

Introducing Fortified Rice through Public and Private Sector : Global Experience and the Way Forward

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2nd International
Workshop on
“Micronutrient and Child
Health”

November 3-7, 2014

AIIMS, New Delhi



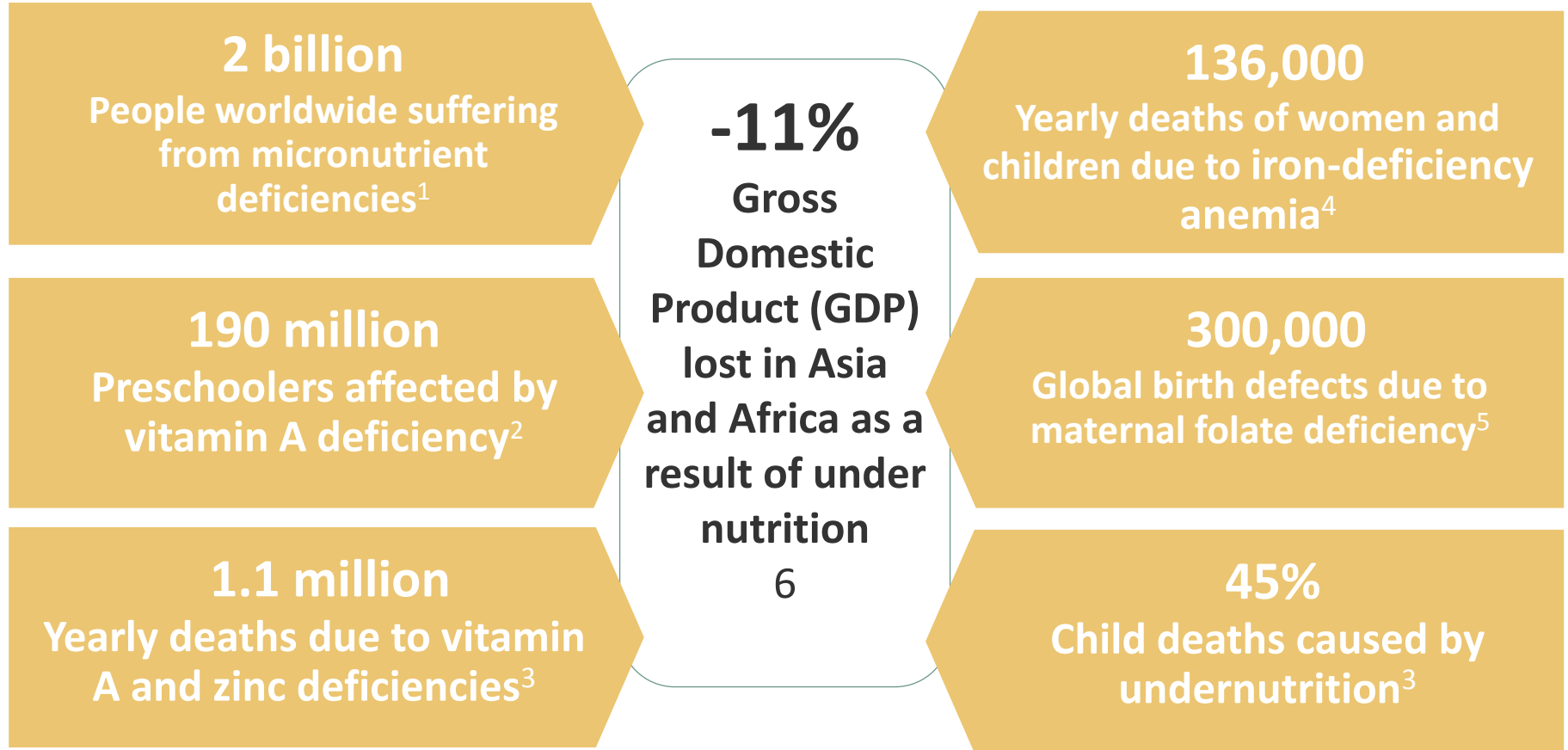
Outline

- Micronutrient malnutrition
- Rice fortification
- Global experience on introducing fortified rice through public and private sector
- Way forward



MICRONUTRIENT MALNUTRITION

MICRONUTRIENT DEFICIENCIES PLACE A HEAVY BURDEN ON THE HEALTH AND ECONOMY OF NATIONS



¹Mason JB, Lotfi M, Dalmiya N, et al. Current Progress in the Control of Vitamin A, Iodine, and Iron Deficiencies. *The Micronutrient Report*. Ottawa, Canada, 2001.

²Allen L, de Benoist B, Dary O, Hurrell R, eds. *Guidelines on food fortification with micronutrients*. Geneva: World Health Organization (WHO) and Food and Agriculture Organization (FAO) of the United Nations; 2006.

³ Prof Robert E Black MD, Prof Cesar G Victora MD, Prof Susan P Walker PhD, Prof Zulfiqar A Bhutta PhD, Prof Parul Christian DrPH, Mercedes de Onis MD, Prof Majid Ezzati PhD, Prof Sally Grantham-McGregor FRCP, Prof Joanne Katz ScD, Prof Reynaldo Martorell PhD, Prof Ricardo Uauy PhD, the Maternal and Child Nutrition Study Group. Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet* . 3 August 2013; Vol. 382, Issue 9890: Pages 427-451.

⁴ Investing in the future: A united call to action on vitamin and mineral deficiencies. Global Report 2009, Micronutrient Initiative.

⁵ Guidelines for Food Fortification with Micronutrients, WHO/FAO, 2006.

⁶ Ending Undernutrition: Our Legacy to the Post 2015 Generation. Lawrence Haddad, IDS in partnership with the Children's Investment Fund Foundation.

Micronutrient malnutrition – India

- 75%** Prevalence of Iron Deficiency Anaemia (IDA) in children < 5 years
- 55%** Prevalence of IDA in women (15 – 49 yrs old)
- 22,000** Maternal deaths due to severe anemia (Annual)
- 57%** Children < 5 yrs with sub-clinical vitamin A deficiency
- 26%** Population at risk of inadequate zinc intake
- 43%** Stunting in children < 5 years of age
- 50,000** Neural tube birth defects (annual)

Source: Micronutrient Initiative Report 2005 – “Controlling Vitamin & Mineral Deficiencies in India – Meeting the Goal”

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

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



RICE FORTIFICATION

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
- Staple food for 65% of Indian population
- 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

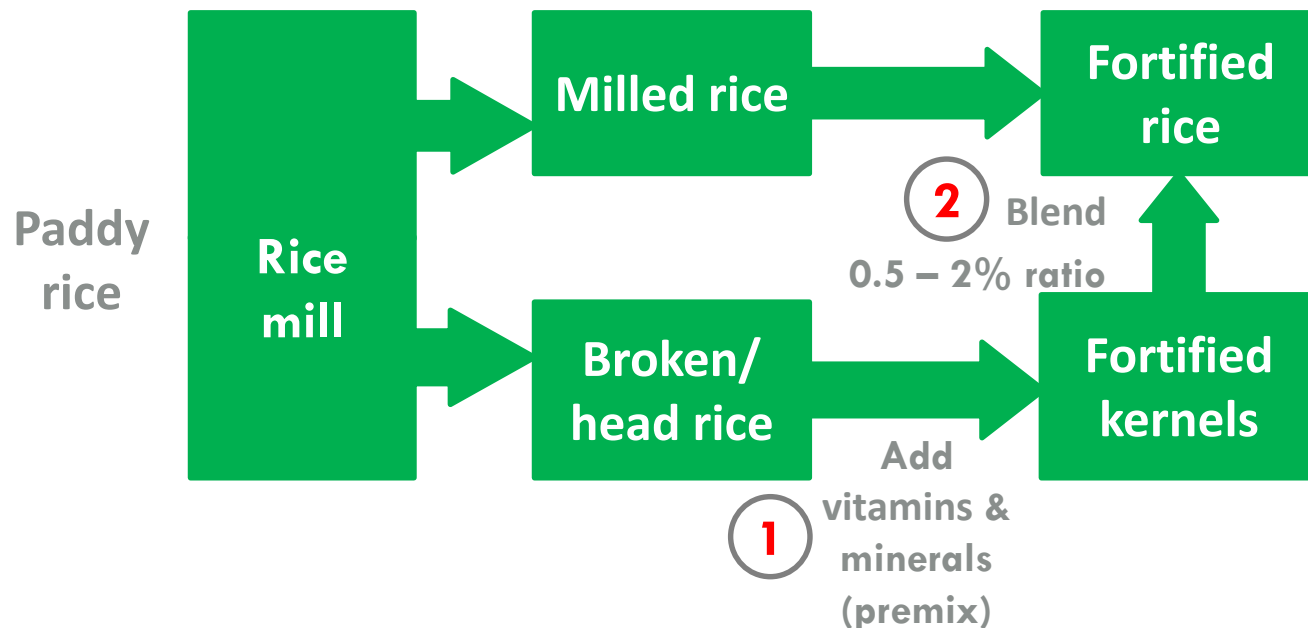


Understanding rice fortification: a few key terms

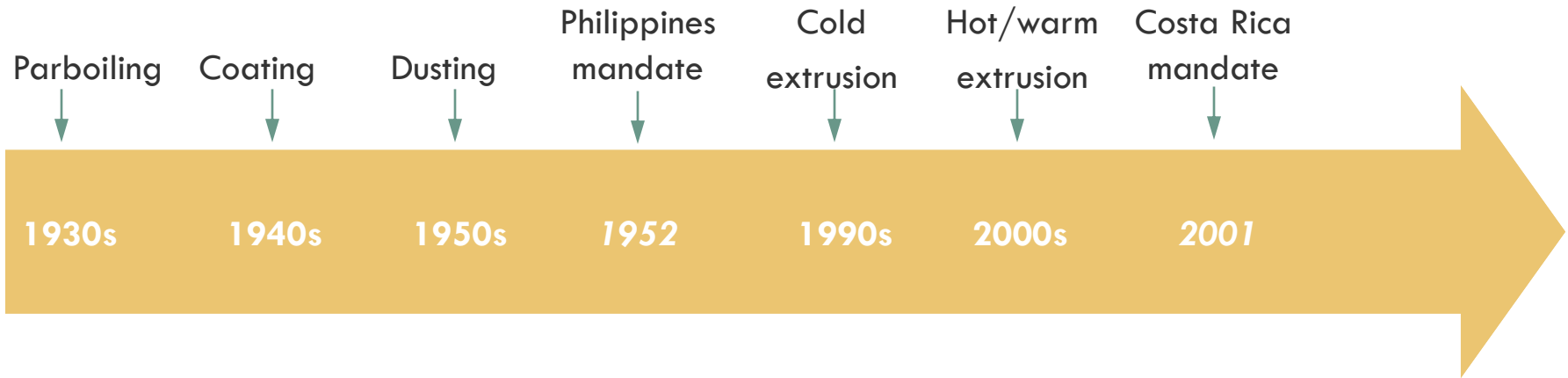
Term	Definition
Fortificant	Selected micronutrient in a particular form to fortify selected food (e.g., rice, flour, salt)
Fortificant mix (premix)	Blend that contains several fortificants (vitamins and minerals)
Fortified kernels	Rice-shaped kernels fortified with the fortificant mix
Fortified rice	Non-fortified rice blended with the fortified kernels (at 0.5 – 2% ratio; typically 1%)

The process to fortify rice comprises two main steps

- **Fortifying rice:** making rice more nutritious by adding essential vitamins and minerals
- Fortifying rice is a **two-step process:**
- Low cost high quality production facility (Usher Agro ltd) for producing fortified rice enabled in India



Rice fortification has come a long way since the 1930s





GLOBAL EXPERIENCE INTRODUCING FORTIFIED RICE THROUGH PUBLIC AND PRIVATE SECTOR

FORTIFIED RICE DELIVERY OPTIONS

- Mandatory
- Voluntary
- Social safety nets



CURRENT STATUS OF MANDATORY RICE FORTIFICATION

Country	Legislation year	Rice Source, Fortified Kernel Source & Milling Industry	Implementation
Costa Rica	2001	40% imported; 2 domestic fortified kernel producers; 11 mills	100% fortified
Nicaragua	2009	80% rice domestically grown; 40+ mills, many small	Limited implementation
Panama	2009	40% rice imported; initial plan for government to pay for kernels	Not being implemented yet
Papua New Guinea	2007	All rice imported; fortified with imported kernels or in country of origin	At least 80% fortified (market share of largest importer)
Philippines	2001	13% imported; ~11,000 mills. Fortified kernels imported plus 3 domestic producers. SSN rice	1-2% total rice fortified 2006-2013. Currently <1%

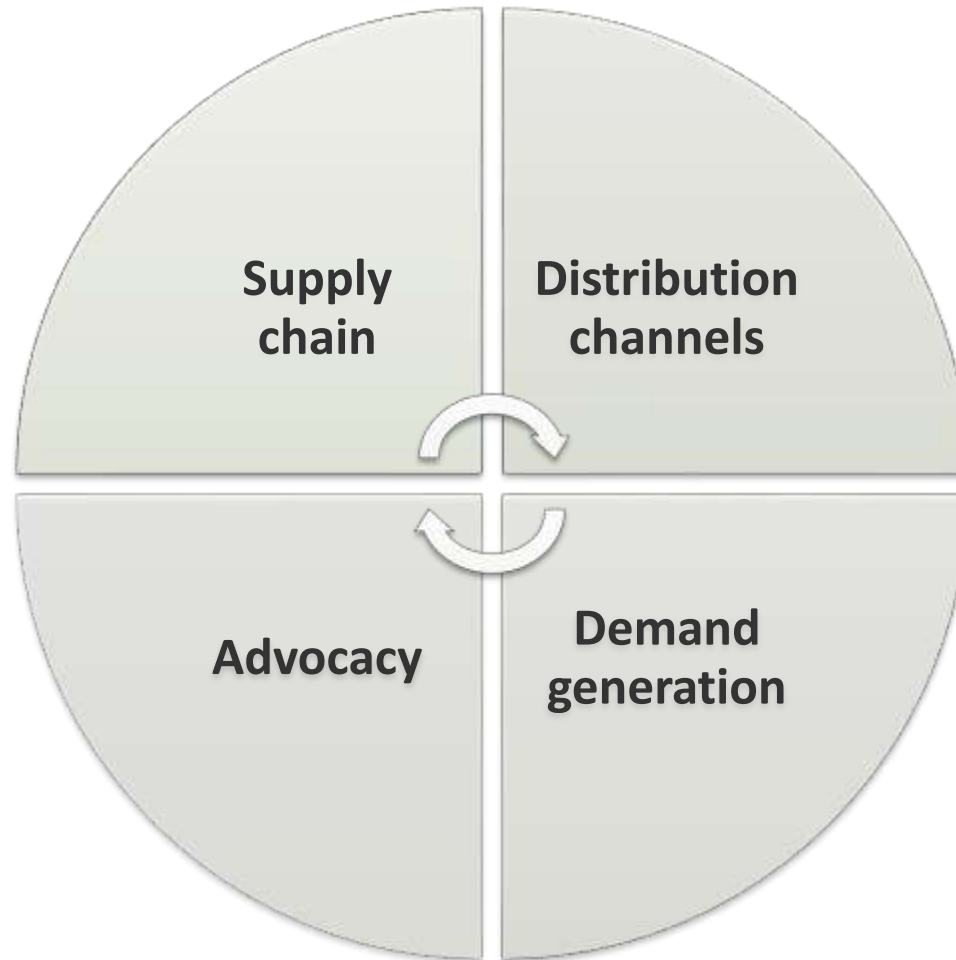
CURRENT STATUS OF VOLUNTARY RICE FORTIFICATION

Country	Start Year	Rice, Kernel Source & Milling Industry	Implementation
Brazil	2006	0 imports; 2 domestic producers of kernels; multiple rice millers	About 1-2% coverage
Colombia	2002	20% rice imported; rice is sprayed with vitamins; <100 millers; ~7 have ~75% market share	Several brands fortifying; about 50% total rice
Dominican Republic	2011	3% imported; unknown kernel source; assume multiple rice millers	Unknown
South Africa	2011-2014	100% imported rice; imported fortified kernels; multiple large mills	1 brand fortifying about 4% of total rice
USA	1998	21% imported; multiple large millers	About 90% coverage Mandatory in 6 states

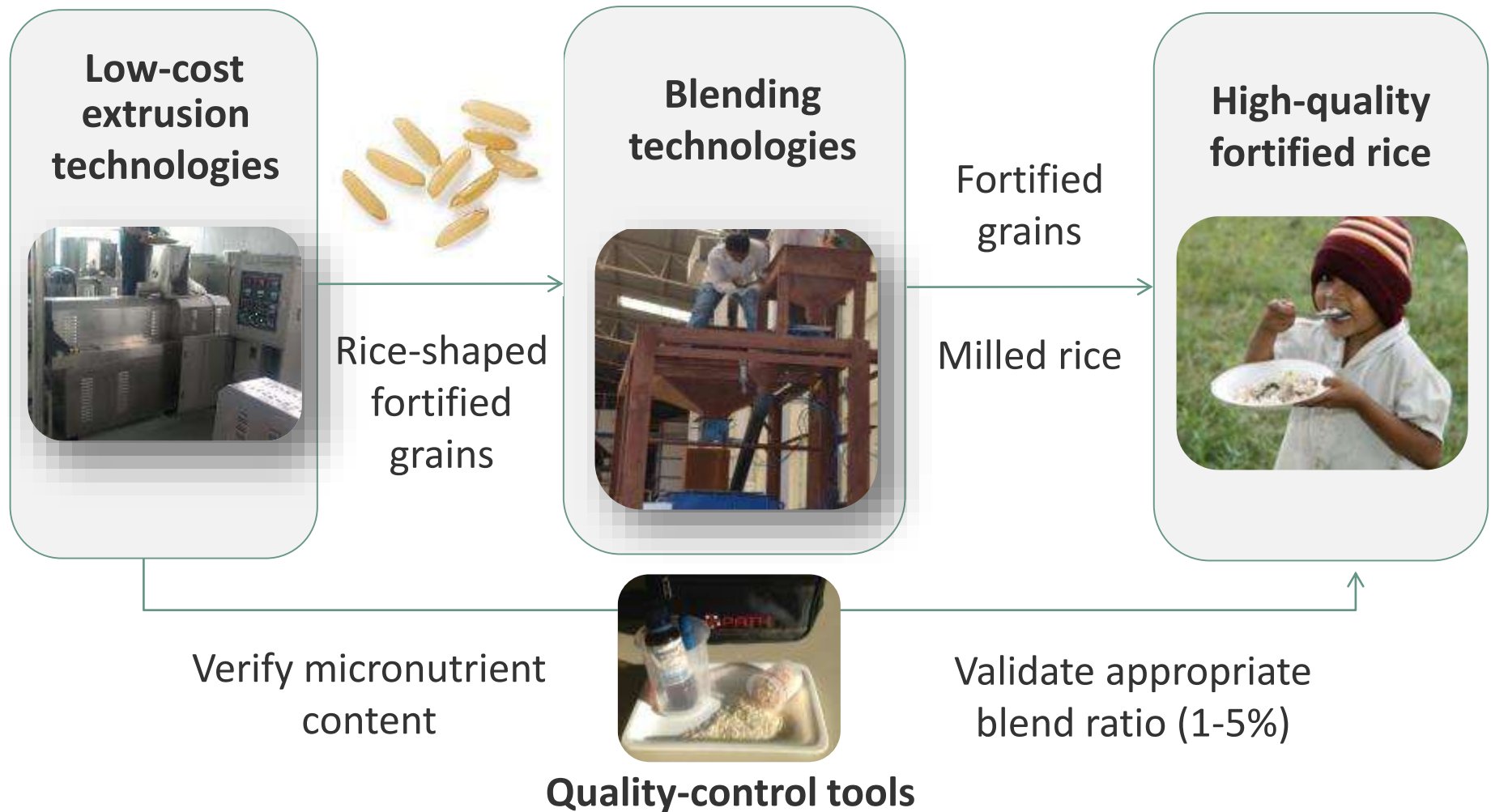
CURRENT STATUS OF SOCIAL SAFETY NET RICE FORTIFICATION

- Bangladesh
 - Government programmes: Vulnerable Group Feeding/Development
 - WFP school feeding
 - Garment factory rice ration for workers
- Indonesia: RASKIN rice for the poor (pilot)
- Philippines: National Food Authority sells lower grade subsidised rice, intended for poor
- School feeding programme in India

Strategies for public and private sector introduction and scale up of fortified rice rests on four pillars



Enabling technologies to ensure quality across the fortified rice supply chain



Introducing fortified rice in India through the public-sector



World Food Programme distributing fortified rice through the Mid-day Meal Program in Gajapati district of Odisha reaching 98,000 children.

WFP pilot and Usher production facility showcased as top innovation in leading English news channel.



Introducing fortified rice in India through the public-sector: New Initiative

- Introducing fortified rice in the MDM program through Akshaya Patra kitchen in Karnataka
- Reaching 450,000 thousand children in 2600 schools
- Integrating WASH and de-worming intervention with fortified rice feeding
- Scaling up WFP implemented fortified rice feeding program by the government of Odisha through the MDM program into additional districts

Bringing together nutritional and economic impact in Myanmar

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



500,000+ fortified rice consumers
(population-based approach)

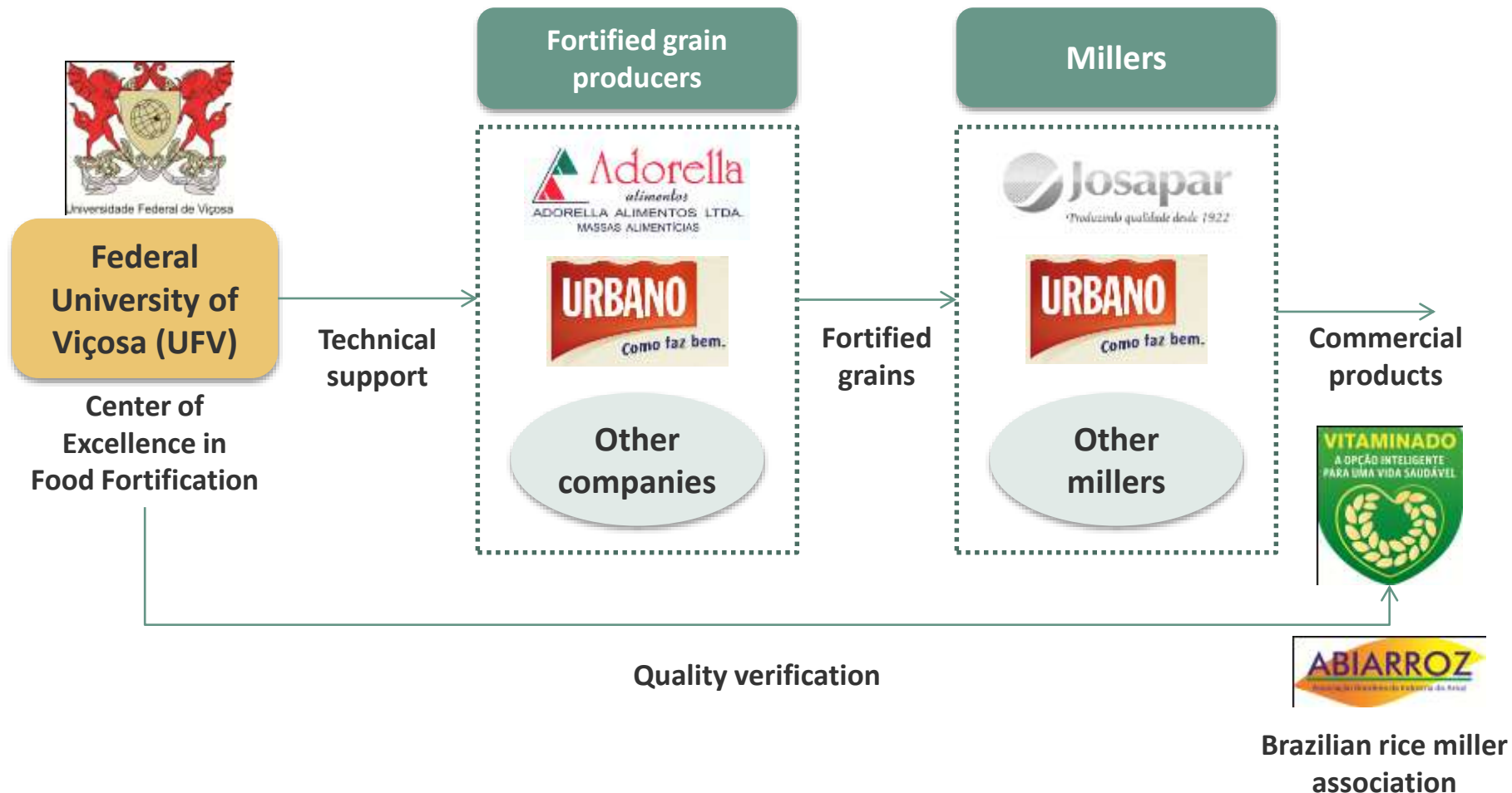


Reduced select micronutrient deficiencies

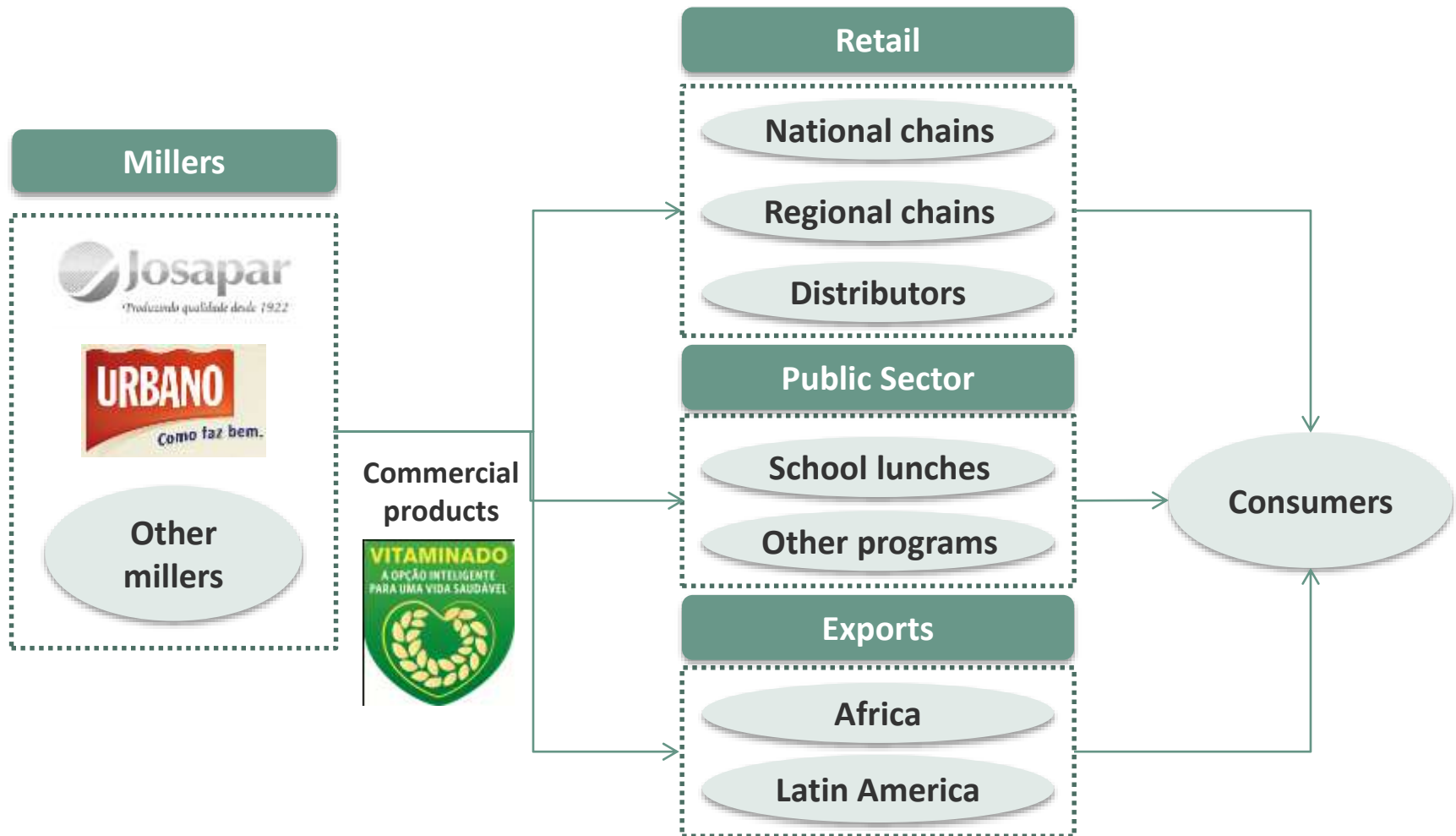


29 local supply chain and distribution actors
(70%+ with increased income)

Leveraging public-private partnerships to scale up rice fortification in Brazil



Leveraging public-private partnerships to scale up rice fortification in Brazil (cont.)



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

Hundreds of thousands of households in Brazil reached through a strategic social marketing campaign

- Developed fortified rice as a category brand
- Partnered with the “Brazilian Walt Disney” and his iconic characters
- Promoting nutrition education through traditional and social media





WAY FORWARD

KEY STRATEGIES TO SCALE-UP RICE FORTIFICATION

- Working with local food regulatory agencies to ensure appropriate standards/guidelines
- Identify key delivery channels for fortified rice
- Local capacity building
- Advocacy

KEY STRATEGIES TO SCALE-UP RICE FORTIFICATION: POLICY CONSIDERATIONS

- Mandatory rice fortification offers the best opportunity for achieving high coverage and a public health benefit
- Voluntary rice fortification has only achieved high coverage in special circumstances
- Social safety nets that distribute rice provide an excellent opportunity to reach vulnerable groups with fortified rice
- However considerations of feasibility of implementation are important for both mandatory and social safety

*RICE FORTIFICATION IS READY FOR A QUANTUM
LEAP IN SCOPE AND IMPACT*

Thank you

