A conversation with PATH, May 8, 2019

Participants

- Katharine Kreis – Director of Strategic Initiatives and Lead of Nutrition Innovation, PATH
- Theresa Lampkin Tamura – Director, Philanthropy, PATH
- Dr. Megan Parker – Senior Nutrition Research Officer, PATH
- Dr. Myo Myint Aung – Country Director, Myanmar, PATH
- Marinella Capriati – Research Consultant, GiveWell
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Note: These notes were compiled by GiveWell and give an overview of the major points made by Ms. Kreis, Ms. Tamura, Dr. Parker, and Dr. Aung.

Summary

GiveWell spoke with Ms. Kreis, Ms. Tamura, Dr. Parker, and Dr. Aung of PATH as part of the second round of investigating applicants to the 2019 GiveWell Grants for Global Health and Development in Southeast Asia and Bangladesh (https://www.givewell.org/research/grants-southeast-asia-bangladesh-2019/application-details). Conversation topics included types of fortification policy, PATH's work on rice fortification, and its grant proposal for additional work.

Types of fortification policy

Fortification policies should be tailored to the political context of the countries in which they are implemented. Options include:

- **Mandatory fortification** – Government-mandated fortification may be the most effective policy in countries with only a few core producers, due to ease of coordination and monitoring. Large producers also have an advantage in meeting quality control requirements, compared to smaller businesses, and may therefore favor mandatory fortification.
- **Voluntary fortification** – Voluntarily-adopted fortification enables more flexibility in how companies decide to incorporate new micronutrient standards into production and does not require significant additional regulatory infrastructure.
- **Mixed-method fortification** – Mandatory and voluntary fortification policies may be combined. For example, voluntary fortification could be implemented for rice available on the open market, while mandatory fortification could be implemented for rice distributed through school feeding programs.

The Global Fortification Data Exchange, a joint effort by the Food Fortification Initiative (FFI), the Global Alliance for Improved Nutrition (GAIN), Iodine Global Network, and Micronutrient Forum, provides information on whether countries

have adopted mandatory or voluntary fortification for different foods. Currently, seven countries have adopted mandatory fortification of rice.

PATH's work on rice fortification

PATH provides rice producers technical assistance with licensing, training, proper installation and operation of fortification equipment, creation of production manuals, and quality control. PATH also provides policymakers with recommendations based on relevant evidence and works with governments to set fortification standards for different foods. It continuously evaluates countries' supply chains, consumer demand, and policy regulatory environments for fortification in order to identify and overcome barriers to increased scale.

Partners

PATH's work on rice fortification often involves collaborating with various partners, including:

- **Multilateral institutions** – PATH works with the World Food Programme (WFP), the World Health Organization (WHO), UNICEF, and the UN Development Programme on fortification programs. It also assists WHO and WFP with policy recommendations for the global fortification agenda.
- **Local organizations** – PATH identifies locally-based NGOs with political standing and significant reach and provides these organizations with both technical expertise and assistance in navigating the policy regulatory environment.
- **Technical NGOs (e.g. FFI, GAIN, Vitamin Angels, Nutrition International)**
- **Government (e.g. education departments)**
- **Academic institutions**

Country prioritization

In the absence of geographical constraints made by donors, PATH prioritizes countries for additional work based on factors including:

- Burden of disease (in this case micronutrient deficiency levels)
- Existing infrastructure for rice fortification
- Policy regulatory environment
- Amount of work required
- Active opposition
- Consumer demand

PATH often selects countries firstly based on political feasibility, which is essential for the success of new fortification programs, and secondly based on disease burden related to micronutrient deficiency.

PATH's work in India

Setting national-level micronutrient targets

PATH worked with India's Central Drugs Standard Control Organization to set micronutrient targets for schoolchildren, ensuring that rice served in each of three school meals is fortified to contain the government's guideline of 33% of the Recommended Dietary Allowance of micronutrients for which the targeted schoolchildren are deficient. PATH is also assisting manufacturers in meeting these fortification standards.

Designing and implementing state-level school feeding programs

In 2016-2017, PATH designed and implemented a school feeding program for 2,600 schools in the Indian state of Karnataka. The program was highly successful, which caused Karnataka's government to take ownership of and expand the program to the remainder of the state. 1 million children are currently being reached through Karnataka's school feeding program. PATH plans to gradually design and implement similar programs in other Indian states. It is currently reaching 130,000 children through its school feeding program in Gujarat and expects a government scale up if the results from its randomized trial are strong.

PATH's school feeding programs in India are designed to be comprehensive, not only ensuring children receive the appropriate micronutrients but also incorporating Water Sanitation and Hygiene and Behavior Change Communication strategies into midday meals.

Work in Myanmar

PATH began its work in Myanmar by collaborating closely with the country's Ministry of Health and Sports (MoHS), Food and Drug Administration (FDA), and National Nutrition Centre (NNC)—as well as external stakeholders such as UNICEF, WFP, and WHO—to set national-level fortification standards for rice. After finalizing these initial standards in 2015, PATH was able to begin providing producers with technical fortification assistance. It is currently working with the only two fortified rice kernel producers in the nation (one located in Yangon Region and the other in Ayeyarwady Region) as well as 13 rice millers across Yangon Region, Ayeyarwady Region, Bago Region, Sagaing Region, and Rakhine State.

PATH's work on rice fortification in Myanmar has also included:

- **Category brand/logo and quality seal design** – PATH worked with the national government to create a category brand/logo and quality seal for fortified rice, which was necessary to build consumer confidence in product quality.
- **Policy development** – Over the past four years, PATH developed a national rice fortification policy for Myanmar, which involved undertaking impact analyses of different models (e.g. mandatory, voluntary, safety net) and creating policy briefs.

Quality control and assurance process

The quality control and assurance process for rice fortification in Myanmar includes:

1. **Verification of fortified rice kernel quality** – PATH prepared production manuals for the two fortified rice kernel producers in Myanmar and trained the producers on quality control and assurance procedures. Myanmar's FDA regularly verifies the quality of imported micronutrient premix and visits production facilities every two years to ensure quality of fortified kernels.
2. **Inspection of blending facilities** – The FDA inspects rice millers' facilities to ensure that the blending of fortified rice kernels with traditional rice is in compliance with local food safety standards and technical guidance on rice fortification.
3. **Sample testing** – The FDA requests nutritional composition tests from both fortified rice kernel producers and rice millers. After the final fortified rice product becomes openly available for purchase, the FDA also collects market samples to ensure the blending ratio (currently 2 fortified kernels to 98 traditional kernels) has been accurately applied. Myanmar's FDA is occasionally unable to perform market sample testing due to limited human resource capacity.
4. **Data collection and submission** – PATH facilitates the collection of data on the production and distribution of fortified rice, which is then submitted to both the NNC and the Myanmar Rice Millers' Association.

Program funding

PATH began its rice fortification program in Myanmar in 2013, with funding from the Livelihoods and Food Security Fund (LIFT)—a multi-donor trust fund that receives contributions from countries including the US, UK, Australia, Canada, Switzerland, Ireland, European Union, and many European nations. Although funding was initially set to expire in 3.5 years, PATH later received additional funding from LIFT to extend its work to the end of 2019, with a focus on reaching vulnerable populations in the internally displaced person (IDP) camps of Rakhine State. PATH has received a total of $4.6 million from LIFT for its rice fortification program in Myanmar.

LIFT recently launched a five-year strategy that includes rice fortification as a key tactic for addressing malnutrition in Myanmar.

Cost per beneficiary

Calculating a cost per beneficiary for PATH's rice fortification program in Myanmar using values for total LIFT funding ($4.6 million) and total reach (350,000) may not yield accurate results due to:

- **Reach population consumption pattern** – PATH estimates the reach of its current rice fortification program in Myanmar at 350,000 people. This value is calculated as total metric tons of fortified rice distributed to date (through

both private and public sector channels), divided by average monthly consumption of fortified rice per individual. Therefore, the total reach value references a population that has consumed fortified rice at least once throughout the project period and not a population that has been consistently consuming fortified rice.

- **Initial investment costs** – At an early stage of its work on rice fortification in Myanmar, PATH invested significant funds into creating a conducive policy regulatory environment—which included facilitating high-level national leadership on rice fortification, assisting the Myanmar Rice Fortification Working Group with acceptability studies, and setting fortification standards. These initial investment costs will likely result in a lower future cost per beneficiary.

Grant proposal for additional work

For its application to the 2019 GiveWell Grants for Global Health and Development in Southeast Asia and Bangladesh, PATH is proposing three activities:

1. Generating demand for fortified rice through social safety net programs in Myanmar
2. Improving a school nutrition program in Ingapu Township, Myanmar
3. Undertaking a systematic review of evidence for rice fortification

PATH selected these activities because they can all be conducted as independent projects and would not rely on additional funding from other donors.

Generating demand for fortified rice through social safety net programs in Myanmar

As part of its current rice fortification program in Myanmar, PATH conducts a variety of consumer demand generation activities, including mass media campaigns, television and billboard advertisements, and point of sales promotions. However, in order to target the most vulnerable populations in the country, PATH believes that fortified rice must be distributed through social safety net programs.

Based on its landscape analysis, PATH found that WFP is the largest social safety net provider in Myanmar, annually distributing 30,000 tons of metric rice. After discussions with PATH, WFP made a commitment to distribute 6,900 metric tons of fortified rice in 2018 and 2019.

Additional analysis by PATH revealed that other, smaller social safety net providers in Myanmar also distribute rice to vulnerable populations through feeding programs. If it received additional funding from GiveWell, PATH would hope to reach approximately 10,000 additional individuals (estimate of total long-term consumers) with fortified rice by targeting the following social safety net providers:

- **The International Committee of the Red Cross (ICRC)** – ICRC serves IDP camps, a demographic not currently being reached by PATH's fortification program in Myanmar.

- **Monastic schools** – Approximately 1,300 monastic schools exist in Myanmar.
- **Training centers and hospital feeding programs** – Use of fortified rice is currently mandated for public programs under the MoHS, including nursing and midwifery training centers, civil service training schools, and hospital feeding programs. However, additional work to generate further interest among the leaders of these programs is necessary to make the government mandate effective.

Improving a school nutrition program in Ingapu Township, Myanmar

An existing school nutrition program in Ingapu Township, Myanmar prepares and delivers daily lunches to 500 children in one school. The program costs 500 kyat per child per day and is funded by individual donor contributions. Fortified rice has been served through this program since its commencement in 2017.

With additional funding from GiveWell, PATH would provide technical assistance for the integration of nutrition education, deworming, and other components into the existing school feeding program in Ingapu Township—with the hope that the program would be a model for comprehensive school nutrition that government could replicate in other regions of the country. PATH would conduct follow-up research on program effectiveness, with a particular focus on anemia reduction.

Undertaking a systematic review of evidence for rice fortification

PATH would use additional funding from GiveWell to conduct a systematic review of data on rice fortification, with core outcome measures including micronutrient stability and retention, product shelf life, and organoleptic properties (relating to human senses) for acceptability. Governments could use this systematic review as guidance for rice fortification programs, instead of conducting new clinical or acceptability trials. PATH's ultimate goal is that this systematic review would reduce barriers to implementation and scale-up of rice fortification.

No systematic review of rice fortification has yet been published, although WHO is working on completing and releasing a systematic review of evidence for the effectiveness of rice fortification in reducing anemia.

All GiveWell conversations are available at
http://www.givewell.org/research/conversations