



Knowledge hub
-
Collection of best practices

Summary of the best practice

1. Title of the best practice (e.g. name of policy, programme, project, etc.) *

Integration of biofortified crops into large scale public procurement programs

2. Country or countries where the practice is implemented *

Bangladesh

3. Please select the **most relevant** Action Track(s) the best practice applies to *

- Action Track 1. Inclusive, equitable, safe, and healthy schools
- Action Track 2. Learning and skills for life, work, and sustainable development
- Action Track 3. Teachers, teaching and the teaching profession
- Action Track 4. Digital learning and transformation
- Action Track 5. Financing of education

4. Implementation lead/partner organization(s) *

HarvestPlus

5. Key words (5-15 words): Please add key descriptive words around aims, modalities, target groups etc. *

Leveraging public procurement to increase nutritious seeds and foods within food systems

6. What makes it a best practice? *

Biofortified crops (natural staple crops with higher levels of micronutrients) are available in over 100 countries and can be integrated into public procurement programs around the world without significant behavior change or increased costs. With better nutrition, children can lead healthier more productive lives.

Description of the best practice

7. Introduction (350-400 words)

This section should ideally provide the context of, and justification for, the practice and address the following issues:

- i) Which population was affected?
- ii) What was the problem that needed to be addressed?
- iii) Which approach was taken and what objectives were achieved? *

In Bangladesh,

- More than half the population suffers from malnutrition.
- Severe acute malnutrition affects 450,000 children, while close to 2 million children have moderate acute malnutrition.
- Anemia affects 52% of children under five years of age.
- 41% of children under five years of age are stunted.
- 16% of children under five years of age are wasted.
- 36% of children under five years of age are underweight.

Malnutrition is estimated to cost Bangladesh more than USD 1bn every year in lost productivity.

The Government is committed to ameliorate the nutritional status of people and promote public welfare. Since independence, the Government, together with development partners, has implemented Public Food Distribution System(PFDS) along with school-based feeding and nutritional programmes.

And for the first time, the Government of Bangladesh is purchasing conventionally bred biofortified Zinc Rice from this year's Boro Rice season(May to June 2022). This is a huge step towards addressing micro-nutrient zinc deficiency in Bangladesh where 32.5% of children under 5 years and 45.40% of women aged 15-49 years are zinc deficient.

Biofortification is the process of developing a crop with bioavailable micronutrients in its edible parts. The development of such crops can either be achieved by selective breeding or through modern biotechnological approaches (Garg et al., 2018).

8. Implementation (350-450 words)

Please describe the implementation modalities or processes, where possible in relation to:

- i) What are the main activities carried out?
- ii) When and where the activities were carried out (including the start date and whether it is ongoing)?
- iii) Who were the key implementation actors and collaborators? (civil society organizations, private sector, foundations, coalitions, networks etc.)?
- iv) What were the resources needed (budget and sources) for the implementation? *

In 2004, HarvestPlus started its journey in Bangladesh to address hidden hunger through biofortification of rice, a staple crop, in collaboration with the Bangladesh Rice Research Institute (BRRI) and the International Rice Research Institute (IRRI).

In 2013, BRRI succeeded in developing and releasing the first-ever biofortified zinc rice variety in the world, BRRI dhan62, through HarvestPlus support. For promotion and delivery of zinc rice, HarvestPlus works with about 30 partners from the public, private and civil society sectors, including the Department of Agricultural Extension under the Ministry of Agriculture, BRRI, Bangladesh Agricultural University, 25 local NGOs, World Vision, and over 350 small and medium-sized seed companies.

In 2016 alone, HarvestPlus and partners have delivered the seeds of four zinc rice varieties to almost half a million farming households across 62 of the 64 districts in the country.

In 2022, HarvestPlus with its partner GAIN (Global Alliance for Improved Nutrition) under the program Commercialization of Biofortified Crops were able to initiate a pilot with The Ministry of Food and Ministry of Agriculture. The Ministry has authorised District Offices in Rangpur, Gaibandha, Thakurgaon, Barisal and Bhola to purchase 3,877 MT of Biofortified Zinc Rice between April 28 to August 31, 2022, an amount projected to increase gradually in the next seasons.

9. Results – outputs and outcomes (250-350 words)

To the extent possible, please reply to the questions below:

- i) How was the practice identified as transformative? (e.g., impact on policies, impact on management processes, impact on delivery arrangements or education monitoring, impact on teachers, learners and beneficiary communities etc.);
- ii) What were the concrete results achieved with regard to outputs and outcomes?
- iii) Has an assessment of the practice been carried out? If yes, what were the results? *

The value chain approach taken by HarvestPlus has built a sustainable supply system for zinc biofortified rice in Bangladesh. With more than 2.3mn farmer growing the staple crop in 2022, observing a 100% increase in 5 years. These farmers have produced over 33mn MT of Rice in 2022.

Over 10000+ of value chain actors (e.g., seed producers, farmers, aggregators, processors, retailers) have received capacity development support.

Due to the advocacy efforts of HarvestPlus Bangladesh, below mentioned policy documents now include provisions on biofortification:

- The National Agricultural Policy 2018,
- Bangladesh 8th Five Year Plan, 2020-2025,
- National Strategy on Prevention of Micronutrient Deficiency Bangladesh 2015-2024,
- Second National Plan of Action for Nutrition 2016-2025
- National Food and Nutrition Security Policy of Bangladesh (NFNSP)

This current initiative of biofortified rice procurement for public distribution system, by Ministry of Food and Ministry of Agriculture, is a landmark decision as it invests in sustainable and innovative ventures that tackle the national burden of malnutrition and strengthen both supply and demand of biofortified crops. This pilot will:

- increase awareness of the importance of education among community members through ongoing advocacy campaigns
- improve health and dietary practices of communities specially, women and children
- increase government ownership through capacity building activities

With the joint efforts of HarvestPlus and its partners, the plan is to complete 70% target of rice procurement by the government through Biofortified Zinc Rice. The team will also promote and propagate other biofortified crops (wheat, maize, pulse, and sweet potato) amongst the farmers and in the public distribution system.

The groundwork has been laid for integrating biofortified staples into other national flagship programs specially school feeding, as HarvestPlus Bangladesh is currently working with 350+ aggregators and processors who could also act as suppliers to the schools.

10. Lessons learnt (300 words)

To the extent possible, please reply to the following questions:

- i) What were the key triggers for transformation?
- ii) What worked really well – what facilitated this?
- iii) What did not work – why did it not work? *

HarvestPlus follows a pilot-pivot model to sustainably embed biofortification in food systems to improve nutrition equitably and cost-effectively for the most vulnerable populations in low and middle-income countries.

i. Pilot-Market Introduction: Seeds released for commercialization

In this first phase, HarvestPlus took a leadership role in promoting zinc Rice breeding and release. To fast track zinc rice for market release, expert breeders follow the step of variety design, discovery, development, screening, characterization and selection of candidate varieties, large scale national testing, and, finally, seed product launch. The HarvestPlus approach was informed by close analysis of the seed system, and implemented through effective partnerships with local and international partners.

ii. Pivot-Scaling: Igniting demand and fueling supply

Once high-quality, competitive zinc rice seed varieties were developed and supply was established, HarvestPlus launched a program to ignite demand to drive increased consumption and nutritional impact. HarvestPlus enables value chain partners at every point where a consumer might be able to access zinc rice. This delivery phase involves commercial seed markets and a non commercial process of “diffusion,” whereby farmers share seeds with other farmers informally.

Transforming the food system, by scaling up production and consumption of nutrient-enriched foods within it, has two distinct strategies (described below), both of which are aimed at anchoring nutrient-enriched products in food supplies.

Strategy One: Fueling Supply. Enable seed production (particularly early generation seed or EGS) at sufficient levels and quality to facilitate access to it and create demand and promote adoption by smallholder farmers. This supports grain production for both home consumption by farming families, and for use by small and medium (SME) food enterprises that require relatively small procurement volumes. During this phase, continual government engagement and endorsement is essential at every stage.

Strategy Two: Igniting Demand. Scale grain production to reach higher procurement volume from commercial supply chains and public procurement programs, such as food subsidy and school feeding programs. This requires significantly higher and more consistent seed and grain production. This part of the process relies on private sector commercial transactions and/or public food commercial procurement.

11. Conclusions (250 words)

Please describe why may this intervention be considered a “best practice”. What recommendations can be made for those intending to adopt the documented “best practice” or how can it help people working on the same issue(s)? *

Domestic rice procurement serves the dual purposes of building rice stocks for the public food grain distribution system (PFDS) and of providing income support to farmers. farm income as well as annual household income of the participant farmers increased by about 4 per cent and 3 per cent, respectively due to participation in the public rice procurement programme, if farmers were able to participate (Alam 2014). Flow down of biofortified zinc rice into school feeding programs will improve nutrition status and cognitive abilities. This also sets a precedent for other countries. HarvestPlus Pakistan is also following a similar path and is in line to secure government procurement for zinc wheat. Following are the critical success factors for building a continuous supply and driving government procurement:

- i. Ensure a continued pipeline of new seed innovation. Investment in R&D, including ongoing adaptation to pests, disease, climate pressures, and food industry desired trait qualities.
- ii. Ensure farmer (customer) satisfaction with the product to drive repeat purchase and collect feedback and farmer testimonials to use for advertising and promotion of seeds.
- iii. Ensure the grain from the seed produces quality product for home consumption and the market. The flour is accepted and preferred by the major food processing industries.
- iv. Use appropriate incentive mechanisms to ensure reliable quality seed production and farmer adoption. Incentives can be financial subsidies but showing commercial demand from businesses and consumers is more powerful to demonstrate market demand.
- v. Multistakeholder meetings with continuous follow-ups to initiate dialogue, decision making and implementation of responses
- vi. Capacity building of value chain actors to increase awareness to strengthen supply and demand of biofortified crops

12. Further reading

Please provide a list and URLs of key reference documents for additional information on the “best practice” for those who may be interested in knowing how the results benefited the beneficiary group/s. *

<https://www.dropbox.com/s/sxusm2kl5ln4xir/Government%20Letter%20for%20procurement%20of%20rice%20including%20Zinc%20Rice.pdf?dl=0>

<https://www.dropbox.com/s/ldp2gblfqm55oyt/Proposed%20Target%20for%20Government%20Procurement%20of%20Biofortified%20Zinc%20Rice%20in%20%20Boro%20Season%2C%202022.pdf?dl=0>