

## Agriculture and Nutrition

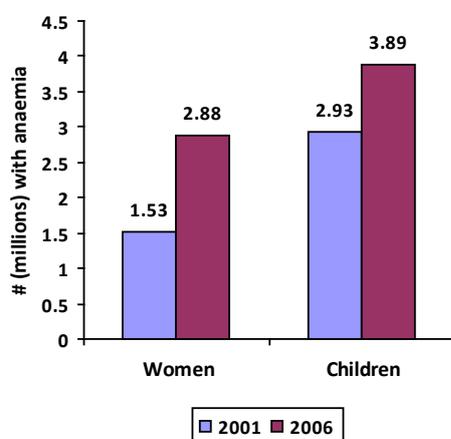
# Brief 2. Agriculture and Nutrition

According to Uganda's National Development Plan (2010-2015), agriculture is the foundation of national development and a major driver in poverty reduction and economic productivity. Yet, agricultural productivity is eroded by malnutrition in the work force. The cost of malnutrition on the economy is immense— about 4.1% of GDP—and must not be underestimated.

### ■ Malnutrition reduces Uganda's agricultural productivity

Anaemia, stunting, and inadequate energy intake hinder agricultural production through reduced labour productivity and capacity to cope with illness. About half of the women in Uganda have anaemia, as do 30 percent of men and 73 percent of children under 5; the number of women and children with anaemia significantly increased between 2001 and 2006 (Figure 1).<sup>2</sup> Anaemia can be caused by iron deficiency from poor diets or iron losses from infections like malaria or hook-worm infestation.

Figure 1: Number of women and children with anaemia by year of survey



Anaemia reduces agricultural productivity by 5 percent for light work, 17 percent for heavy labour. In adults

anaemia costs Uganda more than US\$34 million in lost productivity each year. Reducing anaemia by a third between 2006 and 2015 will increase productivity by US\$80 million.

Poor growth in children also hinders the potential of Uganda's future labour force. Uganda has the fifth highest number of stunted children in the world (slightly over 2 million in 2006, up from 1.6 million in 1995). Uganda lost about US\$210 million worth of future productivity in 2009 due to stunting.

### US\$34 million is lost each

**year** due to anaemia in the adult workforce, with anaemic women of reproductive age accounting for **US\$20 million of this loss.**

### US\$210 million in future productivity is lost each

**year** due to the effects of stunting among children under 2.<sup>3</sup>

### ■ Uganda produces enough food to feed its people, BUT 5 million people cannot get the food they need to stay healthy

Although Uganda is the "food basket" of in East Africa, over a quarter (27 percent) of households are categorised as food insecure. There is considerable disparity in food security between and within regions. Most food-insecure households are in the Northern and Eastern regions, where food insecurity is largely due to seasonal fluctuations in the food supply and access to income-generating opportunities.

Most households in the Western and Southwestern regions are food secure (although food security does not translate directly to good nutrition). Large numbers of poor families live among better-off families, which can mask food insecurity in those regions. Most households do not have enough capital to produce enough food for the household, and the food produced might be sold and income gained might not be used to buy food that provides a well-balanced diet.



*Nutrition is likely to improve if gender considerations and nutrition promotion are incorporated into the design of agricultural programs. Building capacity of fathers and mothers to understand how best to care for and feed the family benefits children, future productivity and overall household well-being.<sup>5</sup>*  
Photo: Biofresh /Uganda 2009

In Uganda, 75 percent of the workforce—of which 70 percent are women<sup>1</sup>—depends on small-scale farming as the main source of food. Increasing agricultural production as envisioned in the agricultural sector's Development Strategy and Investment Plan (DSIP 2010/11- 2014/15) might generate more income but not necessarily translate into improved diets for these small producers.

Fifty-nine percent of the income earned from the sale of labour and farm produce is spent on staples like roots, tubers, or cereals; much less is

spent on fruits, vegetables, legumes, and animal-source foods. Protein, vitamins and minerals are more concentrated in other types of foods (e.g. groundnuts, beans, fruits, vegetables, legumes and animal-source foods). It is important for families to know what children should be fed and what pregnant and lactating women's special needs are. Nutrition knowledge is a key determinant of how household budgets are spent.<sup>6</sup>

In addition, agricultural systems can harm household nutrition if:

- Women's role as child care provider is compromised (e.g., less time for breastfeeding and for proper food preparation and feeding of young children).
- Cash crops replace subsistence crops, and control over the income shifts from women to men, especially if men do not recognize their role in providing healthy foods to the family
- Women's workloads increase and more food or income to buy food is not readily available to provide the additional calories required for the additional work.
- The health and sanitation environment is made worse (e.g., an intervention that leads to standing water can increase mosquito breeding grounds and increase malaria risk).

The DSIP food security and nutrition outcomes could be achieved if:

- Gender considerations are incorporated into planning. Women's roles and constraints must be accounted for if they are targeted in agricultural initiatives, and they should have some role in deciding how income is used in their households. It is also important that men recognize their responsibility to provide healthy foods for the family, given that women often farm on more marginal lands (if they have land at all).





- Strategies for year-round food security are addressed by agriculture extension programs.
- Households' income streams are regular or frequent (even if the amounts are small).
- Smallholder farmers get fair prices for their produce that exceeds production costs (including labour costs).
- Food production is diversified to include vegetables, fruits, groundnuts, beans and livestock in addition to local food staples. When farming systems are more diverse, households are more likely to have diverse diets.<sup>7</sup>

### ■ Malnutrition persists despite food surpluses and lower poverty

The Southwest is the “food basket” of Uganda, but in the past decade it consistently has had the highest prevalence of stunting. In addition, the Southwest also had the largest decline in poverty, but it also saw minimal declines in malnutrition.<sup>1</sup> Nutrition is produced by a combination of adequate food, health and care (e.g. infant and young child feeding). If health and care are lacking, malnutrition can result. While the prevalence of anaemia in adults declines as household incomes rise, household wealth has little impact on anaemia, vitamin A deficiency, and wasting (severely low weight for height) in children. The World Bank estimates that to reduce malnutrition by 1 percent, poverty would have to decline by 4 percent.

### ■ The agricultural sector can reduce malnutrition and boost productivity

The agriculture sector is among many that can help fight malnutrition. This could be done in several ways including:

- Promoting improved nutrition-related behaviours and skills to equip

households to help prevent malnutrition. This includes diet diversification, use of iron supplements during pregnancy and in the early postpartum period, use of fortified foods, and supporting mothers in their important role as caregivers for infants and young children. Simple, practical nutrition messages could also be disseminated at farmer groups, marketing associations, small-scale agro-processing plants, and microfinance clubs.

- Promoting post-harvest technologies that extend production, income-generating options, and food access over a longer period. This promotes a steady stream of income and reduces risk.
- Promoting labour-saving technologies, which allow women more time for child care.
- Diversifying crop production systems by intercropping and introducing micronutrient-rich varieties. Home gardens and small livestock/poultry production, which research indicates is an important source of vitamins and minerals, also should be encouraged. These household food production activities can contribute significantly to a household's food security, nutrition, and income.
- Implementing small-scale agro-processing. Agro-processing can improve a product's storability and make it available over a longer period. By processing and storing a commodity for later resale, the producer adds value to the product and can sell in smaller quantities over a longer period. This can lead to a steadier stream of income and help producers capture a higher price later in the marketing season. Having a steadier stream of income provides greater stability in food

access.

- Improving storage and inventory credit programs. Inventory credit programs (ICP) increase access to food supplies. By participating in an ICP, farmers reduce storage losses, capture higher prices later in the marketing season when supplies are low, and guard against family members consuming reserved seed and emergency food stocks. Whether profits are large or small, farmers still benefit from the more consistent stream of income over the year. ICP credit is usually the only source of credit available to small farmers, and the loans can be used to invest in existing enterprises or diversify into new income-earning activities.

### ■ Recommendations for greater integration of nutrition in the agriculture sector strategy

1. Include nutrition as impact and outcome indicators of agricultural sector strategies and programmes.
2. Include food security indicators in

the 2011 Uganda Demographic and Health Survey (UDHS) and in the National Household Expenditure Survey (NHES). Consider diet diversity measures and the Household Hunger Scale.

3. Increase resources for nutrition actions and programmes by the nutrition and home economics unit of the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) and other nutrition-related agriculture programmes at district level.
4. Develop district and sub-county structures for supporting nutrition activities, including guidelines for integrating nutrition in district agricultural activities. Integrate nutrition and food security technical assistance and structures into existing agriculture extension services.
5. Support a system for monitoring nutritional vulnerability of farmers and other groups in and around areas where agricultural projects are being implemented, specifically monitoring seasonal food prices, nutritional status, and diet diversity.

### Sources

1. NPA (2010). National Development Plan 2010/11 – 2014/15. [http://www.npa.ug/docs/NDP\\_April\\_2010-Prot.pdf](http://www.npa.ug/docs/NDP_April_2010-Prot.pdf)
2. UBOS (2006). Uganda Demographic and Health Survey report. [www.ubos.org](http://www.ubos.org).
3. Uganda PROFILES based on 2006 UDHS data.
4. Philip McKinney (2009). Comprehensive Food Security and Vulnerability Analysis (CFSVA). World Food Programme VAM Food Security Analysis.
5. Berti, P.R., J. Krusevec, and S. FitzGerald. (2004). A Review of the Effectiveness of Agriculture Interventions in Improving Nutrition Outcomes. *Public Health Nutrition*, 7:599-609.
6. Block, S. (2003). Nutrition Knowledge, Household Coping, and the Demand for Micronutrient Rich Foods. Nutrition Working Paper 5, BAPPENAS/Department Pertanian/USAID/DAI Food Policy Advisory team.
7. Herforth, A. (2010). Promotion of traditional African vegetables in Kenya and Tanzania: A case study of an intervention representing emerging imperatives in global nutrition. Doctoral dissertation. Ithaca, NY: Cornell University.

### Read More of Our Series

- Advocacy Brief 1-2010: Health and Nutrition
- Advocacy Brief 3-2010: Education and Nutrition
- Advocacy Brief 4-2010: Economy and Nutrition

### Contact

Peter Rukundo, Secretary General  
Uganda Action for Nutrition Society (UGAN)  
Department of Food Science and Technology  
P.O. BOX 7062, Kampala, Uganda.  
e-mail: [prukundo@agric.mak.ac.ug](mailto:prukundo@agric.mak.ac.ug) or  
[prukundo@kyu.ac.ug](mailto:prukundo@kyu.ac.ug), Tel: +256 782 425076



**USAID**  
FROM THE AMERICAN PEOPLE



**FANTA · 2**  
FOOD AND NUTRITION  
TECHNICAL ASSISTANCE

**AED**  
Ideas Changing Lives