Moderator:
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Reshaping Agricultural Value Chains – The Role of (Bio-) Fortification

· Short introduction of the participants – a lot of GIZ employees, PhD graduates, Ashoka staff
· Bio-fortification occurs in the input stage of the value chain; fortification is adding nutrients in the production and post-harvest stages.
· Harvest Plus – non-governmental initiative funded by other NGOs and research institutions
· Kit for testing the nutrients levels speeds up the process by 5 times
· Out of the Big 5 nutrients usually missing, pholic acid still remains unresolved in measurement (the other ones can be measured)
· Losses in nutrients mainly occur in the post-harvest and processing stages
· It is also a matter of changing consumer behavior (what people eat and what they don't); if the food changes its colour for instance they will refuse to buy it; it's also a matter of education, income etc (Differences between cities and the country-side)
· Need for parameters and quality standards for the production process too, not only for the changes in the crops
· Testing kit utilized in relation to the retail part of the value chain too
· At the moment there are more business opportunities in fortification and not in bio-fortification
· Governments should take responsibility for the nutrients in the food; at the moment they are more open to fortification
· Social marketing is needed in order to create demand for bio-fortified products
· Short presentation of the structure and departments of the GIZ who could be of interest for fellows or for businesses/future partners

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· - 3 main approaches to addressing malnutrition:
· 1. supplementation - short term
· 2. fortification - medium term
· 3. dietary fortification - long term
· - Ideally, the three approaches are implemented simultaneously.
· - Fortification = adding nutrients to processed food.
· - Bio fortification = food-based. Add nutrients to plants as they're growing. Relatively new strategy. It's targeted and usually capitalizes on staple crops.

· - Participant question: Why not focus on biodiversity instead of adding nutrients to crops? Fortification is a preventive measure.
· - BioAnalyt has a product that's important for the process of growing food. His technology can measure nutrient levels in blood so that people can plan health interventions accordingly.
· - Bio-fortification without correct education can go wrong because (1) if people don't label their regular crops and bio-fortified crops, they can't tell the difference between them and sell them accordingly. (2) People are resistant to change.
· - This technology was the result of a partnership between DSM, BSF and the Gates Foundation.
· - Bio-fortified crops can be GMOs but that's why they're also focused on breeding.
· - Participant comment: Before biofortifying, we should first try to return to the traditional diet. In some cultures you could argue that people eat too much cassava. True - but they also ate cassava leaves. Response: Consumption patterns also change with urbanization, and people may not want to return to traditional foods.
· - Participant comment: We shouldn't close the door on going back to cultural traditions. Musheshe said clearly that he wants to go in that direction.
· - Participant question: How does BioAnalyt determine which nutrients to measure? Response: First, they focus on the Big 5, of which they're able to measure 4. Folic acid is very hard to measure (you need specific detection mechanisms), but they're receiving a lot of pressure to find a way to measure it. Second, they ask themselves if there's a market for what they're measuring.
· - Cost: $2,500-$8,000 for the machine (depending on what features you want) plus approximately 5 euros per sample, which changes depending on the sample size.