

Research Article

Hidden Hunger: Exploring the Role of Agricultural Extension for Improved Nutrition in Nigeria

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Abstract: Hidden hunger is still a great concern for many households in Nigeria. The need for nutrition-sensitive agriculture is well recognized and of growing interest to global development players. There is a heightened awareness globally and within development institutions and governments of the need to better understand the linkages between agriculture and nutrition in which the agricultural sector can contribute to improved nutrition. This paper presents hidden hunger with a focus on exploring the role agricultural extension can play to realise the goals of food security and nutrition in Nigeria. This paper argues that Agricultural extension is particularly well positioned to address hidden hunger through the instruments of technology transfer and innovation, human capital development, social capital development and increasing market access. Agricultural extension, with established infrastructure, provides a unique opportunity for nutrition interventions to be implemented at scale with significant reach. The paper focused on the role of Agricultural extension in combating micronutrient deficiencies in Nigeria.

Keywords: Agricultural extension, Exploring, Hidden hunger, Micronutrients, Nutrition, Role.

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INTRODUCTION

Hunger is usually understood to refer to the distress associated with lack of food. Hidden hunger is a form of under nutrition that occurs when intake and absorption of vitamins and minerals (such as zinc, iodine, and iron) are too low to sustain good health and development (Thompson and Amoroso, 2010; De Valençaa, 2017). Clinical signs of hidden hunger, such as night blindness due to vitamin A deficiency and

goiter from inadequate iodine intake, become visible once deficiencies become severe, the health and development of a much larger share of the population is affected by less obvious “invisible” effects (World Health Organization (WHO) (2009). That is why micronutrient deficiencies are often referred to as hidden hunger. Table 1 presents selected micronutrient deficiencies and their effects.

Table 1: Selected micronutrient deficiencies and their effects

Micronutrient Deficiency	Effects
Iodine	Brain damage in newborns, reduced mental capacity and goiter
Iron	Anemia, impaired motor and cognitive development, increased risk of maternal mortality, premature births, low birth weight and low energy
Vitamin A	Severe visual impairment, blindness, increased risk of severe illness and death from common infections such as diarrhea and measles in pre-school age children; and (in pregnant women) night blindness
Zinc	Weakened immune system, more frequent infections, stunting

Source; Micronutrient Initiative (2009); Wessels and Brown (2012)

Adequate food production for a growing world population depends on the continuing success of agricultural research and extension. But the conquest of hunger and malnutrition requires additional links in the food chain. These include post-harvest food conservation and storage, processing, and distribution,

and' finally, consumption (Wessels and Brown, 2012). Human need is not met and human demand is not effective unless people can consume an adequate diet. There is a heightened awareness globally and within development institutions and governments of the need to better understand the linkages between agriculture

and nutrition, and to decipher the ways in which the agriculture sector can contribute to improved nutrition (Abdu-Raheem and Worth, 2011). Ultimately, nutrition-sensitive agriculture is aimed at improving the nutritional status of a population by maximizing the impact of food and of agricultural systems, while minimizing the potential for negative externalities regarding the sector's economic and production-driven goals. Agricultural extension is often thought of as a vehicle for the improved nutritional health of rural communities because they reach and interact closely with farmers in different settings (Milat *et al.*, 2013). Agricultural extension can function as significant service providers on crop, livestock, and forestry aspects of food security, consumption, and production.

Agricultural extension is recognized as a vital component of agricultural development. Agricultural extension involves different activities and sets of organizations that provide the information and services needed and demanded by farmers and other actors in rural settings (Fanzo, 2015). This assists them in developing their own technical, organizational, and management skills and practices, so as to improve livelihoods and well-being. At present, Agricultural extension is increasingly recognized by many development actors as an essential vehicle to ensure that research, development of farmer organizations, improved inputs, and other elements of rural development support actually meet the needs and demands of farmers and other rural actors.

As nutrition becomes an important contributor to poverty-reduction strategies and as countries start scaling up nutrition programmes, new ways of delivering interventions, knowledge, and tools will be essential. One potential vehicle would be through Agricultural extension, because of the ability to improve knowledge, provide information, and deliver improved practices to rural households through consistent provision of services and far reaching networks with rural communities (Abdu-Raheem and Worth, 2011). However, the role of Agricultural extension in improving nutrition is less explored in Nigeria. Therefore, it is of value to establish how agricultural extension can contribute simultaneously to reduction of hidden hunger.

Food and Nutrition Situation in Nigeria

Adequate food and optimal nutritional status are the foundation blocks for the building of healthy, secure lives and thus form the basis for development in any nation. It is well-known fact that the basic cause of the food and nutrition problem is poverty entrenched in the mechanisms of governance and institutions which drive the economy (Micronutrient Initiative (2009). Conceptually, malnutrition in Nigeria arises from poverty, gaps in governance and institutional weaknesses as basic causes whilst food insecurity,

inadequate care and access to health services are underlying causes and inadequate food intake and diseases are the immediate causes (MBNP, (2016).

Malnutrition and nutrition-related morbidity continue to be of public health concern in Nigeria. Malnutrition is widespread in the entire country, although the scale and scope varies between regions and across urban-rural divide ((MBNP, (2016). Adding that, malnutrition manifests mainly as undernutrition, overnutrition and micronutrients (minerals and vitamins) deficiencies. The trend in undernutrition among children under five has not shown significant changes as revealed by the Ministry of Budget and National Planning (MBNP) (2016). Undernutrition reduces economic advancement of nations by at least 8% due to direct productivity losses and losses due to poorer cognition and reduced schooling (Fanzo *et al.*, 2015). This poor state of child nutrition in Nigeria is an indication of inadequate dietary intake, inadequate care of women and children as well as inadequate access to health care and living in an unhealthy environment. Food insecurity in these areas has a disproportionate impact on women and children. Malnutrition restricts children's cognitive and development potential, with long-term - often irreversible - social consequences.

Linkage between Agricultural Extension and Nutrition

There is a heightened awareness globally and within development institutions and governments of the need to better understand the links between agriculture and nutrition, and to decipher the ways in which the agriculture sector can contribute to improved nutrition. There is an established linkage between Agricultural extension and nutrition as indicated by Fanzo *et al.* (2015). These include:

Established infrastructures: In some countries, the Agricultural extension delivery system is already in place and it is just a matter of "topping-up" their portfolio with simple nutrition activities and messages.

Reach: The existing networks of extension agents already reached many people, and thus there is no need to tap into or seek new clientele. Extension agents have direct and sometimes extensive linkages to farming communities in rural and remote areas. These linkages are founded upon well-established structures and systems that cover most farming households.

Community trust: Extension agents maintained regular contact and have established relationships with the people and the communities in which they work. It is much easier to introduce nutrition issues into communities with pre-existing relationships built on trust.

Cultural awareness: Extension agents are often aware of the local social norms, cultures, and belief systems that accompany and contextualize food. Extension agents frequently hail from the region where they work and therefore have intimate knowledge and understanding of the local context.

Empathy and understanding: Because of their familiarity with the conditions and context under which the farmers work and associated limitations and opportunities, extension agents are more able to demonstrate empathy with the farmers. This is particularly true with regard to issues of food production and access. Equipped with knowledge of the local food production system, access to markets and the nutrition status of households; extension agents have a clearer understanding of how to mitigate the constraints faced by farmers.

Raising Awareness of Malnutrition in Nigeria

This is to promote advocacy, communication and social mobilization in Nigeria. These are as reported by Ministry of Budget and National Planning (MBNP) (2016).

- a) Developing an advocacy and social mobilisation strategy for food and nutrition.
- b) Sustaining advocacy to policymakers at all levels for resource mobilisation for food and nutrition activities.
- c) Promoting Behaviour Change Communication (BCC) for better understanding of food and nutrition security problems for improved food and nutrition practices.
- d) Promoting the designing and production of harmonised, appropriate BCC materials for use and distribution at the national, state, and Local Government Area (LGA) levels.

- e) Promoting and strengthening nutrition education for all age groups through multimedia communication approaches.

Agricultural Extension's Role in Improving Nutrition

Agricultural extension refers to any organization in the public or private sectors (e.g. NGOs, farmer organizations, private firms etc.) that facilitates farmers' and other rural actors' access to knowledge, information and technologies, and their interactions with other actors; and assists them to develop their own technical, organizational and management skills and practices, so as to improve their livelihoods and well-being (Abdu-Raheem and Worth, 2011). Over the past few decades the role of Agricultural extension has changed substantially, shifting away from a production oriented, technology transfer model to a greater emphasis on broader development objectives such as improving rural livelihoods through a demand-led, participatory and market-oriented approach. It is in the context of this paradigm shift that a potential role for Agricultural extension in promoting and supporting nutrition interventions has emerged. Experience suggests that Agricultural extension can play a role in promoting nutrition outcomes, enhancing the food and nutritional security of household members, and ensuring sustainable food systems that promote healthy diets. Whether supported by the public, private, or non-profit sector, Agricultural extension are often seen as a potential channel for influencing the production and consumption decisions of farming households so that they grow, sell, and eat more nutritious and diversified foods and time-saving technologies to alleviate drudgery. The practices promoted by extension and advisory services are presented in Table 2.

Table 2: Practices Promoted by Extension and Advisory Services by the three Major Pillars of Food Security

Pillar	Practice
Availability	1. Crop diversification and increased nutrient-dense foods through the introduction of nutritious food and biofortified crops
	2. Home gardening systems: urban, container, and small plot gardening
	3. Effective farming techniques to raise quality of production and yield (drip irrigation, intercropping, and inputs)
	4. Reduction of postharvest losses (improved techniques for harvesting, drying, and storage)
	5. Enhancement of nutritional quality through post processing techniques to remove antinutrients
	6. Breeding animals for protein sources
Access	1. Enhanced marketing strategies for nutrient-rich vegetables
	2. Improved linkages to markets
	3. Increased availability of missing sources of nutrition through tracking of seasonal foods
	4. Income generation
Utilization	1. Increased dietary diversity
	2. Use of complementary foods rich in nutrients and Infant and Young Child
	3. Feeding (IYCF) counseling
	4. Recipes & food preparation techniques that maximize nutritional benefits of local foods

Source; Fanzo *et al.*, 2015

Extension workers (through public, private, and nongovernment organisation (NGO) channels) are often thought of as a promising platform or vehicle for the delivery of nutrition knowledge and practices to improve the nutritional health of rural communities because they reach and interact closely with farmers in different settings. They act as significant service providers of crop, livestock, and forestry aspects of food security, consumption, and production. The role of Agricultural extension in improving nutrition should include the following (Milat, 2013; Fanzo, 2015; Fanzo *et al.*, 2015):

- Promoting the wide scale adoption of nutrition-rich crops and their cultivation at the farm level.
- Linking farmers to markets and value chains to sell and buy nutritious foods at the farm gate level.
- Fostering better use of foods grown and purchased at the household level through preservation, cooking, storing, and processing.
- Providing nutrition messaging and education geared towards behaviour change at the individual level. One source of this could be the essential nutrition actions, which provide core messages that can be adapted.

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CONCLUSION

The paper identified an established linkage between Agricultural extension and nutrition. This paper also established various means by which the role of agricultural extension can help address nutrition insecurity at the household level. Its instruments of technology innovation and transfer, human capital development, social capital development and increasing market access are effective means of addressing food insecurity and poverty at the household level. It demonstrated that, by focusing on enhancing agricultural productivity and profitability (through the agricultural path options), all the other options available to rural households can also be enhanced. Thus, it is vital that agriculture remain an integral part of any government's strategy to address food and nutrition insecurity at the household level. Whatever approach or combination of approaches used – technology transfer, advisory, facilitation, or learning – agricultural extension programmes should be re-examined and adjusted so that they are made to contribute to creating and maintaining food and nutrition security at the household level.