Scaling Up
Biofortification: Better Crops, Better Nutrition

Speakers
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Facilitator
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Howarth E. Bouis

Dr. Bouis is the director of HarvestPlus, a global research program that develops and deploys biofortified nutritious food crops to reduce hidden hunger among malnourished populations. He advocates widely for improving nutrition through food-based approaches and has worked with India, China, and Brazil to promote national biofortification programs. Dr. Bouis holds a joint appointment at the International Food Policy Research Institute (IFPRI) in Washington, D.C. and the International Centre for Tropical Agriculture (CIAT) in Cali, Colombia. He received his B.A. in Economics from Stanford University and his M.A. and Ph.D. from Stanford's Food Research Institute.
Anna-Marie Ball

Dr. Ball is the head of Africa strategic alliances at HarvestPlus. She joined HarvestPlus in 2006 as Team Leader for the Reaching End Users Orange Sweet Potato Project, which rolled out in Mozambique and Uganda between 2006 and 2009. Prior to that, she worked in the water sector in Zambia as a health expert/sociologist and in Botswana in the area of youth reproductive health, behavior change and HIV/AIDS. She received her doctorate from the University of Manitoba in community health sciences, and her master’s in international rural development planning from the University of Guelph.
Biofortification - the Evidence

• Breeding increases nutrient levels without reducing yield
• Extra nutrients in crops improve micronutrient status
• Farmers are growing biofortified crops, and consumers are eating them
• Biofortification is cost-effective: central, one-time investment
Biofortification: USAID’s Role

• USAID involvement from very beginning
• USAID missions fund HarvestPlus’ vitamin A orange sweet potato program in Uganda and vitamin A maize program in Zambia as part of the Feed the Future initiative
• Biofortified crops also prominent in USAID’s current list of scalable agricultural innovations and in its recent report to Congress on health-related research
Target Countries and Crops

More than 2 million farming households reached by HarvestPlus. Crops released are high-yielding with climate-smart traits.
Scaling Biofortified Crops Globally
Cost-Effectiveness

- Copenhagen Consensus and World Bank criteria re cost-per-DALY suggest that biofortification is highly cost-effective
- Research at a central location; seeds multiply themselves across space and time
- Sustainable – driven by private sector once demand is established and mainstreamed in public and private breeding programs
OSP’s Impact on vitamin A intakes

Figure 5: Impact of REU Intervention on mean vitamin A intakes (μg Retinol Activity Equivalents (RAE)/day), Mozambique and Uganda

- **Mozambique**
  - **Children:** 6-35 mths. vs. 3.5-6 yrs.
  - **Women:**

- **Uganda**
  - **Children:** 6-35 mths. vs. 5-7 yrs.
  - **Women:**

The charts show the comparison between impact and control at project end for different age groups in Mozambique and Uganda.
Integrate nutrition and agriculture deliberately from the beginning
Extension staff trained in agronomy, nutrition and marketing
Train both women and men with both nutrition and agronomic messages.
Sharing seed – farmer to farmer
Engage markets for long-term adoption
Mass media creates demand; also requires preparation of seed system
High-Level Support - Policymakers
Implementation - the Road Ahead

• Private sector investments in plant breeding and seed marketing
• Mainstreaming of biofortification by public sector agricultural research
• Mainstreaming of biofortification by NGOs and multi-lateral institutions
• Advocacy and other support by national governments and regional organizations
• Creating consumer demand (advertising, governments, NGOs)
• Private sector marketing of a range of biofortified products with standards/quality control
• Generating evidence/experience, then sharing this information across countries and regions
Thank You!

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**Upcoming Events**
May 19th: Agrilinks Twitter Chat | Aflatoxins

May 20th: Ag Sector Council | Mycotoxins

Agrilinks and the AG Sector Council Seminar Series are products of the USAID Bureau for Food Security under the Feed the Future Knowledge-Driven Agricultural Development (KDAD) project.