
Agriculture-Nutrition Field Note

Supporting Agriculture and Nutrition Interventions at the Community Level in Senegal

An Activity Example from the Agriculture and Nutrition Global Learning and Evidence Exchange Landscape Analysis

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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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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.

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INTRODUCTION

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 activity 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 USAID-funded Yaajeende activity in Senegal and highlights several approaches that contribute to the effective integration of agriculture and nutrition programming. Following a desk review of activity documents, SPRING carried out a one-week field visit in November 2012, to gather information from field staff, USAID Mission staff, government extension agents and supervisors, implementing partner staff, private sector partners, community health and agricultural agents, and beneficiaries. Information collected was analyzed using the conceptual pathways between agriculture and nutrition¹ to identify ways in which Yaajeende is linking agricultural interventions to nutritional outcomes.

Field Note Highlights

This field note focuses on:

- The integration of agriculture and nutrition in a USAID activity in concept and implementation
- Organizational supports established to aid implementation of an integrated design
- Perspectives on integration of key actors and stakeholders involved in the activity
- Whether and how lessons can be adapted and applied to similar Feed the Future activities

¹ The conceptual pathways between agriculture and nutrition help to 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

The National Cooperative Business Association and CLUSA International (NCBA CLUSA) launched Yaajeende, funded by USAID, in late 2010. The activity focuses on improving food security at the local level and enhancing nutrition outcomes for pregnant women and children under five through an approach known as Nutrition Led Agriculture (NLA). NLA promotes the emergence of an agricultural sector focused on the improved production, trade, and consumption of highly nutritious foods, especially foods that resolve priority nutritional deficiencies such as vitamin A, zinc, iodine and iron. Yaajeende staff work with and train a cadre of community-based local resource persons (LRPs) to deliver an integrated package of interventions, supported by a range of government, private sector, and community institutions. Expanding access to agricultural inputs, fortified foods, improved technologies, and services is a major focus, coupled with efforts to increase the availability of nutritious foods on local markets while building demand and promoting their proper utilization in local households.

Activity Highlights as of Year 3

- Community agricultural and nutrition agents have delivered a total of US\$1.5mn worth of products and services.
- The activities report an increase in 6- to 23-month-old infants consuming a minimal acceptable diet (MAD).
- Activity design features a strong approach to women's empowerment through novel agricultural production and land tenure initiatives.
- Yaajeende has demonstrated effective activity buy-in by country government, including coordinated work planning, at national, regional, and local levels.
- Activity staff members share a well-articulated vision of agriculture-nutrition linkages.

The expansive scope of Yaajeende makes it difficult to capture in brief; for the purpose of this field note, a microcosm of interventions can be observed within activity's Community-Based Solution Provider (CBSP) interventions.

Yaajeende's CBSPs are autonomous entrepreneurs identified and trained by the activity and then linked to a wide range of private firms on whose behalf they act as sales agents for key agricultural and nutritional products/services as well as playing the role of extension agents providing knowledge around the technologies. The CBSPs link farmers to markets by facilitating the sale of inputs (i.e. fertilizers, improved seeds, tools, iodized salts, enriched flours, etc.) and building demand for these products through related training and marketing. Selected CBSPs are trained in key service areas including land preparation, crop spraying, irrigation services, grafting, and livestock vaccination.

The activity also taps into a vast network of Community Nutrition Volunteers (CNVs)—community health workers that provide nutrition information and sell nutritional products. CNVs lead mother-to-mother groups and conduct community meal demonstrations that teach healthy local recipes. They additionally mentor student leaders to act as agents of change among youth, and team up with grandmothers—key influencers of young women within the zone of intervention. In response to a 2011 World Food Program survey and the activity's baseline food security analysis, Yaajeende designed its behavior change communications (BCC) strategy to address diarrhea, balanced diets, dietary diversity, exclusive breastfeeding, child nutrition, enriched flour, vitamin A, and use of iodized salt. BCC messages are combined with practical activities such as community gardens and low cost water interventions such as the creation of 'tippy-taps' or low tech hand washing stations.

To support, sustain, and grow the CBSP network, Yaajeende has made concerted efforts to create dynamic working relationships between government entities such as local technical agencies, other USAID activities such as the Community Health Program, regional producer federations, and private sector companies. This type of deliberate “cross sector” coordination—including linking private input suppliers with local CBSP vendors to sell horticulture seed and ensuring that district health officers are aware of CNV activities—contributes to the activity’s comprehensive strategy, and serves an example of the commitment and vision necessary to implement a fully integrated activity.

PATHWAYS LINKING AGRICULTURE AND NUTRITION

Global evidence has led to the development of a theoretical framework that presents seven key pathways linking agriculture and nutrition (Annex 1). While it is possible to argue that Yaajeende addresses each pathway in certain ways, three pathways appear particularly evident and are described below.

Own Production → Food Consumption

Both CNVs and CBSPs illustrate Yaajeende’s concerted strategy that reflects the “production to consumption” pathway. As the primary nutrition educators, CNVs reach local people with information and behavior change messaging that educates them in nutrition issues and promotes the consumption of nutritious foods. CNV activities include house-to-house visits, cooking demonstrations, WASH trainings and infant and young child feeding lessons with mother to mother groups. However, education and social and behavior change messages delivered by the CNVs alone would likely achieve only a limited impact; nutritional messaging is therefore complemented with agricultural training in how to plant, grow, harvest, and store nutritious crops. CBSPs also provide easy access to the products and services that enable behavior change by providing needed technologies and knowledge and ensuring production of high quality produce as part of the activity’s sustainability strategy.²

Integration and Dietary Diversity

One kilometer outside of Ourosogui in Matam, Samba Diallo is growing 8 different crops, only one of which is a staple cereal. He uses improved planting techniques such as *zai* holes and grafting. Samba notes that, in addition to providing more nutritious food for his household, he can sell his *pomme du sahel* fruits for 500cfa/kg (\$1) at market, and a sack of *oseille* leaves for 2500cfa (\$5). His wife explains that the local *dolich* leaves—a prolific wild food re-introduced by Yaajeende—are easy to cook and well-liked by children. The variety of Samba’s crops—sorrel, peanuts, sweet potato, *dolich*, etc.—is a necessary step to achieving dietary diversity and represents one important way to link agriculture and nutrition at the household level.

² Participant households are able to afford the extra inputs as Yaajeende is also promoting income generating opportunities per the agricultural income to food purchase pathway.

Income → Food Purchase

The income to food purchase pathway is considered by some to be an ‘obvious’—if indirect—route to nutrition impact, but a large number of competing priorities within households suggests that income may be used in a variety of ways and not necessarily to further health goals. Beyond providing education, there is no concerted effort within Yaajeende’s programming to compel beneficiaries to purchase nutritious foods using the increased revenues generated through their business activities. However, the activity design is predicated on the assumption that if smallholder farmers are assisted to increase their incomes and if these same households are also exposed to adequate nutrition education and effective social behavior change communications, there is an increased likelihood that both men and women will choose to buy more nutritious foods for their families.

Through the income pathway, the roles of CNV and CBSPs reinforce each other. The CBSPs ‘lead’ the revenue generation components while the CNVs provide the education and harmonized behavior change messages to support the nutrition outcomes. It is also worth noting that the roles of CNVs and CBSPs are increasingly merging and more CNVs are becoming CBSPs by combining their educational activities with commercial activities such as the sale of fortified foods like enriched flours, iodized salts, and potable water solutions. In fact, the goal of Yaajeende is to migrate as many CNVs as possible to the CBSP role by the activity’s end in order to ensure the sustainability of this local community health worker network.

Women’s Control of Income → Resource Allocation

Yaajeende considers that women are at the center of food security as the primary producers of micronutrient rich vegetables, the primary purchasers of food at the local markets, the primary preparers of food in the home, and the primary caregivers to children under 5 years old. Thus the activity takes several steps to ensure that mother-to-mother groups—the institution used to reach these women—are favored in the rollout of all technologies, techniques, and training, including livestock assets, gardening, biofortified crops, and educational resources. Yaajeende ensures that these groups receive the complete integrated package of interventions it offers. One example that clearly demonstrates how the activity addresses the specific concerns of women is an activity termed Bio-reclamation of Degraded Lands (BDL).³ In the BDL gardens, Yaajeende staff help women formally acquire long term land rights to abandoned farmland and revitalize it using a suite of agricultural techniques to produce crops that generate revenue and address issues of malnutrition. The initiative to build women’s land assets is based on decades-worth of evidence showing that resources in women’s hands are more frequently allocated for the benefit of children’s nutrition and health.

³ The Bio-reclamation of Degraded Lands system developed by ICRISAT is an integrated system aimed at increasing food production and income of poor farmers (chiefly women) through the utilization of degraded lands for production of rain fed fruit trees and vegetables. For more details, visit: <http://www.icrisat.cgiar.org/icrisat-rrp2-bdl-wca.htm>.

APPROACHES TO INTEGRATION

Viewing Yaajeende through the lens of the pathways between agriculture and nutrition is a useful exercise in design-level thinking, examining how agricultural activities may be aligned to help achieve desired nutrition outcomes. The CBSP is one example of this concept as an operational reality: a single village-level actor providing both agricultural and nutritional knowledge, products and services through a revenue generating and private sector mechanism. By integrating both private sector and public sector human resources, Yaajeende is able to engage a broad range of agriculture and nutrition actors into its activities while also supporting the priorities of these same stakeholders to contribute towards their own discipline's particular missions and goals. This interdisciplinary character is evident at all levels of the activity.

Government Level

Yaajeende has actively pursued relationships within and across national, regional, and local level of the ministries of agriculture and health. Collaboration at the national level enables Yaajeende to share data, statistics, and best practices with Senegal's National Nutrition Board (CLM), an inter-ministerial technical and advisory nutrition committee established under a World Bank initiative. This means that the activity is deeply inscribed in and informed by the national government's priorities for agriculture and nutrition.

Another successful collaboration has been with the Senegalese Institute for Agricultural Research (ISRA). Yaajeende has worked in close partnership with ISRA to field-test a wide range of crops (including biofortified varieties) and to coordinate training and supportive supervision with both regional agricultural and health directorates. Yaajeende regularly conducts collaborative work planning exercises to minimize redundancy in programming and coordinate both activity and governmental capacity for training, data collection, and monitoring and evaluation (M&E) intervention.

Mission Level

Within the USAID | Senegal Mission itself, there is leadership-level buy-in regarding the importance of integrating agricultural and nutrition activities. Mission staff facilitated a partnership between Yaajeende and the Community Health Project that uses a cadre of community health workers to support Yaajeende's community-based solution provider model rollout. In this way, the Mission better aligns its programming, while Yaajeende is better able to take advantage of the Community Health Project's clinical capacities to address common concerns such as reducing the incidence of diarrheal disease to improve nutrition.

Activity Level

An important question for any Feed the Future integrated activity is *how* a shift in thinking can be encouraged for professional staff who are typically steeped in either agriculture or nutrition disciplines to move towards an "interdisciplinary" paradigm where specialists in both agriculture and nutrition are motivated to apply their skills towards a common goal. In the case of Yaajeende, activity leadership has established a collective vision of the linkages between agriculture and nutrition and makes a deliberate attempt to guide staff by creating regional, local, and staff specific performance targets for agriculture and nutrition outcomes. The result is staff who are able to use both the agricultural lens and the nutritional lens. During the field visit, animal husbandry specialists and M&E officers actively expressed an appreciation for linking agriculture and

nutrition and described applying a nutrition lens to their planning; thus livestock are viewed as both economic assets as well as producers of “proteins and lipids.”

Community Level

The levels described above can be thought of as the prerequisite support and structure that allow CBSPs to be an effective and sustainable community-level delivery system.⁴ While Yaajeende reaches its beneficiaries through a variety of village-level mechanisms—mother support groups, community-based organizations, and local food security governance groups—the CBSP system is increasingly the primary delivery mechanism. The community-based service provider system is itself becoming a stand-alone entity, intended to be autonomous and financially viable by the activity’s close-out.

CONCLUSION

This field note shows that Yaajeende effectively links agricultural activities to nutrition outcomes using, at minimum, three pathways; these are **own production → food consumption, income → food purchase, and women’s control of income → resource allocation**. This is a powerful combination of pathways to achieve nutrition outcomes but is not unique in its application. What sets Yaajeende apart is its simultaneous focus on local market access to nutritious foods and the products and services necessary to produce them. The activity oriented its crop selection toward addressing priority health concerns, promoting indigenous foods, encouraging dietary diversity, and generating revenue. At the same time, Yaajeende has worked to create a system—the CBSP network—that can provide improved seeds, extension services, agricultural services, and nutritional products. In addition, the importance of BDL in empowering women in agriculture cannot be overstated.

Yaajeende provides important lessons regarding the broader institutional linkages that ensures that agriculture-nutrition integration can be effectively implemented. There is deliberate programmatic overlap with a well-established USAID community health activity that is closely tied to the Ministry of Health. Yaajeende also consults with, and draws extensively on, government agricultural research facilities and both regional and local technicians. A number of contracts and work plans also exist with local producer federations and agricultural technical services. The sum of these links is that, whether from the beginning or as the activity has evolved, Yaajeende has reached out on both sides of the agriculture – nutrition equation to ensure that its interventions are as coordinated as possible. The activity tailored its own nutrition education and social and behavior change communication efforts to those crops or animals currently promoted for production. The close ties to Senegalese public and private institutions at multiple levels (national, regional, district, community), as well as to other USAID activities, also provide a basis for sustainability; the community-based service provider system is itself becoming a stand-alone entity, intended to be financially viable by the activity’s end.

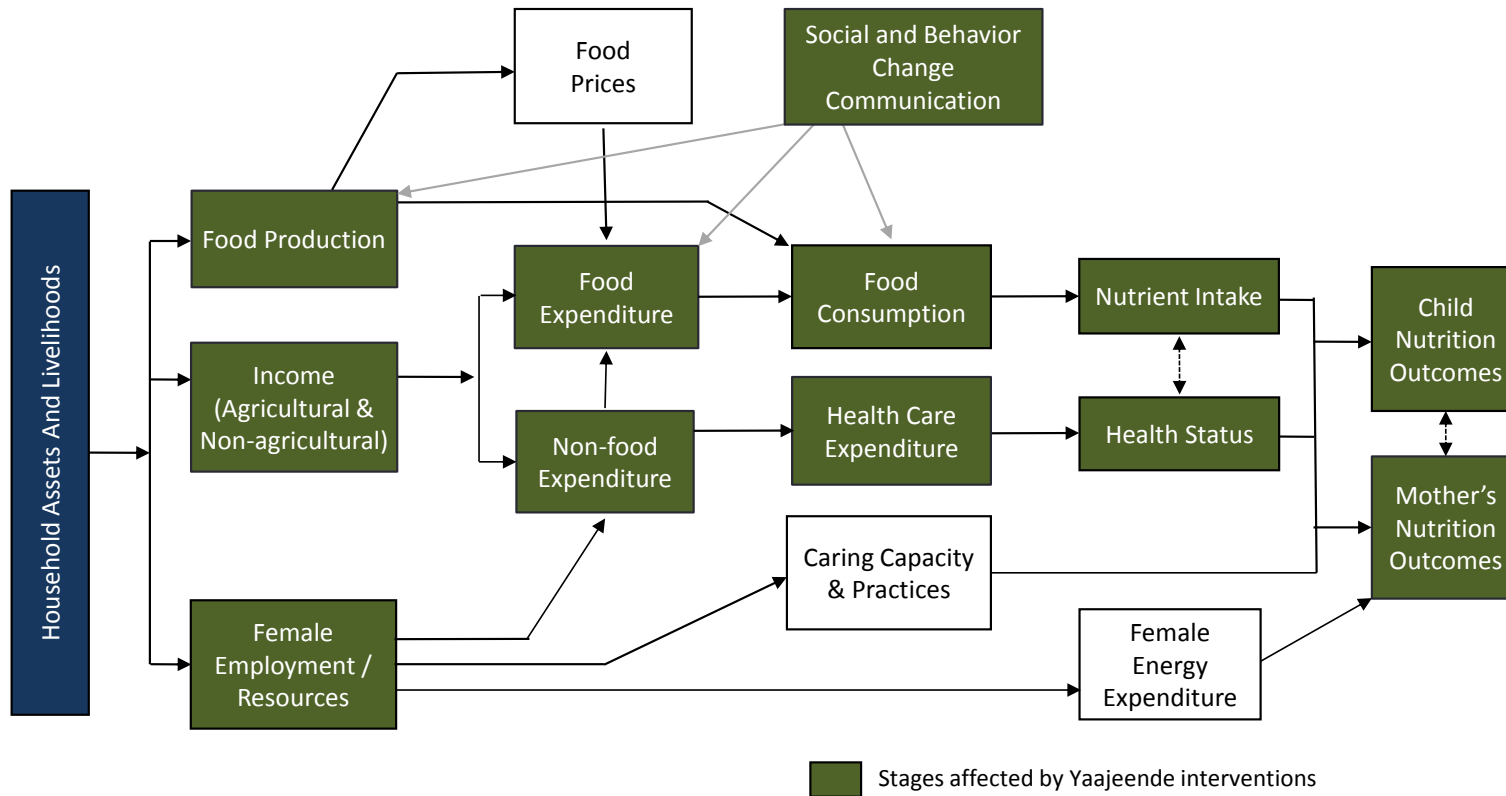
⁴ Although not discussed in depth in this field note, there is a deliberate attempt to make the CBSP model, in particular, sustainable via the sale of inputs and services.

FUTURE RESEARCH QUESTIONS

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

- What is the trade-off for implementing Bio-reclamation of Degraded Land in terms of women's workload and healthy pregnancy or lactation? What is the likelihood that resources gained through women-led activities such as Bio-reclamation of Degraded Land and gardening, remain in their hands, and/or that the decision of how these resources are used remains under their jurisdiction?
- How can Yaaajeede glean information on profits generated by the CBSPs? Is the income generation they gain adequate to sustain their role as CBSP agents? Do CBSPs establish their own networks of "sub-CBSPs" and how do they manage those networks?
- Can the CBSP model be effectively adapted to the health/nutrition sector? The potable water sector? Will affluent agriculture oriented CBSPs continue to market inputs for nutritional crops or will they focus on high value products?
- How will the CBSPs' relationship to local government develop? Will there be oversight and guidance for the CBSPs from local civil society? Will CBSPs continue to work with local citizenry to resolve health concerns by providing inputs for strategic crops?
- Can the CBSP system be adapted successfully to other countries? What are the political, economic, or other enabling factors necessary to attempt the institutionalization of such a system? When is it not appropriate?
- Are there effective ways to measure Yaaajeede's effects on increasing availability of nutritious foods in markets accessible to beneficiary villages? Is there an increase in demand for these same foods at the local level?

ANNEX 1. PATHWAYS FRAMEWORK



REPRESENTATIVE INTERVENTIONS

Production → Consumption

- Households growing nutritious local crops
- Cooking demonstrations using homegrown vegetables

Income → Food Purchase

- Improved growing techniques to increase quantity and quality
- Improving links to markets and facilitating sale of agricultural inputs

Women's Control of Income → Resource Allocation

- Bio-reclamation of Degraded Land

The Seven Key Pathways Between Agriculture and Nutrition

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 Suneeha Kadiyala, *The Agriculture-Nutrition Disconnect in India, What Do We Know?* IFPRI Discussion Paper 01187, June 2012.