Breeding Crops for Better Nutrition
As we speak, a consequence of rising food prices is a significant increase in iron, zinc, vitamin A and other mineral and vitamin deficiencies in developing countries.
% Changes in Cereal & Pulse Production & in Population Between 1965 & 1999

Cereals

Pakistan: 228%
India: 142%
Bangladesh: 112%
Developing: 228%

Pulses

India: 6%
Pakistan: 4%
Bangladesh: 4%
Developing: 8%

Population

World: 100%
Developing: 100%
Share of Energy Source & Food Budget in Rural Bangladesh

Energy Source

Staple foods

Non-Staple plants

Fish and Meat

Food Budget

Staple foods
After a 50% increase in all food prices, the share of total expenditures on staples and non-food items changes as follows:

**Before**
- Staples
- Non-Food

**After**
- Staples
- Non-Food
Biofortified Crops: Asia

- **Iron & Zinc**
  - Pearl Millet (India)

- **Zinc**
  - Rice (Bangladesh, India)
  - Wheat (India, Pakistan)
Biofortified Crops: Africa

- Iron Beans (Rwanda)
- Vitamin A Cassava (Nigeria, DR Congo)
- Maize (Zambia)
- Sweet Potato (Uganda, Mozambique)
Impact of Orange Sweet Potato Adoption on Intakes of Vitamin A in Mozambique and Uganda by Age Group

- **Mozambique**
  - Children 6-35 mths.: 200
  - Children 3.5-6 yrs.: 400
  - Women: 800

- **Uganda**
  - Children 6-35 mths.: 600
  - Children 5-7 yrs.: 1200
  - Women: 1200

**Impact** and **control at project end**
Niche for Biofortification

• Cost-effective, e.g. Copenhagen Consensus
• Investment of $300-400 million over 15 years will have an economic return of tens of billions of dollars
• Focuses on women and children whose nutrition requirements are highest
• Works best where women are farmers; women are more open to nutrition messages than men
• Targets the rural poor
• Sustainable, most costs are front-loaded
• Links agriculture and nutrition; HarvestPlus has a proven track record in bringing the agriculture and nutrition communities together
• The technology now on the shelf waiting to be implemented; impacts will improve over time
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