Rice Landscape Analysis

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Overview

• Rice fortification can be an effective strategy to reduce micronutrient deficiencies in areas where rice is widely consumed.
• The full potential of the strategy can only be realized when it is feasible to fortify a significant proportion of the rice consumed.
• Understanding the rice supply chain is therefore critical to design effective programs.
Setting the Scene

• Widespread micronutrient deficiencies in the target population
• Large proportion of the target population consume rice in adequate amounts
• There is general concurrence amongst key stakeholders (public and private) on issues related to sensory properties, efficacy and technology
Key success factors for rice fortification at large scale

**Market attractiveness**
- Micronutrient deficiencies
- Adequate per capita rice consumption
- Absolute market size
- Consumer awareness & acceptance
- Existence of large safety nets with significant reach

**Ease of implementation**
- Adequate capacity in the rice processing industry
- Adequate and cost-effective technology
- Broad public and private support
- Minimal restrictions on rice trade
- Ease of doing business

**Many Asian countries meet majority or all of the factors for market attractiveness**

**Barriers to rice fortification**

Exploring Rice Fortification

• A close scrutiny of the rice supply chain is essential when considering scaling up or introducing rice fortification

• The feasibility increases when the following objectives are met:
  – Degree of consolidation in the rice industry is high
  – Costs along the supply chain are minimized
  – Complexity and number of interventions required along the rice supply chain are minimized
  – Total proportion of rice that is fortified is maximized
  – Ensure the needed micronutrients of the right quality are delivered
Changes in the Rice Supply Chain When Fortification is Introduced

- Input suppliers
- Farmers
- Processors (Millers)
- Distributors
- Consumers

- Blending
  - Fortified kernel producers
  - Fortificant suppliers

- Regulatory and Program Environment
# Rice Fortification Landscape Matrix

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Fortified Rice Supply Chain

*For extrusion technology broken rice can be used to produce fortified kernels, with coating technology head rice is required*
Important Considerations for Landscape Analysis

• Industry structure
  – What is the milling infrastructure?
  – What is milling capacity?
  – What is the market share of mills in the country?
  – Where is market demand?
  – What is industry organization?

• Rice source
  – How much of the rice supply is from local farming and imports?
  – How many varieties of rice are consumed?

• Distribution
  – What proportion of rice is distributed through commercial channels and social safety nets?

• What kind of commerce/business regulations surround the Rice Industry?
• What are the consumer preferences and purchasing behaviours?
Examples of how opportunities within the supply chain can be explored under different contexts
Small number of rice millers and/or high production volume at a mill

- Rice millers
  - Milled rice
  - Fortified rice
- Fortified kernel producers
  - FK
- Rice blending
  - Fortified rice
- Distribution and sales channels
- Social distribution channels
- Consumers
- Rice farmers
  - Paddy rice
  - Broken rice / head rice*
- Fortificant / Fortificant mix (premix)
- Micronutrient producers & suppliers

Milling, FK production and blending in one location – this model has the highest cost effectiveness potential but applies mainly to mills with high production volumes
Large number of rice millers and/or small milling volumes at multiple locations

Rice farmers → Paddy rice → Rice millers → Milled rice → Rice blending → Fortified rice → Distribution and sales channels → Consumers

- Rice farmers (Rice farmers)
- Paddy rice (Paddy rice)
- Rice millers (Rice millers)
- Milled rice (Milled rice)
- Rice blending (Rice blending)
- Fortified rice (Fortified rice)
- Distribution and sales channels (Distribution and sales channels)
- Consumers (Consumers)

- Fortified kernel producers
- Broken rice / head rice*
- Fortificant/ Fortificant mix (premix)
- Micronutrient producers & suppliers

An independent FK facility or larger rice mill supplying FK to multiple mills. Additional transport costs for broken/head rice to FK facility and FK to blending locations would be incurred.

Blending at rice mill with an external FK source – FK would have to be sourced and distributed to multiple milling locations.
Blending at safety net distribution point – FK would have to be sourced. Reach would be limited to safety net recipients.
Small number of distributors who consolidate milled rice supply

Blending at distribution point – FK would have to be sourced.
Additional Considerations

• While some countries maintain emergency stocks of rice, access to this is challenging

• The rice supplied through safety net programs has to be carefully reviewed since there are challenges that include:
  – Regularity of supply
  – Effectiveness and sustainability of existing safety programs
  – Disparity with local preferences or stigmatization
  – Varieties of rice distributed may not be regular

• Establishing markets is very important and requires strong public–private partnerships and regulatory environments and is not limited to consumer awareness
Closing remarks

• It is critical that a detailed landscape analysis is done before embarking on a rice fortification initiative

• An Important starting point would be to identify opportunities where the level of consolidation in the rice supply can be improved and strengthened and an enabling environment is created

• The landscape analysis at the very least should contain information on volumes, who is involved and the flow of rice/fortified kernels and outline the public and private entities that are involved
Thank you
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Salamat Po