

The Integration of Nutrition within Extension and Advisory Services (EAS): A Synthesis of Experiences, Lessons, and Recommendations

Executive Summary



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Executive Summary

Introduction

There is heightened awareness globally, within development institutions and governments, for the potential of the agriculture sector to influence the production and consumption of nutritious foods necessary for healthy and active lives.

Nutrition-sensitive agriculture aims to maximize the impact of nutrition outcomes for a population through sustainable farming systems that employ a “nutrition lens,” while minimizing the potential for unintended negative consequences that may result from the sector’s economic and production-driven goals. However, the linkages between agriculture and nutrition – and the mechanisms for effectively delivering nutrition-sensitive agriculture services to rural households – are not well documented.

Agricultural extension and advisory services (EAS) are often mentioned as a promising platform for the delivery of nutrition knowledge and practices, due to the close interaction that EAS agents have with farmers through their role as service providers in rural areas. Yet the context in which any nutrition knowledge is delivered by EAS agents, and the mechanisms for doing so, is unclear.

The purpose of this study was to examine the integration of nutrition and agricultural EAS in Africa, South Asia, and Latin America and the Caribbean. For the purpose of this report, EAS encompasses all activities aimed at providing information and services needed by farmers and other actors in rural settings, which assist them in developing their own technical, organisational, and management skills and practices, so as to improve their livelihoods and well-being. Specific objectives of the research were to:

1. Understand the extent to which nutrition is included in the portfolio of EAS activities.
2. Document the nutrition content of training provided to EAS agents, as well as the nutrition messages delivered by EAS agents to farmers and other clientele.
3. Understand the extent to which EAS agents coordinate and/or duplicate nutrition-related services with workers from other sectors.
4. Understand the challenges faced by EAS and identify opportunities for strengthening these services.
5. Identify good practice country or program cases, noting comparative advantages of different types of providers and/or nutrition advice from EAS agents versus other sectors.

Methodology

Researchers used a systematic literature review, survey, and semi-structured key informant interviews. Data were collected between December 2012 and June 2013.

The systematic review utilised the GFRAS “Worldwide Extension Study” database and both white and grey literature from 1960 to the present. The literature search resulted in 232 documents of which 25 were deemed relevant and summarised in the report.

The online survey was targeted at respondents familiar with either nutrition or EAS, and was hosted on eight agriculture/nutrition websites and advertised through various agriculture/nutrition communities. The survey focused on the following themes: good practices for linking nutrition and home economics in EAS; effective dissemination of nutrition messages; available EAS training programs and their respective locations; capacities, gaps, challenges, and activities for integrating nutrition within EAS; mechanisms for functional collaboration between ministries; and women’s role in EAS. In total, 68 responses were received.

Semi-structured key informant interviews focused on the following themes: good practices and approaches to integrating nutrition within EAS; nutrition training topics, interventions, and messages; capacities required and challenges faced by EAS agents; technical, institutional, and political support required to integrate nutrition within EAS; and conditions for scaling the integration of nutrition within EAS. Interviews were conducted in the language of the participant, recorded and transcribed, and analysed using Daily Interpretative Analysis. In total, 38 interviews were conducted.

Funding for the study was provided by the World Bank’s SecureNutrition Knowledge Platform and the Global Forum for Rural Advisory Services (GFRAS).

The research findings are summarised below. The full report includes illustrative quotes from survey participants and lessons learned at the end of every section. The full report also includes twelve country case studies featuring examples of specific projects, programmes, and initiatives that have integrated nutrition within EAS.

Findings

Integration of Nutrition within EAS

The rationale for the integration of nutrition within EAS lies in the opportunity to leverage key strengths of agriculture EAS systems and agents, including: (a) an established infrastructure (b) reach (c) community trust, and (d) and cultural awareness, including (e) an understanding of how to mitigate the constraints faced by farmers. However, the extent to which it

is effective to rely on agricultural extension agents to deliver nutrition messaging is uncertain. Also, few of the integrated approaches have been implemented at scale and, although there are pilots underway, there is scant evidence for their effectiveness currently available.

Consequently, although this report is premised on the notion that there is potential to increase alignment and collaboration of nutrition and agriculture through EAS, there are in fact differing opinions as to whether integration is viable or beneficial, and countries approach the integration of nutrition within EAS in different ways. This study indicates that countries vary in the scope of their integrated nutrition EAS programs and activities, the types of organizations that are involved in implementation, and the core functions of EAS agents, including how they incorporate nutrition messaging and the clientele they target. Rather than a comprehensive national nutrition EAS program, some countries target EAS towards specific regions based on their burden of malnutrition, food insecurity, or poverty. EAS agents may work in the public sector, the private sector, or may even be volunteers who have been nominated by their community. The services provided by EAS agents working in nutrition are diverse, and their role often extends beyond that of the traditional frontline agricultural extension agent.

While integrated EAS models often involve frontline agents who are charged with managing a wide range of activities, messages, and other responsibilities, other models exist, including those that pair agricultural extension agents with nutrition extension agents who then work together in the community. This study identified the following eight distinct nutrition EAS functions:

1. Generalist – Have a broad range of agriculture-based knowledge relating to farming systems, fertilizers, and/or marketing, in addition to knowledge on rural poverty alleviation and development issues, nutrition.
2. Nutrition specialist – Focus on nutrition and serve as technical backstops, providing ongoing training to frontline extension agents. They are responsible for relaying relevant information from the research to frontline agents, and in turn gather feedback from frontline agents concerning the local needs of the community.
3. Generalist with access to nutrition specialists – Agriculture-focused with basic training in a range of topics including nutrition. With an understanding of the potential causes of malnutrition, they assist the community in accessing nutrition resources and/or services, including nutrition specialists.
4. Home economics extension agent – Nutrition specialists, typically female and housed within Agriculture ministries,

who are responsible for addressing the nutritional needs of vulnerable family members, care and feeding practices, food preparation, and intra-household distribution of food. They were a fixture of EAS during the 1970s and 1980s, before the role was refocused towards agricultural production.

5. Lead farmer / Community volunteer – Community members who are trained by EAS agents to be farmer-to-farmer “promoters” within their own community. Assisting with agriculture training and/or the dissemination of nutrition messaging, they serve to extend the reach of the EAS agents. The approach aims to move away from a dependence model towards one where community members are learning the skills and the methods to share them.
6. Farmer field school (FFS) facilitator – Typically local, national, or international NGOs that lead community farmers in experiential group learning activities, including experiments with different cultivation techniques, field observations, and group analysis. While the focus is primarily on agricultural production, the participatory nature of FFS provides an entry point to the discussion of other priority issues such as HIV, gender, and nutrition.
7. Health sector extension agent / Community health worker (CHW) – Considered to be the main source of nutrition education by female beneficiaries, CHWs offer a direct entry point for nutrition messages. They provide nutrition counseling that touches upon components of a balanced diet, the importance of kitchen gardens, and appropriate feeding practices for children.
8. Educator – Teachers and professors can play an important role in nutrition messaging, however the emphasis on nutrition within school curricula varies across countries.

Although there is potential for overlap for the delivery of nutrition messaging between functions, findings from this study suggest that few extension agents provide this service and thus there is in actuality little duplication in duties.

Integration challenges

- Weak evidence base: There is a lack of conclusive evidence for the efficiency and cost-effectiveness of integrated agriculture-nutrition interventions and their impact on food and nutrition security, including which elements of agriculture-nutrition programming are essential. In some countries, little is known about the capacity, quality of service, and performance of nutrition-sensitive agriculture interventions.
- Funding: Integrating nutrition within EAS incurs additional costs (e.g. training, logistics, activities, etc.) for systems that are, generally, already under-funded and may not have the necessary financial or human resource capacity. Lacking evi-

dence for cost-effectiveness, the argument for budgetary allocation is weak.

- **Human resources:** There are insufficient numbers of EAS agents – especially with nutrition expertise – and high rates of turnover, primarily as a result of low pay, poor incentives, and task-overload. Adding additional tasks to already overstretched staff is often met with resistance.
- **Political disruption:** Public EAS is the product of national level policies and politics, institutional dynamics, and institutionalised management systems. As a result, it is vulnerable to political pressure and trends that affect political will.
- **Gender inequality:** It is notable, given the importance of gender in nutrition and agriculture, that only 15% of extension agents worldwide are women and just 5% of women benefit from EAS. Gender inequality persists in many facets of nutrition and agriculture, including intra-household food distribution, land and property rights, access to agricultural inputs, and access to credit and agro-processing. Reversing the inequality that results from embedded gender relations requires long-term behavioural change that is difficult for extension agents to bring about on their own, without corresponding changes in the broader policy environment.

Multisectoral Coordination

The public sector is the largest provider of EAS (80%) compared to non-governmental organisations and civil society organisations (12%), and the private sector (5%). These sectors operate at different levels and in varying capacities. No single nutrition EAS function addresses all areas where intervention is needed, and these functions are in fact not mutually exclusive within a single country. Consequently, in an integrated EAS system, agents from different disciplines must work together towards common objectives. Multisectoral coordination, particularly between the agriculture and health sectors, lies at the heart of integrating nutrition within EAS. This level of coordination is a political challenge requiring institutional innovation to facilitate and generate political pressure.

This study elucidated a few examples of efforts to coordinate EAS activities. In the “model village” approach, frontline staff from both ministries work together to conduct participatory rural appraisals, and then jointly address the priorities set out in the action plans and national roadmaps. In other contexts, workshops were organized at the national and divisional levels, which helped to ensure that ministry staff understood the policies and could thereby more easily implement them.

Another example described how plans, activities, and roles of extension agents are jointly reviewed, discussed, and agreed upon at the community level.

Multisectoral coordination challenges

- **Funding:** There is insufficient funding to facilitate/obligate EAS agents to collaborate with other sectors.



- **Lack of joint planning and dialogue:** An important issue is how to motivate, initiate, and sustain such multisectoral initiatives. Increased governance and ministerial collaboration is needed.
- **Expanded mandate:** Donors and policy makers expand the mandate of EAS at the expense of other service provisions. The degree of involvement for EAS agents delivering nutrition services are not based on the budgets allocated for staff and other competing national priorities.
- **Local coordination:** Although there may be coordination at the national ministry level, coordination is often insufficient at the level at which projects are being implemented. As a result, nutrition falls through the cracks for both EAS agents and health workers.
- **Shared language:** Different sectors use different terminology; there is need for a common “language” across disciplines.

Nutrition Messaging

EAS agents delivering nutrition services focus thematically on crops and food, and to a certain extent on livestock and natural resource management, with an overall aim towards enhancing the availability, access, and utilisation of nutritious foods. Some EAS agents delivering nutrition services focus on addressing the needs of commercial farmers and promotion of market goods; others work primarily with smallholder and/or women farmers. Participants consulted for this study disagreed on whether EAS can or should aim to reach individual households; there is evi-

dence to suggest that follow-up at the household level is neither viable (through EAS) nor necessary.

The specific activities undertaken by EAS agents delivering nutrition services depend on the model implemented, but cover the key components of food security (availability, access, and utilisation). This study identified the following practices that EAS agents delivering nutrition services promote:

Component Availability

Practices promoted

- Crop diversification and increased nutrient-dense foods through the introduction of locally available, affordable, and easily-adoptable nutritious foods, and/or biofortified crops such as orange-fleshed sweet potato (OFSP).
- Home gardening systems including urban gardens, container gardening, and small plot agriculture.
- Effective farming techniques to raise quality of production and yield, such as drip-irrigation, intercropping, and the use of inputs and/or equipment.
- Reduction of post-harvest losses through the promotion of improved techniques for harvesting, drying, and storing.
- Enhancement of overall nutritional quality through promotion of post-processing techniques to remove anti-nutrients.
- Breeding animals for protein sources.

Access

- Enhanced marketing strategies for nutrient-rich vegetables.
- Improved linkages to markets.
- Increasing the availability of missing sources of nutrition through engaging communities to track the seasonality of local foods.
- Income generation.

Utilization

- Increased dietary diversity.
- Use of weaning with foods rich in vitamins and minerals, and recommended infant and young child feeding (IYCF) practices.
- Awareness of the basic benefits of a nutritious diet, including the quality and quantity of food required, and the role of each food group.
- Recipes and food preparation techniques that maximize the nutritional benefit of locally available foods.

Additionally, some EAS agents are involved in nutrition surveillance, including the design of data collection systems, and promotion of recommended sanitation and hygiene practices.

Participants cite various techniques used by EAS agents to incentivise or otherwise increase receptivity to nutrition messaging in their communities. For example, the potential for selling surplus production can encourage farming households to be more receptive to messaging concerning cultivation of more

nutrient-dense crops, or the use of home gardening can serve as an entry point into discussions of utilization, sanitation and hygiene, dietary diversity, complementary feeding, frequency of feeding for children, and other general health issues; some participants cited emphasizing “small doable actions.”

Nutrition messaging noted by participants of this study includes principles of improved infant and young children feeding, methods of food preparation that reduce cooking time and/or enhance nutrient bioavailability, dietary diversity including growing and consuming nutrient-rich vegetables and fruits and animal source foods, women’s nutrition, and encouraging hand-washing with soap and water before handling food and after defecation.

Nutrition messaging challenges

- Competing priorities: Nutritious foods are just one of many needs that compete for limited cash in rural households, including staples such as sugar and salt, and schooling for their children.
- Demand: There is weak local demand for nutrition information as communities are unaware that undernutrition – especially micronutrient deficiencies or “hidden hunger” – is a problem; undernutrition is therefore not recognized as a priority.
- Materials: EAS agents delivering nutrition services lack educational materials to share with their clients.
- Frequency and penetration: The minimum frequency and level of penetration that nutrition messaging needs to achieve in order to be effective is unknown.
- Time: Nutrition EAS activities can be costly and time-consuming to implement, whether working with individual households or community groups.
- Transportation and materials expenses: EAS agents delivering nutrition services lack access to transportation and materials that they need to carry out their duties. The lack of free or affordable transportation in particular is a disincentive to reach communities or to make repeat journeys.
- Effectiveness: Nutrition EAS activities may not work as well for nutrition-sensitive practices that do not have a short-term, tangible, and visible benefit (e.g. savings from reduced pesticide use).

Training for EAS

Each of the nutrition EAS practices draws, to varying degrees, on different skills and knowledge. Training is considered by participants of this study to be a fundamental “good practice” and one that is crucial for building institutional capacity in nutrition, reinforcing government activities in agriculture and nutrition, and furthering sustainable change. The need for adequate training is especially important in adopting new methodologies.

Training takes place at different levels: within projects, within vocational training, and within other formal education systems. Participants in this study noted the importance of periodic



refresher training to reinforce key concepts and skills; engage in hands-on learning to narrow the gap between theory and practice, and to hone the interpersonal skills required to be effective; feedback through either mentorship and/or existing peer venues in which to share experiences and challenges, raise concerns, engage in joint problem-solving, and solicit specialised support.

The Food and Agriculture Organization (FAO) first introduced nutrition concepts into the training of extension personnel for rural development projects in the 1960s. While EAS agents are not expected to be experts on all topics, the effectiveness of EAS agents delivering nutrition services hinges upon sufficient understanding of the nutrition-related issues in the communities in which they operate. They must expand beyond the sole focus on food production to incorporate food consumption and to some degree, food utilisation, and feel comfortable talking to farmers about the linkages between agriculture and nutrition.

The importance of the skills and capabilities of EAS agents delivering nutrition services must be underscored. The knowl-

edge required encompass agriculture, nutrition, nutrition-sensitive agriculture, and related issues such as gender, and water, sanitation and hygiene. The findings from this study suggest that EAS agents delivering nutrition services must be conversant in:

- Farm management, production, drying, and storage techniques, as well as the physical terrain and agro-ecosystem in which they operate;
- The importance of nutrition and nutrition-related concepts, including the causes and consequences of malnutrition, food groups and what constitutes good nutrition, food preparation and preservation, and the ability to recognize nutritional needs – particularly for women during the 1,000-day window between pregnancy and her child's second birthday;
- The basic nutritional characteristics of locally available crops and how families can use them in their diets to improve nutrition and/or fill nutritional gaps, including crops which may be undervalued by the community;

- Cultural norms and gender dynamics that may impact nutrition, and appropriate water, hygiene, and sanitation practices; and
- The potential for unintended consequences of intervention and the “do no harm” considerations to mitigate them.

Beyond understanding the importance of nutrition and the purpose for intervention, EAS agents delivering nutrition services must believe in the ability of households to make behavioural changes and, to that end, must effectively employ a wide range of soft skills, including: communication (e.g. demonstration techniques, use of visual aids, negotiation), management, facilitation (e.g. participatory techniques, demand articulation), motivation (e.g. community organisation, mobilisation, and stakeholder engagement), critical thinking and problem solving, adaptation of new knowledge and skills, and cultural competency, including context-specific strategies to utilise local knowledge, the ability to communicate with clients in their language, and gender sensitivity.

Some training and counselling materials intended for EAS agents delivering nutrition services are available, and have been translated and adapted for use in several countries throughout Latin America and Africa.

Training challenges

- **Shifting emphasis:** EAS agents have traditionally promoted staple crops and cash crops as income-generating sources, with an emphasis on production over nutritional benefits and home consumption. Many EAS agents themselves grew up unaware of nutrition and do not understand its importance. Integrating nutrition within EAS requires agents to acquire a toolkit of knowledge and skills that is very different from the one they traditionally have. Although it may be impractical to replace outright the production mandates with nutritional considerations, the current knowledge and skill set of EAS agents is inadequate for the nutrition EAS role. Less than half of survey respondents thought that in their respective countries, EAS agents had specialized skills in nutrition.
- **Quality of nutrition training:** Nutrition training provided to EAS agents at agricultural schools and universities is widely believed to be ineffective and inadequate. There is a gap between the perceived potential for nutrition EAS, and the commitment/investment in equipping agents with the requisite knowledge and skills.
- **Message delivery:** Training has often traditionally been based on rote memorisation rather than experiential learning, and EAS agents are more accustomed to delivering standardised messages that capitalise on economies of scale without con-



sideration for local context and conditions. Training is needed not just on the content, but also how to deliver it.

- Motivation: EAS systems lack mechanisms for motivating inclusion of nutrition, including opportunities for career advancement, performance-based incentives, supervision and monitoring, and mentorship and guidance.
- Nutrition knowledge and skills: There is insufficient training in basic nutrition concepts and skills, including the causes of and possible solutions to malnutrition, anti-nutrients and food safety, nutritional assessment, understanding of the local nutrition context, needs assessment, how to raise awareness of nutrition as a priority, and behaviour-change communication.
- Soft skills: Interpersonal communication skills are arguably the most important ones for EAS agents, but are the most difficult for agents to acquire.

Education Techniques Utilized by EAS

EAS agents are typically trained to incorporate nutrition into their routine services. To be effective, EAS must be tailored to the demands and needs of farmers. Consequently, critical to the success of nutrition in EAS is the ability of agents to create demand for better nutrition and increased nutrition education. Participants of this study noted the importance of employing adult learning principles, and emphasised interactive learning and incorporation of effective educational materials for distribution.

Demonstration is a common technique used by agents to create demand and effect change in the communities they work in. Varying types of community garden systems are commonly employed as an informal resource for learning, enabling communities to build their knowledge through testing different crops and assessing their joint benefits for soil fertility and nutrition. For example, in the “mother-baby” system, “mother” trials with all available crops are conducted on village land, and individual farmers carry out “baby” trials of one or two crops. Other forms of demonstration commonly employed by EAS agents delivering nutrition services include field days, exhibitions and shows, and farm visits.

EAS agents also frequently employ peer-to-peer engagement through model farmers and/or community champions/promoters using a “train-the-trainer” approach. Another technique successfully employed by participants of this study is the “walk-and-talk” methodology, wherein agents are trained, with every client interaction, to pick up and start talking about a range of topics. Another related example conducted by agents and focused on women are forest walks to harvest wild nutrient-dense foods, which are followed by demonstrations in how to prepare and incorporate the food into conventional dishes.

In addition to such integrated education techniques, participants of this study also noted working with small groups, mass media, or other creative methods for delivering culture-spe-

cific nutrition messages. Key to engaging community members is first determining which communication channels are most effective, and then finding creative ways to leverage available technology and community platforms. Participants mentioned the use of mobile phones, internet, radio, TV, billboards, and video, as well as interactive group learning venues such as community theatre.

Participants of this study disseminated nutrition messaging via educational materials such as posters, pamphlets, and booklets, as well as innovative low-cost multimedia that can be shared among community members, such as cassette tapes or mobile devices. Digital Green, a particularly innovative initiative started in India cited by study participants, enables community members to produce videos on nutritional topics that can be shared almost immediately. Multimedia mechanisms are especially helpful in overcoming illiteracy.

Education techniques challenges

- Cost-effective activity selection: EAS agents must work with the characteristics and constraints of the community in determining which techniques to employ, and where and at what level they ought to work. Some activities require a high level of support from EAS agents, and cost-effectiveness becomes an important consideration. Where the EAS agent-to-farmer ratio is low, numerous visits and the associated expenses may result in high per client cost.
- Culturally appropriate activity selection: EAS agents must also consider the cultural context in the selection of nutrition EAS activities to employ. For example, farmer field schools may not be feasible if agents are not in a position to experiment with new approaches, literacy and education levels may influence whether a program can effectively utilize community-level champions, and alternative mechanisms may need to be devised for cultures where it is not acceptable for male EAS agents to address women.
- Reaching the community: EAS agents have to devise ways to reach the community and to find times when farmers are available.
- Inclusivity: EAS agents have traditionally targeted their resources and interventions towards male farmers, and are now called upon to ensure that illiterate farmers and women farmers are not excluded from this outreach.

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