

Developing Biofortified Crops Value Chains for Nutritional Security

Nutrition-sensitive food system requires moving beyond traditional definition of food system to include policies for food availability and access at macro level and also intra-household distribution and individual absorption of nutrients in a holistic manner. This is important as hidden hunger adversely affects two billion rural population in developing countries and indirectly causes humongous disease burden, even as food security is achieved at national levels. Biological fortification of food has been emerging as a major route and is proven to be simple, cost effective and sustainable. WHO has proposed biofortification as a 'public health strategy' to circumvent micronutrient malnutrition, as part of a comprehensive approach and is in the process of formulating standards. Twenty million people grew and ate biofortified crops in the world in 2016, according to HarvestPlus. There is documented evidence of successful interventions through these crops across countries that include vitamin A enhanced orange fleshed sweet potato (OFSP), and yellow cassava; iron rich beans, (orange) maize and pearl millet; and zinc fortified wheat. Iron rich pearl millet varieties have been in use for the past few years and zinc fortified wheat is now ready, apart from new pearl millet hybrids from ICRISAT and other varieties from ICAR. Bangladesh have already released zinc rich biofortified rice varieties. India, Pakistan and Nepal are also moving forward with zinc fortified wheat.

The returns in their development far outweigh investment in that saving one healthy life year is possible with as low as three dollars in India. There is a need to look at the inventory of technologies that can give higher levels of micronutrients along with agronomic superiority over conventional crop varieties. Development of cultivars with higher micronutrients is not sufficient and their bioavailability and possible ways of mal-absorption have to be studied in specific context. However, from a farmer perspective it is the inclusion of superior agronomic traits that matter as profitability hinges on them, in the absence of trait-specific price premium. The development of innovative public-private partnerships and encouraging private sector to invest by creating enabling environment are key to product commercialisation. Some of the seed companies have been selling truthfully labelled seeds of these crops in collaboration with the public institutions. However, inability to segregate these crops' grains from their counterparts stands in the way of the farmers getting any premium in the market and therefore certification mechanisms are needed. Available studies show that the consumers are willing to pay 21.6% and 23.7% higher for these crops. However, context specific studies are needed to move forward. Supermarkets are playing bigger role in food market with branded food products finding their way to consumers through them. Awareness building through large campaigns by government organisations as well as demand pull mechanisms through public procurement will be crucial in the process.

Do these crops help poor to overcome targeted micronutrient deficiencies? Are these profitable to the farming community? How can markets develop for seeds of these crops to attract more private players to engage into it? What institutional mechanisms and policy options can help their commercialisation? The papers might stress the need for commercializing biofortified crops and creating value chains that connect farmers to consumers. How do we create product differentiation and brand recognition for biofortified crops? What are the conditions under which private sector and PPP ventures will invest in biofortified crops? What are the priority biofortified crops for investment in India/South Asia? The outcome of the workshop will be a priority policy agenda for moving forward with biofortified crops in India/South Asia. Authors might highlight successful models of scaling up biofortified crop value chains. The workshop proposes to deliberate on the above issues arising in connection with the development of value chains for biofortified crops in South Asia. Though this workshop is primarily meant to deliberations among social scientists, useful contributions from plant breeders, nutritionists and health professionals can illuminate the ways forward.