The role of agriculture in improving nutrition in Africa

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Under-nutrition remains a problem

Sub-Saharan Africa,
Children under 5 years of age:
- 40% are stunted
- 21% are underweight
- 9% suffer from wasting

Source: Demographic Health Surveys (DHS)
Why invest in nutrition? (1/3)

• More than 50% of child deaths in developing countries are attributable to malnutrition (Pelletier et al, 1994).

• For those who survive, malnutrition increases the risk of infections and chronic diseases (leading to increased medical costs).

• Malnourished children become less productive adults (large literature on the impact of height on productivity, especially in agriculture).

• Poorly nourished farmers are less productive. Improving the nutrition of rural populations will improve agricultural productivity.

Sources: Behrman et al (2004); Hoddinott et al (2013)
Why invest in nutrition? (2/3)

- Micronutrient deficiencies also lead to productivity losses:
  - Serious Vitamin A deficiency leads to blindness
  - Anemic (iron deficiency) workers are less productive

- Nutrition also affects schooling outcomes, cognitive development which in turn affects productivity in adulthood (large literature on the impact of schooling on wages)
Why invest in nutrition? (3/3)

- Africa loses 11% of Gross National Product – each year – due to poor nutrition (Horton and Steckel 2013).

- The median benefit-cost ratio for reducing stunting in Sub-Saharan Africa is 13 (Global Nutrition Report, 2014).
Political commitments

• **Sustainable Development Goals**
  • End hunger, achieve food security and improved nutrition and promote sustainable agriculture

• **CAADP results framework**
  • Stunting -- target: reduce to 10% by 2025
  • Underweight
  • Wasting
  • Minimum dietary diversity - women
  • Minimum acceptable diet for 6-23 months old infants
    • dietary diversity & meal frequency
CAADP successes 2003-2012

- Annual average growth rate of 5.2 %
- African governments now allocate more resources to agriculture
- Agricultural labour & land productivity have increased
- Accelerating poverty reduction

Source: Bahiigwa et al, 2013
But growth in incomes may not be enough

• 5.5 % per capita GDP growth translates into 1 percentage point reduction in stunting prevalence (Headey, 2013).

• Little evidence that growth in agricultural income having a special role either (Headey, 2013)

• Green revolution (major increases in rice yields) in Bangladesh increased children weights but no impact on linear growth (height) (Headey & Hoddinott, 2015)

• Ethiopia’s Productive Safety-Net Program (PSNP) improved food security but did not translate into improvements in child nutrition (Berhane, Hoddinott et al, 2015)
'Business-as-usual' unlikely to deliver

Source: DHS data for Sub-Saharan African countries with at least two surveys in 2004-13
‘Business-as-usual’ unlikely to deliver

Source: DHS data for Sub-Saharan African countries with at least two surveys in 2004-13
How can Agriculture contribute?

• Agriculture is the source of calories and important micro-nutrients (Vitamins, iron, etc).

• Most Africans reside in rural areas and agriculture remains the main income source for most people. --> Improving agricultural productivity leads to higher incomes.

• Improvements in agricultural productivity lead to lower food prices, thus making food more affordable to African households.

➢ Higher incomes or improved purchasing power can be used to purchase more food (calories) and a more diverse diet (Proteins + micro-nutrients)
Why is this not happening? (1/2)

• Households (caregivers) unaware of the health benefits of diverse diets?
  
  ➢ Solution: Behavioral change communication (BCC) needed to improve awareness [+ create demand for high-value agriculture production!]

• Households production decisions are based on dietary considerations, not just on maximizing income?
  
  ➢ Households may have to produce the foods to achieve better diets. Consumption & production decisions are non-separable (Singh, Squire, and Strauss 1986).
  
  ➢ Implies a market imperfection (missing markets)
  
  ➢ Evidence from Ethiopia (Hirvonen & Hoddinott, 2014)
  
  ➢ Solution: Provide households with market access!
Why is this not happening? (2/3)

• Women working in agriculture are time-constrained
  ➢ Negatively affecting child-care (e.g. breast-feeding)
  ➢ But women’s control over income and assets are also important
  ➢ No clear policy recommendation, other than more focus on gender aspects in agriculture & focus research on this area

• Food value chains are incomplete leading to poor availability of nutritious foods
  ➢ Especially important for perishable products (dairy, fruits)
  ➢ Solution: invest in infrastructure that allow transporting foods across regions with different agro-climatic conditions
Why is this not happening? (3/3)

- Other constraints?
  - Large part of international variation in children’s heights (stunting rates) can be explained by differences in sanitation (open defecation) (Spears 2013)
  - Sanitation have been the main driver of nutritional improvements in the last decade in Ethiopia (Headey 2015)
Conclusions

• Neglecting nutrition means that Africa’s growth potential is not achieved

• Context specific solutions needed

• Multi-sectoral cooperation is vital
  o Encouraging examples from Ethiopia:
    1) National Nutrition Program signed by 9 state ministers;
    2) Nutrition Unit in the Ministry of Agriculture

• Need to make sure that necessary data are collected to track nutrition indicators