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*Agriculture-Nutrition Field Note*

# Training to Integrate Agriculture and Nutrition in Bangladesh

*A Program Example from the Agriculture and Nutrition Global Learning and Evidence Exchange Landscape Analysis*

April 2014

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JSI Research & Training Institute, Inc. (JSI) • Helen Keller International (HKI) • International Food Policy Research Institute (IFPRI) • Save the Children (SC) • The Manoff Group (TMG)



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## ACKNOWLEDGMENTS

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## ABOUT SPRING

The Strengthening Partnerships, Results and Innovations in Nutrition Globally (SPRING) project is a five-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 the JSI Research & Training Institute, Inc., with partners, Helen Keller International, the Manoff Group, Save the Children, and the International Food Policy Research Institute. SPRING provides state-of-the-art technical support and focuses on the prevention of stunting and maternal and child anemia in the first 1,000 days.

## RECOMMENDED CITATION

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## DISCLAIMER

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## SPRING Project

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# INTRODUCTION

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Despite worldwide efforts to reach the Millennium Development Goal target of halving the proportion of people who suffer from hunger by 2015, 165 million children remain stunted and 870 million people are chronically undernourished. *The 2013 Lancet Series on Maternal and Child Nutrition* points to a growing consensus that combating the global burden of malnutrition will require collaboration across development sectors.

Recognizing the potential gains that can be made through better coordination, USAID's Bureau for Food Security and Bureau of Global Health commissioned the Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project to lead a series of practical and program-driven Agriculture and Nutrition Global Learning and Evidence Exchange (AgN-GLEE) events in Uganda, Guatemala, and Thailand between December 2012 and March 2013.

To inform the agendas of the AgN-GLEEs, SPRING conducted a landscape analysis. Its purpose was to review and synthesize current Feed the Future investments being made by USAID, extracting key data and patterns from project documents and telephone interviews with USAID Missions. In addition to completing landscape analysis reports for each of the 19 Feed the Future countries, SPRING also conducted several field studies. These qualitative exercises were designed to gather, analyze, and summarize one or more practical activities being carried out by either a USAID Mission or a Feed the Future implementing partner that demonstrated potential for supporting nutritional outcomes within the country's Feed the Future defined zone of influence.

This field note examines the SPRING/Bangladesh project and its training of project and government agents to deliver nutrition and hygiene messages alongside agricultural interventions at the community level. Following this training, agents deliver messages during routine house visits and modified Farmer Field Schools. A two-week field visit was carried out, using semi-structured interviews to gather information from project staff; government extension agents and supervisors; partner project staff and senior technical officers; and SPRING/Bangladesh Farmer Field School participants. Interviews took place in Dhaka and at project sites in Barisal and Khulna Divisions. The goal was to gather information on: 1) what kinds of messages are promoted during SPRING/Bangladesh nutrition trainings; 2) the rationale behind the message selection; 3) training logistics and support; 4) uptake of messages by trainees; and 5) comprehension of the messages by target community members. Information collected was analyzed using the conceptual pathways between agriculture and nutrition<sup>1</sup> to identify ways in which SPRING/Bangladesh is linking agricultural interventions with nutritional outcomes.

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<sup>1</sup> The conceptual pathways between agriculture and nutrition help one understand how various agricultural investments or activities could reach nutrition; how they affect and are affected by the enabling environment; and how they ultimately affect the nutrition of women and children. The pathways framework has been adapted from Stuart Gillespie, Jody Harris, and Suneetha Kadiyala, *The Agriculture-Nutrition Disconnect in India, What Do We Know?* IFPRI Discussion Paper 01187, June 2012. See Annex 1.

## BACKGROUND

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SPRING/Bangladesh is a five-year USAID-funded project focused on the “1,000 days approach,”<sup>2</sup> promoting essential nutrition and hygiene actions (ENHA) by pregnant and lactating women and children under the age of two years. The project aims to improve the nutritional status of 350,000 households between 2011 and 2016, reaching targeted communities (or unions) using multiple delivery channels that include SPRING-led Farmer Field Schools, as well as training partnerships with government health agents, agricultural extension agents, and development partner facilitators. Box 1 describes the Farmer Field School activities and the ENHA messages selected by SPRING/Bangladesh.

### **Box 1. Linking Farmer Field Schools and Agriculture Trainings to ENHA**

***SPRING/Bangladesh Farmer Field Schools focus heavily on homestead food production, including home gardening:***

- Space planning
- Vegetable bed / pit preparation
- Seed sowing
- Seedling planting
- Intercultural operation
- Soil health management
- Organic manure preparation
- Integrated pest management
- Seed production and storage

***Each Farmer Field School agricultural lesson also has integrated ENHA small doable actions:***

- Women’s Nutrition and Dietary Diversity
- Hand-washing before handling food
- Hand-washing after defecation
- Exclusive Breast Feeding, 0-6months-old children
- Child Complementary Feeding and Dietary Diversity

***The same ENHA topics are taught to government agents and partner activity technicians, in Farmer Field School communities\*:***

Ministry of Health and Family Welfare	3890
Ministry of Agriculture	896
Farmer Field School Facilitators	163
Partner Project Facilitators	610

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<sup>2</sup>The 1,000 days approach aims to improve nutrition from the start of a woman’s pregnancy through the first two years of her child’s life. The right nutrition during this critical period has an enormous impact on a child’s ability to grow and learn.

## Farmer Field Schools

SPRING/Bangladesh is directly responsible for organizing, implementing, and monitoring Farmer Field Schools that have been modified from the standard Farmer Field School approach to target attendance exclusively by pregnant and lactating women.<sup>3</sup> These Farmer Field Schools cover three major areas of homestead food production: gardening, poultry-raising, and pond-fish farming. Homestead food production approaches have long been employed in Bangladesh by organizations such as Helen Keller International (HKI) and DANIDA; however, the integration of this food security approach into all-female Farmer Field Schools is a new and potentially powerful approach to securing outcomes in agriculture and maternal and child nutrition. Participants of each Farmer Field School live within one kilometer of the learning plot site, must be functionally landless (<50 decimal land), and have an income of under \$U.S. 50.00/month. They receive seeds and financial assistance to construct poultry sheds. Farmer Field School facilitators conduct monthly follow-up visits to each Farmer Field School participant. SPRING/Bangladesh began Farmer Field School implementation in 15 subdistricts (“upazilas”) in June 2012, and has since expanded to 40 upazilas across the USAID's Feed the Future intervention divisions of Khulna and Barisal.

### Box 2. SPRING/Bangladesh Project Highlights

- Adapts Farmer Field School model to focus on poor households with pregnant and lactating women and children under 2, integrating homestead food production with ENHA.
- Advocates for government agriculture extension agents (Sub-Assistant Agriculture Officers) to include 10 minutes of discussion on ENHA topics following community extension sessions.
- Co-targets households with pregnant and lactating women alongside partner activity Feed the Future Aqua, to deliver both nutrition social and behavior change communication and aquaculture trainings.
- Has signed five letters of collaboration with partner activities, many of which outline the roles and responsibilities for cross-trainings, monitoring, supervision, and coordination of activities.
- Has four letters of support and one tripartite memorandum of understanding involving government directorates or services in agriculture, nutrition, and health.

## PATHWAYS LINKING AGRICULTURE AND NUTRITION

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Global evidence has led to the development of a theoretical framework that presents seven key pathways linking agriculture and nutrition (Annex 1). While several of these pathways are being actively employed

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<sup>3</sup> Farmer Field Schools should reach 48,000 participants by Year 5.

through interventions under SPRING/Bangladesh, the most salient connection between agriculture and nutrition is via the **Own Production → Food Consumption** pathway. The extensive ENHA trainings, as well as the Farmer Field School model, reinforce combined and often complementary messages about the steps necessary to plant, grow, harvest, cook, and consume nutritious foods at the household level.

### **Own Production → Food Consumption**

Improvements in production practices and diversification of crops can lead to better nutrition when coupled with appropriate nutrition messaging. In the context of the 1,000 days approach, SPRING/Bangladesh uses homestead food production as a centerpiece for promoting immediately accessible nutritious vegetables and animal-source protein for pregnant and lactating women and children over six months of age. The nutrition and agriculture cross-training of Farmer Field School facilitators allows them to directly bridge the practical concerns of production (how to plant, how to save seeds, how to fertilize) with the behavioral and knowledge components of consumption (what nutritious foods to grow, who should eat it, how to prepare it). In this way, the Farmer Field School can be considered SPRING/Bangladesh’s practical alignment with the conceptual pathways between agriculture and nutrition.

In addition, SPRING/Bangladesh conducts nutritional cross-training for production-focused government extension agents or partner project facilitators, effectively adding an ENHA component to its scope of work, and in some cases, co-targeting households with pregnant and lactating women and children. In the case of sub-assistant agricultural officers, most beneficiaries are male rice growers, meaning there will be less immediate connection between growing nutritious foods at the household level and having it consumed by SPRING/Bangladesh targets. In all cases, however, SPRING/Bangladesh trainings focus on the capacity to disseminate the *same ENHA messages*, such that Farmer Field School facilitators, subassistant agricultural officers, project partners, and community health agents consistently promote food utilization behaviors.

## **TRAINING PHILOSOPHY AND APPROACHES**

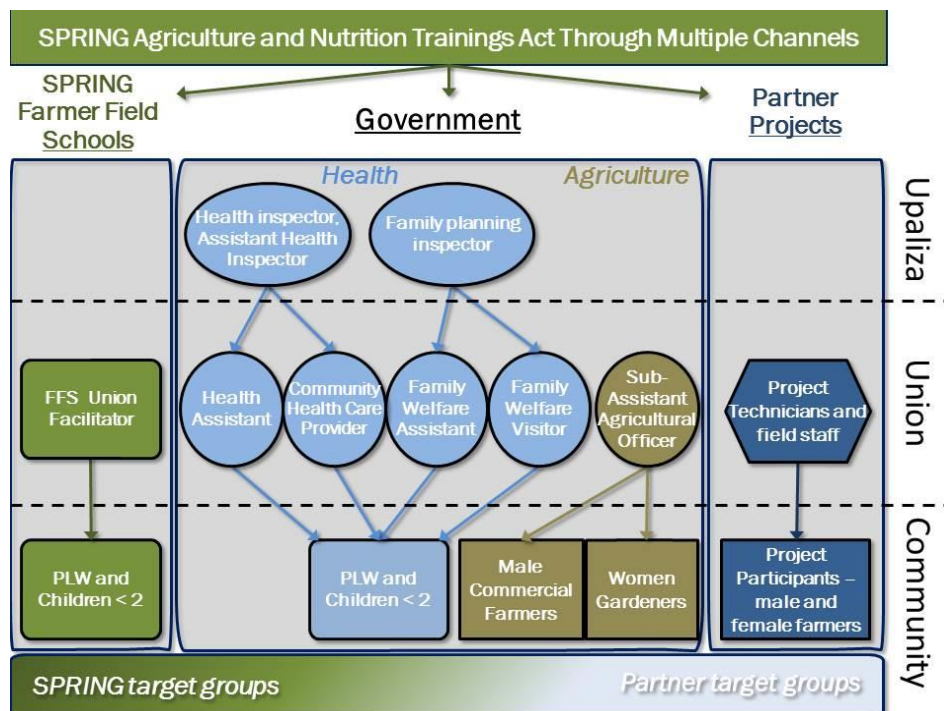
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SPRING/Bangladesh acts as a “Master Trainer” for an array of government and project technical partners by planning, designing, and conducting ENHA training sessions, either directly to community agents or as part of a cascade “Training of Trainers” (see figure on page 5). These trainings began in 2011 and benefit from strong government and project partnerships.

The cross-training component of SPRING/Bangladesh is based on evidence from prior activities and conceptual frameworks, including BASICS in Madagascar, Alive & Thrive in Bangladesh, and the UNICEF conceptual framework on nutrition. Additional consultations with IFPRI, Save the Children, HKI, and the Ministry of Health and Family Planning helped determine which nutrition and hygiene messages were most likely to result in the behavior change necessary for nutrition impacts. This idea is captured by the phrase “Small Do-Able Actions”—those nutrition and hygiene behaviors most easily implemented by a household, regardless of means or prior education. SPRING/Bangladesh selected from among the 12 ENHA topics a total of 5 (see Box 1) that can be directly tied to homestead food production, are most critical to nutrition for pregnant and lactating women and children under two years of age, and can be understood and practiced by vulnerable and landless families.

The figure illustrates the SPRING/Bangladesh training structure. It highlights the different channels—Farmer Field Schools, government, and partner projects—along with respective actors implicated in training on, and delivery of, select ENHA.

**Figure. The SPRING/Bangladesh Training Structure<sup>4</sup>**



Particularly important to its cross-training approach, SPRING/Bangladesh streamlined the instruction and delivery of messages so that government service providers and project facilitators will not feel overburdened when asked to effectively expand their scope of work. Streamlining also helps minimize the dissemination of incorrect information; the less material cross-trained agents are asked to memorize, understand, and disseminate, the less likely participants will receive inaccurate information. Finally, standardizing the ENHA messages through multiple channels puts key social and behavior change communication principles into practice, as the same information is reinforced through Farmer Field Schools and government and project partners. For a detailed list of elements in the SPRING/Bangladesh training approach, see Annex 2.

## CHALLENGES

SPRING/Bangladesh’s approach to agriculture-nutrition cross-training partnerships promotes the dissemination of ENHA messages through multiple channels, but faces a number of ongoing challenges related to cross-training buy-in, monitoring and evaluation, dissemination, and workload.

- Pregnant and lactating women contribute the majority of labor for homestead food production, which can negatively affect healthy pregnancy and time for child care.

<sup>4</sup> Upazilas are the largest municipal unit in Bangladesh, and are further divided into unions

- Working through staff funded by governments and activities separate from SPRING presents challenges of oversight, and SPRING has no mandate to dictate staff activities.
- Production technicians in partner activities may view nutrition training as creating extra work for which they were not previously responsible. Consequently, clear communication is needed between supervisory and field staff.
- Currently, no system exists to assess the impact of nutrition messaging delivered by subassistant agricultural officers, reducing the certainty that cross-training is supporting nutrition outcomes.
- Additional complexities with monitoring and evaluation arise when determining how many Farmer Field School participants are at the same time receiving visits from SPRING-trained community agents within the Ministry of Health and Family Welfare.
- While SPRING/Bangladesh is taking a leadership role as an ENHA trainer, discrepancies in message content may occur when delivered by other channels to target community members, which can affect the uptake of new behaviors.
- Farmer Field School facilitators are expected to provide their own transport to eight Farmer Field Schools every two weeks, in addition to 160 participants that must receive household visits each month.

## CONCLUSION

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The SPRING/Bangladesh project offers several important lessons. The first is around the adaptation of the Farmer Field School model, which typically is reserved for male farmers. SPRING/Bangladesh has used the Farmer Field School approach to instead focus hands-on agricultural trainings for pregnant and lactating women, promoting up to three varieties of homestead food production (pond-fish aquaculture still according to availability of water). The inclusion of targeted ENHA activities is likewise a new approach and there is great interest in seeing whether the selected Small Do-Able Actions are effectively translated into results such as improved hand-washing, increased complementary feeding frequency, and improved nutrition for pregnant and lactating women. At the same time, a nine-month, biweekly class is no small undertaking and, while it creates significant opportunities around homestead food security, it also demands time and energy among a nutritionally vulnerable population.

Regarding the cross-training of production agents (agriculture, horticulture, aquaculture) in government agencies or technical projects, SPRING/Bangladesh is clearly focused on identifying partners, advocating for cross-training and—in certain cases—co-targeting. Perhaps the greatest achievement to date is building and maintaining a role as master trainer for its own brand of selected ENHA messages; SPRING/Bangladesh appears well accepted by the health and agricultural ministries, which strongly indicates the messaging is approved by the Bangladeshi government and not overly redundant or in conflict with other initiatives. The close ties with the agricultural ministry, and the department of extension in particular, is laudable—the only caveat in terms of lessons learned is that not every project will benefit from such willing government partners.

Finally, mapping SPRING/Bangladesh onto the pathways between agriculture and nutrition framework, project activities fit predominantly within the **Production → Consumption** pathway. The modified Farmer Field School combines practical knowledge on establishing and maintaining homestead food production, with both improved food utilization and hygiene practices targeted toward pregnant and lactating women and



children under two years of age. Similarly, the use of other production agents and government extension services to reinforce nutrition messaging falls along similar lines—placing nutrition knowledge in the hands of producers, commercial and homestead alike.

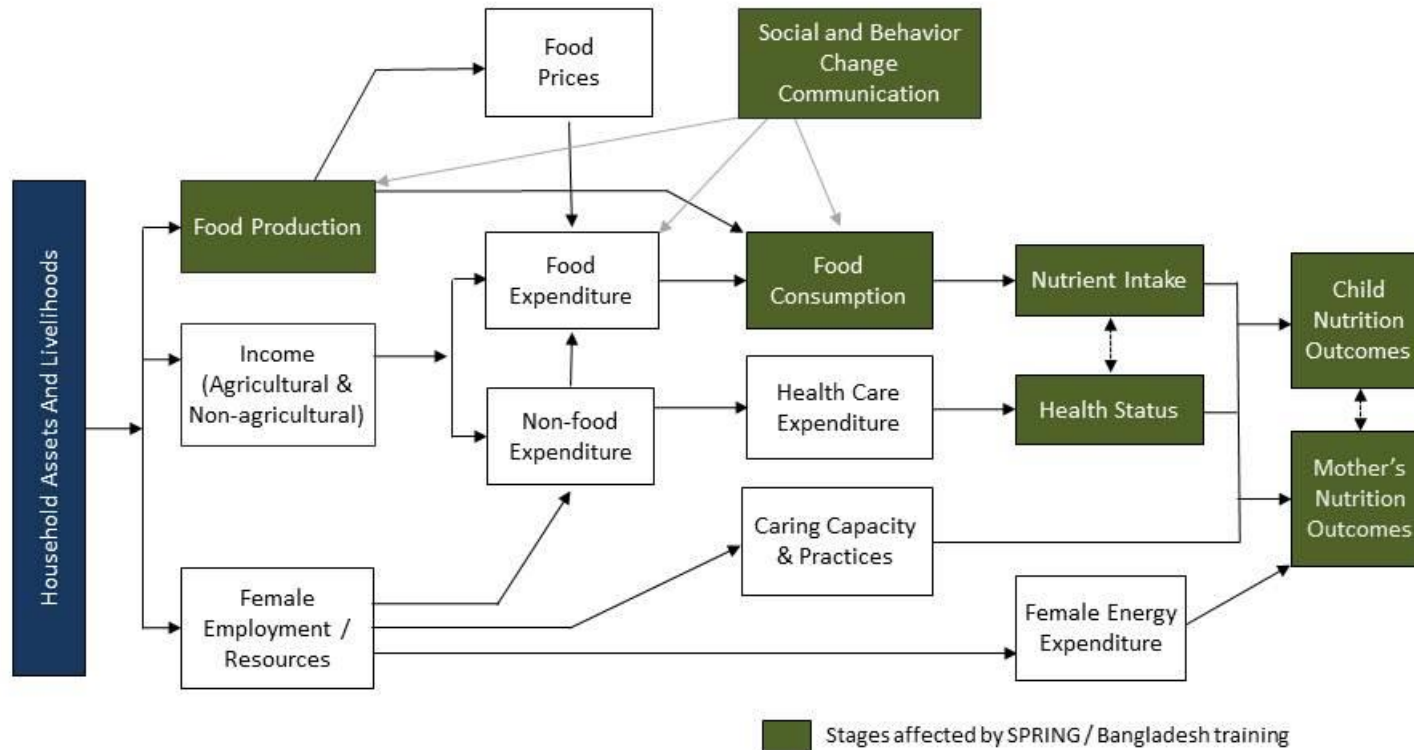
## FUTURE RESEARCH QUESTIONS

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This brief field note was based on initial desk research, interviews with donors and activity staff, and one site visit by SPRING research staff. As with any field research, the visit raised additional areas of inquiry that are of interest. Some of the potential research questions may already be part of the Mission or project’s learning agenda. For SPRING/Bangladesh, the following research questions warrant additional consideration:

- How effective is the Farmer Field School training format in delivering ENHA messages, and what are its advantages and disadvantages compared with other methods? Do ENHA messages benefit from the same practice and discovery-based training approach of Farmer Field Schools? Are there observed advantages in limiting participation to women only? How effective are nutrition messages delivered by agricultural agents versus health agents?
- How do the homestead food production activities targeted to women affect the health of pregnant women and the time availability and energy levels of lactating mothers? How does the project mitigate the negative effects on mother’s health, and the care and feeding of infants?
- Homestead food production may directly increase household food consumption, diet diversity, and individual food intake, but the impact on child nutrition outcomes is less direct as health and care determinants become prominent. Given this context, what activity approaches are most promising for influencing intra-household behavior that could likely impact mother and child health and nutrition?

# ANNEX 1. PATHWAYS FRAMEWORK



## REPRESENTATIVE ACTIVITIES

### Production → Consumption

- **PRODUCTION:** how to prepare terrain for planting, improve soil, plant a variety of crops, preserve seeds, and schedule planting so that homestead garden food is available in rapid succession.
- **CONSUMPTION:** specific messaging on meal frequency and diet diversity for PLW and for children under two.
- **SBCC:** cooking demonstrations during Farmer Field School sessions with PLW.
- **SBCC:** SAAOs bring examples of complementary foods to extension sessions with male rice growers.
- **NUTRIENT INTAKE:** local crops that correspond to nutritional needs according to 1000 Days Approach.
- **NUTRIENT INTAKE / HEALTH STATUS:** addition of streamlined Essential Nutrition and Hygiene Actions to production-focused activities.

# The Seven Key Pathways Between Agriculture and Nutrition

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## Pathway 1: Own Production → Food Consumption

Own agricultural production—food consumption—nutrient intake—child nutrition outcomes

- Agriculture as a *source of food*, the most direct pathway by which household agricultural production translates into consumption (through crops or livestock cultivated by the household)

## Pathway 2: Income → Food Purchase

Income (agricultural or nonagricultural)—food expenditure—food consumption—nutrient intake—child nutrition outcomes

- Agriculture as a *source of income spent on purchasing diverse nutritious foods*, either through wages earned by agricultural workers or through the sale of agricultural goods

## Pathway 3: Income → Healthcare Purchase

Income (agricultural or nonagricultural)—nonfood expenditure—healthcare expenditure (cost)—health status—child nutrition outcomes

- Agriculture as a *source of income spent on nonfood items, particularly health*, either through wages earned by agricultural workers or through the sale of agricultural goods

## Pathway 4: Food Prices → Food Purchase

Supply and demand factors (policies, taste, incomes)—relative prices of various food items—food expenditure

- The link between agricultural policy and *food prices*, involving a range of supply-and-demand factors that affect the prices of various food and nonfood crops, which, in turn, affect the incomes of **net sellers** and the ability to ensure household food security (including diet quality) of **net buyers**

## Pathway 5: Women's Time Use → Care Capacity

Female employment in agriculture—time use/caring capacity—child nutrition outcomes

- Women's *time use*, and subsequent ability to manage the care, feeding, and health of young children alongside agricultural work

## Pathway 6: Women's Workload → Maternal Energy Use

Female employment in agriculture—energy expenditure—maternal and child nutrition outcomes

- Women's *workload and work-related energy expenditure*, and subsequent effects on child nutrition and health through the lifecycle, including during pregnancy

## **Pathway 7: Women's Control of Income → Resource Allocation**

Female employment/resources —female socioeconomic power—household expenditure (food/health)—intra-household allocation—maternal and child nutrition outcomes

- Women's *control of household income* and their ability to influence household decision-making and household allocation of resources for food, health, and care

Adapted from Stuart Gillespie, Jody Harris, and Suneetha Kadiyala, *The Agriculture-Nutrition Disconnect in India, What Do We Know?* IFPRI Discussion Paper 01187, June 2012.

## Annex 2. Outline of Training Approaches in SPRING/Bangladesh

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### Training of Farmer Field School Facilitators

- Facilitators receive a six-day intensive course led by SPRING senior technical officers in nutrition, agriculture, animal husbandry, and aquaculture.
- SPRING/Bangladesh adapted training materials and practical agricultural sessions from Danish International Development Assistance (DANIDA) Farmer Field Schools and Helen Keller International homestead food production experience in Bangladesh.
- Facilitators receive a 110-page training manual in the local language comprised of 18 sessions, for reference in their work with the Farmer Field School beneficiaries.

### Farmer Field School Training and Participants

- Farmer Field Schools are made up of 20 to 25 participants who meet once every two weeks to learn about homestead food production, poultry rearing, and ENHA.
- Sessions are conducted at “learning plots” near participants’ households to facilitate hands-on participation and learning during agricultural lessons.
- Participants of each Farmer Field School live within one kilometer of the learning plot site. All participants receive seeds and monetary assistance to construct poultry sheds.
- Farmer Field School facilitators pay monthly follow-up visits to each Farmer Field School participant.
- The selection of pregnant and lactating women is based on antenatal care visit records, child’s birth registration, or clinic discharge date. Participants must be functionally landless (<50 decimal land) and have an income of under \$50 per month.
- Participants **cannot** be part of similar agriculture or nutrition program under Feed the Future.

### Training of Ministry of Agriculture Extension Agents

- Subassistant agricultural officers receive two-day intensive ENHA cross-trainings led by SPRING senior technical officers and upazila coordinators. Each session includes 18–25 sub-assistant agricultural officers.
- Trainings include household negotiation social behavior change communication approaches such as GALIDRAA, which guide extension agents in how to effectively communicate nutrition messages to their target audience.
- The Department of Agricultural Extension has issued a letter of support to SPRING and often subsidizes the venue cost for the subassistant agricultural officer trainings.

- Trainings complement the Department of Agricultural Extension mandate to reach women in 25 percent of all community extension sessions, due to the SPRING/Bangladesh focus on nutrition of pregnant and lactating women and women-led homestead food production.

#### Training of Ministry of Health and Social Welfare Agents

- Health inspectors, assistant health inspectors, and family planning inspectors receive a four-day intensive training of trainers to reinforce ENHA knowledge and counseling practices.
- These supervisory-level health workers then co-facilitate cascade trainings—with support from SPRING upazila coordinators—for union-level frontline health agents.

#### Training of Partner Project Facilitators and Field Technicians

- Trainings are similar to those for sub-assistant agricultural officers in messages and social behavior change communication techniques. They are provided to SPRING-identified projects that promote agriculture or aquaculture at the community level.
- Funding for training space, materials, and facilitators are provided by SPRING/Bangladesh. Funding for trainees is covered by project partners. This arrangement is clearly defined in letters of collaboration.