Creating lasting nutrition and development impact via public-private-people partnerships

PATH's Rice Fortification Program

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PATH
A catalyst for global health

PATH/Heng Chivoan

PATH is an international nonprofit organization that transforms global health through innovation

- Bringing innovations to scale
- Strengthening systems
- Encouraging healthy behaviors

PATH works in 70 countries

PATH/Minzayar

- Vaccines
- Devices
- Diagnostics
- Drugs
- System and service innovations

* Figures from Myanmar Demographic and Health Survey 2015-16

PATH/Minzayar

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RICE FORTIFICATION

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Staple food fortification is a proven, cost-effective strategy to improve micronutrient health

- Adopted in developed countries since the early 20th century
- Supported by WHO, WFP, FAO, and the World Bank
- Ranked by the Copenhagen Consensus 2012 as one of the highest-return interventions in global development[1]
- Particularly effective with rice, a staple food for half of the world population

World Health Organization

WFP wfp.org

Food and Agriculture Organization of the United Nations

WORLD BANK

COPENHAGEN CONSENSUS 2012 solving the world's challenges

[1] http://www.copenhagenconsensus.com/Projects/CC12/Outcome.aspx.

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Our Myanmar project brings together nutritional and economic impact

Purpose: To reduce micronutrient deficiencies in the population while creating income-generation opportunities for supply-chain and distribution actors through the introduction of fortified rice in Myanmar

Project goals

1 Million+ fortified rice consumers

(population-based approach)

Reduced select micronutrient deficiencies

24 local supply chain and distribution actors

(50%+ with increased income)

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LEVERAGING PUBLIC-PRIVATE-PEOPLE PARTNERSHIPS

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We are leveraging public-private-people partnerships to scale up rice fortification in Myanmar

Ministry of Health and Sports (MoHS)

National Nutrition Centre (NNC) &

Food and Drug Administration (FDA)

Technical support

Fortified grain producers

Gold Power

Fortified grains

Millers

Other millers

Commercial products

Quality verification

MYANMAR CONSUMERS UNION

Myanmar rice miller association

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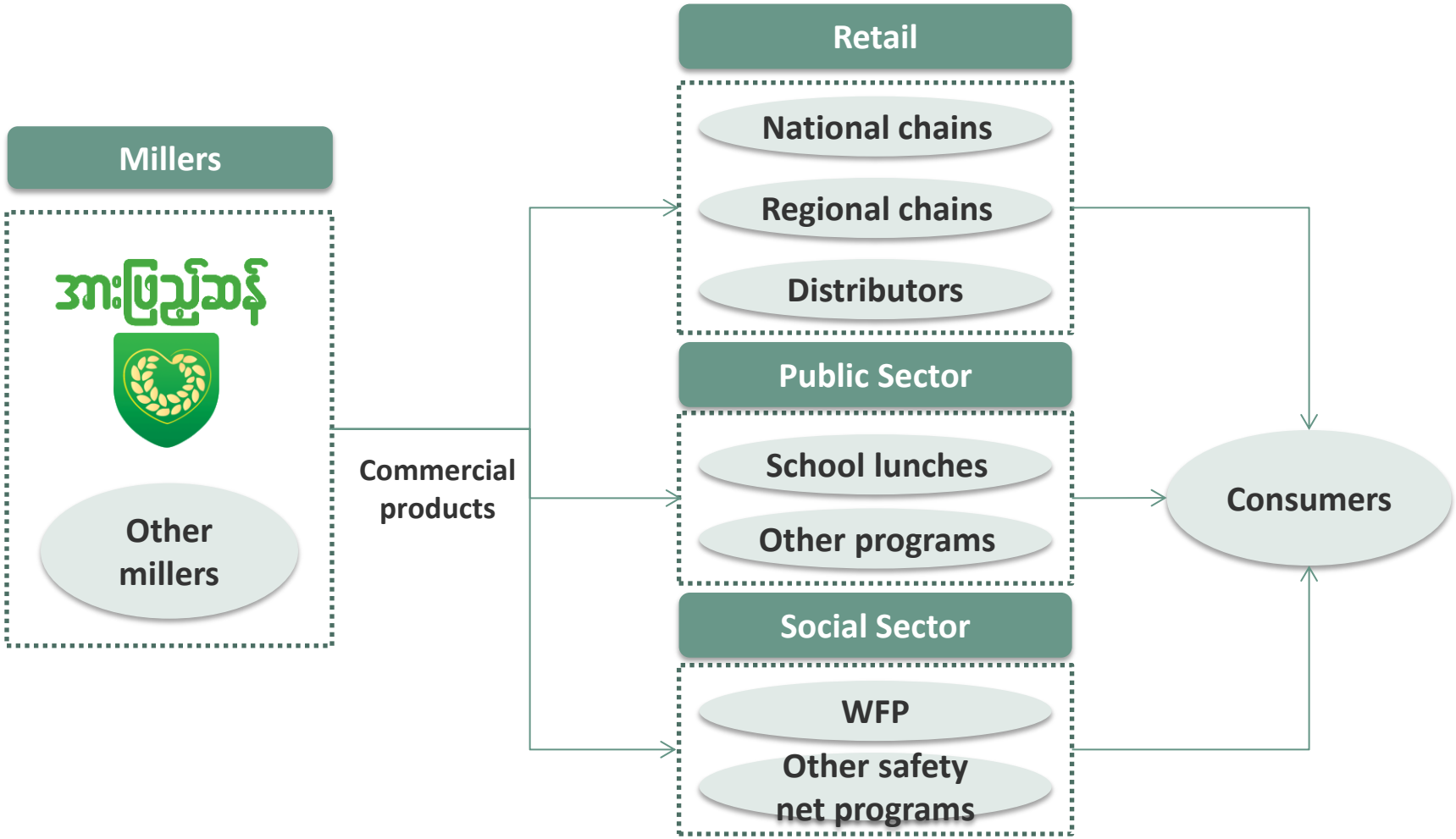
We are leveraging public-private-people partnerships to scale up rice fortification in Myanmar (cont.)



Our goal is to achieve market sustainability.

Introduction phase

- Local evidence on acceptability
- Health needs assessment
- Logistical feasibility
- Value chain analysis
- Policy development
- Project management

Core cost components of rice fortification

Production & transport of FK

Extrusion technology

Blending of FK with normal rice

Blending technology

Sales or distribution of fortified rice

Quality Control and assurance (QA & QC)

Quality-control tools

COSTS

Scale-up phase

- Greater efficiency in supply chain
- Social marketing; advocacy
- Economies of scale
- Commercialization

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Key achievements

PATH has achieved promising results in the fortified rice market through strategic public-private-people partnerships.

- National Rice Fortification Alliance established
- Acceptance by population validated
- National Rice Fortification Policy drafted

- Enabled 2 fortified grain producers
- Enabled 2 blender fabricators
- Enabled 8 fortified rice producers
- Distributed to 300 retailers and 33 outlets of City Mart

- Demand generation campaign and nutrition education ongoing
- Consumer feedback used to inform production and design

Thank you

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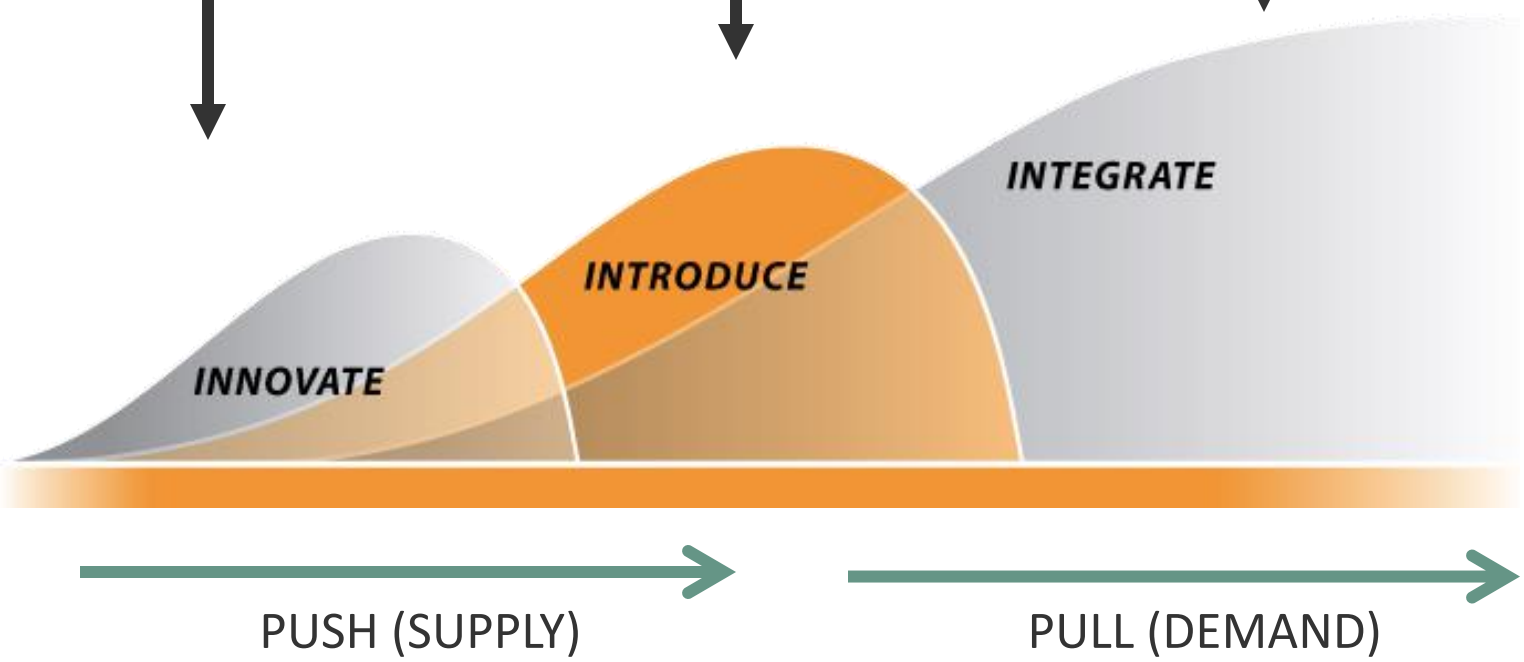
BACK UP

PATH works along the value chain to maximize impact

Develop technology to meet the need and prove its efficacy

Promote access to technology in rice **supply and distribution chains**

Policy change: encourage national and/or programmatic mandates to **ensure sustainability**



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Rice value chains offer significant opportunity for social and economic impact from field to fork

The fortified rice value chain

Fortified grain producers

Input suppliers → Producers → Processors (Millers) → Distributors → Consumers

Blending equipment fabricators

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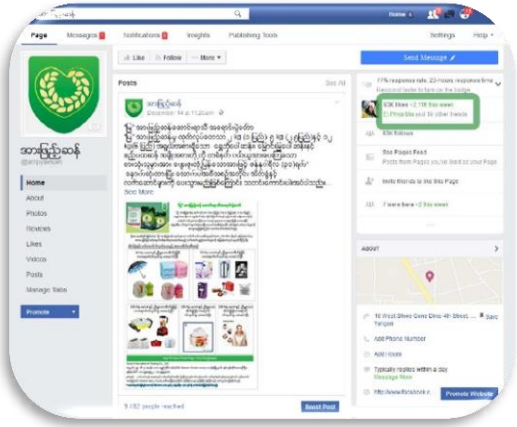
Social marketing is essential for scale up in non-mandated environments like Myanmar

PATH is reaching hundreds of thousands of households in Myanmar through a strategic social marketing campaign

- Developed fortified rice as a category brand
- Partnered with the "Population Services International" for demand generation campaign
- Promoting nutrition education through traditional and social media



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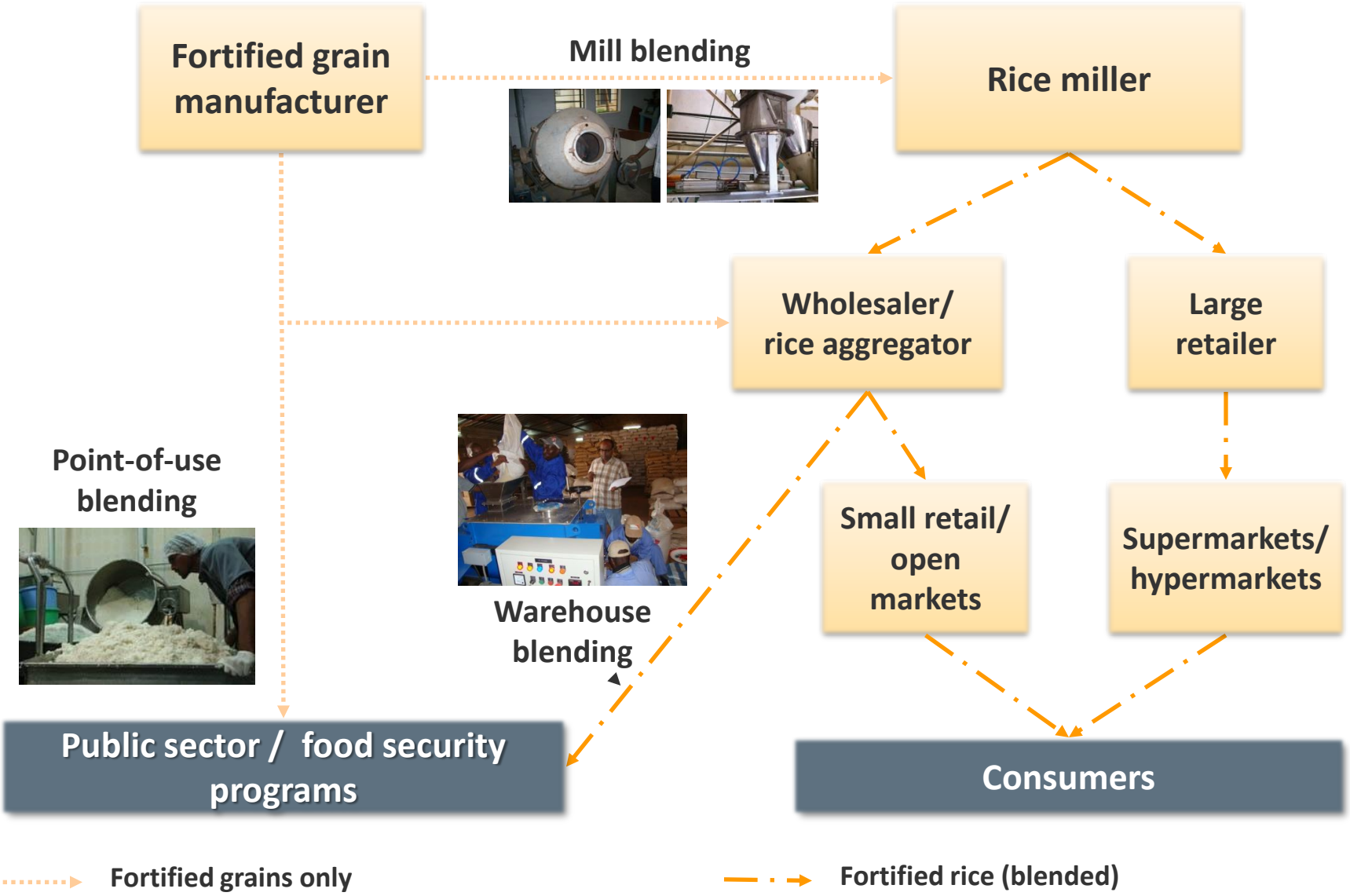
Fortified Rice Distribution Channels



PATH has built a robust evidence base for the Ultra Rice® technology

30 research and field studies[1]

Key research areas

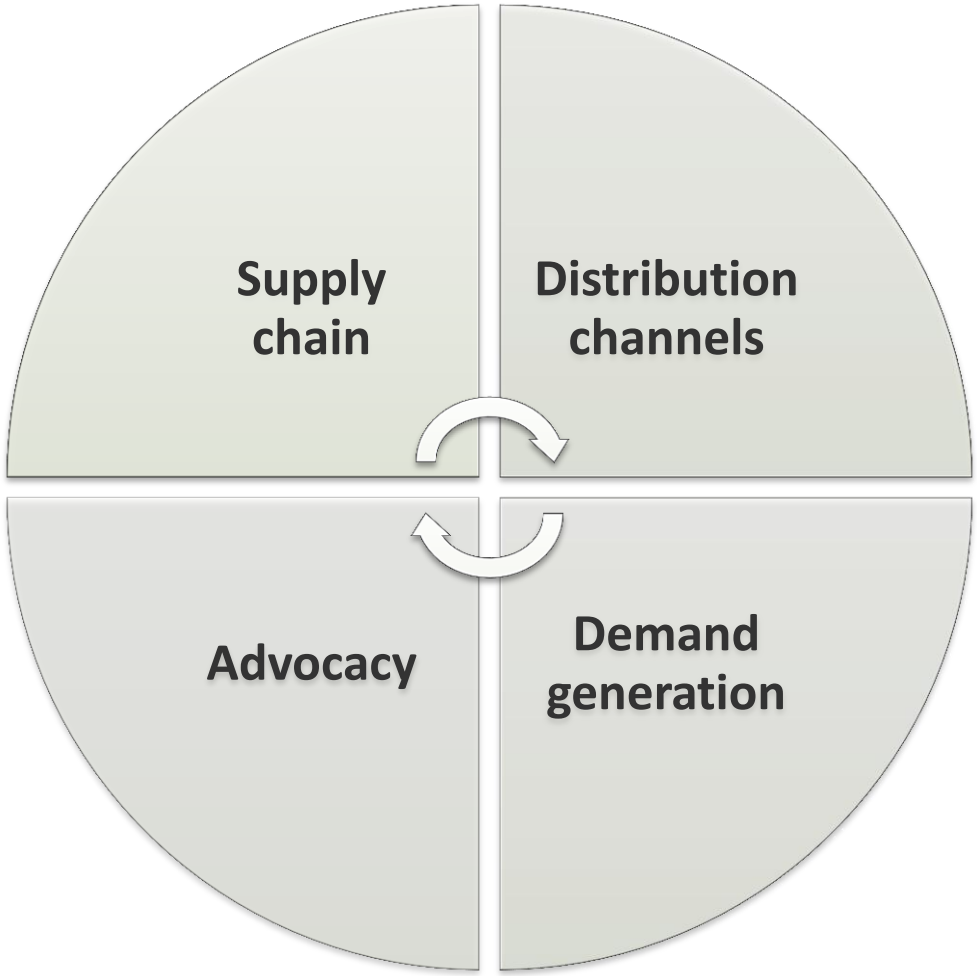
- Effectiveness
- Safety
- Stability
- Acceptance
- Cost

Peer-reviewed research highlights

- Fortified rice was more effective than iron drop supplements in improving the iron status of children between the ages of 6 months and 2 years in the southwest region of Brazil
- Schoolchildren in India between the ages of 5 and 12 years who ate fortified rice had a significant increase in iron stores
- The prevalence of iron deficiency reduced significantly in Mexican women who consumed fortified rice in comparison to the control group

[1]Research on Ultra Rice. Available at: www.path.org/projects/ultra_rice_research.php. Accessed November 25, 2013.

PATH's strategy for market introduction and scale up of fortified rice rests on four pillars



Accelerating innovations across the value chain

Getting innovative ideas from concept to action

Identify problem and potential intervention	Generate evidence for approval	Secure regulatory approvals and endorsements	Manufacture, distribute, and introduce	Implement across multiple regions

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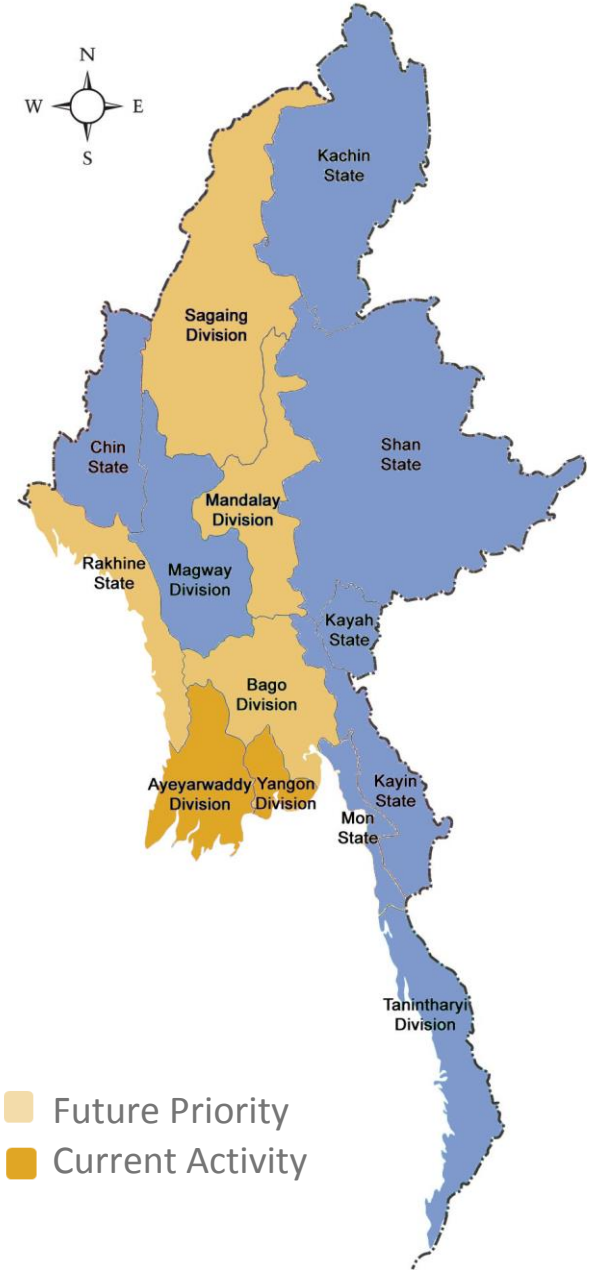
Rice fortification is ready for a quantum leap in reaching the most vulnerable populations in Myanmar



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PATH capabilities in India create a hub for market expansion across Asia

- Replicable distribution models
  - Micro-retail channels
    - Empowering women entrepreneurs
  - School-feeding programs
    - Unleashing children's potential
- Capacity to enable fortified rice value chains in South and Southeast Asia

PATH recently partnered with Sakhi Unique Rural Enterprise, a distribution network of women retailers in India

Our rice fortification work spans multiple dimensions and geographies

	Project work	USA/Canada (lab research)	Brazil	Colombia	Costa Rica	Dominican Rep.	Ecuador	Mexico	Nicaragua	Burundi	Mali	Nigeria	Senegal	Tanzania	Bangladesh	Cambodia	China	India	Myanmar	Nepal	Philippines	Vietnam
		AMERICAS								AFRICA					ASIA							
	Effectiveness		■					■		□						□		■		■		
RESEARCH	Stability	■	■						■												■	
RESEARCH	Acceptability, Sensory	■	■				■	■	■	■					■	■		■				■
RESEARCH	Bioavailability	■	■																			
RESEARCH	Safety		■																			
	Market Landscaping		■	■	■				■		■	□	■	■	■	■	■	■	■		■	■
	Public/Private Sector Pilots		□							□					■	□		□	▨			□
	Availability of Fortified Rice		✓	✓	✓	✓					✓							✓			✓	

▨ **Planning in progress:** The project team is exploring funding and partnership opportunities that will facilitate movement into the specific geography.

□ **Active:** Project work has been launched and remains ongoing.

■ **Achieved:** In-country project work has been completed.

✓ **Available:** Fortified rice, using any fortification technology is commercially available in-country.

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PATH in Myanmar

2012

- Office opened in Myanmar

2013

- MOU signed with MoH

2017

- 2nd MOU signed with MOH

Today

- 14 staff and growing
- 3 active projects and many more in pipeline

PATH's Projects in Myanmar

- Fortified Rice
- Japanese Encephalitis vaccine
- Health care waste management
- Reproductive health policy support
- Total Market Approach for Family Planning

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Micronutrient malnutrition places a heavy burden on the health and economy of Myanmar

3 million
People considered "food poor"[1]

7%
Children under 5 are wasted (acutely malnourished)[2]

29%
Children under 5 are stunted[2]

-0.7%
Gross Domestic Product (GDP) lost annually as a result of chronic undernutrition in Myanmar[4]

18%
Pregnant women with Vitamin A deficiency[5]

5.5%
Under-5 deaths due to maternal thiamine deficiency[3]

58%
Children age 6-59 months with iron-deficiency anemia[2]

[1] Integrated Household Living Conditions Assessment (2009-2010)
[2] Ministry of Health and Sport (MOHS) and ICF. 2017. 2015-16 MDHS Key Findings. Rockville, Maryland, USA: MOHS and ICF.
[3] Ministry of Health [MOH], United Nations Children's Fund [UNICEF]. Overall and cause specific under-five mortality survey (2002-2003) in Myanmar. Yangon: Department of Health; 2003.
[4] UNICEF and the Micronutrient Initiative. 2004. Vitamin and mineral deficiency: a global progress report.
[5] WHO. 2009. Global Prevalence of Vitamin A Deficiency in Populations at Risk 1995–2005. WHO Global Database on Vitamin A Deficiency.

Rice is an ideal fortification vehicle at the heart of a key value chain in many developing economies

- Staple food for over 2 billion people
- Largest source of calories in many developing countries
- Core component of agriculture and nutrition in most of Africa and Asia
- Important element of many food security initiatives

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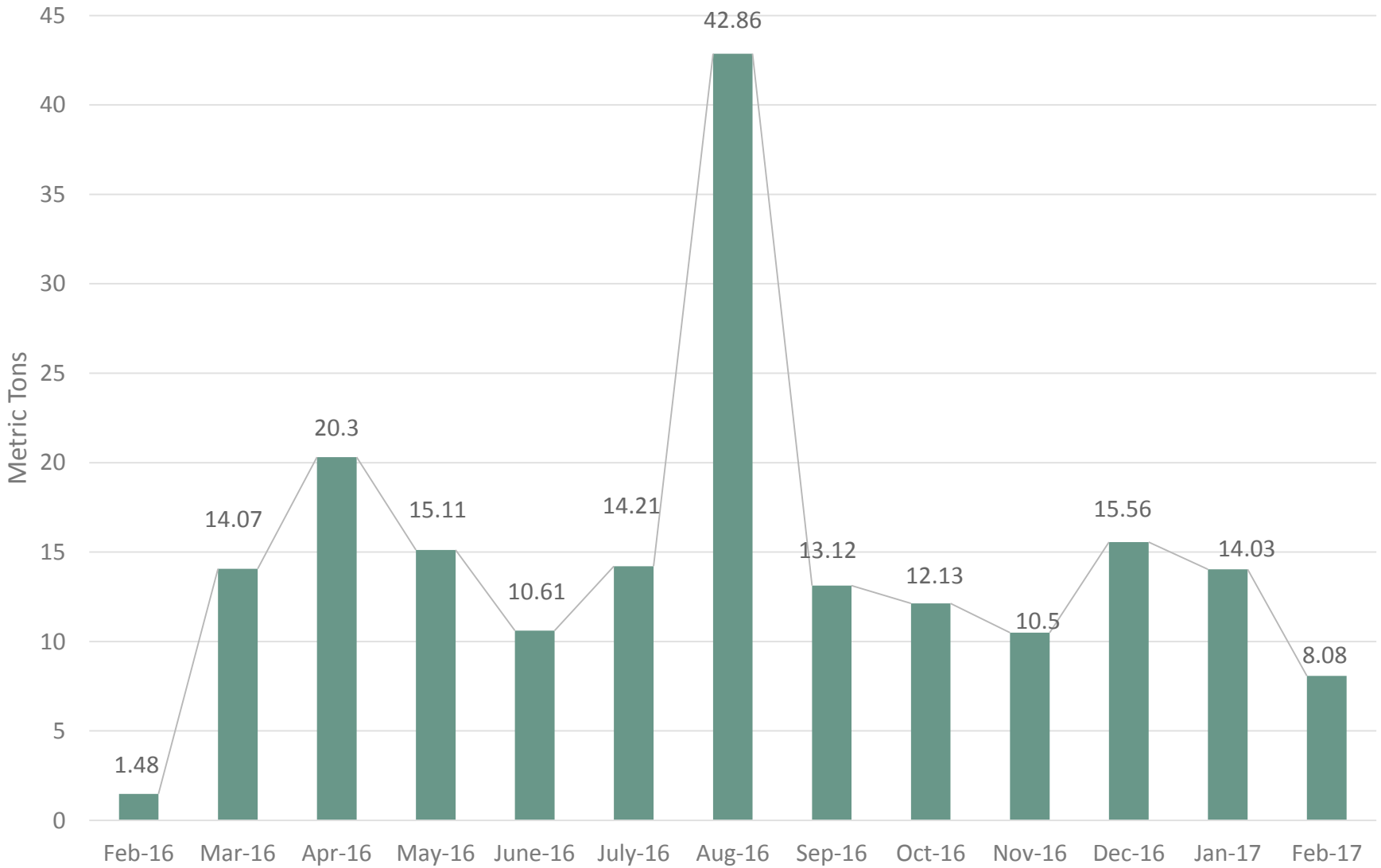
Fortified Rice Distribution



Addressing micronutrient malnutrition requires an integrated strategy that includes fortification

	Diet diversification	Supplements/ Micronutrient powders	Fortification
Cost	Medium	High	Low
Results	Long term	Short term	Medium term
Change of habits/ Compliance	High	High	Low

Staple food fortification provides a population-based safety net against micronutrient malnutrition, especially relevant to children and women of reproductive age

PATH depends on strong global partnerships to scale up rice fortification worldwide

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