



Integrating Nutrition and Agriculture: Use of Extension Workers and Community Models in Uganda

BACKGROUND

Improving the nutritional status of women and children in the country benefits all sectors and should therefore be a priority to everyone investing in the future of Uganda. Improved maternal nutrition leads to healthier newborns; and improved nutrition for children leads to better mental and physical health in adulthood and thus a stronger, healthier workforce. This improves productivity particularly in an agrarian society like Uganda which is the forerunner to a healthier, more economically viable nation.

AGRICULTURAL EXTENSION

The definition and interpretation of extension services allows one purpose for agricultural extension that is to disseminate information to raise the production and profitability of farmers. Broadly, the purpose of agricultural extension is to advance not only production knowledge but the whole range of agricultural development tasks, such as credit, supplies, and markets (Rivera, 2001). The question is, whether under this broad interpretation, community extension services can be used to educate farming communities about the importance of good nutrition for themselves and for their families?

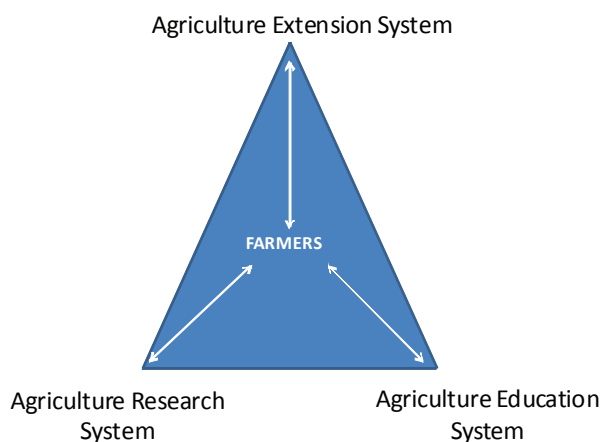
Linking Education, Research and Extension Systems

Agricultural extension operates within a broader knowledge system that includes research and agricultural education (Rivera, 2001). Many organisations like FAO, the World Bank and OECD refer to this “system” with different names but in essence, the triad of research, extension and higher education can be thought of as an “Agricultural Knowledge Triangle” with a common clientèle, the farmers.

The Knowledge Triangle (see Figure 1) works under the principle that faculty involved with agricultural education systems send relevant information to extension

system workers who then feed back field observations to faculty. This would also support development of short courses for in-service training of extension workers and training of trainers for community teams. Similarly, researchers – who focus primarily on technical aspects for generating useful technologies – feed information to extension workers whose focus is on farmers’ acceptance and adoption of those technologies.

Figure 1. Agricultural Knowledge Triangle



Entry Points for Nutrition

There are multiple entry points by which nutrition can become part of the Knowledge Triangle. Operational research with nutrition outcomes such as stunting or micronutrient indicators are in-built directly into the hypotheses to inform the type of linkages existing between agriculture, health and nutrition. Agricultural institutions of higher learning could embed nutrition issues in the curriculum with continuous review based on the emerging issues with support from nutrition experts to support the design and delivery of health and nutrition messages to farmers.

However, for nutrition to be accepted as part of the Agriculture Knowledge Triangle there needs to be commitment and innovation from all levels. Funders of research would need to embrace the idea of nutrition outcome measures as part of the research. This means linkages between the agriculture and health sectors would be necessary to design and carry-out the nutrition research that would entail specimen and/or data collection as well as data analysis and interpretation of the results. Similarly in education, linkages would be needed to develop an agriculture curriculum that includes nutrition education.

Opportunities

Linking nutrition and agriculture is a great opportunity for the formation of new and innovative partnerships. For example, funders of research to improve the vitamin A content of orange-flesh sweet potatoes might work with funders or organisations addressing vitamin A supplementation to combat blindness. The joint venture might be through public-private partnerships or through co-funded projects that maximize each funder's investment. Agricultural researchers might also benefit from new partners in health who would have access to new and different sources of funding.

Integrating nutrition into agricultural education would likely require financial incentives for the different schools to work together in designing an integrated curriculum. Faculty would need grants in order to devote the time required to designing the new curriculum; and schools in the health field would need to be willing to assist in developing the curriculum. With the right incentive, the likelihood of this increases significantly. Through this integration of education and research, nutrition messages would then be fed to agricultural extension workers through the agriculture Knowledge Triangle.

Employing nutrition extension workers and/or Village Health Teams (VHTs) to link their messages with agricultural extension workers is yet another innovative way of getting important health and nutrition messages directly to the farmer; although creating a demand for the information may help with the receptivity of the messages. A way to do this may be through the National Agricultural Advisory Services (NAADS). NAADS is one of the pillars for the Plan for Modernisation of Agriculture (PMA). It is aimed at extension service delivery to empower farmers to purchase privately-delivered, publicly-funded advisory services. Operating since the early 2000s, the programme uses a more focused, demand-driven model that is owned by and responsive to the needs of the stakeholders. NAADS started with a few districts/sub counties and has now expanded to cover the entire country. This may be an opportunity for the extension workers with NAADS to create a demand for nutrition education as they discuss agricultural issues.

COMMUNITY EXTENSION WORKERS

Government objectives meant to benefit the nation's poor often fail to be met due to inadequate extension strategies to interface between technical service providers and the implementing community. The ratio of extension workers to farmers in sub-Saharan Africa is about 1:800 (NAADS, 2003). Innovative methods must be sought to enable sufficient and sustainable service provision to farming communities. One possible innovation is the community worker concept that emphasizes a client

involvement in the development and delivery of messages. There is quantitative evidence that community-based service delivery is popular, cost effective and efficient (NAADS, 2003).

Community-based Service Delivery

Civil service reforms have decentralised extension services to local governments, which are empowered to choose different ways of implementing development programmes based on client needs (MAAIF/MFPED, 2000). Civil Society, particularly the NGOs have been at the fore-front in promoting such community-based service delivery and is meant to ensure that:

- Local people are active and involved in the management of their own development and not merely passive recipients of services;
- A dispersed and active network of local and other service providers exists; and
- Service providers are effective, responsive, and held accountable to the community.

There are commendable initiatives in both agriculture and health that have promoted community-based service delivery mechanisms. For example, the Uganda Land Management Project (ULAMP), the Indigenous Soil and Water Conservation (ISWC) project and Promoting Farmer Innovation (PFI) project, all implemented under MAAIF. The Ministry of Health has also initiated community-based service delivery in nutrition, reproductive health, and HIV/AIDS.

By connecting agriculture with health-based community initiatives, it may be possible for the local community to force linkages between government ministries to the benefit of all in the community. In addition, civil society could again be recruited to promote community action for linking nutritional outcomes with local agricultural initiatives.

Linking Sectors Locally

- **Millennium Villages Project**

The Millennium Villages Project (MVP) is aimed at empowering and working with impoverished communities in rural Africa to achieve the Millennium Development Goals (Millennium Villages, 2010). In Uganda the project – known as the Ruhiira Cluster – is made up of 8 villages in the Isingiro District of southwestern Uganda. Largely due to mounting population pressure, food production had been declining in Ruhiira over the years. This led to a high prevalence of malnutrition especially

among women and children, further constraining agricultural productivity through reduced labour. An overdependence on banana as the main food source with little nutritional diversification also contributed to malnutrition.

Due to the cross-sectoral efforts of the MVP, health and nutrition in the Cluster has significantly improved. In 2006, MVP supported the communities in the Ruhiira Cluster to develop implementation work plans for agriculture, education, health, home improvement, and village banking. In May 2007, these local plans were integrated into the broader local government strategy and fed into district-level development plans. Success of Uganda's cluster is attributed to strong community participation and local development (Millennium Villages Project, 2008).

- **The Gender Informed Nutrition Agriculture (GINA)**

GINA was a community-based approach of linking agriculture, nutrition and gender in 3 districts in the southwest between 2005 and 2008. GINA's overall goal was to improve nutrition outcomes of children under 5 years of age. GINA was designed to promote, facilitate and measure uptake of several activities that cross-cut nutrition, agriculture, hygiene and sanitation. These included: backyard (home) and community gardening, growing and consuming nutrient-enriched food crops (orange-fleshed sweet potato-OFSP), and increased consumption of home or community-produced animal protein, monthly child weighing, and caregiver counseling.

Experience from GINA demonstrates that it is possible to achieve a suite of positive outcomes related to both agriculture and nutrition with a single integrated project implemented over a relatively short time (4 years). It also shows that it is possible and productive to incorporate nutrition activities into District Development Plans. However, a number of challenges were discovered during GINA implementation. The period of implementation and support proved too short to effect lasting behavioral change. The agriculture component met with varied success at the household level due to difficulties in managing diseases of both crops and small stock (OFSP and rabbits). Recruitment of Community Growth Promoters was based on a model of volunteerism which proved unsustainable after funding for other project components ended.

In summary, although community engagement is important to the success of many locally-driven projects, such interest may not be able to overcome obstacles to time and money. As such, pilot projects may be too short to demonstrate a sustainable impact and a model that relies on volunteerism may also not be sustainable.

CONCLUSION

Investing in the future of Uganda means improving the nutritional status of the nation's women and children. This Policy Brief considers linking nutrition and agriculture through Extension and Community health systems as a key action toward addressing malnutrition in Uganda.

Beyond the benefit of improved health and ultimately a better economy, there are other benefits to addressing malnutrition through cross-sectoral partnerships. Such advantages may come in the form of opportunities for agriculture funders who could link with funders of nutrition projects to promote the health benefit of their “product.” Researchers in agriculture who partner with researchers in nutrition could also benefit through expanded pools of potential funders. In contrast, schools of agriculture may not inherently see the benefit of including nutrition in their curriculum and might need incentives to work with schools of medicine or nursing to include basic nutrition education in their curriculum. However, students trained under the new integrated curriculum will likely form the next generation of extension workers, educators and researchers who will in turn impart their expanded knowledge to future generations.

Although extension services have faced difficulties at the community level, the challenges are not insurmountable and extension systems could be a driver of nutrition and agriculture integration. Similarly, the local community could be a source of linkages between health and agriculture provided the initiatives are adequately funded beyond the time of the pilot project. In conclusion, encouraging linkages between sectors could lead to sustainable effects that raise awareness to the value of improving nutrition for the betterment of the health and economic well-being of Uganda.

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UGANDA NATIONAL ACADEMY OF SCIENCES

The Uganda National Academy of Sciences (UNAS) was founded in 2000 and granted a Presidential Charter in 2009 as the National Academy for Uganda. Like many other academies of science, UNAS is an autonomous body that brings together a diverse group of scientists from the physical, biological, and social and behavioral sciences. These scientists work together in an interdisciplinary and trans-disciplinary manner to achieve their main goal of promoting excellence in science by offering independent, evidence-based advice for the prosperity of Uganda. The mission of UNAS is to advance the ability of Uganda to address its most serious national development challenges by (1) engaging in a series of scientific activities designed to elucidate potential evidence-based solutions to pressing national and regional health concerns; (2) enhancing the general capacity of UNAS to provide relevant and useful scientific policy advice and (3) building Uganda's appreciation of and demand for advice from the Academy.

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