriculture workers in Pakistan are three times as likely to be underweight as women not working or working outside agriculture (Balagamwala 2015).
 - Seasonality affects energy expenditure and food intake of women who are involved in agriculture, decreasing weight and fat stores and increasing physical labor among poor women engaged in agricultural activities during the lean season (Kadiyala 2014).
- *Impact on infant:*
 - Excessive maternal activity during pregnancy may result in increased risk of poor birth outcomes, such as low birthweight, small-for-gestational-age births, and preterm deliveries (Rao et al. 2003; Pitchaya et al. 1998; Barnes, Adair, and Popkin 1991; Herforth et al. 2012).
 - A study in Brazil found lower mean birthweight in infants born to women who engaged in heavy agricultural work throughout pregnancy (Lima et al. 1999; Herforth et al. 2012).
 - Increased physical activity levels may also leave mothers unable to meet the increased energy demands of lactation (Rashid and Ulikaszek 1999; Piers et al. 1995; Guillermo-Tuazon et al. 1992; Herforth et al. 2012).

Lastly, it is important to recognize that all of these aspects are affected by intra-household dynamics —age relations, mothers-in-law, husbands, etc. — all play a key role in influencing food, health and care.

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Developing a Seasonal Calendar

Session Guide Five of the Nutrition-Sensitive
Agriculture Training Resource Package

Preparing to Present This Session

Purpose

This is Session Five of seven that are included in the *Nutrition-Sensitive Agriculture Training Resource Package*.

Building a seasonal calendar helps participants explore and understand how seasonal changes in agriculture and livelihood tasks, cash flow, labor requirements, as well as the health environment, affect farmers' access to food, health, and care. This exercise-based session is a good starting point for participants to explore several concepts around agriculture, income, labor, and nutrition related to the pathways.

Before starting the session, the facilitator should have an idea of how seasonal changes impact agriculture and nutrition in the context. This knowledge will allow the facilitator to guide participants through the exercise and discussion.

Objectives

By the end of this session, participants should be able to—

1. describe the agricultural context and how it varies throughout the year in areas where their activity functions
2. articulate how agricultural constraints (growing season, holidays, seasonal illnesses, changes in weather) affect the wellbeing of communities
3. identify opportunities to make agricultural activities more nutrition-sensitive.

Estimated Duration

1 to 1.5 hours

Materials

- There are no slides to accompany this session.
- Masking tape or other method for fixing flipchart pages to the wall

Core Content



Facilitator Note: *This Seasonal Calendar session can be adapted to illustrate several concepts related to nutrition and agriculture. Before starting the exercise, take some time to focus on your specific purpose and adapt the introduction and discussion to fit your context and relevant aspects of this context you would like for participants to explore. For example, you may want to refine the seasonal calendar to emphasize specific aspects of the environment in which you are working. You could choose these aspects of the environment based on what most affects community members' access to food, health, and care. If relevant, you could also choose these aspects of the environment based on your expected activities. As you create the template seasonal calendar, you can determine how deeply you would like participants to explore seasonal activities within a given context.*

Over the years, SPRING has created various versions of the seasonal calendar to emphasize seasonal trends, such as agricultural production tasks, cash flows, and illnesses. Sometimes SPRING has included all topics, and other times we have only included one or two topics. While planning this session, it is important to determine which aspects of the context are most important to explore. Furthermore, while planning, think through the process to remove some of the discussion questions, create questions with a narrower scope, or refocus parts of the exercise, depending on what you would like participants to take away.

This exercise can be adapted for non-literate participants by using icons, rather than words, to represent different seasonal elements.

Exercise: Examining the Effect of Agricultural Activities on Nutrition in the Local Context

About this Exercise

- **Goal:** to increase understanding of the context in which we work by analyzing the current local growing seasons and agricultural activities.
- **Duration:** 60–90 minutes
- **Materials:** None
- **Preparation:** Determine how many seasonal calendars your training group will need to use during this exercise. It is best if each group (one for each seasonal calendar) has four to five participants. You will need to have sufficient materials for each group.

Determine whether you would like to focus your seasonal calendars on agricultural activities associated with specific crops. If you would like to focus on agricultural activities for specific crops, use Option A in this exercise. If you would only like to focus on overall labor, use Option B in this exercise.

If choosing Option A, you must determine the crops/animals on which you would like to focus. When thinking through which crops/animals, select a range of key crops grown and livestock raised in the target area. Selecting a mix of staple food crops and several nutrient-rich crops and livestock is best. Choose the crops/animals most popularly grown/raised in your target agro-ecological zone(s). For example, in Guinea, we selected rice, maize, cassava, cowpea, sweet potato (including leaves), and vegetables (tomato, pepper, and okra). The selection of crops can also be

done together with participants, depending on the time you have available. It is possible to conduct this exercise while examining multiple agro-ecological zones. If you decide to examine multiple agro-ecological zones, ensure that you create a seasonal calendar for each zone.

Build your calendar(s) on the wall (see samples below)

- X-axis (horizontal): Write months of the year, with one blank row under it.
- Y-axis (vertical): Inserting lines along with the categories shown in the diagram below, write the following categories:
- Option A: Seasons, Holidays, Crop/Animal 1, Crop/Animal 2, Crop/Animal 3, Crop/Animal 4, Food sufficiency, Labor (women), Labor (men), Cash flow, Health, Environmental shocks.
- Option B: Seasons, Holidays, Food sufficiency, Labor (women), Labor (men), Cash flow, Health, Environmental shocks.

Facilitator Note: *As a facilitator, you may need to build more than one seasonal calendar, depending on your audience and its size as well as the focus of your training. These directions include two options:*



Option A: *Small groups each create their own seasonal calendar, representing different agro-ecological zones and specific crops. For example, SPRING worked with local partners in Guinea to create a seasonal calendar representing each zone where the partner works. We created one for Kindia, one for Mamou, and one for Faranah, as weather patterns, activities, holidays, food produced, and food consumed varied regionally.*

Option B: *Small groups each create a seasonal calendar which focuses on general trends, like availability of specific food types, demand for labor, and times of the year when money is typically made or spent.*

Option A may be preferable for a project working across multiple agro-ecological zones, while Option B may be preferable for a project working in a single, uniform agro-ecological zone.

Sample seasonal calendars

Option A

	January	February	March	April	May	June	July	August	September	October	November	December
Seasons												
Holidays												
Crop/Animal 1												
Crop/Animal 2												
Crop/Animal 3												
Crop/Animal 4												
Food sufficiency												
Labor, women												
Labor, men												
Cash flow												
Health												
Environmental shocks												

Option B

	January	February	March	April	May	June	July	August	September	October	November	December
Seasons												
Holidays												
Food sufficiency												
Labor, women												
Labor, men												
Cash flow												
Health												
Environmental shocks												

Exercise Instructions

- Throughout this workshop, we have discussed improving agricultural practices that can help to solve some of the nutritional challenges faced by communities. We live in environments that change, so these challenges are not the same throughout the year.
- Introduce the template
 - **Option A** – As you look at the seasonal calendar on the wall, you will see the months listed across the top. On the side, we have created rows, so that you may list several crops/livestock. We have also made rows for seasons (dry, rainy, etc.), holidays, production of crops/animals, food sufficiency, women's labor, men's labor, cash flow, health, and environmental shocks. You will explore each of these rows and complete the seasonal calendar during your group work.
 - **Option B** – As you look at the seasonal calendar on the wall, you will see the months listed across the top. On the side, we have listed general seasonal trends, including rows for seasons (dry, rainy, etc.), holidays, food sufficiency, women's labor, men's labor, cash flow, health, and environmental shocks. You will explore each of these rows and complete the seasonal calendar during your group work.
- Divide participants into groups of four to five. In each group, there should be at least one person who is familiar with agriculture in the area.
 - **Option A** – Assign each group an agro-ecological zone to work with and explain the two to four of the predominant crops and/or livestock that are produced in that zone.
 - **Option B** – Assign each group to fill out the seasonal calendar.
- Ask participants to start by discussing and agreeing on what seasons they use locally (e.g., dry season, rainy season, and/or cold season).
- Then, within your groups, discuss each row and list the activities that take place during each month of the year.
 - **Option A only** – Begin by discussing key agricultural activities for each crop and/or livestock. The groups should discuss when each of these activities takes place and then draw/write them on the calendar on the wall.
 - For example: land preparation during the months of May and June; planting in July; weeding in August; harvesting in September; drying/transformation/storage in September, October, and November; and selling in October, November, December, and January.
- Continue the discussion by mapping out which month(s) of the tasks listed in each row takes place. If you use one of the example calendars provided, discuss:
 - Seasons (wet, dry, etc.)
 - Holidays/Festivals/Celebrations
 - **Option A only** – Reflect the tasks completed during each month of the year for the associated crop/livestock
 - Food sufficiency – Are there times when food is very scarce?
 - Women's labor – Reflect both agricultural and non-agricultural tasks, if possible
 - Men's labor – Reflect both agricultural and non-agricultural tasks, if possible
 - Cash flow/Income flow – Which months is cash flow positive (i.e. earnings exceed expenses)? Which months is cash flow negative?
 - Health – What are the most common illnesses that affect families living in the target area by month (e.g., malaria, respiratory infections, diarrhea)?
 - Environmental shocks – Are there shocks that happen during the year such as floods, drought, heavy rains, heavy winds, etc.? When are they?
- This is your agricultural calendar. It may take 30–40 minutes to prepare depending on the number

of people working together. Larger groups can be separated into sub-groups that split the various rows among them.

Discussion: Examining the Seasonal Calendar

- Distribute one page of flipchart paper to each group.
- In your groups, you will have 20 minutes to work. Discuss the following questions:
 - How is community members' ability to access food, health, and care impacted by each row on the seasonal chart?
 - What are the top three challenges and top three opportunities, per season, related to accessing food, health, and care?
- After your group has finished discussing, record your findings on the flipchart.
- Invite each group to present their findings in plenary.
 - **Option A:** In the large group, share the most critical seasonal challenges and opportunities affecting farmers' access to food, health, and care across the different zones. This presents an opportunity to compare unique aspects of each zone. As each group presents, encourage discussion and inquiry throughout each presentation. Sharing the rationale behind each group's selections is an opportunity to learn.
 - **Option B:** In the large group, discuss each group's rationale behind the three challenges and opportunities that they identified. As each group presents, discuss various ways that the environment and seasons affect community members' access to food, health, and care. As a facilitator, ensure that the rationale behind each group's work is strong and coherent.



Discuss: Now that we have identified seasonal challenges and opportunities affecting families' access to food, health, and care: How can our project activities reduce challenges and build on opportunities to improve access to food, health, and care? **[Take several responses.]**



Facilitator Note: During this exercise, you may need to help participants focus on the categories listed on the left side of their calendars. Review the terms below and guide participants as needed. As guidance:

- **Seasons:** This is simply how people divide the year. For example, there may be two rainy seasons, a cold dry season, and a hot dry season. It is important that the full group agree on when these seasons begin and end. Because seasons have been shifting, this topic often requires some discussion to reach consensus.
- **Holidays/Celebrations:** What are the key holidays and celebrations and when do they occur? Once these are included on the calendar, the discussion could center around how these holidays affect demands on time, labor, income/expenditure, and food. For example, holidays may limit time available to make money (income) or provide care (health).
- **Food sufficiency:** This line should show when food stocks tend to be low or high for the majority of families. It is also useful to note the sources of foods most available during lean months, when for example, wild foods might be more commonly found in households or diets may be sourced through market purchases due to depleted household stores. Food sufficiency

determines decisions made around food purchases. With low food sufficiency, families have few choices of how much food to eat and what kind of foods to eat.

- Labor roles: Labor roles included on the calendar may also reflect times of the year when many families have one or more members migrating to work in cities or other countries. Labor directly impacts women's health, which is especially significant to pregnant women and women exclusively breastfeeding, and through them, children under two years of age. Limited labor limits production as well as income. On the other hand, the time that is dedicated to labor potentially takes away time from health and care.*
- Cash flow: Income and expense flows can be reflected by month using one or more "+" symbols to reflect months in which total income exceeds total expenditures and one or more "-" symbols to reflect months in which expenditures exceed income. Income and expense flows determine a family's ability to access resources, affecting the amounts, quality, and diversity of food available to it, as well as their access to health services, and WASH supplies. Discussion about income and expenses might point to strategies such as promotion of savings among women and men or promotion of household or community storage technologies/ systems that would result in increased income in months that are currently in the negative.*
- Health: Health determines family members' ability to work productively, which impacts the family's income and their food production. Discussion related to the completed calendar may identify when cash flow might be low while illness is high and consequently, potential health expenses cannot be met. They may also identify when illness burden is high and food stores and income are low, putting even more stress on resource-poor families. Being able to identify these times of year may inform the need to develop program strategies that help mitigate greater illness and food insecurity or may point to the need for linkages to other programs, such as social safety nets.*
- Environmental shocks: In addition to health shocks, environmental shocks may affect both short- and long-term food access, as well overall income, which may also have consequences for health.*

The following images show two examples of a completed seasonal calendar. There are many ways to make a seasonal calendar, including showing a seasonal calendar on a PowerPoint slide. It is important to make a seasonal calendar in a format that is most easily understood by the participants, allows them to modify the calendar so that they can take ownership of it, and facilitates their interaction with the calendar as they complete the group work.

Example of Variation of Option A



Example of Variation of Option B



Lesson Learned: This seasonal calendar exercise provides insight into the local context for both the facilitator and the participants. A completed seasonal calendar can be referenced by the facilitator throughout other workshop sessions. The seasonal calendar can also be useful to participants as they think through their agriculture activities.



The timing of agricultural activities is important when planning behavior change interventions, group meetings, and project monitoring activities. For example, understanding times of the year when farmers earn income, or have high expenses, can help with the timing of program activities. Thinking through seasonal holidays, illness outbreaks, harsh weather, and other big events helps participants see the types of challenges and competing priorities that farming households face throughout the year.

Additional Resources

The following resources provide further information on seasonal calendars:

SPRING. 2017. *Accelerating Behavior Change in Nutrition-Sensitive Agriculture*. SPRING Online Training.

<https://www.spring-nutrition.org/publications/training-materials/accelerating-behavior-change-nutrition-sensitive-agriculture>

CARE. 2014. *Formative Research: A guide to support the collection and analysis of qualitative data for integrated maternal and child nutrition program planning*. Atlanta, GA: CARE.

Social and Behavior Change for Nutrition-Sensitive Agriculture

Session Guide Six of the Nutrition-Sensitive
Agriculture Training Resource Package

Preparing to Present This Session

Session Purpose

This is Session Six of seven that are included in the *Nutrition-Sensitive Agriculture Training Resource Package*.

This session focuses on how SBC principles can guide nutrition-sensitive agriculture work. These approaches can be used in the design stage, implementation stage, and post-implementation activity review stage to help stakeholders change agriculture practices to better contribute to improved nutrition.

To start this process, we need to look at why people do what they do and how practitioners can use behavior change principles and approaches to help achieve activity goals

Objectives

By the end of this section, participants should be able to—

1. articulate the basic concepts about why behaviors change
2. explain several ways that SBC contributes to improved activity outcomes
3. describe how SBC uses formative research to guide activity interventions.

Estimated Duration

2 hours

Materials

All documents needed to deliver the session can be found at <https://www.spring-nutrition.org/nutrition-sensitive-ag-training/session6>.

- PowerPoint presentation: 6. Behavior Change Concepts for Nutrition-Sensitive Agriculture
- Handout: Typical Process for Designing SBC Strategies

Core Content

Slide 1 (cover) Behavior Change Concepts for Nutrition-Sensitive Agriculture

- Good development programming is behavior-centered. As we discussed in Session Four: Agriculture-to-Nutrition Pathways, changing traditional agriculture practices is often necessary to improve nutrition.
- As we start to look at nutrition-sensitive agriculture practices that align with our overall goals, we also need to understand which practices will be feasible and have an impact on nutrition outcomes in the specific contexts where we work.



Facilitator Note: *The language to describe social and behavior change can vary from organization to organization. Here, we use the terms “practices” and “behaviors” interchangeably. They both refer to actions that people do at a specific time and place, which are measurable and have frequency and duration. Some are observable, some are not.*

Slide 2 Objectives

By the end of this session, stakeholders will be able to—

- analyze enablers and barriers to performing specific behaviors using both personal and professional examples
- explain several ways that SBC contributes to improved activity outcomes
- describe how SBC uses formative research to guide activity interventions.

Slide 3 What is Social and Behavior Change?

- Activities that focus on changing the behavior of individuals and communities, as well as the social norms and environmental factors that affect those behaviors.
- Encourages people to adopt and maintain practices that contribute to specific positive outcomes.



Discuss: Reflecting on our discussion of the Agriculture-to-Nutrition Pathways, ask the group **what kinds of behaviors might an agriculture program want to change?** Identify the WHO and WHAT. Take several responses, noting them on a flipchart. Feel free to guide discussion to ensure that the following concepts are touched upon:

- Financial institutions increasing access to capital by women farmers
- Mothers breastfeeding within first hour of birth
- Families selecting nutritionally-rich crops to grow and foods to eat
- Farmers practicing improved conservation of soil, water, and other natural resources
- A husband and wife making farming or spending decisions together based in part on the nutritional needs of their family
- Vegetable sellers understanding and explaining the nutritional features of certain produce to buyers
- Purchasers changing what they buy from farmers
- Processors fortifying some foods with additional nutrients

- Retailers bringing convenient and nutritious products to rural villages
- And many others

Slide 4 Clearly Defining Behaviors: “Behavior” and “Practice”

- We use the words “behavior” and “practice” interchangeably to mean a concrete action that a specific person or group does at a specific time and place.
- Behaviors have characteristics including—
 - whether they are observable or hidden (private)
 - their specificity (time, place, quantity, duration, and/or frequency)
 - whether they are easy or hard to measure
 - whether they are feasible to adopt and maintain over time.

Discuss: Reflecting on our discussion of the Agriculture-to-Nutrition Pathways, ask the group **what kinds of behaviors might an agriculture program want to change?** Identify the WHO and WHAT. Take several responses, noting them on a flipchart. Feel free to guide discussion to ensure that the following concepts are touched upon:



- Financial institutions increasing access to capital by women farmers
- Mothers breastfeeding within the first hour of birth
- Families selecting nutritionally rich crops to grow and foods to eat
- Farmers practicing improved conservation of soil, water, and other natural resources
- A husband and wife making decisions together about farming or spending based in part on the nutritional needs of their family
- Vegetable sellers understanding and explaining the nutritional features of certain produce to buyers
- Purchasers changing what they buy from farmers
- Processors fortifying some foods with additional nutrients
- Retailers bringing convenient and nutritious products to rural villages
- Many other behaviors

Slide 5 Clearly Defining Behaviors: Behavior Statements

- A behavior statement helps to define a priority behavior clearly so that project staff can understand what change we are striving for and know how to plan for and monitor the change.
- A behavior statement includes:
 - Priority group + Action verb in present tense + The details (e.g., frequency, quantity, duration...)
- Examples of a behavior statement include:
 - Mothers of children under five years of age wash their hands with soap at the five critical times each day.
 - Targeted male and female farmers farming on sloped land plant trees on the hillsides of their land.
 - Targeted caregivers add Small Fish Powder to the meals for their children under five years of age each day.



Discuss: Reflecting on this format for a behavior statement, ask the group, **can anyone give me an example of a behavior statement?** Identify the priority group, the action verb (in present tense), and the details (frequency, quantity, duration).

Within participants' statements, the examples of the behavior to change aren't as much of a concern as the format of the statement. During this discussion, there is no wrong behavior to change. The important part of this discussion is the application of the format of a behavior statement. All examples should include a priority group + action verb in present tense + the details. Enjoy exploring this format with participants.

As participants become more comfortable with the format of behavior statements, this discussion is an opportunity to apply this understanding to making agriculture practices more nutrition-sensitive. For example, you can prompt thinking with questions such as: What can a given priority group do to make an agriculture practice more nutrition sensitive? With what frequency? Ensure that the discussion builds on lessons learned from previous sessions and applies the behavior statement format.

Slide 6 5 "Behave" Principles

Several years ago, a group of SBC practitioners pulled together a list of key principles for a training that they were developing.² These Behave Principles are simple points about behavior change that everyone working in humanitarian relief and development should remember and apply in their work. While planning behavior statements and larger behavior change activities across programming, it is helpful to keep in mind the following five principles:

- Base decisions on evidence and keep checking in.
- Understand exactly who your priority groups are and work closely with them to understand everything from their point of view.
- Bottom line: Action is what counts (not knowledge, attitudes, or beliefs).
- People take action when it benefits them. Barriers keep them from acting.
- All SBC activities should maximize the benefits and minimize the barriers that matter to the people with whom you are working.

Slide 7 Using SBC Approaches in Design Helps Us Identify...

- As we look at the whole set of possible nutrition-sensitive agriculture activities, a main challenge is to determine which interventions are most likely to have an impact on improved nutrition. **Using SBC approaches in design helps us identify which activity interventions will have the most impact in the context where we work and with the specific people we want to reach.**
- SBC activities, guided by a change strategy, facilitate changes in behaviors by addressing knowledge and attitudes, and by creating enabling social, market, and policy environments that

² Adapted from: The Technical and Operational Performance Support (TOPS) Program. 2017. *Designing for Behavior Change: A Practical Field Guide*. Washington, D.C.: The Technical and Operational Performance Support Program.
http://www.fsnnetwork.org/sites/default/files/designing_for_behavior_change_a_practical_field_guide.pdf

make promoted practices easier for people. Additionally, environmental and economic barriers may exist for certain behaviors that are equally important.

- As such, SBC activities include non-communication activities (like increasing access to resources or introducing new technology to make practices easier), and communication activities, like mass media, community mobilization activities, advocacy, and interpersonal communication.

Slide 8 SBC in Practice

- SBC is at work in nearly everyone's daily life—anyone who hears commercials on the radio, has sat in a classroom, or has worked to change his or her own behavior or the behavior of others has experience with SBC.



Discuss: Ask your group what behaviors their activity aims to change and whether they are supporting someone to stop a behavior or start using a new practice? **[Take several responses.]**

Slide 9: Exercise: The “Exercise” Exercise



Facilitator Note: *The following exercise focuses on behavior change related to eating a healthier diet. This exercise can easily be adapted to focus on whatever kind of change will be well understood by your audience. For example, you could replace eating your veggies with getting exercise for physical fitness. Any healthy behavior that we know we should be doing can be substituted. Additional notes are provided at the end of the activity box.*

Exercise: The “Exercise” Exercise

About this Exercise

- **Goal:** To illustrate the challenges and opportunities that accompany efforts to change behavior
- **Duration:** 1 hour
- **Materials:** Masking tape, flipchart, statements pre-written on flipchart paper
- **Preparation:**

Write this behavior change goal on the flipchart: All adults will exercise at least 4 times a week

Three sets of flipcharts are needed for this activity. Each set has three pages, as follows: For all sets, page 1 should be on top of page 2, which is on top of page 3. A blank sheet should be taped on top of page 1 to hide all pages at the start of the activity. Tape the sets to the wall so it is easy to remove each page as they are revealed.

Set 1

- page 1: I know that getting exercise is very important. I have read multiple studies that prove it. I have also heard many advertisements promoting good health through exercise.
- page 2: I believe that getting exercise is very important. I think that everyone should exercise regularly, at least 4 times a week.
- page 3: Last week, I exercised between 4 and 6 times for 30 minutes at a time.

Set 2

- page 1: I have heard only that exercising can reduce your chance of heart disease.
- page 2: I believe exercise is somewhat important; most people should exercise 1–2 times a week.
- page 3: I exercised at least twice last week.

Set 3

- page 1: I know that many people are in shape because they exercise, but I am not sure how they do it.
- page 2: I think that we get enough exercise with the routine activities of the day.
- page 3: I did not do any exercise last week.

Exercise Instructions

Explain that for this exercise, participants will each play two different roles: a community health promoter and a community member. Point out the behavior change goal written on the flipchart paper.

Tell participants that before we decide how to address our goal, we will undertake some audience research, involving all of you as research participants.

Ask one participant to remove the first blank sheet from each of the three stacks of papers taped to the wall.

- Here, we have three different knowledge statements posted on the wall. Would someone read them out loud?
- Next, I would like for each of you to stand near the statement that most approximates your knowledge level.

When participants have settled next to a statement, ask:

- What do you notice about the groups?
- How many are in each group?
- Other observations: Demographics? By profession? Gender? Age? Nationality? Language group? Region? Other?

Tell participants:

- You have just divided yourselves into segments, or subgroups of the community, according to your stated knowledge about exercise.
- We will now see what happens when we look at your beliefs.

Ask a participant to remove the knowledge statement from each of the three stacks of papers to reveal the belief statements.

- Now, please go and stand near the statement that most approximates your level of belief.
- What do you notice about these groups? What differences do you see? Other observations?
- We will now see what happens when we look at your behaviors.

Ask a participant to remove the belief statements from each of the three stacks of papers to reveal the action statements.

- Now, read the action statements and reposition yourselves according to what you actually did (your behaviors).
- What differences do you see? Demographic observations? By profession? Gender? Age? To what extent did your knowledge and beliefs predict your behavior?

Stress that what we know and what we believe are often quite different from what we do.

Introduce the terms “doer” and “non-doer.” Explain that identifying doers and non-doers is an important part of this type of qualitative research.

A “doer” is someone who does a certain practice and a “non-doer” is someone who does not do that practice.

While participants are still standing in their groups, ask:

- If you had to pick one audience segment to work with first, which group would you pick?

Introduce the term “target of opportunity” (groups that may initially be more prone to change). This may be people with the greatest desire to change, due to vulnerability, or those for whom the transition would not be difficult.

- How else might you use this information in a social and behavior change (SBC) program?
 - Identification of an “early adopter” – a person who is first to try a new practice. They may have more time or resources than others or they may be open to more risk—or perhaps, in the case of eating more vegetables, they have just had a health scare.
 - We might also look at “positive deviants”—people who have already achieved the outcome that we are interested in. For example, a family that is poor, but with well-nourished children. We can learn from them—what practices have they adopted that helped them achieve this outcome? Can these practices be adopted by other families?
- What did you learn about prioritizing?

Ask participants to share what they learned from this exercise.

Help draw out the following themes:

- What people do does not always reflect what they know or believe. That is obvious to all of us when we think about our own actions, but we sometimes forget this basic principle when we’re planning our programs.
- This reminds us that just giving people information is generally not enough. Even convincing them of a new belief may not move people to take a beneficial action.
- For public health programs (and others), it is helpful to identify the competing behaviors that are making appeals to our audience.

- Because we are working with limited time and resources, we should focus our SBCC activities on the audiences and behaviors where we will see the greatest impact from our investment. This exercise gives us some ideas about how to focus activities to different audiences. For example, we may be more successful at changing behaviors of people who already believe exercise is important but need strategies to find the time, rather than trying to change behaviors of people who don't believe they need to exercise
- This activity points us toward the value of doing qualitative research.

Slide 10 Effective SBC Interventions Facilitate Change

- Behavior change works to facilitate shifts in some or all of the following:
 - How people think and feel about an issue, including how relevant it is to them, and whether they have ability to change
 - Physical and market environments that influence people's decisions and actions. This refers to the location where decisions are taking place—anything outside a person's thoughts and feelings that may help or hinder as they make that decision
 - Levels of participation and engagement in activities, markets, and services/programs
 - Policies which can incentivize or dis-incentivize behaviors
 - Resources available for marginalized groups to practice optimal behaviors, including time, money, labor, skills, and knowledge
 - Social norms, identities, and roles, including gender norms and gender relations.
- Behavior change initiatives work to make specific actions more desirable, easier to do, and closer to an ideal that will improve outcomes (for example, leading to more equitable gender roles in farming households, or better nutrition for children and mothers).



Lesson Learned: A significant challenge in applying theoretical Agriculture-to-Nutrition Pathways to program design is determining which nutrition-sensitive agriculture interventions are most likely to contribute to improved nutrition among populations in a given context. SBC helps us find the right interventions for the context.

Slide 11 Change Agents and Communities May Think About a Problem Differently

- Successful SBC interventions reach people where they are and work to uncover how they think and feel about the issue at hand.
- This is critical when we think about the differences between how we think, as change agents, and how different people living and working in target communities think.



Discuss: As change agents, we need to take a step back and understand that the way we think about an issue may be quite different from how the communities we work with think about it. Ask the participants what examples they have come across in their work where they might have viewed an issue differently? **[Take several responses.]**

- The former head of the World Bank, Robert Zoellick (2010) said, “We tend to think in terms of how our work is divided into siloes—health, education, infrastructure—but the average person thinks much more holistically.”
 - We need to understand activities on the ground and stakeholders’ thoughts on an issue. We need to talk to not only the people we would like to adopt a certain practice, but also to influential groups who can support them to do the practice.
 - A lot of people think that SBC is education (teaching people). In fact, it is quite the opposite—SBC is about learning from the community. They know what is stopping them from changing behaviors and they *want* to improve their lives.
 - We want the community to first teach us. Then, we can help facilitate the changes that they think are important.

Slide 12 Increasing Activity Impact through SBC

- SBC is essential to meet development objectives. SBC approaches help us understand what strategies will work to affect the change we want to see.
 - Activities that use SBC approaches have a **greater impact** than those that do not include SBC.
 - **Reaching target groups** through multiple channels and points of contact improves the effectiveness of SBC interventions.
 - A wide variety of SBC delivery strategies have **evidence of effectiveness**, including interpersonal communication, community mobilization, social marketing, mass-media campaigns, financial and social incentives (Lamstein et al. 2014).
- One-on-one or small group communication is the most consistently and effectively used approach, with the most published evidence supporting it to date.

Slide 13 Promoting Behavior Change Effectively

- Researchers studying human behavior have created models that explain how we function in societies. This research is especially helpful for finding the right approaches to nutrition-sensitive agriculture (Thaler and Sunstein 2009).
- Focus on promoting practices in local terms.
 - What does the community value when it comes to food?
 - What do healthfulness, affordability, desirability, and convenience mean in this context? Are there local concepts for things like maternal anemia, growing well, and brain development?
- Link improved practices to short-term risks and benefits.
 - Preventing or recovering from chronic malnutrition is a complex, longer term process. But improved nutrition-sensitive and nutrition-specific practices have lots of shorter-term benefits that people tend to care about: hair and skin look better; active kids with bright eyes; fewer headaches and less fatigue for women; reduced illness and associated costs.
- Messages should grab the heart and gut, as well as the mind.
 - We act out of habit and emotion as much as carefully thought-through decisions. Messages, sounds, and images that make us laugh, surprise us, or make us feel an emotion (positive or negative), move us to try new things. If our emotions are triggered, we also remember messages better.
- Social identities and gender roles can enable or constrain acting on messages.
 - Example: engaging men in Ethiopia as “hero fathers” to give more of their income to their wives to buy eggs and produce from the market builds on a value that already exists in their culture—being a good father and a provider.

- Example: engaging mothers-in-law in multiple contexts as “wise women” respects their position and experience, so they become motivated to learn the latest ways to keep their daughters-in-law and grandchildren healthy.
- Messages need to be appropriately targeted.
 - Broad messages are not likely to succeed, rather messages need to be tailored to address identified barriers and/or leverage facilitators to change. And they must speak to the actor whose behavior you wish to change.

Slide 14 Social, Market, Policy, and Physical Environments are Essential for Change

- When we look at when and how individuals change their behavior, we can see that the surrounding environment has a big impact. Enabling environments spur us to action.
 - People will practice a new behavior—for example, making spending decisions about food with their wife, if they feel that most others in their community also do that behavior.
 - Our actions are influenced by our family and peers; by the resources available in our communities and local market environment; and by the wider enabling environment—things like the natural resource base, our wider society, and national policies and markets.
- Throughout behavior change research, there is continued recognition that individuals are more likely to change when there is a change in their societies and the conditions they live and act in.
- Those changes can be encouraged through mass media, market-led interventions, and advocacy with policy-makers.

Slide 15 Key Concepts and Models for SBC

- To understand how to change human behavior, we need to look at several models that explain how we behave and why.
- There are many models and conceptual frameworks for behavior change, based on the evidence available and theories about what influences human behavior.
- We will look at two of the most common SBC models. Although there are many different frameworks, processes, and tools, they have more in common, overall, than they have differences.

Slide 16 The COM-B Model: Getting to Action³

- The COM-B model brings together concepts from multiple behavior change theories.
- The model states that a person will perform a behavior if they have sufficient **capability**, **motivation**, and opportunity at the right time and place.
- If any of these elements are not present or are insufficient, the person will not perform the behavior—no matter how compelling the messages!

³ Reproduced from Michie, van Stralen, and West. 2011.

Slide 17 The Socio-Ecological Model⁴

- In the Socio-Ecological Model, the self is at the center of a series of concentric rings. This model suggests that each human being is influenced by layers of society, like an onion. The “rings of influence” are—
 - Interpersonal: this includes partners, family, and friends.
 - Community (leaders and providers): this includes organizations, services, and products.
 - Enabling environment: made up of higher-level leaders, such as government, nongovernmental organizations (NGOs), and the private sector. This includes policies, legislation, politics/conflict, economics, religion, technology, and the natural environment.
- Additionally, crosscutting factors influence the individual and all the rings of influence:
 - Information and knowledge
 - Motivation, including attitudes and beliefs
 - “Ability to Act”: skills, self-efficacy, access
 - Norms: perceived, sociocultural, and gender-based
- The socio-ecological model reminds us that social identity and support from peers and organizations are powerful forces that we can leverage to facilitate change.

Slide 18 What is formative research?

- Formative research is critical for identifying barriers and facilitators of key behaviors, designing the overall strategy, and developing messages, when appropriate, which resonate both with the priority and/or influencing group(s) and effectively address the identified issues. Formative research can also help identify and build on existing positive behaviors to advance the SBC approaches.
- Formative research broadly refers to data collection that informs activity design. In the context of behavior change, it refers to research that helps designers get more specific about priority practices and factors that will prevent or facilitate target groups’ uptake of a new behavior.
- Formative research can be done at any time during an activity, but generally it is important to conduct formative research before promoting practices on a large scale.
- Formative research is about understanding small, doable actions that fit with existing identities and priorities in communities and families.
- It helps us figure out **how** to promote practices effectively, whether through communication activities or other types of interventions.



Lesson Learned: *SPRING used formative research to inform the design of a nutrition-sensitive agriculture activity in Odisha, India. We used the research to explore current practices, beliefs, attitudes, and community priorities related to agriculture, livelihoods, and nutrition. Then, working with activity implementers, we used research findings to adapt the Agriculture-to-Nutrition Pathways to local norms and constraints and to prioritize context-appropriate, nutrition-sensitive agriculture practices for the activity to promote.*

⁴ Image adapted from *Multi-Sectoral Nutrition Strategy Technical Brief: Effective At-Scale Nutrition SBCC* (<https://www.usaid.gov/what-we-do/global-health/nutrition/technical-areas/effective-scale-nutrition-social-and-behavior>)

Slide 19 Formative Research in Odisha, India

- SPRING conducted formative research in Odisha, India to identify which nutrition-sensitive agriculture practices would be feasible for farmers and their families to do, and which practices would be most likely to contribute to activity outcomes.
- The research explored different parts of the pathways through formative research, including:
 - household and community environments, markets, resources, and services
 - community priorities related to agriculture, livelihoods, and nutrition
 - WASH practices, attitudes, and beliefs
 - gender roles, household relationships, and decision-making
 - household division of labor and labor sharing
 - attitudes and beliefs related to commonly produced and/or purchased foods
 - farming practices, attitudes, and beliefs
 - seasonal challenges related to food security, income and expenditure, labor demands, and health issues.

Slide 20 Data Collection Methods for Formative Research

- Different methods will reveal different data—focus group discussions are good for figuring out group consensus around knowledge, attitudes, beliefs, and perceived risks, barriers, and enablers for action.
- Direct observation of markets, environments, and daily life is good for figuring out those risks, barriers, and enablers that people may not be as aware of.
- For nutrition-sensitive agriculture, seasonal calendars are important for figuring out food availability, gendered labor patterns, spikes in income or expenditures, and seasonal health issues that affect agriculture, income, and nutrition.
- Mixed methods in formative research—using a combination of focus groups, direct observations, surveys, and seasonal calendars—can take more resources but often pays off in terms of being able to have more confidence in the overall picture that the data give you.
- For more information about formative research methods, see **Additional Resources**.

Slide 21 Strengthen Enablers of Change

- Behavior change is needed to achieve several important outcomes:
 - Increased demand for diverse, nutrient-rich foods and diverse diets
 - Increased availability, affordability, and desirability of diverse, nutrient-rich foods in local markets
 - Increased production of nutritious crops (by ensuring accessibility to the right inputs—seeds, farming equipment—and resources)
 - Improved food and environmental safety
 - Increased time and energy savings for women
 - Increased income controlled by women and equitable opportunities for women.
- Generating demand and improving supply together is complicated but critical.
- Strengthening the enabling environment for food safety and quality can reinforce consumer demand for safer, higher-quality food, by creating a virtuous cycle that enables further change.



Facilitator Note: *The example that follows helps to illustrate how SBC can be applied in a specific context. If you can, replace this example with a local example that will resonate more strongly with your audience.*

Slide 22 Applying SBC to Design: Joint Decision-Making

- SPRING conducted additional SBC research to understand joint farm and family decision-making (for consumption and sale) in Odisha, India.
 - Findings: men, young women, and older women all separately said that making decisions together about farming, spending money, or other tasks indicate good relationships and a happy family.
- This formative research also explored drivers of household food choice, including consumer preferences.
 - Findings: farming families consider chicken and eggs healthy, available, and affordable.
- Given the importance of affordable animal source foods in the diets of women and children under two years of age, the activity decided to promote improved household chicken and egg production (for consumption and sale).
- The activity ensured that families have access to support services, such as affordable and high-quality vaccinations, before deciding to promote improved production. These services are part of the **enabling environment** for change.
- Within the same videos showing improved “agriculture-specific” practices, positive nutrition-sensitive agriculture practices are also modeled—showing husbands, wives, and in-laws discussing whether to start the improved practices; discussing how additional income might be used to meet nutrition-related needs like food, health, WASH, or other care. In addition, the videos took care to “do no harm” by emphasizing handwashing and hygiene in the context of poultry rearing.

Slide 23 Accelerating Behavior Change in Nutrition-Sensitive Agriculture: On-line Course

- If you are interested in learning more about how behavior change theories can be applied in nutrition-sensitive agriculture activities, the SPRING project has created a 7-hour online training that you can take either by yourself or with a group.
- To learn more or to take the training, please visit: <https://www.spring-nutrition.org/publications/training-materials/accelerating-behavior-change-nutrition-sensitive-agriculture>

Slide 24 Key Points from this Section

- Social and behavior change includes activities that focus on changing the behavior of individuals and communities—encouraging them to adopt and maintain practices that contribute to specific outcomes.
- Activities that use SBC approaches are better able to achieve stated outcomes, when compared with activities that have no SBC component.
- SBC for nutrition-sensitive agriculture focuses on two key questions:
 - Which agriculture practices are mostly likely to contribute to the nutrition of priority groups in each context? (Identifying the WHO & WHAT.)
 - How can we apply behavioral science to improve uptake of those practices? (Determining the HOW.)

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Additional Resources

The following resources provide further information on behavior change for nutrition-sensitive agriculture:

Accelerating Behavior Change in Nutrition-Sensitive Agriculture. SPRING Online Training <https://www.spring-nutrition.org/publications/training-materials/accelerating-behavior-change-nutrition-sensitive-agriculture>

The Technical and Operational Performance Support (TOPS) Program. 2017. *Designing for Behavior Change: A Practical Field Guide*. Washington, D.C.: The Technical and Operational Performance Support Program. http://www.fsnnetwork.org/sites/default/files/designing_for_behavior_change_a_practical_field_guide.pdf

Designing Effective Nutrition-Sensitive Agriculture Activities

Session Guide Seven of the Nutrition-Sensitive Agriculture Training Resource Package

Preparing to Present This Session

Purpose

This is Session Seven of seven included in the *Nutrition-Sensitive Agriculture Training Resource Package*, which provides guidance, recommendations, and ideas for individuals charged with training others on nutrition-sensitive agriculture. Unlike Sessions One through Six, Session Seven is a full workshop that can be conducted over 2-3 days after any of the preceding sessions, as needed.

The workshop will help an activity team establish contextually-appropriate, nutrition-sensitive agriculture outcomes and interventions. Participants will discuss the key outcomes that their agricultural market systems development activity should consider in order to increase the activity's contributions to better nutrition. They will then go through a process to develop interventions that address underlying contributors to malnutrition in the activity's target area.

This participatory process guides teams to examine six activity level nutrition-sensitive agriculture outcomes and think through specific interventions that fit within their existing scope. Exercises in this workshop focus on actions that are practical and feasible, and that leverage an activity or organization's existing strengths. The goal is to ensure that agricultural market systems development activities are able to document and explain their contributions to nutrition goals.

Who Should Participate

The Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project recommends this resource to all who are involved in designing, implementing, monitoring, and managing agriculture-led economic growth activities that aim to increase production, income, resilience, and market competitiveness, while also seeking to improve the nutrition of poor and vulnerable households.

It is critical to the success of this process that the right participants are in the room for the workshop. Your nutrition-sensitive agriculture outcomes and interventions should be identified by a multi-disciplinary team. Ideally, a nutritionist or an individual familiar with the nutrition situation in the activity's target area should participate in the design discussion. Activity leadership, such as the implementing partner's (IP) activity manager or the chief of party as well as senior technical staff, are critical to ensuring that action is taken after the group has established outcomes and interventions. The activity's monitoring and evaluation (M&E) lead, agricultural advisor(s), and anyone involved in conducting assessments or formative research to design a behavior change strategy for the activity should also be active contributors in the workshop. If possible, USAID activity managers should participate. SPRING recommends a group that ranges in size from 6–12 participants. **The workshop should be conducted with only one activity at a time** to ensure that both workshop preparations and outputs are responsive to the needs and operating contexts of the participants.

When to Use This Workshop

The team participating in this workshop should be in the process of designing or implementing an agriculture or economic growth activity that also hopes to contribute positively to nutrition. The activity should ideally have a goal to increase incomes, improve food security, or strengthen resilience of smallholders and other value chain or market system actors in a sustainable manner. The discussions included in this workshop are most useful after the

initial context assessment has been completed and the focus agricultural value chain crops or livestock products have been identified.

However, there are multiple other points in the program cycle when this workshop can be useful:

- At the design stage by USAID activity designers and implementing partner program designers, to draft a Request for Proposal/Application, including development of a results framework that is multi-sectoral and addresses the objectives and intermediate results (IRs) of the U.S. Government's Global Food Security Strategy (GFSS).
- At the work plan stage by implementing partners to adjust their interventions, results framework or performance management plan (PMP). This guidance will assist a value chain activity to identify additional nutrition-sensitive agriculture outcomes, interventions and indicators.
- As part of an iterative annual work planning process by implementing partners when they reassess and modify nutrition-sensitive agriculture interventions and outcomes previously chosen for their select value chains.
- As part of USAID's activity review, when there is opportunity to (re)examine the value chain activity approaches and commodity choices. A comprehensive review may result in an activity that is better aligned with nutritional objectives of the Country Development Cooperation Strategy.



Facilitator Note: *If you are conducting this workshop at a time other than the initial design stage, some of the language in the presentation will need to be adjusted slightly to appropriately reflect the process of "revising" or "adding," as opposed to newly "defining" interventions and outcomes.*

Who Should Facilitate

Facilitating this workshop requires advance preparation, a good understanding of the country and context where the activity is or will be working, and some advance knowledge of the technical capacities of the participants. Due to the highly participative nature of the workshop and the fact that much of the work will be done with small groups of 3–5 people, **at least two facilitators are needed**. Between them, the workshop facilitators should be experienced in leading workshops and have a thorough understanding of program design, including how to develop results frameworks, activity interventions, and outcomes. The facilitators must have a good understanding of nutrition-sensitive agriculture and ideally a background in agriculture, nutrition, food security or some combination thereof. If possible, we recommend enlisting a third person to support logistics and communications. This will result in better note capturing during exercises and report outs, and allow for greater facilitation during small group work.

Estimated Duration

The workshop is expected to take 2–3 days, though it could be longer if the facilitator decides to include more than 1 or 2 introductory sessions from the Training Resource Package mentioned below. When determining the appropriate length of your workshop, be sure to ensure that the teams involved have enough breaks to support the critical thinking that is essential for a workshop of this type. There is a sample agenda in Annex 1 to help get you started in putting together this workshop. The content roughly breaks out as follows:

Day 1	Day 2
Introduction and background	Step 3: Develop interventions
Step 1: Prioritize nutrition-sensitive agriculture outcomes for your activity	Step 4: Define monitoring indicators
Step 2: Prioritize nutrition-sensitive agriculture strategies	Next steps and wrap up

Before You Begin

Preparing the Facilitator

This guide and accompanying slide set are meant to be used together to prepare your workshop. Each slide in the PowerPoint deck has a corresponding narrative in this facilitator's guide with some key points you might want to make. **Keep in mind that this is all meant to be led by you and, most importantly, adapted to your context and group of participants.** Feel free to change the order, pictures or narrative to suit your workshop. Additionally, we include examples (such as outcomes, strategies, interventions) throughout, but you are encouraged to adapt examples from your own region if they would resonate better.

Preparing to facilitate this workshop is expected to take a number of days. In addition to reviewing the materials in this guide and the PowerPoint deck, it will also be useful to familiarize yourself with the [Agriculture-to-Nutrition Pathways](#), and with USAID's Global Food Security Strategy (GFSS), whose goal is to sustainably reduce global hunger, malnutrition, and poverty. We also recommend familiarizing yourself with any documents from the activity you will be working with (including RFA or RFP, work plan, results framework, monitoring plan among others). You should use these to **run through the exercises in this guide before the workshop** to ensure you are prepared to support participants with any questions they may have.

This workshop was developed to align with the objectives of the Global Food Security Strategy:

- Objective 1: Inclusive and sustainable agricultural-led economic growth
- Objective 2: Strengthened resilience among people and systems
- Objective 3: A well-nourished population, especially women and children

It should be noted that the key nutrition-sensitive agriculture outcomes recommended here may support all the Strategy's objectives. Therefore, the nutrition-sensitive agriculture interventions defined by workshop participants may cross over all three GFSS objectives, and should not be limited to only fitting under Objective 3. All activities should be designed based on a solid understanding of the context, needs, and challenges in the activity area. This workshop does not explore approaches for conducting a context assessment, which should be completed before the design process begins. For more information on context assessment visit the [SPRING website](#).

While some parts of the workshop are specific to USAID-funded activities, this resource is intended to support a broader audience interested in nutrition-sensitive agriculture program design, implementation, and monitoring. However, if the workshop is being conducted with a USAID-funded activity, it is important to make sure that USAID is involved in the process and agrees that as the result of completing this design workshop, the participating activity may determine that different or additional nutrition-sensitive agriculture outcomes and short to medium term indicators may be needed. Having this discussion prior to the workshop, and including USAID staff in the workshop, will help increase the buy-in of the workshop participants and ensure that the workshop outputs are responsive and specific to the participating activity's results frameworks, work plans, and performance measurement plans (PMPs).

Preparing the Participants

The discussions and decisions that take place during this workshop presume that all participants are familiar with the scope of their activity, their commitments to donors, and the context in which they are working. Before the workshop begins, it may be helpful to ask participants to review their initial context assessments, the RFA/RFP and their award, if their proposal has already been approved, and have several copies of these on hand during the workshop to reference as needed. If the project has a results framework, theory of change, workplan or performance management plan, it would be useful to have your participants review them before the workshop.

Participants should have a basic understanding of key concepts related to nutrition, agriculture, social and behavior change (SBC) and activity design to benefit from this workshop. Background orientation and training in any technical subject areas that may be lacking should be held prior to conducting the Designing Effective Nutrition-Sensitive Agriculture Activities workshop.

Additional Resources

SPRING also has created facilitator's guides with slide decks on six other topics that are critical to improving the design of nutrition-sensitive agriculture activities. Available online, SPRING's "[Training Resource Package](#)" includes the following training sessions:

- Strengthening Agriculture-Nutrition Linkages: Why it Matters
- Essential Nutrition Concepts for Nutrition-Sensitive Agriculture Activities
- Essential Concepts in Agriculture and Food Systems
- Agriculture-Nutrition Pathways
- Developing a Seasonal Calendar
- Behavior Change Concepts for Nutrition-Sensitive Agriculture

Most of these sessions should take 1–3 hours to complete, and you should feel free to share them either in advance of your workshop or include them as a part of it if you feel that your participants would benefit from the additional information.

Additionally, you should recommend that your participants read the Agriculture- to- Nutrition Pathways briefs available on SPRING's [website](#).

Workshop Objectives

By the end of this workshop, participants will be able to:

- Explain a four-step approach for designing effective nutrition-sensitive agriculture activities
- Select nutrition-sensitive agricultural outcomes appropriate to the participants' agricultural market systems development activity
- Analyze and prioritize potential strategies for addressing malnutrition
- Develop relevant practices, interventions, and indicators to include in the activity design
- Outline the next steps for implementation and monitoring.

Workshop Output

During this workshop your group will be working through a series of exercises and building a matrix one column at a time. By the end of the training they will have a completed Activity Design Matrix with a list of prioritized nutrition-sensitive agriculture outcomes, a list of prioritized strategies that will help to achieve the selected outcomes, a list of interventions for each of their strategies and the practices they support, and a list of indicators that will measure progress towards those interventions.

A printable copy of the full matrix is included in the annexes (along with printable copies of all of the component pieces for each exercise). This guide assumes you are using a large piece of flip chart paper to build the matrix. You can use large-size sticky notes to add items to the columns if you don't want to worry about having to remake the matrix as things are revised. Another option is to use a laptop to project the matrix and build it digitally. Here is what a small version looks like:

Nutrition-Sensitive Agriculture Outcomes	Strategies	Practices	Interventions	Indicators

As your group works through each of the steps and builds the accompanying matrix, it will be helpful to create a physical version on the wall of the room you are in using large post-it notes or paper and tape. Participants will be able to see the matrix develop throughout the day and better appreciate the iterative nature of the process. At the end of the workshop, your participants will only need to make a few small tweaks to what is already on the wall in order to have the "complete matrix" posted. Using large post it notes for each "box" of each matrix will make it easy to move things around as you go so you do not have to start from scratch during each step.

If the activity has a theory of change or results framework, it may be helpful to pass out copies before beginning step one. Throughout the workshop you should freely refer to these documents and make sure that everything they are planning during this workshop fits with their activity scope. As mentioned previously, if it does not, and USAID has asked the activity to achieve nutrition-sensitive outcomes or to specifically complete this workshop, you may want to have a conversation with USAID before starting this workshop, or make sure that they are included in the workshop.

Materials

The following is a complete list of materials and equipment needed for the workshop. All handouts can be found at <https://www.spring-nutrition.org/nutrition-sensitive-ag-training/session7>. We list the specific materials and handouts at the beginning of each section or step of workshop.

PowerPoint presentation: ***Designing Effective Nutrition-Sensitive Agriculture Activities***

Large sticky notes—roughly one pad for every four participants

Blank flip chart paper, 10–20 full sheets and 10–20 half-sheets

Print one copy of the facilitator's guide (for facilitator's use):

- Six large note cards labeled: (1) Availability, (2) Affordability, (3) Desirability, (4) Environmental & Food Safety, (5) Women's Control of Income, (6) Women's Time & Labor

Print one copy for each participant:

Handout No.	Handout Title	✓
1	Six Key Nutrition-Sensitive Agriculture Activity Outcomes	
2	UNICEF Framework	
3	MSNS Results Framework	
4	Agriculture-Nutrition Pathways	
5	Key Terms	
6	What, How, Who Matrix	
7	Activity Design Matrix	
8	Nutrition-Sensitive Agriculture Strategy Criteria and Examples	
9	Prioritization Criteria	
10	Illustrative Nutrition-Sensitive Agriculture Outcomes, Practices and Interventions	
11	Activity Design Matrix – West Africa Activity Example	
12	Post Workshop Action Items	
If available, bring one copy for each participant of:		
	Theory of Change	

	Results Framework	
	Work Plan	
	Performance Management Plan (PMP)	
	Key results from context assessments or any other data that has been collected to inform the design or implementation of the participating activity	

Core Content

Introduction and Background: Ensuring a Common Understanding of Nutrition-Sensitive Agriculture

Estimated time: 2–2.5 hours

Slides 1–16

Materials and Handouts: Handout 1: Six Key Nutrition-Sensitive Agriculture Activity Outcomes; Handout 2: UNICEF Framework; Handout 3: MSNS Results Framework; Handout 4: Agriculture-Nutrition Pathways; Handout 5: Key Terms

Learning objectives: Participants will: understand workshop objectives, key nutrition-sensitive agriculture concepts, the agriculture-to-nutrition pathways, and the six nutrition-sensitive outcomes

Slide 1 Designing Effective Nutrition-Sensitive Agriculture Activities

- As we begin the workshop, I would like to thank each of you for your participation here today. We are very pleased to bring this diverse group together for these important discussions about how we can strengthen or add nutrition components to our agriculture activity.

Slide 2 Strengthening Nutrition Results through Agriculture Activities

- In the areas where we work, the problem of malnutrition is urgent, especially for young children and mothers. To address malnutrition effectively, we need to explicitly design our agriculture activities to achieve improved nutrition.
- As a development community, we need to do something differently. We cannot continue the status quo, where 45 percent of child deaths are due to undernutrition. In addition, malnutrition leads to overall lower IQ, reduced school performance, and later in life, reduced work productivity and earnings. These effects have significant economic ramifications, with countries across Asia and Africa losing 11 percent of gross domestic product every year because of poor nutrition (Black, et al. 2013; Horten and Steckel 2013; IFPRI 2016).
- Nutrition is influenced by many different factors, such as the types and quantity of food you eat, the ability to source diverse food year round through production or purchase, your health status, access to clean water and good caring practices. Because agriculture and economic growth activities may only affect a few of these factors, it is challenging for them to deliver nutrition outcomes, such as reductions in stunting among

children.⁵ However, agriculture and economic growth activities can contribute to better nutrition by enabling households and communities to improve diets, have the resources needed to obtain health, hygiene and sanitation services, and support time and energy required for child care.

Slide 3 Workshop Objectives

- By the end of this workshop, participants will be able to:
 - explain a four-step approach for designing effective nutrition-sensitive agriculture activities
 - select nutrition-sensitive agriculture outcomes appropriate to the participant's agricultural market systems development activity
 - analyze and prioritize potential strategies for addressing malnutrition
 - develop relevant practices, interventions, and indicators to include in the activity design
 - outline the next steps for implementation and monitoring.

Slide 4 Four Steps for Designing a Nutrition-Sensitive Agriculture Activity

- Our participatory design process is built around four steps, and after we ensure a common understanding of nutrition-sensitive agriculture, we will spend the rest of the workshop going through each step:
 - Prioritize nutrition-sensitive agriculture outcomes for your activity
 - Prioritize nutrition-sensitive agriculture strategies
 - Develop interventions
 - Define monitoring indicators
- We will then spend time pulling it all together and planning next steps to ensure that your work is incorporated into your activity results framework, work plan, and performance monitoring systems.

Slide 5 Identifying Nutrition-Sensitive Agriculture Outcomes



Facilitator Note: Refer to Handout 1: Six Key Nutrition-Sensitive Agriculture Activity Outcomes. The participants should find this useful as a reference throughout the workshop.

- As we discussed, it is challenging for agriculture and economic growth activities to deliver nutrition outcomes, such as reductions in stunting among children. However, agriculture interventions are well-placed to contribute to one or more key nutrition-sensitive agriculture results or outcomes. Recent work

⁵ According to the World Health Organization, stunting is “the impaired growth and development that children experience from poor nutrition, repeated infection, and inadequate psychosocial stimulation. Children are defined as stunted if their height-for-age is more than 2 standard deviations below the WHO Child Growth Standards median.” See http://www.who.int/nutrition/healthygrowthproj_stunted_videos/en/

completed through the SPRING project points to six nutrition-sensitive agriculture outcomes for agriculture activities. These can be used to guide the design of an agricultural market systems development activity.

- These outcomes are:
 - Improved availability of diverse, nutrient-rich foods in local markets
 - Improved affordability of diverse, nutrient-rich foods in local markets
 - Improved desirability of diverse, nutrient-rich foods among target consumers, especially economically vulnerable (poor) and households with women who are pregnant or infants under 2 years of age (1,000 day households)
 - Improved environmental and food safety
 - Increased income control by women and equitable opportunities
 - Increased time and energy savings for women
- These six nutrition-sensitive agriculture outcomes shape the design approach we will apply during this workshop. Using these outcomes, we will identify specific interventions that can be considered a win for both agriculture and nutrition.
- Not all outcomes will be appropriate for every agriculture activity. For example, if your activity is focused on maize or coffee production with an objective of increasing income, you likely would not aim to improve availability of diverse, nutrient rich foods in local markets.
- The approach that we will use in this workshop is participatory and centers around asking questions to explore how an agricultural investment can have an impact on these nutrition-sensitive outcomes, given the specific context and stakeholders involved.

Slide 6 Ensure a Common Understanding of Nutrition-Sensitive Agriculture

- We will begin by ensuring that everyone in the room has a common understanding of nutrition-sensitive agriculture and the opportunities and challenges that it can bring to a program.

Slide 7 The UNICEF Framework: Reducing Malnutrition (UNICEF 2015)



Facilitator Note: Handout 2: UNICEF Framework is included in packets; participants should have it available for this discussion.

- Under the United Nations Children’s Fund (UNICEF) framework, two immediate causes of malnutrition are identified: inadequate nutrient intake and illness.
- A range of interventions exists to address malnutrition, such as assistance on breastfeeding and complementary feeding, micronutrient supplements, and community-based approaches for the management of malnutrition. These approaches are effective in addressing the immediate causes of malnutrition, and are described as *nutrition-specific*.
- Approaches that address the underlying and systemic causes of malnutrition—problems such as food security and access to health services—are referred to as *nutrition-sensitive*. If we are to comprehensively address malnutrition, we need approaches that target underlying causes. Nutrition-sensitive agriculture and

economic growth interventions can move households and communities towards health and nutrition results by helping them meet outcomes such as improved availability of a diversity of nutritious foods.

- In short, nutrition-sensitive agriculture strategies are those that address some aspect of **Food Access, Food Quality, Health, WASH or Care**.

Slide 8 USAID's Multi-Sectoral Nutrition Strategy (MSNS) Results Framework



Facilitator Note: Handout 3: MSNS Results Framework is included in packets; participants should have it available for this discussion.

- As you are likely aware, USAID also recognizes the need to invest in both nutrition-specific and nutrition-sensitive programming to address malnutrition. USAID has published a “Multi-Sectoral Nutrition Strategy 2014–2025” that aims to decrease chronic malnutrition, measured by stunting, by 20 percent through the U.S. Government’s Feed the Future and Global Health initiatives, the Office of Food for Peace development programs, resilience efforts, and other nutrition investments.
- The overall goal is to “Improve nutrition to save lives, build resilience, increase economic productivity, and advance development.” As you can see from the strategic objective, the framework focuses on **nutrition-specific and -sensitive** interventions, programs and systems across humanitarian and development contexts.
- There is growing evidence on how to design and implement nutrition-sensitive agriculture activities. This workshop outlines the essential components for designing nutrition-sensitive agriculture interventions.
- The U.S. Government’s Global Food Security Strategy (GFSS) guides investments by all U.S. federal departments and agencies that contribute to global food security, Feed the Future activities being central to this effort. The GFSS adopts the integrated approaches to nutrition laid out in USAID’s Multi-Sectoral Nutrition Strategy (MSNS) and the USG Global Nutrition Coordination Plan (GNCP).

Slide 9 How Does Agriculture Affect Nutrition?



Facilitator Note: The material on the linkages between agriculture and nutrition is covered in more detail in the Agriculture-to-Nutrition Pathways Session of SPRING’s Nutrition-Sensitive Agriculture Training Resource Package. You can expand on this as necessary using these materials or, if participants already have a good background in the contributors to undernutrition, you can use the abbreviated version found here.

- There are three essential linkages between agriculture and nutrition—food production, income and gender (how women’s time and energy are spent and the extent to which women have some decision making power over use of household income).

- The most obvious link between agriculture and nutrition is the production of nutritious foods. This is one way agriculture can contribute positively to nutrition—by making more diverse, nutritious foods available in farmer households as well as in local markets.
- Households also depend on income, which they use to purchase food, health services, and hygiene-related goods that are necessary to maintain good health and nutrition. Agricultural and economic growth activities can not only help to increase incomes of smallholders and other value chain stakeholders but can also influence the decisions that producers make in spending their income. There is often a perception that if agriculture activities succeed in helping families increase their income, they are nutrition-sensitive; however research has frequently shown that that increased income alone does not always translate to improved nutrition.⁶ Competing priorities may mean that people use added income to purchase things unrelated to health and nutrition. Further there are a range of factors that can intervene (such as health status and distribution of food) that can mitigate or prevent positive benefits from any improvements in nutrition even if diets improve.
- Seasonality is an important consideration for ensuring both food availability and cash flow. It is important to note that not all household income derives from agriculture related-activities. To promote resilience, we can assist households to be successful with both on-farm and off-farm income-earning opportunities.
- Women are highly engaged in agricultural activities and the use of their time and energy can have significant implications for health and nutritional status of both themselves and their children. Excessive labor demands have been shown to have a direct negative impact on the health and well-being of newborns and their mothers. Women with some control over how household income is spent tend to ensure that it is spent on things that improve the nutrition and health of the family.
- Let's take a few minutes to unpack each of these three pathways between agriculture and nutrition a bit more.

Slide 10 Agriculture as a Source of Food

- Good nutrition requires every household member to be able to consume enough nutritious food, including a diversity of foods, to ensure adequate calories, protein, and micronutrients. This can be a challenge due to seasonality and/or distances to markets.

⁶For more on the complex relationship between improved incomes and improved nutrition, please see USAID. 2017. Nutrition Sensitive Agriculture: Applying the Income Pathway. Multi-sectoral Nutrition Strategy 2014-2025 Technical Guidance Brief. Washington, D.C.: USAID. SPRING. 2017. Webinar: Does increased income within rural households lead to improved nutrition? Arlington, VA: Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project. <https://www.spring-nutrition.org/events/does-increased-income-within-rural-households-lead-improved-nutrition>



Discussion Prompt: Ask the group:

1. What do you think about when you hear “enough nutritious food”?
2. How might families get “enough nutritious food” year-round in your area of implementation?

Take several responses and write them down on a flip chart. To help guide discussion, make sure that the group touches on the following points:

- Safety
- Variety
- Quality
- Quantity

- Production decisions are made based on many factors: market prices, relative costs and risks, productive assets of the family (including land, labor, and capital), needs for cash versus food, and, of course, preferences and cultural norms/expectations.
- Processing and storage can affect shelf-life, safety, and nutrient content of foods. It has a direct impact on timing and duration of household food access.
- Additionally, households need appropriate knowledge about what it means to have a healthy diet, safe food and when to seek medical treatment for illnesses. All of these contribute to nutrition and are essential for positive child and maternal nutritional outcomes.
- Some rural families live in areas where agriculture is extremely difficult due to climate, soil, weather conditions, or vulnerability to shocks. These families may be better off seeking income sources that are not based in agriculture to improve the family’s health, nutrition, and chances of survival. Or diversifying... to increase resiliency for the family.
- In these cases, increased income from non-agricultural work (alternative livelihoods) may be a better strategy for promoting resiliency and ensuring the family’s survival during lean times. So, let’s see how agricultural income may help contribute to nutrition.

Slide 11 Agriculture as a Source of Income

- A common goal of many programs is to increase household income through agriculture.



Discussion Prompt: Ask the group:

1. Why is increasing household income not sufficient for improving nutrition?

Take several responses. Ensure that participants consider things such as:

- competing priorities,
- understanding what constitutes a nutritious diet,
- availability and accessibility of nutrient-rich foods,
- access to clean water and sanitation,
- access to healthcare
- illnesses that might decrease the ability to consume or absorb sufficient food or nutrients

2. What can your activity do to ensure that income is used to improve nutrition?

- There are a number of ways that increased income can be used to improve nutrition outcomes. Improved year-round income and cash flow can be used for immediate or future household needs to support a healthy diet and life. Income may be used for food or non-food items that improve health, such as medicines, clinic visits and agricultural supplies.

- In order to affect nutrition, income must be used to purchase AND consume a diverse diet which may be challenging where a diversity of nutritious foods, including animal source foods, fruits, and vegetables are not available or affordable in local markets.
- Purchasing power can drive demand, and if people begin to demand more diverse, nutritious foods, then the increased demand can support the relationship between agriculture and nutrition in the food market environment.
- Use of income toward good health and care is also crucial to improved nutrition. Investments in potable water sources and toilets, preventive care for pregnant or lactating women and young children, transportation to health facilities and purchase of prescribed medicines, as needed, and other basic necessities, including soap and handwashing stations can have a positive impact on nutrition. Rural farm households are constantly balancing spending between farm production and marketing investments and the immediate purchases of food, health, and care necessities. SPRING's field work has found in select contexts that joint decision making within the household helps to define and maintain the balance.

Slide 12 Agriculture as a Means to Women's Empowerment

- Evidence shows that women are more likely to spend additional income on the health and nutrition needs of the household (SPRING 2014a).



Discussion Prompt: Ask the group:

1. How can your activity maximize women's control of income?

Take several responses and write them on a flipchart. Remind the group to think about these answers later when they are working on interventions.

- However, women's empowerment is not just about income. If our goal is to improve nutritional status, we must also consider time and energy use, which have a direct impact on the health of unborn children, infants and women's ability to care for families.
- When thinking through income and time, it's important to emphasize that although we are referring to "women's empowerment", it involves all household members - such as the husband, mother-in-law, or any other key decision makers at the household level.
- We've learned that involving each of these key decision makers in programming - both to alleviate the heavy workload that comes with agriculture and to increase women's control of income - leads to much more effective programming and more likely uptake of promoted practices.
- Women's roles in the household (time spent laboring in the fields, caregiving, managing income) are deeply embedded in the fabric of a society so creating change in this area may take time. Additionally, changes that we advocate for women may come with unintended consequences, including increased tensions in the household, less time for children's and self-care, and possibly even domestic violence.

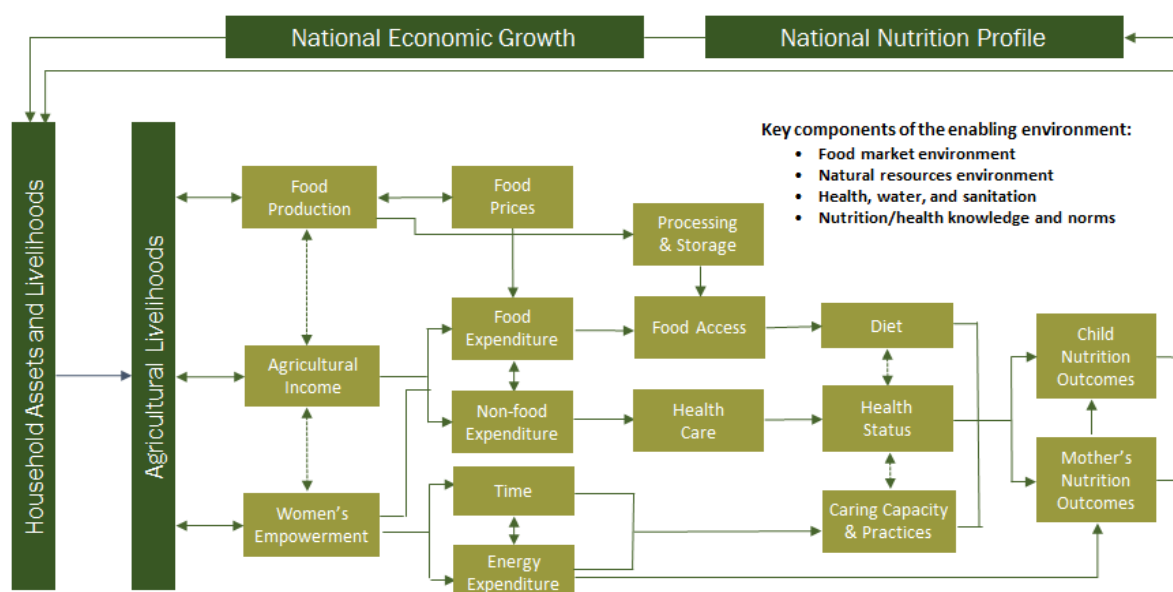
Slide 13 Agriculture-to-Nutrition Pathways Diagram



Facilitator Note: The Agriculture-to-Nutrition Pathways are covered in more detail in the Agriculture-to-Nutrition Pathways Session of SPRING's Nutrition-Sensitive Agriculture Training Resource Package. The session includes an interactive activity in which participants map out the pathways and could be adapted for an additional exercise in this workshop if you have the time and feel participants could benefit from more hands-on work with the pathways.

- This framework describes the Agriculture-to-Nutrition Pathways we just discussed (Handout 4: Agriculture-Nutrition Pathways).
- On the left side, we have the three main pathways—food production, agricultural income, and women’s empowerment. On the far-right side, we have our desired outcomes—better nutrition (and overall health) for children and mothers. The rest of this diagram focuses on how we get from our starting point (agriculture) to our ending point (nutrition).
- It is important to note that though this diagram has been simplified to make these the agriculture-nutrition linkages clear, these pathways are not always linear. They interact with one another and are also influenced by (and influence) the enabling environment.

Agriculture-to-Nutrition Pathways



Sources: Headey, D., Chiu, A., and Kadiyala, S. 2011. *Agriculture's role in the Indian enigma: Help or hindrance to the undernutrition crisis?* IFPRI discussion paper 01085. Washington, DC: IFPRI; Kadiyala S., Harris J., Headey, D., Yosef, S., Gillespie, S. 2014. "Agriculture and nutrition in India: mapping evidence to pathways." *Ann N Y Acad Sci* 1331:43–56.

Slide 14 The Enabling Environment

- Wrapped around the pathways is the enabling environment, which exerts tremendous influence at every stage. The four components of the enabling environment include:
 - The Food Market Environment
 - (Natural Resources Environment)
 - Health, Water, and Sanitation
 - Nutrition/Health Knowledge and Norms
- Here are some examples of how aspects of the enabling environment can have an influence along the pathways:
 - Local markets determine what kinds of foods are available for households to purchase. Availability and affordability drive food choices and preferences. (Food Market Environment)
 - Lack of rainfall during a growing season determines crop yield available for sale and consumption (Natural resources environment)

- Unsafe food due to contamination during storage or processing can lead to an increase in disease, which is another cause of malnutrition.(Health, Water and Sanitation)
- Cultural practices around which foods to feed young children impact feeding and care practices and can affect household nutritional status (Nutrition/Health Knowledge and Norms)
- Finally, government policies and legal frameworks are a part of all of the components, for example determining what commodities are subsidized in the markets or how natural resources are managed.

Slide 15 Caution: Go Beyond the Production of Nutrient-Rich Commodities

- Note of caution: There is often a misperception that the only way for an agriculture activity to be nutrition-sensitive is if it promotes nutrient rich crops, or if it includes a home garden component. As we discussed earlier, there are numerous ways for any agriculture activity to be nutrition-sensitive that go beyond nutrient-rich crop production, so be sure not to limit your thinking during the following exercise.⁷
- Additionally, if your activity IS promoting nutrient rich crops, it does not mean you will necessarily see improvements to nutrition. Unless the activity ensures that some of the nutrient-rich crops is set aside for home consumption or remains in the local markets and direct beneficiaries have the income and knowledge and desire to purchase them, a nutritional benefit is an unlikely outcome. Nutritious foods must be produced and consumed in sufficient quantities if they are to contribute to better nutrition. Ultimately, agriculture is only going to take you so far towards nutrition, which is why agriculture activities need to partner with activities that are focused on nutrition-specific and health interventions to ensure that nutritional outcomes are reached and sustained.

Slide 16 Key Terms

- Before we go to Step 1 of our design process, it is important that everyone understands several key terms in the same way. Let's discuss each of the following terms as I present definitions. It is important that we agree upon definitions as a group, so that as these terms are used throughout the workshop, we all are thinking of each term in the same way. If the definitions presented in the following slides require some adjustment, let's do so as a group. Then I will continue to remind you of our agreed-upon understanding of the meaning of these terms as we continue through the workshop. These terms are also available on Handout 5.
- Key Terms
 - Nutrition-specific
 - Nutrition-sensitive
 - Food market environment
 - Nutrient-rich value chain
 - Activity Outcome
 - Strategy

⁷USAID defines a commodity as nutrient-rich if it meets any of the following criteria:

1. It is biofortified
2. It is a legume, nut, or seed, such as sesame, sunflower, pumpkin seeds, wheat germ, or sprouted legume seeds
3. It is an animal source food, including dairy products (milk, yogurt, cheese), fish, eggs, organ meats, meat, flesh foods, and other miscellaneous animal protein (e.g. grubs, insects)
4. It is a dark yellow or orange-fleshed root or tuber
5. It is a fruit or vegetable that meets the threshold for being a "high source" of one or more micronutrients on a per 100-calorie and per 100-gram basis

See: <https://www.usaid.gov/what-we-do/global-health/nutrition/nutrition-sensitive-agriculture-nutrient-rich-value-chains>

- Practice
- Intervention
- Output Indicator
- Outcome Indicator

End of Introduction and Background

Step 1: Prioritize Nutrition-Sensitive Agriculture Outcomes for Your Activity

Estimated time: 2 hours

Slides: 17–24

Materials and Handouts: Handout 1: Six Key Nutrition-Sensitive Agriculture Activity Outcomes; Handout 2: UNICEF Framework; Handout 3: MSNS Results Framework; Handout 6: What, How Who Matrix; Handout 7: Activity Design Matrix, Flip Chart and/or White Board with markers

Learning Objective: Participants will be able to determine which nutrition-sensitive agriculture outcomes are attainable in the context of their agricultural and economic growth activity, including a discussion about key nutrition challenges in their target area.

Slide 17 Step 1: Prioritize Nutrition-Sensitive Outcomes for Your Activity

Slide 18 What is the Purpose of Your Activity?

- Most agriculture and market systems development activities strive to achieve one or more of the following:
 - Improve production of target commodities (crops and livestock/poultry)
 - Increase income
 - Sustain, protect or enhance productive natural resources
 - Engage women and youth to secure their livelihoods
- In order to develop nutrition-sensitive agriculture outcomes, strategies, interventions and indicators, it is important to have a clear picture of what and how your activity plans to undertake its agricultural market systems development efforts. In this first exercise, you will be describing the agricultural market systems development components of your activity with a focus on WHAT agricultural, economic growth or resilience outcomes you hope to achieve, HOW you plan to achieve these and WHO will be involved in implementation as well as WHO is targeted to benefit.

Slide 19 Example: West Africa Activity

- Throughout the training, we will be using an example activity from West Africa. This activity centered on strengthening smallholder producer incomes through involvement in one or more of the following value chains: fish, pumpkin, cowpea or rice.



Facilitator Note: *This example is used throughout this training; however, we would encourage the facilitator to develop contextually appropriate examples, if possible.*

What	How	Who
Increase production of pumpkin, fish, cowpea and rice	<ul style="list-style-type: none"> - Promote good farming practices - Introduce new technologies 	<ul style="list-style-type: none"> - Small farmers; coops; agricultural extension agents - Agricultural extension agents, small farmers, coops, researchers
Increase income	<ul style="list-style-type: none"> - Improve rice storage in order to sell at higher prices - Add value to fresh fish using drying technology - Increase access to agricultural financing 	<ul style="list-style-type: none"> - Small farmers, coops, input suppliers, buyers - Fishermen, WorldFish, research staff - Microfinance institutions, cooperatives, small farmer groups, women's groups

Slide 20 Exercise: Describe Your Agricultural Market Systems Development Activity

Exercise: Describing Your Activity

Describing Your Agricultural Market Systems Development Activity		
Goal: To have a common understanding among workshop participants of the agricultural market systems development components of their activity	Duration: 45 minutes Materials: Heading Cards (post on the wall—create Handout 6: What, How, Who Matrix), pass out copy of Handout 6 Large sticky notes Copies of activity results framework, theory of change, work plan, PMP, initial context assessments and the RFA/RFP, if applicable	
<p>In plenary, ask the participants to think about their agriculture activity. Begin by asking them WHAT their project intends to do. As participants call out their agriculture-related results, facilitator should write these under a heading, “WHAT”, at the top of a flip chart paper, on a white board or on a document that is projected. These are meant to be the big picture results or outcomes of what the activity is trying to achieve. It is unlikely that there will be more than 3 or 4 expected results and they may include one or more of the four on the previous slide, or they may come up with some that are not included on that list.</p> <p>Break into small groups assigning each group one of the responses on the flip chart under “WHAT.” Each group should take 20 minutes to discuss and write down “HOW” their activity plans to achieve the result assigned to them and, then, WHO will benefit from and who will participate in the work described for each “HOW.” This can be completed using note cards or Post-It notes or by simply having each group come up and write in their answers on a flip chart at the front.</p> <p>Have the group come back to plenary and write their answers under “HOW” and “WHO” columns next to the “WHAT” column on the flip chart (or on separate flip charts). Your matrix should look something like the one below.</p>		
What, How, Who Matrix		
What	How	Who

Slide 21 Nutrition Refresher

- As you know, malnutrition is a complex problem and effective approaches need to target the specific problems that exist in your activity's area. In order to design nutrition-sensitive agricultural strategies and interventions into your activity, it is critical to understand the key nutrition challenges that may affect individuals in your target activity area. Let's take a few minutes and discuss some of the things that contribute to malnutrition for your target groups.



Discussion Prompt: Ask the group:
Have participants use their Handout

3: UNICEF Framework and Handout 4: MSNS Results Framework.

Ask: What are some factors that are contributing to malnutrition in the activity area? Remind participants to consider immediate, underlying and basic causes from the MSN strategy and UNICEF Framework that they saw during the Introduction and Background session. Encourage them to provide examples from their own experience (facilitator should also be prepared to provide examples, as needed). Write down the answers on a flip chart.

Slide 22 Identifying Nutrition-Sensitive Agriculture Outcomes



Facilitator Note: Remind participants to pull out Handout 1: Six Key Nutrition-Sensitive Activity Outcomes for more information on each outcome. Also, have them pull out Handout 5: Key Terms to review the definition of nutrient-rich foods and refer them to the [USAID.gov](https://www.usaid.gov/our-work/food-for-peace/nutrition-sensitive-agriculture) web link that has a list of nutrient-rich foods.

- Of the several key contributors to malnutrition listed on the flip chart, some may be addressed through agriculture; these are the ones for which your activity may want to develop strategies and interventions. To do this, let's first determine what may be possible within the context of your agricultural market systems development plans.

SPRING has identified six (6) nutrition-sensitive agriculture outcomes that your activity may strive to achieve:

- Improved availability of diverse, nutrient-rich foods in local markets
 - Per the production pathway, agriculture activities can be nutrition sensitive if they are striving to increase production of nutrient rich food commodities⁸ that are going to be sold in local markets

⁸USAID defines a commodity as nutrient-rich if it meets any of the following criteria:

1. It is bio-fortified
2. It is a legume, nut, or seed, such as sesame, sunflower, pumpkin seeds, wheat germ, or sprouted legume seeds

and/or consumed at home. Other strategies may also be used to improve availability of diverse, nutrient rich foods including: appropriate storage, handling, processing and packaging that would extend the life (and quality) of these foods in homes and markets.

- Improved affordability of diverse, nutrient-rich foods in local markets
- Per the income pathway of the agriculture-to-nutrition pathways, an agriculture activity may contribute to the affordability of nutrient rich foods, by improving purchasing power of rural households. However, having increased income does not, in and of itself, ensure that nutrient-rich foods will be purchased. The cost of producing and selling these more perishable commodities requires interventions within the enabling environment components of the agriculture-to-nutrition pathways. For example, the food market environment may support incentives to help increase the production of good quality nutritious foods, thereby helping to bring down prices. And, in order to build demand for more expensive nutrient-rich foods, an agriculture activity may pursue the development of smaller packages or advertise the benefits of consuming a diversity of nutritious foods. As supply of nutrient rich foods more easily follows demand, including behavior change communication that encourages the purchase of a diversity of nutrient-rich foods as a part of an agriculture activity's efforts to improve farmer incomes may lead to increased supply of these foods in local markets. And, as supplies of foods increase to meet demand with the help of strengthened food and market systems, a reduction in the prices of these foods may also result.
- Improved desirability of diverse, nutrient-rich foods among target consumers, especially economically vulnerable (poor) and households with women who are pregnant or infants under two years of age (1,000 day households)
 - While high prices may serve as disincentives to the purchase of nutrient-rich foods, agriculture activities can provide incentives for their purchase by strengthening the food market environment (per the agriculture-to-nutrition pathways) to make nutrient-rich foods more desirable and appealing. Convenience in preparation and purchase is a key component but may not be the most important desirability characteristic needed to increase the purchase and consumption of these foods. Appearance, quality, taste, texture, and cultural norms all shape what people like to eat. However, agriculture activities, especially those focusing on strengthening food systems for nutrient-rich commodities such as fruits, vegetables and animal source foods, can consider including social marketing and consumer education campaigns and other behavior change communication strategies to promote the desirability of nutrient-rich foods and overcoming barriers to purchase.
- Improved environmental and food safety

3. It is an animal source food, including dairy products (milk, yogurt, cheese), fish, eggs, organ meats, meat, flesh foods, and other miscellaneous small animal protein (e.g., grubs, insects)

4. It is a dark yellow or orange-fleshed root or tuber

5. It is a fruit or vegetable that meets the threshold for being a "high source" of one or more micronutrients on a per 100-calorie and per 100-gram basis

See: <https://www.usaid.gov/what-we-do/global-health/nutrition/nutrition-sensitive-agriculture-nutrient-rich-value-chains>

- Agriculture activities can mitigate harmful effects of toxins (either the result of chemical inputs or naturally occurring contamination such as mycotoxins) in agricultural production or processing – a part of the production to consumption pathway – thereby reducing the risk of disease and contributing to improved health status, which lies at the center of the agriculture-to-nutrition pathways. Similarly, food sold in markets, per the income pathway, must be hygienic and free of pathogens. Handwashing when handling food, wearing protective gear while using pesticides, and keeping animals away from living areas and small children are some additional ways nutrition-sensitive agriculture may support environmental and food safety.
- Increased income control by women and equitable opportunities
 - Many agriculture activities strive to engage women. However, per the women’s empowerment pathway of the agriculture-to-nutrition pathways, addressing women’s control of income and equitable access to resources is a key nutrition-sensitive outcome relevant to a majority of agriculture development activities. Given the strong cultural norms associated with roles and responsibilities for agriculture and control of income and productive assets, achievement of this nutrition-sensitive agriculture outcome requires strategies that strengthen the enabling environment for women to invest more resources in the nutritional well-being of themselves and their children.
- Increased time and energy savings for women
 - Saving energy and time for women, especially during their pregnancy, can help protect the health and nutritional status of women and their children, the second part of the women’s empowerment pathway. Agriculture activities can incorporate technologies or labor saving practices aimed at saving time and energy for women in order to allow them more time for their other responsibilities which often include caring for children. Additionally, as in the case of women’s control of income, ensuring an enabling environment within households, communities and businesses that supports women to limit excessive labor during pregnancy is also a key component to this outcome.

Slide 23 Activity Design Matrix

- Please pull out Handout 7: Activity Design Matrix. During the rest of this workshop we will be working to complete this matrix using your own activity. During this step, we are going to work on identifying your nutrition-sensitive agriculture outcomes, but by the end of the workshop, you will have a completed matrix that you can use to inform your workplan and PMP, and that can be mapped to your results framework and other project documents.

Nutrition-Sensitive Agriculture Outcome(s)	Strategies	Practices	Interventions	Indicators

Slide 24 Exercise: Identify Nutrition-Sensitive Agriculture Outcomes

Exercise: Identify Nutrition-Sensitive Agriculture Outcomes

Identify Nutrition-Sensitive Agriculture Outcomes

Goal: To identify nutrition-sensitive agriculture outcomes your activity will be able to achieve

Duration: 30 minutes
Materials: Handout 7: Activity Design Matrix; flipchart paper and the large sticky notes

During this exercise, the participants will complete the first column of the Activity Design Matrix. In this exercise, the participants will think about which of the above nutrition-sensitive agriculture outcomes will make the most sense for their activity.

Based on WHAT your agriculture and economic growth activity is striving to achieve and based on the key nutritional problems in your target area, think about which of the above six nutrition-sensitive agriculture outcomes might be possible. It is recommended that you select no more than three nutrition-sensitive agriculture outcomes to pursue as implementation of each will require several strategies and numerous interventions.

Once you have determined which of the nutrition-sensitive agriculture outcomes is appropriate to your context and activity, insert these into the first column of your Activity Design Matrix shown below.

Nutrition-Sensitive Agriculture Outcome(s)	Strategies	Practices	Interventions	Indicators

End of Step 1

Step 2: Prioritize Nutrition-Sensitive Agriculture Strategies

Estimated time: 1.5 hours

Slides: 25–36

Materials and Handouts: Flip chart paper with the team’s completed “What, How, Who” matrix, Flip Chart paper of the team’s Activity Design Matrix with the priority nutrition-sensitive agriculture outcomes completed, the activity’s Results Framework, Handout 8: Nutrition-Sensitive Agriculture Strategies Criteria and Examples, Handout 9: Prioritization Criteria

Learning Objective: Participants will discuss a range of strategies that the activity can feasibly pursue in order to meet its selected nutrition-sensitive agriculture outcomes. In selecting and prioritizing the strategies, workshop participants will discuss key assumptions and risks.

Slide 25 Step 2: Prioritize Nutrition-Sensitive Agriculture Strategies

- In this step, we will define and prioritize potential strategies.

Slide 26 Key Terms

- Let’s remind ourselves of a few key terms. Who can tell me what the difference is between a strategy and an intervention? *(take several responses from participants)*
- You will recall that during the first session, we discussed both of these terms and agreed on these definitions:
 - A strategy is the means or broad approach by which an activity may achieve a stated purpose or desired outcome. Strategies are made up of collections of behavior-centered interventions. Achievement of each of the activity’s desired nutrition-sensitive agriculture outcomes may require one or more strategies.
 - An intervention is a collection of actions that, taken together, will accomplish a planned (nutrition-sensitive agriculture) strategy.
 - In other words, one or more interventions are needed to meet a planned strategy and one or more strategies are required to achieve a planned nutrition-sensitive agriculture outcome.

Slide 27 Recap

- In Step 2, we are going to focus on defining one or more strategies that your activity may use to achieve each of the nutrition-sensitive agriculture outcomes you selected in Step 1. **It will be important to refer back to your “What, How, Who” matrix** as well as to your Results Framework to ensure the nutrition-sensitive agriculture strategies you devise are not only doable but also complementary to your agriculture and market systems development strategies.
- Before we start, let’s check in with what we have done so far:

- We have reviewed the agriculture and market systems development outcomes (What) and strategies (How) for your activity. As a part of that process, you also identified who will be engaged in the interventions required to pursue those strategies. From this thinking, you completed the “What, How, Who” matrix.
- The thinking you did on the “What, How, Who” matrix initiated a conversation about how your planned agriculture and market systems development outcomes and strategies might do more to contribute to nutrition in your target area which resulted in your team selecting nutrition-sensitive agriculture outcomes that are in line with your activity’s goals and that may be able to be addressed within your agriculture-led interventions.

Slide 28 Developing Nutrition-Sensitive Agriculture Strategies

- Now we are going to develop nutrition-sensitive agriculture strategies for each of the nutrition-sensitive agriculture outcomes.
- In order to be nutrition-sensitive, an agricultural strategy must help work towards one of the nutrition-sensitive outcomes. There are a number of criteria you can consider to assess if the strategy is doing this.
- Remember, nutrition-sensitive agriculture strategies are those that address some aspect of **Food Access, Food Quality, Health, WASH or Care**.

Slide 29 Nutrition-Sensitive Agriculture Strategies Criteria and Examples

- Please pull out Handout 8. This handout provides criteria by which you can assess your strategies and determine if they will contribute to nutrition and how you could adjust them to be nutrition-sensitive. The criteria are organized by the six outcomes we reviewed previously (Handout 1).
- Handout 8 lists key criteria related to each of the six outcomes. You may discover additional criteria that would enable your strategy to address some aspect of food access, food quality, health, WASH or care. The example strategies however are just a small sampling of the strategies that will contribute to these outcomes. Again, the strategies will be specific to the context in which one is working, the agricultural commodities involved, timeframe, and so forth.
- Let’s look at the first example for Outcome 1: Improved availability of diverse, nutrient-rich foods in local markets
 - One criterion that would indicate your strategy will *contribute to improved availability of diverse, nutrient-rich foods in local markets* is *if your strategy increases the supply of a nutrient rich food in local markets*. Examples of strategies that do this include:
 - Link dairy farmers to milk collection centers
 - Promote inter-cropping and other practices to diversify home production
 - Another criterion for this same outcome is *does your strategy extend the time period a nutrient rich food is available in local markets?* Examples of strategies that do this include:
 - Use hermetically sealed bags for cowpea storage

- Promote community warehouse system to safely store commodities closer to market for longer periods of time
- Note that some strategies will meet more than one criteria and could also be used to support more than one outcome. For example, use of improved preservation practices can contribute to both improved availability (Outcome 1) and improved food safety (Outcome 4).
- Let's read through the rest of Handout 8 together now.

Slide 30 Some strategies may **ALREADY** be nutrition-sensitive

- For example, in our example from West Africa, one of the strategies for *increasing incomes* is to *add value to fresh fish using drying technology*. While the intention of the strategy is to contribute to fishermen's incomes by lengthening the amount of time that they will be able to sell the fish, thereby obtaining higher prices over a longer period of time, this strategy can also contribute positively to nutrition by improving the safety of a nutrient-rich food, and making it available in markets to purchase and consume for longer.
- Therefore, this agricultural strategy is already a **nutrition-sensitive** agriculture strategy.

Slide 31 Some strategies can be **ADAPTED** to be nutrition-sensitive

- In our example from West Africa, the activity had two strategies for increasing production of fish, cowpea, rice and pumpkin: *Promote good farming practices*; and *Introduce new production technologies*. They determined that these two strategies **could** be adapted to enable them to reach the nutrition-sensitive outcome of *improved availability of diverse, nutrient-rich foods in households and local markets*.
- Using the criteria we just discussed, the West Africa team adapted their agricultural development strategy to help extend availability of nutrient rich and safe foods for consumption, as follows: *Build capacity of cooperative members and farmer groups in appropriate storage practices for cowpea and rice*. This would enable cowpeas and rice to be stored for longer, and would help ensure that they were stored correctly and stayed safe for consumption. Both of these would improve the availability of cowpeas and rice in households and local markets.

Slide 32 Some new nutrition-sensitive strategies may need to be **ADDED**

- In order to fully achieve your prioritized nutrition-sensitive outcomes, your activity may need to also consider **ADDING** new strategies in addition to identifying and adapting strategies that are already in place.
- In our West Africa example, the team did not have an existing strategy to address building consumer demand for nutritious foods, so while they were addressing the supply side issue of the availability outcome, it was also important to think about ways the activity could also increase demand to ultimately improve availability of nutritious foods in local markets. So an example of a new strategy is: *Facilitate marketing to build consumer demand for fish and cowpeas*.

- Please take a look again at Handout 8 to review criteria for nutrition-sensitive agriculture strategies and examples.

Slide 33 Partnering as a Strategy

- It is not expected that your activity alone has sufficient breadth and resources to address every contributor to malnutrition in your target area. It is, therefore, important that as you are developing your strategies, you are also thinking about key linkages, partnerships, and advocacy needs in order to work with other investments, programs and plans to reduce malnutrition in your target area. What target groups are being reached by others? To improve adoption of what practices? If others are promoting some of the practices you have identified as critical to implementing your strategies, rather than implementing directly, it may be more cost effective to adjust your strategy and partner with an existing activity or program. In order to fully achieve your prioritized nutrition-sensitive outcomes, your activity may need to also consider coming up with new strategies in addition to identifying and adapting strategies that are already in place.

Slide 34 Exercise: Identify Nutrition-Sensitive Agriculture Strategies

Exercise: Identify Nutrition-Sensitive Agriculture Strategies

Identify Nutrition-sensitive Agriculture Strategies																			
Goal: To identify nutrition-sensitive strategies your activity will be able to achieve		Duration: 20 minutes Materials: Handout 7: Activity Design Matrix; Handout 8: Nutrition-Sensitive Agriculture Strategies Criteria and Examples; Flipchart paper or the large sticky notes																	
<p>In plenary, take a look at the strategies listed in your HOW column of your “What, How, WHO” matrix.</p> <p>Using the criteria on Handout 8 that we discussed, go through each strategy on the HOW column and determine whether it is already nutrition-sensitive or can be made nutrition-sensitive. On a piece of flip chart paper, list any of the strategies included in your “What, How, Who” matrix that are already nutrition-sensitive and indicate which nutrition-sensitive agriculture outcome it supports.</p> <p>Then re-word any strategies that can be adapted to be nutrition-sensitive and add them to the “Strategies” column of your flip chart and indicate which nutrition-sensitive agriculture outcome it supports.</p> <p>Finally, looking at the criteria, and considering the nutrition challenges in your target area and the scope of your activity, please add any additional nutrition-sensitive strategies that you come up with. Make sure to indicate with nutrition-sensitive outcome it supports.</p> <p>Your flip chart should look like this:</p> <table border="1"> <thead> <tr> <th>Nutrition-Sensitive Agriculture Outcome(s)</th> <th>Strategies</th> <th>Practices</th> <th>Interventions</th> <th>Indicators</th> </tr> </thead> <tbody> <tr> <td></td> <td>Strategy 1</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Strategy 2</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Nutrition-Sensitive Agriculture Outcome(s)	Strategies	Practices	Interventions	Indicators		Strategy 1					Strategy 2			
Nutrition-Sensitive Agriculture Outcome(s)	Strategies	Practices	Interventions	Indicators															
	Strategy 1																		
	Strategy 2																		

Slide 35 Recap

- To recap, you should now have a full list of nutrition-sensitive agriculture strategies for your activity. These will be composed of:
 - Strategies that your agriculture activity included that were **ALREADY** nutrition-sensitive
 - Strategies that your agriculture activity **ADAPTED** to make them more nutrition-sensitive
 - Strategies that your agriculture activity **ADDED** to better achieve nutrition-sensitive outcomes

However, you may have too many strategies listed and so we will now prioritize these strategies by checking their feasibility.

Slide 36 Checking the Feasibility of Your Nutrition-Sensitive Agriculture Strategies

Discussion Prompt:

Now that the group has come up with a list of strategies, let's make sure to consider whether achieving them is feasible. In plenary, go through each strategy and discuss whether it meets all of the criteria listed on the slide (also listed in Handout 9: Prioritization Criteria). If any of the strategies do not meet the criteria or do not YET meet the criteria, consider deleting them, or flagging them for consideration in a future work plan.



- Sustainability and potential for impact
- Funding available
- Time available
- Staff capacity and experience
- Organization's competitive advantage/expertise
- Alignment with government priorities
- Alignment with USAID (donor) priorities
- Complementarity with other investments in the activity area
- Opportunity to leverage private sector investment

End of Step 2

Step 3: Develop Practices and Interventions

Estimated time: 2.5 hours

Slides: 37–43

Materials and Handouts: The flip charts with the participants' Activity Design Matrix with the first two columns completed; Handout 10: Illustrative Nutrition-Sensitive Agriculture Outcomes, Practices and Interventions

Learning Objective: Participants will consider a range of practices that their activity should promote in order to address the strategies prioritized in Step 2. Using these practices as a starting point, participants will then develop a list of interventions that the activity can program into its work plan for achieving each nutrition-sensitive agriculture strategy.

Slide 37 Step 3: Develop Practices and Interventions

- At the end of this step, you will have a number of nutrition-sensitive agriculture interventions to accompany the strategies you developed in Step 2. As already mentioned, this guidance uses a behavior-centered approach to design. Therefore, each intervention will be developed with an eye to supporting the adoption of nutrition-sensitive agriculture practices by key target groups in order for your activity to successfully implement its strategies.

Slide 38 Key Terms

- A **practice** is a concrete action that a specific person or group does at a specific time and place. Promoting the use of good practices is at the core of our work.
- An **intervention** is an action that, combined with other actions, will accomplish the nutrition-sensitive agriculture strategies.
 - Interventions clearly state what will be done and who will be involved as an actor or target recipient. An intervention will in many cases describe the key practices or behaviors that the activity wants a specified organization or individual to adopt.
- Because interventions focus on key practices that an activity wants particular individuals or organizations to adopt (or use), we must first think about the key practices that need to be used - and by whom - to implement our strategies BEFORE we can write out our interventions.

Slide 39 Adapting Good Agricultural Practices to Support Nutrition

- In agricultural market systems development activities, we often promote the use of good agricultural practices by smallholders. These practices may vary by crop, location or context, market and resource base. But, in order to determine what will be done and who needs to be involved, agricultural market systems development activities must determine which practices will have the greatest effect and who needs to adopt them.
- The same is true in the case of nutrition-sensitive agriculture. The nutrition-sensitive agriculture strategies you prioritized in Step 2 imply the use of key practices that need to be used by particular target groups. We

will share an example of this below. But, before we start to write interventions, let's review a few things that we know about targeting.

Slide 40 Targeting: Agriculture vs. Nutrition

- There is an inherent tension between agricultural market systems development activities versus those that aim to reduce malnutrition. Agricultural activities tend to target changes for farmer households, value chain actors, or even systems. Nutrition activities tend to target changes for women who are pregnant or lactating and children under two, the groups most vulnerable to undernutrition.
- We must also consider gender roles (e.g. what men can do to ensure nutritional well-being of women and children) and strengthen the environment that will enable women and young children to benefit from planned strategies, thereby achieving planned outcomes. However, women may not need to participate in all aspects of agricultural or nutrition-sensitive agriculture activities in order to benefit.
- In other words, in some cases the actors and the beneficiaries will be the same, while in other cases they will be different groups.

Slide 41 Identify Practices: West Africa Activity Example

- When we were defining strategies in the last step, we mentioned that a strategy can be thought of as a collection of behavior-centered interventions.
- You will need to identify the nutrition-sensitive agriculture practices your activity wants to promote first and then develop the range of interventions needed to promote the adoption of those practices.
- For example, let's look at one of the strategies from our West Africa example: *Build capacity of cooperative members and farmer groups in appropriate post-harvest handling and storage practices for both cowpeas and rice*. First, the West Africa team considered which post-harvest handling and storage practices or behaviors were lacking for both rice and cowpea that would have the greatest contribution to nutrition. Before they could develop interventions, they considered the range of possible post-harvest handling and storage practices by commodity:
 - For cowpea, they determined that poor storage practices were resulting in high levels of loss both in households and in markets. Clearly, by promoting improved storage, more cowpeas would be available for longer periods of time for both purchase from local markets and consumption from household level stores. However, there were challenges before the cowpeas even reached storage in that farmers were not aware of appropriate sorting techniques and visual cues to inform which beans should be discarded rather than stored. Therefore, **cowpea sorting techniques** were included in the training to mitigate mycotoxin contamination in storage which would have a positive effect on nutrition as well as on product quality (for sale) and longevity (extending time the time period cowpeas could be consumed or sold and possibly obtaining higher prices).
 - For both rice and cowpeas, there were also a lot of challenges with obtaining the appropriate moisture content before storage. It was, therefore, important to focus training on use of **good drying practices** and **recognizing and testing for appropriate moisture content** before storage.

Slide 42 Develop Interventions: West Africa Activity Example

- Once our West Africa team had identified specific practices that could be included under their priority strategies they needed to determine what needed to happen and who needed to play a role in order to define their interventions. Their discussion resulted in several specific interventions that, taken together, would support each strategy and assist their target actors to use the practices the activity wanted to promote. For the strategy, *Build capacity of cooperative members and farmer groups in appropriate post-harvest handling and storage practices for both cowpeas and rice*, these interventions included but were not limited to:
 - train cowpea growers in good sorting, drying and moisture testing practices before storage
 - train rice growers in good drying and moisture testing practices before storage
 - train agricultural extension agents (both government and private sector) in how to train others in good sorting, drying and moisture testing practices before storage
 - develop pictorial guidance to assist cooperatives, farmers and agricultural extension agents in continuing to use good sorting, drying and moisture testing practices before storage of cowpeas and/or rice
- These are just four of the possible interventions that may be required to support behavior change for the practices noted above for both rice and cowpea. Now it is your turn to try to be as specific as possible about the practices and interventions that will support your prioritized strategies. Remember that you will be developing indicators for your interventions (Step 4) so they must be clear and measurable.

Slide 43 Develop Practices and Interventions

Exercise: Develop Practices and Interventions

Develop Nutrition-Sensitive Agriculture Practices and Interventions	
Goal: To operationalize prioritized strategies	Duration: 1.5 hours Materials: Flipchart with nutrition-sensitive outcomes and strategies filled in from previous steps, flipchart paper or index cards to add practices and interventions. Handout 10: Illustrative Nutrition-Sensitive Agriculture Outcomes, Practices and Interventions
Divide participants into small groups: <ul style="list-style-type: none">● Assign one outcome and the related strategies prioritized from Step 2 to each group for discussion.● Groups should review each strategy, discuss key practices that are desired for each, and develop interventions that will ensure uptake and use of those practices. Keep in mind that <i>an intervention clearly states what will be done and who will be involved as an actor or target recipient.</i>● Participants should use Handout 10: Illustrative Nutrition-Sensitive Agriculture Outcomes, Practices and Interventions. They have been organized by nutrition-sensitive agriculture outcome and are provided only as examples to help your team start brainstorming. Note that this handout also illustrates intermediate outcomes that are more specific to a given context than the 6 nutrition-sensitive agriculture outcomes that you selected from at the beginning of this process. These more detailed, context specific outcomes are useful in helping to define your outcome indicators, which you will be doing in Step 4. If you think a more detailed outcome is appropriate to your activity, this would be a good time to review your selected nutrition-sensitive agriculture	

outcomes and to adjust the wording, as needed.

- Each team must agree upon a number of nutrition-sensitive agriculture interventions that the team feels they have the budget, staff, and timeframe to undertake. After smaller groups have discussed, each should post their interventions on the wall or share with the note taker for inclusion in the team's full Activity Design Matrix for later discussion and use.

Nutrition-Sensitive Agriculture Outcomes	Strategies	Practices	Interventions	Indicators
Outcome 1	Strategy 1.1	Practice 1.1.	Intervention 1.1	
	Strategy 1.2	Practice 1.2	Intervention 1.2	
Outcome 2	Strategy 2.1	Practice 2.1	Intervention 2.1	
	Strategy 2.2	Practice 2.2	Intervention 2.2	

End of Step 3

Step 4: Define Monitoring Indicators

Estimated time: 2 hours

Slides: 44–50

Materials and Handouts: Handout 2: Key Terms, Handout 11: Activity Design Matrix – West Africa Activity Example

Learning Objective: Participants will define outcome indicators in line with their outcomes and strategies and output indicators for the interventions developed in Step 3. During this step, participants will complete the design matrix and have a chance to review an example completed matrix, pulling together all four steps of this workshop.

Slide 44 Step 4: Define Monitoring Indicators

- Now that you have identified the strategies and interventions that you will use to reach your selected nutrition-sensitive agriculture outcomes, you need to think through appropriate indicators.
- Without regular monitoring of your interventions – assisted through the development of appropriate indicators – it is impossible to know whether your interventions are supporting your strategies and whether your strategies are adding up to achieve your outcomes. So, let's remind ourselves what is required for good activity monitoring.

Slide 45 Good Monitoring

- Monitoring nutrition-sensitive agriculture is like monitoring any of your other activity outcomes. You need to collect data regularly on your nutrition-sensitive agriculture indicators and adjust approaches and interventions when problems arise. So, here is a quick review of what constitutes good monitoring:
 - Undertake regular data collection activities to track implementation progress:
 - Monitor the quantity, quality, and timeliness of activity outputs
 - Monitor achievement of activity outcomes
 - Ensure the quality of performance monitoring data collected
 - Data collection typically entails the following tasks:
 - Review performance indicator data and monitoring reports
 - Conduct or participate in Data Quality Assessments (DQAs)
 - Conduct site visits
 - Examine technical reports and deliverables
 - Meet with implementing staff and other stakeholders

Slide 46 Key Terms

- It is not the purpose of this workshop to build expertise in writing indicators. Hopefully, the M&E advisors for the activity - who bring some of this expertise - are participating. However, we do think it is useful to provide a reminder about what indicators are and how they are used, along with definitions of output and outcome indicators.

- An **indicator** is a variable that measures one aspect of a program or project.
- An **output indicator** is a unit of measure to assess the quality and implementation of resulting products, goods or services at the end of an intervention. Data to inform output indicators are generally collected quarterly, semi-annually or annually to track progress toward planned benchmarks.
- An **outcome indicator** measures short- to medium-term effects of the combined outputs from an activity's interventions. Data to inform outcome indicators are generally collected annually or at the mid-term of an activity and are often reported in terms of a percentage of targeted groups reached.

Slide 47 Develop Output Indicators: West Africa Activity Example

- Most indicators associated with your interventions will likely be **output** indicators. For example, for the four interventions identified by the West Africa activity team, potential output indicators may be:
 - Number of rice/cowpea growers using improved drying technology
 - Number of rice/cowpea growers measuring moisture levels for their commodity prior to storage
 - Number of fish processors meeting food safety standards
 - Number of agriculture extension agents trained in appropriate post-harvest handling and storage practices for rice and cowpea
 - Percentage of agriculture extension agents completing all planned farmer group visits
- You will notice that these output indicators serve to measure the uptake and use of key promoted practices by the targeted users as well as measure progress toward achievement of specific interventions according to your detailed implementation plan. For example, in our sample project, it was important to know how many agriculture extension agents completed their training because that training served as a basis for extending knowledge to farmer group members. But, the process of extending that knowledge was also critical to farmers' use of key practices so the indicator, "% of agriculture extension agents completing all planned farmer group visits," helped activity managers to know whether their interventions were on track according to set progress measures.

Slide 48 Develop Outcome Indicators: West Africa Activity Example

- Your outcome indicators will serve as the measures of your original prioritized outcomes (per Step 1 of this guidance). In the example shown in Handout 11: Activity Design Matrix – West Africa Activity Example, the activity design team selected *improved availability of diverse nutrient rich foods in households and local markets* as one of their overarching nutrition-sensitive agriculture outcomes. One of their strategies for doing this was to *add value to fresh fish using drying technology, thereby extending availability in homes and in markets*. The activity's outcome indicator associated with this strategy was: *Percentage increase in volume of dried, packaged fish in local markets*. For the fish value chain, this outcome indicator measures the nutrition-sensitive agriculture outcome originally prioritized by the design team. The activity is also increasing production of other nutrient-food commodities – cowpea and pumpkin – and outcome indicators similar to that for fish may be used for these commodities to contribute to the overall measurement of *Improved availability of diverse nutrient rich foods in households and local markets*

- Now, let's develop indicators for achieving your nutrition-sensitive agriculture strategies and interventions

Slide 49 Exercise: Define Indicators

Exercise: Define Indicators

Define Indicators				
Goal: Establish indicators		Duration: 45 minutes Materials: Activity Design Matrix, flipchart paper		
<p>This exercise can either be done in plenary or the group can return to the small groups they worked in to develop interventions.</p> <ul style="list-style-type: none">● Assign 1 outcome to each group for discussion and make sure each group has a copy of the Activity Design Matrix, filled in except for the far-right hand column.● Ask groups to develop 1 or 2 outcome indicators as well as output indicators for the interventions most critical to achieving the strategies and/or outcomes assigned to them. The development of indicators will begin by determining what short to medium term outcome indicator(s) best measure their planned strategy and intended outcome. Group discussions will then focus on determining the most critical output indicators for managing implementation toward achievement of their interventions, strategies and outcomes. It might be helpful to refer back to Handout 1: Six Key Nutrition-Sensitive Agriculture Activity Outcomes which also provides a range of measurable sample outcomes.● Once groups have finished, they will report back in plenary, agree on proposed indicators and write their final wording on the Activity Design Matrix.				
Nutrition-Sensitive Agriculture Outcomes	Strategies	Practices	Interventions	Indicators
Outcome 1	Strategy 1.1	Practice 1.1	Intervention 1.1.1 Intervention 1.1.2	Outcome Indicator 1 Output 1.1
	Strategy 1.2	Practice 1.2	Intervention 1.2.1 Intervention 1.2.2	Output 1.2
Outcome 2	Strategy 2.1	Practice 2.1	Intervention 2.1.1 Intervention 2.1.2	Outcome Indicator 2 Outcome 2.1
	Strategy 2.2	Practice 2.2	Intervention 2.2.1 Intervention 2.2.2	Outcome 2.2

Slide 50 Pulling It All Together: Completed Matrix!

- The exercises we have been working on are progressive and additive. Each exercise has allowed us to build our complete Activity Design Matrix.
- Together as a group now we'll review the completed matrix for your activity and ensure that we all understand and agree on the final outcomes, strategies, interventions, and indicators.

Nutrition-Sensitive Agriculture Outcomes	Strategies	Practices	Interventions	Indicators
Outcome 1	Strategy 1.1	Practice 1.1	Intervention 1.1.1 Intervention 1.1.2	Outcome Indicator 1 Output 1.1
	Strategy 1.2	Practice 1.2	Intervention 1.2.1 Intervention 1.2.2	Output 1.2
Outcome 2	Strategy 2.1	Practice 2.1	Intervention 2.1.1 Intervention 2.1.2	Output 2.1
	Strategy 2.2	Practice 2.2	Intervention 2.2.1 Intervention 2.2.2	Output 2.2



Facilitator Note: We recommend asking the team to discuss if they have any remaining concerns or questions because they will be leaving the workshop with the final matrix and the understanding that this is what will be incorporated into a new or revised work plan and PMP.

End of Step 4

Next Steps

Estimated time: 30 minutes

Slides: 51–53

Materials and Handout: Handout 12: Post-workshop Action Items

Learning objective: Participants will agree upon a series of steps required to incorporate the information contained in the Activity Design Matrix into their activity work plan, results frameworks and program monitoring plan (PMP), assigning clear roles, responsibilities and timelines.

Slide 51 Next steps

- Before finishing this workshop, you need to discuss how your activity plans to integrate your new nutrition-sensitive agriculture outcomes, interventions, and indicators into your activity work plans and monitoring systems. To do this, you will likely need to map out the contents of the matrix you completed during this workshop along your activity results framework and include the strategies and interventions within your work plan, and interventions within your PMP.
- Additionally, you will need to manage any necessary approvals to activity adjustments by appropriate management staff within your organization, your USAID AOR/COR, and any other key stakeholders.
- It is also important to think through any other tasks that need to happen as a result of our work here. For example, do you need to contact local government officials or representatives at national ministries to update them on activities? Will you need to enlist the support of other partners or coordinate interventions with organizations not represented in this workshop? Are there new resources, tools, trainings that now need to be planned in order to proceed with the outlined interventions?

Slide 52 Exercise: Outline Post-workshop Action items

- We need to ensure that our plans lead to action and implementation of the new nutrition-sensitive interventions. To do this, we will focus on creating a timeline and identify individuals responsible for the next steps. These exercises will take time and your group might choose to do them later, so we have included the exercise below to ensure that there is a solid plan with clear next steps, roles and a timeline for ensuring that all of the work from this workshop gets incorporated into the activity documents

Exercise: Outline Post-workshop Action Items

Define Post-workshop Action Items

Goal: Outline next steps for the team to ensure integration of new outcomes and indicators into activity work plan and monitoring systems

Duration: 20 minutes
Materials: Handout 12: Post-workshop Action Items, flipchart paper

In plenary discuss how you plan to incorporate the work you did during this workshop into your results framework, work plan, performance management plan, and other activity documents. Additional follow up tasks should also be discussed and should include ideas about other stakeholders and partners to reach out to. Be sure to identify specific follow-up tasks and the name of a person (or small group) that will be responsible for carrying out each task. We also recommend committing to a timeframe for completing each task.

This list will need to be tailored to the specifics of the activity/organization and relevant management and decision-making structures.

Post-workshop Action Items

Task	Individual Responsible	Timeline

Slide 53 Thank You!

- You did it! We have now completed the full *Designing Nutrition-Sensitive Agriculture Activities* workshop. Thank you for all the hard work.
- We hope you are excited to now take these plans forward and implement nutrition-sensitive agriculture. We hope you will also keep in mind the ways that you can share back with the growing community of practice for nutrition-sensitive programming and plan to document your successes, lessons learned, and evidence for what works!

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- World Health Organization: "Stunting in a Nutshell." http://www.who.int/nutrition/healthygrowthproj_stunted_videos/en/

Additional Resources

- FANTA training: "NS program design: where do I start?" <https://agrilinks.org/training/nutrition-sensitive-agriculture>
- Food and Agriculture Organization of the UN (FAO). 2015. "Designing nutrition-sensitive agriculture investments: Checklist and guidance for programme formulation." <http://www.fao.org/3/a-i5107e.pdf>
- Food and Agriculture Organization of the UN (FAO). 2016. "Toolkit and E-Learning Module on Nutrition-Sensitive Agriculture and Food Systems: Guidance for Policy and Programme Planner." <http://nutritioncluster.net/wp-content/uploads/sites/4/2016/10/Nutrition-Sensitive-Toolkit-and-E-Learning-Module.pdf>
- Food and Agriculture Organization of the UN (FAO). 2013. "Synthesis of Guiding Principles on Agriculture Programming for Nutrition." http://www.fao.org/fileadmin/user_upload/wa_workshop/docs/Synthesis_of_Ag-Nutr_Guidance_FAO_IssuePaper_Draft.pdf
- SPRING tool: "Agriculture and Nutrition Context Assessment Tool." <https://www.spring-nutrition.org/publications/series/context-assessment-linking-agriculture-and-nutrition>

SPRING training: “Accelerating Behavior Change in Nutrition-Sensitive Agriculture.” <https://www.spring-nutrition.org/publications/training-materials/accelerating-behavior-change-nutrition-sensitive-agriculture>

SPRING “Nutrition-Sensitive Agriculture Training Resource Package.” <https://www.spring-nutrition.org/publications/series/nutrition-sensitive-agriculture-training-resource-package>

USAID E3 Trade Facilitation Monitoring, Evaluation, and Learning (MEL) Toolkit. <http://usaidprojectstarter.org/>

USAID Monitoring, Evaluating, and Learning Toolkit Pathways. <http://usaidactivitystarter.org/content/monitoring-evaluating-and-learning-toolkit-pathways>

USAID Multi-Sectoral Nutrition Strategy 2015-2025. <https://www.usaid.gov/nutrition-strategy>

USAID Performance Monitoring and Evaluation TIPS: Selecting Performance Indicators. http://pdf.usaid.gov/pdf_docs/Pnadw106.pdf

USAID Technical Guidance Brief: “Nutrition-sensitive agriculture: Nutrient-rich value chains.” <https://www.usaid.gov/what-we-do/global-health/nutrition/nutrition-sensitive-agriculture-nutrient-rich-value-chains>

Annex 1. Draft Workshop Agenda

Designing Effective Nutrition-Sensitive Agriculture Activities

Workshop Dates

DAY 1

8:30 a.m.–9:00 a.m.	COFFEE AND REGISTRATION
9:00–9:30	Welcome <ul style="list-style-type: none">• Welcome extended by the Facilitator or other appropriate person such as Activity COP<ul style="list-style-type: none">○ Brief summary of the intent of the workshop• Participants introduce themselves<ul style="list-style-type: none">○ Participants share their expectations for the workshop○ <i>Facilitator may want to use a fun icebreaker, since participants may know each other</i>
9:30–10:00	Introduction to Workshop Objectives <p>Learning objective: Participants will have an understanding of the workshop objectives and the six nutrition-sensitive outcomes that an agriculture activity may include.</p> <ul style="list-style-type: none">• Walk through Day 1 Agenda• Handout: <i>Six Activity Level Outcomes</i>
10:00–11:00	Introduction and Background: Ensuring a Common Understanding of Nutrition-Sensitive Agriculture <p>Learning objective: Participants will receive a review of key nutrition-sensitive agriculture concepts, discuss how their activity interfaces with the agriculture-to-nutrition pathways, and be introduced to the six nutrition-sensitive outcomes that an agriculture activity may strive to achieve</p>
11:00–11:15	BREAK
11:15–12:30p.m.	Introduction and Background: Ensuring a Common Understanding of Nutrition-Sensitive Agriculture (continued)
12:30–1:30	LUNCH
1:30–3:30	Step 1: Prioritize Nutrition-sensitive Outcomes for Your Activity <p>Learning objective: Participants will be able to determine which nutrition-sensitive agriculture outcomes are attainable in the context of their agricultural and economic growth activity, including a discussion about key nutrition challenges in their target area.</p> <ul style="list-style-type: none">• Exercise: Describe Your Activity• Exercise: Identify Nutrition-sensitive Agriculture outcomes• Handout: MSNS Handout, Nutrition-Sensitive Agriculture Outcomes Handout, Activity Design Matrix; Handout with USAID definition of nutrient-rich foods• Output: <i>Matrix 1 completed; Column 1 of Activity Design Matrix completed</i>
3:30–3:45	BREAK
3:45–5:15	Step 2: Prioritize Nutrition-Sensitive Agriculture Strategies <p>Learning objective: Participants will discuss a range of strategies that the activity can feasibly pursue in order to meet its selected nutrition-sensitive agriculture outcomes. In selecting and prioritizing the strategies, workshop participants will discuss key assumptions and risks.</p> <ul style="list-style-type: none">• Exercise: Identify ALREADY Nutrition-sensitive Agriculture Strategies• Exercise: Identify Agriculture Strategies that can be ADAPTED to be Nutrition-Sensitive• Exercise: ADDING Nutrition-sensitive Agriculture Strategies• Handout: Activity Design Matrix (continued)• Output: <i>Column 2 of Activity Design Matrix completed</i>
5:15–5:30	Day 1 Closing

- Summary of what was accomplished and learned in Day 1

DAY 2

8:30 a.m.–9:00 a.m.	COFFEE
9:00 – 9:30	<p>Welcome and Sharing from Day 1</p> <ul style="list-style-type: none"> • Welcome extended by the Facilitator <ul style="list-style-type: none"> ◦ Walk through Day 2 agenda • Participants share outputs from Day 1 <ul style="list-style-type: none"> ◦ <i>Facilitator may want to use a gallery walk and/or a report back format for this</i> ◦ <i>Note: If more than one activity is participating in the workshop, this session may take a little longer to complete.</i>
9:30–11:00	<p>STEP 3: Develop Practices and Interventions</p> <p>Learning objective: Participants will consider a range of practices that their activity should promote in order to address the strategies prioritized in Step 2. Using these practices as a starting point, participants will then develop a list of interventions that the activity can program into its work plan for achieving each nutrition-sensitive agriculture strategy from Step 2.</p> <ul style="list-style-type: none"> • Exercise: Develop Practices and Interventions • Handout: Activity Design Matrix (continued) • Output: Columns 3 and 4 of Activity Design Matrix completed
11:00–11:15	BREAK
11:15–12:30p.m.	STEP 3: Develop Practices and Interventions (continued)
12:30–1:30	LUNCH
1:30–3:00	<p>STEP 4: Define Monitoring Indicators</p> <p>Learning objective: Participants will define outcome indicators in line with their outcomes and strategies and output indicators for the interventions developed in Step 3.</p> <ul style="list-style-type: none"> • Exercise: Develop Practices and Interventions • Handout: Activity Design Matrix (continued) • Output: Activity Design Matrix fully completed
3:30–3:45	BREAK
4:00–4:15	<p>STEP 4: Defining Monitoring Indicators (continued) -- Pulling it all together!</p> <p>Learning objective: During the final part of this step, participants will review the completed Activity Design Matrix, pulling together all four steps of this workshop.</p>
4:15–4:45	<p>Next Steps</p> <p>Learning objective: Participants will agree upon a series of steps required to incorporate the information contained in the Activity Design Matrix into their activity work plan, results frameworks and program monitoring plan (PMP), assigning clear roles, responsibilities and timelines.</p> <ul style="list-style-type: none"> • Exercise: Develop Practices and Interventions • Handout: Post-workshop Action Items table • Output: Post-workshop Action Items table completed
5:00–5:15	Closing remarks

SPRING

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