

# Biofortification: An Overview



## 2FAS Presentation Brussels, 15 February 2018

Peg Willingham/Paulus M. Verschuren

---

HarvestPlus c/o IFPRI  
2033 K Street, NW • Washington, DC 20006-1002 USA  
Tel: 202-862-5600 • Fax: 202-467-4439  
HarvestPlus@cgiar.org • [www.HarvestPlus.org](http://www.HarvestPlus.org)





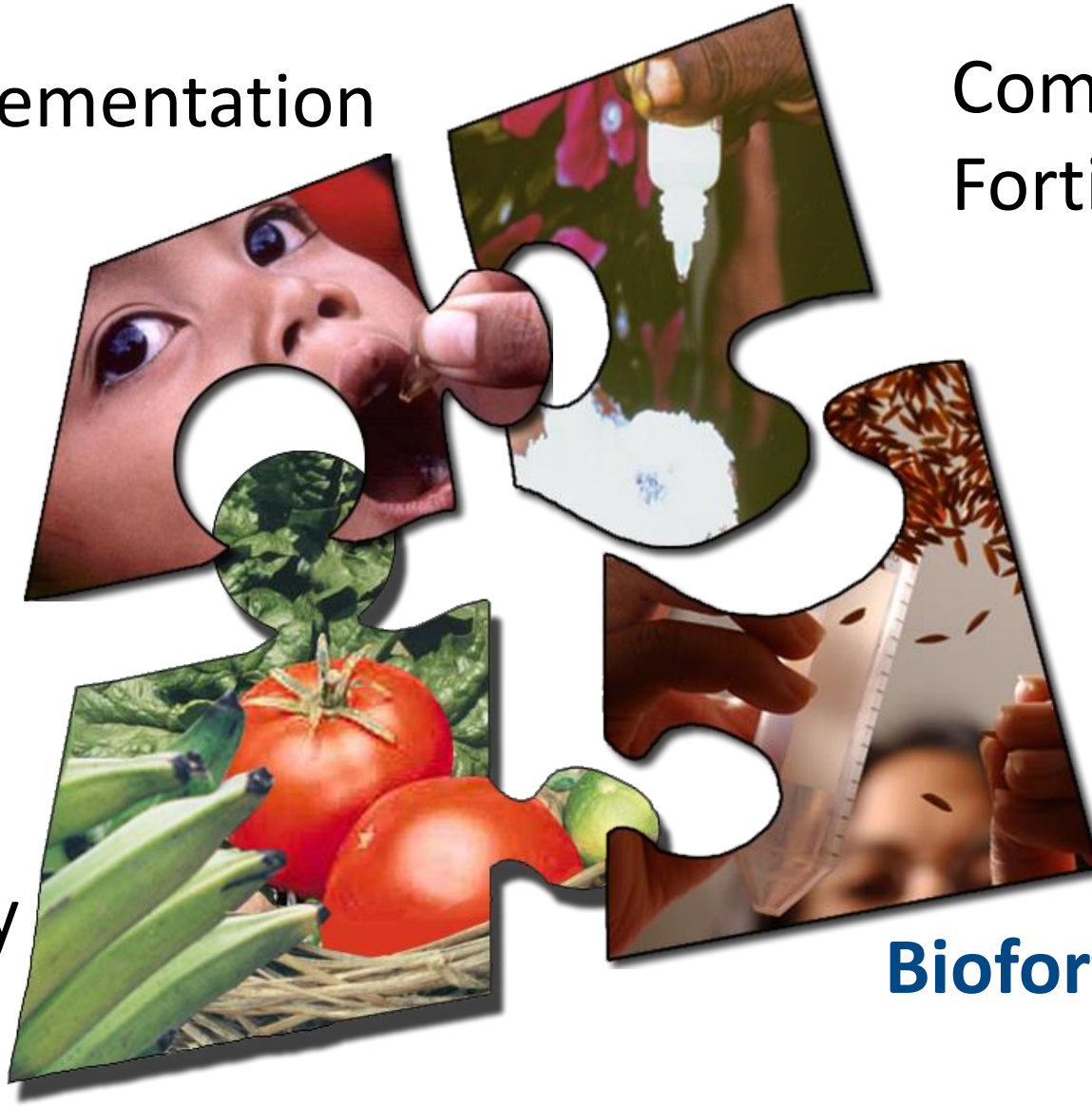
# Biofortification - One Piece of the Puzzle

Supplementation

Commercial  
Fortification

Dietary  
Diversity

**Biofortification**





# BIOFORTIFICATION

It all starts with a seed.



Process of  
breeding &  
delivering  
staple food  
crops that are  
naturally  
enriched with  
micronutrients



**30 million+ people in farming households have been reached  
with foods rich in vitamin A, iron and zinc.**



# How Biofortification Works

---

- Improve nutrition, health and productivity by naturally enriching staple foods grown and eaten by the population.
- Using conventional crop breeding, researchers develop new varieties, then transfer them to countries' agricultural research services.
- Test in different terrain, soils, climates.
- Deliver to farmers.







# Biofortification: the Evidence

---

- HarvestPlus conventional crop breeding increases nutrient levels without reducing yields.
- More vit A, iron and zinc nutrients in crops, even after processing and cooking, improve micronutrient status.
- Farmers are growing and eating biofortified crops, and consumers are buying them.
- Biofortification is cost-effective: centralized investment; seeds cost same as existing varieties



**Vitamin A Maize (Corn): Orange  
Color from Beta Carotene**



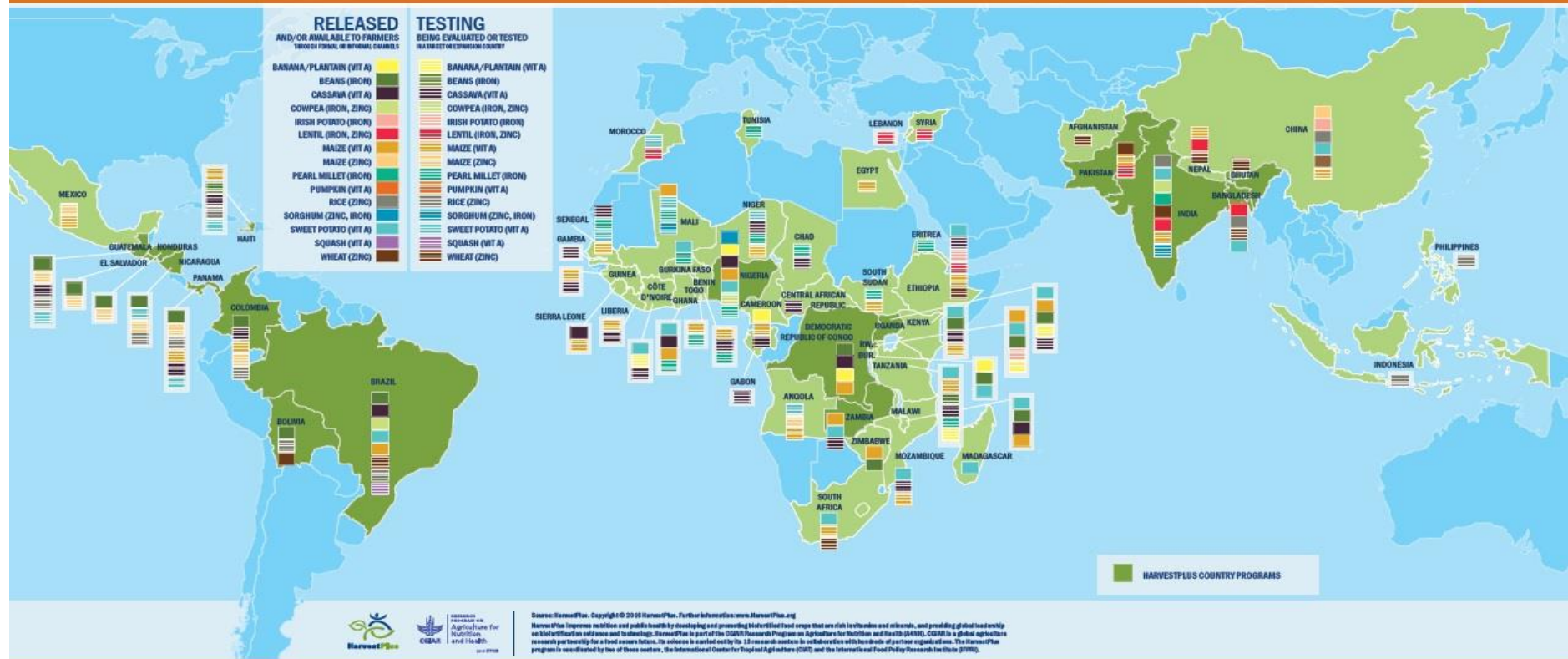




# >175 Varieties Released Across 12 crops

## BIOFORTIFIED STAPLE FOOD CROPS: WHO IS GROWING WHAT?

These crops have been conventionally bred to be rich in essential vitamins and minerals that are needed for good health.



Equally resistant to diseases, pests, heat, drought



# Biofortification Value Chain

SEED RELEASE







# Generating Demand

---



Consumer tasting sessions with Orange Sweet Potato in Uganda



HarvestPlus / Nollywood collaboration on Yellow Cassava in Nigeria



HarvestPlus joint roadshow with afroPop, rap, R&B musicians to promote iron beans in Rwanda



# How does BF reduce MND's?

---

## General key findings:

- Biofortified staple crops like orange maize, orange cassava, and orange sweet potato can provide 50-100% of a child's daily vitamin A needs.
- Biofortified beans contain up to twice the amount of iron as common varieties and reverse iron deficiency in young women when consumed daily. High iron pearl millet helps reverse iron deficiency in school children.
- A food-based diet providing 4mg of extra zinc a day – the amount provided by biofortified crops like zinc rice – improved zinc absorption and improved immune function.





# World Food Prize







# Implementation Globally - the Road Ahead

---

1. **Promotion** by governments, regional frameworks
2. **New funding** by multilateral institutions and other donors
3. Increasing **consumer awareness**/demand
4. **Marketing** of products, with **standards**/quality control
5. Enhanced private sector **investments** in seed/products
6. Effective private-public-NGO **partnerships** to coordinate & integrate activities
7. **Technology** to accelerate product development, multiplication and dissemination
8. More **pilots/demonstrations** in effective deployment
9. Country **capacity building**, including curricula development
10. Cross-country/region **sharing and learning**



# Thank You!

Stay up-to-date with HarvestPlus:



Facebook



Twitter



Instagram



YouTube

[www.harvestplus.org](http://www.harvestplus.org)



Photo: HarvestPlus