Digital solutions to promote nutritious food value chains for biofortified staples

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Overview

• What is biofortification?
• Delivering seeds, grains and foods to farmers and consumers
• Digital solutions to build scale and expand reach
  – Building global standards
  – Promotions to farmers
  – Digital marketplaces
  – Supply chain integrity
Biofortification is a process of increasing the density of vitamins and minerals in a crop through plant breeding or agronomic practices, so that the biofortified crops, when consumed regularly, will generate measurable improvement in vitamin and mineral nutritional status.

The HarvestPlus program uses varieties from conventional plant breeding, it is not GM.
Currently, over **42 million** people are benefiting from biofortified crops throughout Africa, Asia, and Latin America and the Caribbean.
Ending Hidden Hunger

A Value Chain for Biofortified Foods

How do we partner for a biofortified food system across the globe? Beginning at the research phase, knowledge, education and partnership are required at every step so that we can scale up and embed biofortified foods into the food chain. By working together we can reach one billion malnourished consumers by 2030.

1. Agriculture research
   Centres breed crops to increase nutrients.

2. Seed/vine release
   Official national approval given to release a new variety.

3. Agricultural supply
   Supply of seeds and other supplies such as fertiliser.

4. Farming
   The HarvestPlus target is the smallholder farming families in developing countries.

5. Aggregation
   Staple crops are collated from many small-scale farmers.

6. Milling
   Crops undergo basic processing and flour is milled.

7. Processing
   Food manufacturers of any size make the crop into a finished ready-to-eat food.

8. Retailing
   Shops of all sizes from road side vendors to global retailers.
• Lack of standards for Nutrient Enriched Crops holds back scale at grain trade level.
• Normally standards take many years to complete with extensive global travel.
• Create and disseminate the first globally created and market led Publicly Available Standard completely on-line.
On-line purchases for the supply chain
- Seeds and agricultural inputs
- Off takers and aggregators
- Grain trade
- Milling
- Food processing

On-line forecasting
“BiofortStat” collates data on biofortification activities (e.g., households reached) with biofortified planting material quantity harvested and market prices
Promotions to Farmers

- Reaching 100,000 Pakistani Farmers Remotely Through a unique partnership.
- Customized agricultural information and services through mobile devices.
- Formally we would hold in person meetings with up to 7000 farmers in one venue.
Supply Chain integrity - Blockchain Nigeria

- Vitamin A deficiency costs Nigeria $183 Million annually
- Deficiency can be alleviated through regular consumption of vitamin A Orange Maize
- The barriers to scale and for the food industry to adopt biofortification is the inability to distinguish from standard.
- Project developed from pilot to full roll-out to digitize the entire orange maize supply chain.
Conclusions

• The use of digital tools are essential for HarvestPlus to reach 2 billion consumers by 2030.
• Don’t forget the basic digital tools we all have available to us.
• We adopt digital tools at every step of the value chain with a network of brilliant, nimble partners to help us.
• Take risks! Innovation, by definition, is unproven.
• Be thorough in your risk assessment, but also be prepared for failures and to learn quickly from them.
• Communicate unfinished ideas – crowd in more minds and find like-minded, solution driven partners and sponsors.
Thank you!

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