Catalyzing rice fortification to improve nutrition outcomes

Summary of lessons learned

1. While promoting fortified rice (FR), there is a need to consider the complex public-sector administrative processes.
2. A knowledge bank or resource center on FR implementation should be established.
3. Government stewardship and support are required to generate demand for FR.
4. Government regulations and enforcement are necessary in a voluntary fortification system.
5. The price of FR is a barrier for consumers from low-income households. Social and behavior change is key to overcoming this barrier as price will drop with increase in demand.
6. Selling packaged FR through traditional rice distribution channels remains a challenge.
7. Sharing messages about FR is powerful and has strong impacts for demand generation.
8. Focusing on community-based activities increases trust in FR.

Background

More than 2 billion people are deficient in key vitamins and minerals, according to the World Health Organization. Pregnant women, breastfeeding women, and children are the most vulnerable to these deficiencies, many of whom live in low- and middle-income countries. Malnutrition in Myanmar is among the highest in Asia, with one in four children suffering from stunting and 7 percent acutely malnourished. More than 50 percent children in Myanmar between 5 and 9 years old and 40 percent pregnant women are anemic, with many more suffering from micronutrient deficiencies. Micronutrient deficiencies (hidden hunger) have lifelong consequences on health, productivity, and mental development.

Fortifying staple foods with micronutrients is one of the most cost-effective, scalable, and evidence-based interventions to help combat widespread micronutrient deficiencies. Rice is Myanmar’s staple food. However, it lacks many necessary vitamins and minerals found in a balanced diet, thus, rice fortification is a culturally appropriate solution and an effective way to improve nutrition in the country.

With support from the Livelihoods and Food Security Fund (LIFT), PATH launched commercial fortified rice (FR) in Myanmar in March 2016. The project was implemented in Yangon and Ayeyarwady regions and has been scaling up to increase access to FR throughout the country. The goal of the project is to reduce micronutrient deficiencies in Myanmar’s population, while also creating income-generating opportunities for supply chain and other market actors.
Since October 2013, PATH has been able to make significant progress in scaling up rice fortification in Myanmar

- Inception phase consultation with National Nutrition Centre (NNC) and Department of Public Health
- Project kick-off and conducted feasibility analysis

2013

- Rice Fortification Working Group (RFWG) established
- Fortified rice composition proposed and production guidelines developed

2014

- FR Category Brand and Quality Seal Registered Officially
- 1 Fortified Rice Kernel Producer in Yangon
- 3 Fortified Rice Producers in Yangon
- National Launch of fortified rice in December

2015

- First draft of National Rice Fortification Policy endorsed by RFWG
- Deployed Commercial Launch in March
- 1 Fortified Rice Kernel Producer in Yangon (Gold Power)
- 6 Fortified Rice Producers:
  - 3 in Yangon
  - 3 in Ayeyarwady
- 170.50 MT distributed (48,368 consumers)

2016

- Department of Social Welfare replaced fortified rice in feeding programs in nursery schools in Yangon, Nay Pyi Taw, Bago and Ayeyarwady
- 9 Fortified Rice Producers:
  - 3 in Yangon
  - 4 in Ayeyarwady
  - 1 in Bago
  - 1 in Sagaing
- 456.24 MT distributed (129,428 consumers)

2017

- WFP started fortified rice distribution in Rakhine in September
- 2 Fortified Rice Kernel Producers (Gold Power and Mapco Golden Lace)
- 14 Fortified Rice Producers:
  - 4 in Yangon
  - 5 in Ayeyarwady
  - 2 in Bago
  - 1 in Sagaing
  - 2 in Rakhine
- 1,526.57 MT distributed (356,738 consumers)

2018

- MOHS launched the Technical Guidance on Rice Fortification in March
- 2 Fortified Rice Kernel Producers (Gold Power and Mapco Golden Lace)
- 14 Fortified Rice Producers:
  - 4 in Yangon
  - 5 in Ayeyarwady
  - 2 in Bago
  - 1 in Sagaing
  - 2 in Rakhine
- 5,355.21 MT distributed (561,060 consumers)

2019

- National Rice Fortification Policy

2020
1. Key relationships and actors

Achievements

- PATH’s collaboration with the Government of Myanmar resulted in including FR in the revised National Nutrition Strategy (NNS) as the stakeholders recognized the importance of nutrition in improving health outcomes, a critical factor in FR’s success. The Ministry of Health and Sports (MOHS) supported introducing FR in Myanmar as a key solution to widespread micronutrient deficiencies through the Multisectoral National Plan of Action for Nutrition (MS-NPAN). In early 2019, the MOHS launched technical guidelines for rice fortification, which marked a commitment to ensure high production standards.

- The Government of Myanmar agreed to expand FR among preschoolers across the country to improve children’s health and reduce nutritional deficiencies, and committed to using FR in all public-sector institutions under the MOHS.

- PATH established the Rice Fortification Working Group (RFWG) in 2014, chaired by the National Nutrition Centre (NNC) with technical assistance from PATH. The purpose of the RFWG is to promote FR by developing suitable policies for mandating rice fortification. In the near future, it will be expanded to the Fortified Food Work Group (FFWG) to include broader scope of fortification of other food staples. Together, a final draft of a national policy for rice fortification was developed to ensure a supportive regulatory environment and effective quality standard. Currently, a unified logo representing all types of fortified food is being developed by PATH.

- Myanmar’s Department of Food and Drug Administration (FDA) came up with safety and hygiene standards through PATH’s support and has given approval to fortified rice kernels (FRK) and FR manufacturers.

- The NNC registered FR as a category brand and quality seal at the Trademark Registration Office in 2015, which is owned by the MOHS. A ministry-endorsed trademark on the packages of FR helps consumers make an informed decision in choosing a healthy and nutritious product.

- The program to scale up rice fortification was handed over to the Myanmar Rice Federation in 2019. From 2020 onwards, the Federation will partner and coordinate with the NNC to expand the reach of FR.

Challenges

- Despite the formation of the RFWG, more convergence and a new approach is needed to move the rice fortification policy forward, such as bilateral meetings with each ministry when seeking support for decision-making at the level of formulation.

- To fulfill NNC and FDA requirements, large investment is required. Private-sector stakeholders can be reluctant to make these investments while they are involved with traditional rice production and distribution. Scaling up FR is dependent on production and demand. Potential resistance from large rice millers can be foreseen due to the small scale of FR consumption currently.

Recommendations for scale-up

- Strategic partnerships, direction, and planning should be organized for the long term to scale up FR. Rice fortification standards, particularly the composition of FR, should be updated as per the latest data and information about the population’s micronutrient status.

- A coordination or facilitation body can bring more private-sector involvement and assure quality control. A knowledge bank or resource center on FR implementation can allow for information sharing regionally, building key relationships, supporting capacity-building, and sharing technology and research. This could be supported by PATH and World Food Programme (WFP), and integrated into the government system later.

- Government-led social marketing campaigns can influence the community, help raise awareness, and increase purchasing behavior.

- The MOHS needs to take a leadership role, as per the MS-NPAN governance structure, in forwarding the draft of the national rice fortification policy. A supportive policy environment and collaboration between the government and key stakeholders are important.
2. Public and social-sector interventions: conflict-affected communities

**Achievements**

- Local production of FR is important given the high transportation costs and the preference for local rice varieties in different regions. PATH engaged two local rice millers in Rakhine State, Tun Tun Zaw in Minbya and Crescent Land in Kyauktaw to produce FR and make it more accessible. Both the rice millers received support to install equipment to produce FR.
- PATH and WFP distributed FR as part of household rations and emergency food distribution in Sittwe Township in Rakhine to address high malnutrition rates among conflict-affected groups. Overall, 3,469 metric tons (MT) of FR have been distributed to 28,795 internally displaced persons (IDPs) in six camps. In addition, health volunteers facilitated health education sessions to promote the benefits of FR.
- FR is now included in the NNS and is one of the strategic interventions under the MS-NPAN. According to MS-NPAN, seven prioritized states and regions will roll out FR from 2019 to 2023. WFP has also developed a country-specific plan of action over five years to include FR in school meals, asset creation, food/nutrition provision to people living with HIV, and vouchers / in-kind provision for relief settings.
- A draft policy on rice fortification was developed at the national level. Additionally, a rigorous external review was conducted to support the advancement of rice fortification. The policy review found a more efficient way to navigate the complex public-sector administrative processes for import permits and to secure tax exemptions for FR production equipment.

**Challenges**

- The blending unit in Yangon cannot address the demand from other parts of the country as the variety of rice differs in every region.
- WFP initiated FR distribution in IDP camps in Rakhine in September 2018, which presented challenges in the micronutrient analysis of FRK and involved a long lead time from production to distribution sites. The blending capacity is lower than the monthly distribution amount in Rakhine—a blending machine produces 500 MT of FR in a month but the WFP-supported distribution in Rakhine was at least 1,000 MT monthly. WFP has only one rice miller contracted as a supplier of FR, which cannot satisfy this supply.
- The public sector’s uptake of FR has been limited due to scattered distribution points, reluctance to initiate processes before the national policy is endorsed by the government, and the government’s reluctance to cover transportation costs.

**Recommendations for scale-up**

- Unique distribution networks, a pricing strategy, sales initiatives, and a revised commercialization strategy is needed for FR to reach low-income and vulnerable population.
- In order to reach vulnerable population, government’s support is essential in the use of FR in safety net programs with pricing in an affordable range and to generate demand for FR.
- Regional hubs of FR production and distribution are recommended in the final draft of the national policy. This will give space to support social safety net programs. A joint planning session with the WFP and NNC can bring more insights for a more efficient supply chain and gradual scaling-up from the social safety net. PATH is collaborating with WFP to stabilize supply chain operations FR scale up in Rakhine region, particularly in Sittwe.
3. Competitive pricing – competitive channel and social channel

**Achievements**

- A rice miller in the Ayeyarwady region produced FR in large- and medium-sized packages with minimal incremental pricing, proximity of the production plant to the rice field, and vicinity of the production plant to consumers and supply chain.
- Packaged FR distribution is successful through modern trade avenues, such as minimarts, supermarkets, convenience stores, and kids' stores. Traditional rice retail shops sell their own brands of rice and make a profit by mixing two different varieties of unequal value to satisfy the specific consumer.

**Challenges**

- Price was one of the main reasons for promoting the sales of FR. The price of FR is higher in the middle- and low-grade variety of FR (Emahta), as the higher cost of the high and premium grades of FR (Paw San) is negligible as compared to the cost of traditional rice of the same variety. Commercializing Emahta FR has been less successful compared to Paw San FR. Price sensitivity, consumers' reaction to switching to a less costly version of FR, and lack of support and buy-in from conventional rice wholesalers and retailers to sell FR contributed towards this challenge.
- Some rice millers who were engaged at the beginning of the project stopped producing FR. Rice millers who focused on Paw San have more chance of staying in the market than those who focused on Emahta. Though the incremental cost was the same for Paw San and Emahta, the cost increase for the Emahta variety was difficult to afford for the low-income groups.
- The traditional rice retail shops' practice of selling rice in open bins presented challenges in retail marketing. FR is sold in small- and medium-sized packages in the commercial market, which results in a less profitable margin and causes many rice retailers to avoid promoting FR. The price setting and profit margin are dependent on the retail owners and vary according to the consumers' preferences and choices.
- To reach remote areas, there was a recommendation to distribute FRK in small sachets with instructions to mix at home. However, this presented a challenge to ensure food safety, quality control, gain consumer acceptance, and monitor and encourage continued consumption.

**Recommendations for scale-up**

- Mass production can lower the cost of FR as it relies minimally on continuous demand. Increased scale of production and operational efficiency of supply chain actors can help bring down the price, which can make FR more affordable for low-income consumers.
- Reduce the blending ratio and operational efficacy to reduce the price of FRK and FR.
- Change the blending ratio from 98:2 to 99:1 to reduce the cost of fortified rice kernel (FRK) from MMK 5400 (for 2 kg of FRK required at 98:2 blending ratio) to MMK 3900 (for 1 kg of FRK required at 99:1). This change in blending ratio can reduce the cost of fortified rice by MMK 15 per kg of fortified rice.
- Source good quality premix from India at lower price to reduce the cost of FRK.
- Optimize the cost of blending operations and transport to reduce the cost of FR. This is very important as the cost of FRK adds up to only 30% of the incremental cost of fortified rice compared to traditional rice. Nearly 70% of the incremental cost of fortified rice is due to blending operations and transportation.
- Collaboration between the premix supplier, kernel producer, political and administrative body, regulatory body, rice millers, and a third body, such as a laboratory or consumer-oriented group for improved scale up.
- Introduce a range of packaging sizes to meet the customers' different needs and satisfy their taste preferences and price sensitivities.
- Reconsider pricing strategy to reach low-income populations and attract them with an affordable price.
Challenges

- In the initial introduction of FR, reaching low-income population in the commercial market was challenging. Low-income consumers are sensitive to new products and their prices. Due to differing needs and interests of the consumer segments, FR’s commercial strategy targeted high- and middle-income groups.
- There were discrepancies in awareness of FR between people in the Muslim IDP camp and the Rakhine IDP camp. Given that health education and promotion activities were conducted in both the communities, this was surprising. This gap in knowledge was attributed to language barriers.
- Availability of FR and places to buy it remains a challenge to scale up trial and continued purchasing. FR availability is heavily dependent on the rice millers to expand their outlets.

Recommendations for scale-up

- In the supply chain, the outlets have influence over consumers, and their encouragement can draw interest in purchasing FR. Securing reliable distribution channels, such as outlets and stores, can sustain consumer demand of the product by strengthening the supply chain.
- Effort in demand generation is critical to market success since the supply capacity is much higher than the demand. Creating more awareness and demand in the market as well as in the social safety net programs is key to sustain FR’s expansion.
- Add targeted FR messages to the Standardized Health Message booklet to ensure consistency of messaging.
- Undertake a FR consumer pattern survey to assess the market penetration of FR, estimate the consumer reach in the general population, and evaluate the impact of fortified rice in reducing micronutrient deficiency.
- Enhance awareness about benefits of FR among the community. Overcoming the language barrier can help address this. Further, awareness raising and demand generation are required to inform the consumers that FR is a product for everyone, not just kids and pregnant women.