Delivery Options and Current Status of Rice Fortification

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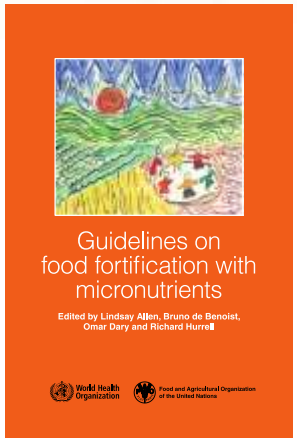
Types of Food Fortification



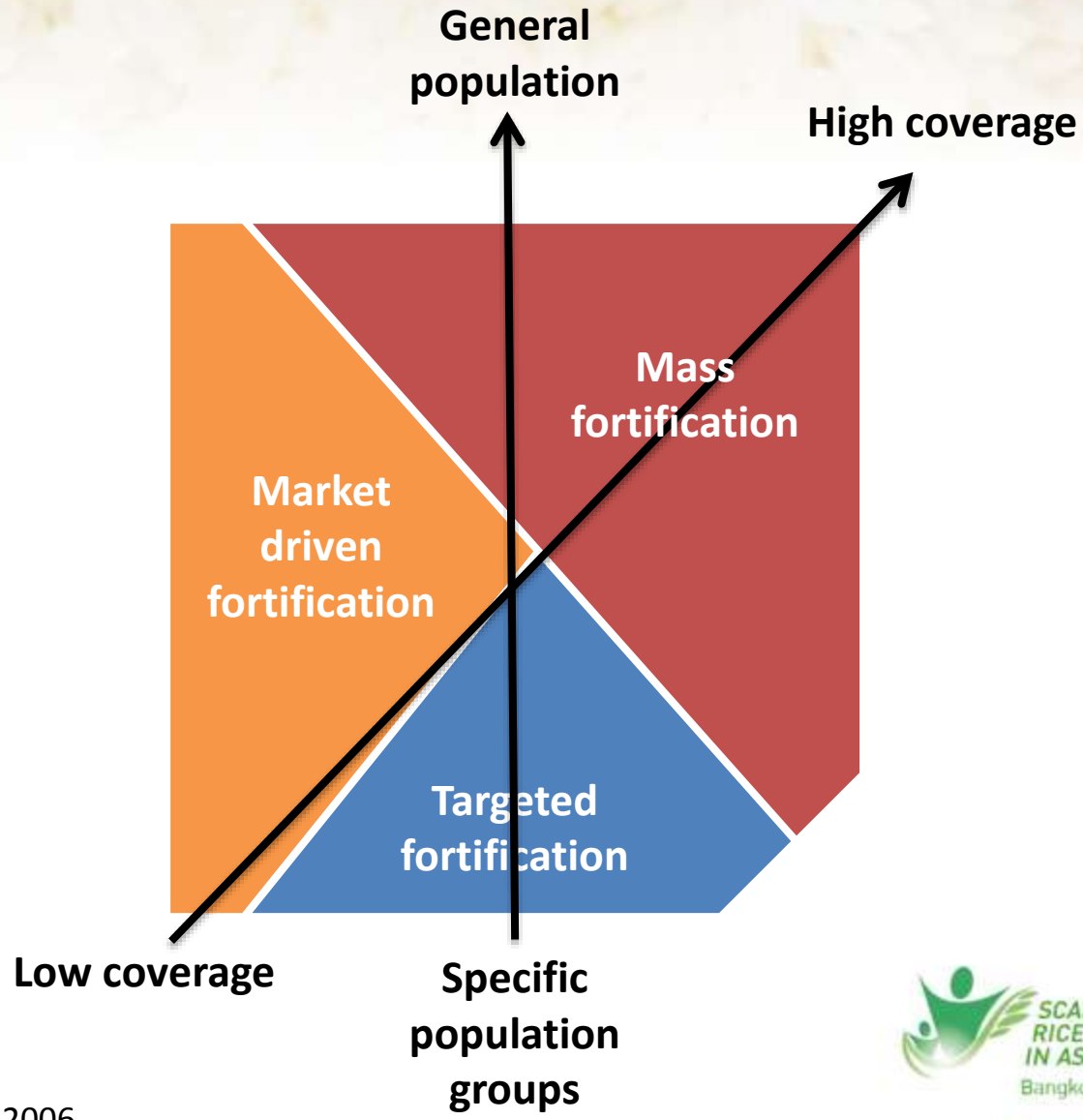


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Figure adapted from WHO/FAO 2006

Objectives and Delivery Options for Food Fortification

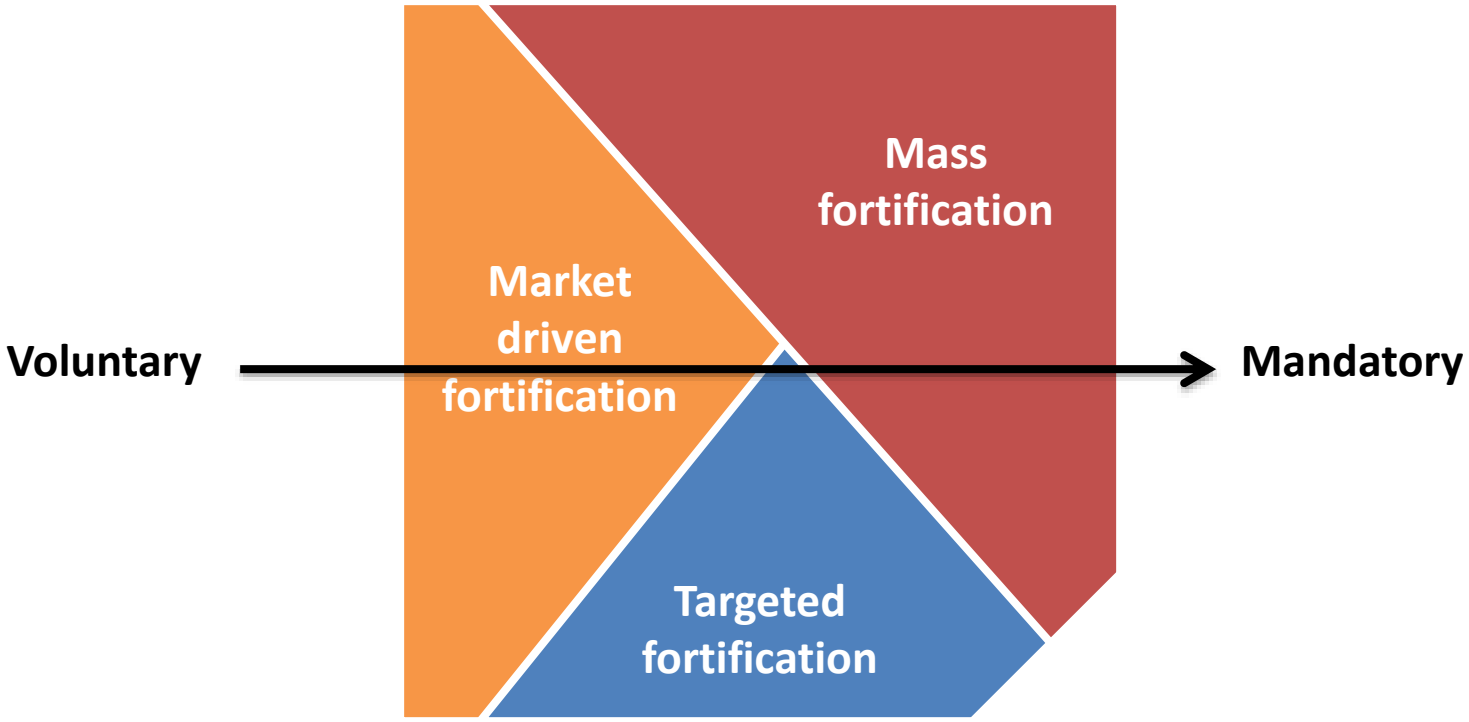

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Figure adapted from WHO/FAO 2006

Fortified Rice Delivery Options

- Mandatory
- Voluntary
- Social Safety Net

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Mandatory Rice Fortification

How	Requirement of national government
Legislation	Legislation and standard needed Enforcement to create a level playing field
Availability	Available to all; all rice is fortified
Choice	Only fortified rice available; no behaviour change
Who pays	Consumer or rice industry
Consumer cost	Price increase for fortified rice is minimal
Who benefits	Everyone

Voluntary (Market-Driven) Rice Fortification

How	Producer decision in response to perceived demand
Legislation	Not needed; but preferably standards and govt monitoring
Availability	Mixture of fortified and non-fortified available
Choice	Consumer choice; requires marketing & behaviour change
Who pays	Consumer
Consumer cost	Fortified more expensive than non-fortified
Who benefits	Wealthy and educated

Social Safety Net Rice Fortification

How	Through social safety nets programmes distributing rice
Legislation	Not required but policy decision for social safety net implementer
Availability	All distributed rice for targeted groups
Choice	Only fortified rice available; no behaviour change
Who pays	Social safety net implementer
Consumer cost	Not relevant (free or subsidised rice; no extra cost for fortification)
Who benefits	Social safety net recipients: poor and vulnerable

Characteristics of the Delivery Options: Voluntary vs. Mandatory

Voluntary

- Does not require strong government action
- Leaves choice to millers and consumers
- Low likelihood of high coverage; nutrition is not primary concern in staple food choices
- Requires significant marketing & promotion to effect behaviour change
- Sustainability not assured
- Fortified rice most accessible by wealthy/educated
- No/little evidence of public health benefit

Mandatory

- Requires strong government action – legislation & enforcement
- Removes choice from millers and consumers
- If enforced, fortified food is available for all at minimal additional cost
- Highly effective at improving nutrient intake and achieving public health benefit
- Not easy/possible to implement in decentralised industry
- Some rice may not be fortifiable

Characteristics of the Delivery Options: Social Safety Net Rice

- Targeted to poorest and most vulnerable
- May be easier to implement than mandatory
- Does not require marketing or promotion; no issue of consumer choice
- Evidence of health benefit
- Adds to 'logistic management' of programme
- Requires programme implementer to cover costs of fortification
- Problems with implementation of SSN

CURRENT STATUS OF RICE FORTIFICATION

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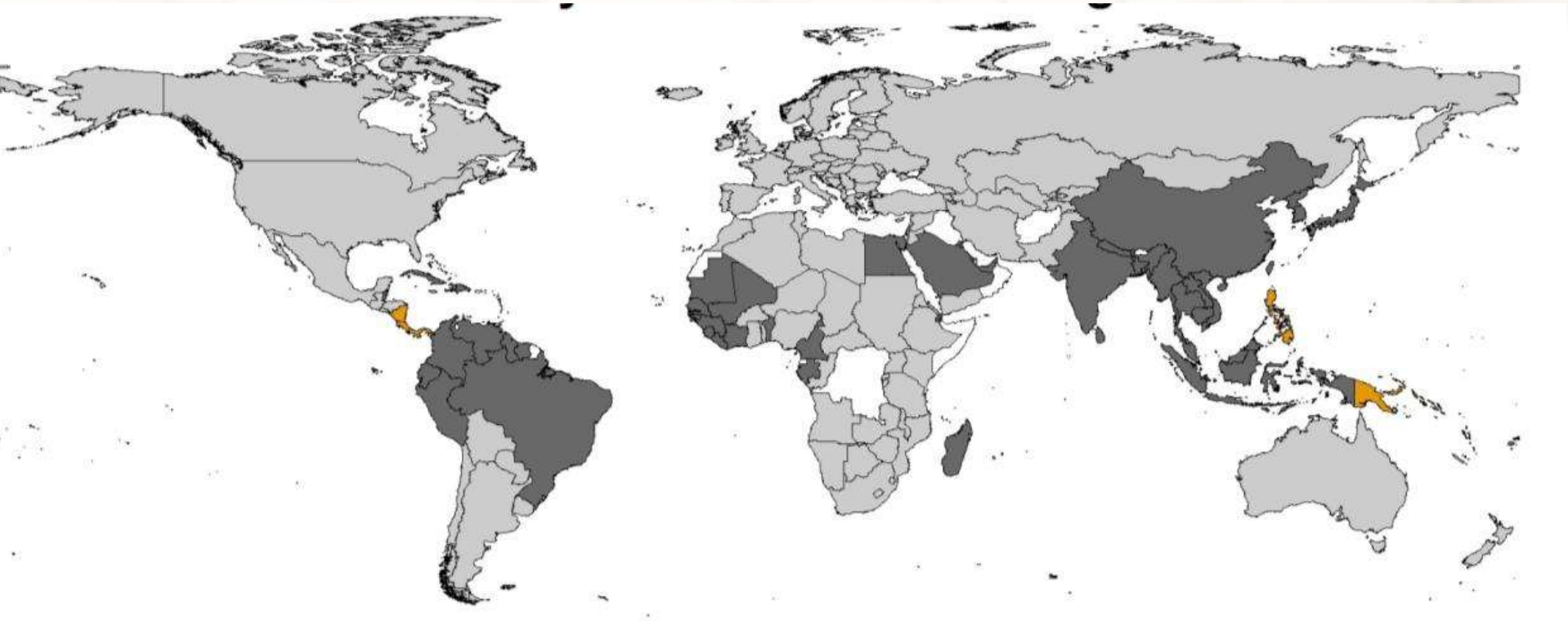
Current Status of Voluntary Rice Fortification

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
Puerto Rico	1998?	Imported fortified kernels	Unknown
South Africa	2011	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 Mandatory Rice Fortification



	75 or more grams available per person per day
	Less than 75 grams available per person per day

	Mandatory fortification legislation * 5 countries
	No availability or legislation data

* Legislation has effect of mandating grain fortification with at least iron or folic acid; does not reflect how much grain is available .
Grain availability data from the Food and Agriculture Organization (2009).
Legislation status from the Food Fortification Initiative (www.FFInetwork.org) May 2014

Current Status of Mandatory Rice Fortification

Country	Legislat-ion year	Rice, Fortified Kernel Source & Milling Industry	Implementation
Costa Rica	2001	40% imported rice; 2 domestic fortified kernel producers; 11 mills, imports required to be fortified in country of origin	100% fortified
Nicaragua	2009	80% rice domestically grown; 40+ mills, many small	Limited implementation
Panama	2009	40% rice imported, PATH kernels paid by govt	Unknown
PNG	2007	All rice imported; fortified with imported kernels or in country of origin	At least 80% fortified (market share of largest importer)
Philippines	2004	13% imports of rice; ~11,000 mills. Fortified kernels imported plus 3 domestic producers	1-2% total rice fortified 2006-2013. Currently <1%

Lessons Learned on Mandatory Rice Fortification

- Effective and cost-effective if properly implemented (lesson from fortified rice efficacy and wheat flour effectiveness)
- Political commitment and capacity to enforce legislation are essential
- Cost effective and sustainable source of fortified kernels is needed: domestic production may be necessary
- Many components of cost; many variations. Costs likely to reduce with large scale implementation but more expensive than wheat flour fortification or salt iodisation
- Hard/cost prohibitive with multiple, small mills:
  - Costa Rica – 11 mills; Philippines – ~11,000

Current Status of Social Safety Net Rice Fortification

- Bangladesh
  - Govt programmes: Vulnerable Group Feeding/Development
  - WFP school feeding
  - Garment factory rice ration for workers
- Indonesia: RASKIN rice for the poor
- Philippines: National Food Authority subsidised rice for the poor
- School feeding programme in India

Lessons Learnt from Social Safety Net Programmes

- Opportunity to target most in need
- May be only option for rice fortification to achieve PH impact
- Requires government/implementer commitment, including to cover cost of fortification
- Logistical complications often a problem – of both SSN programme and fortification component
- Proven efficacy from multiple school feeding programmes

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Considerations for Choosing the Optimal Delivery Option

- Potential of rice fortification to impact national health and nutrition
- Structure of national rice industry including production/imports, number & capacity of mills, trade & distribution patterns
- Potential source of fortified kernels
- Extent to which rice is distributed through social safety nets

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Thank you

Terima kasih

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