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

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

Key success factors

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

Barriers to rice fortification

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Source: Beretta Piccoli N. et al. 2012. Rice fortification: Its potential for improving micronutrient intake and steps required for implementation at scale. Food Nutr Bull. 33(4):S360-72

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

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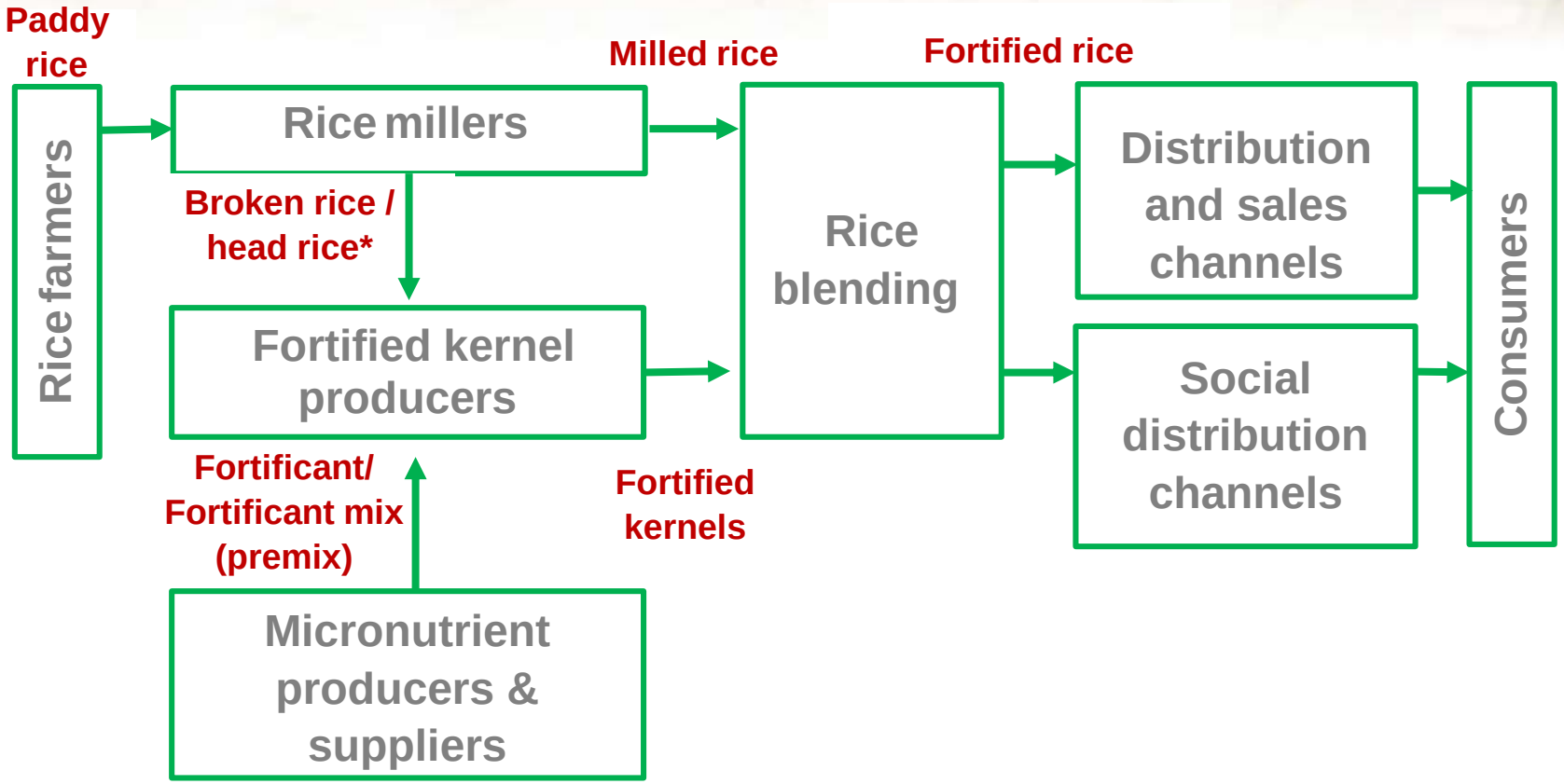
Rice Fortification Landscape Matrix

Additional Components	Key issues
Fortificant supply for Fortified Rice Kernel Production	• Distribution of fortificants/ fortificant mix to fortified kernel producers • standards and quality of fortificants
Fortified Kernel Production	• Broken rice /Head rice supply to the FK or coating facility • Investments in technology and operating costs
Blending	• Distribution of FK to blending sites • Investment in blending machinery • Internal QAQC
Program and Regulatory Environment	• Program management and coordination resource requirement • Additional regulatory systems, monitoring and evaluation • Policy, advocacy and sensitization

Fortified Rice Supply Chain

Applies to coating and extrusion



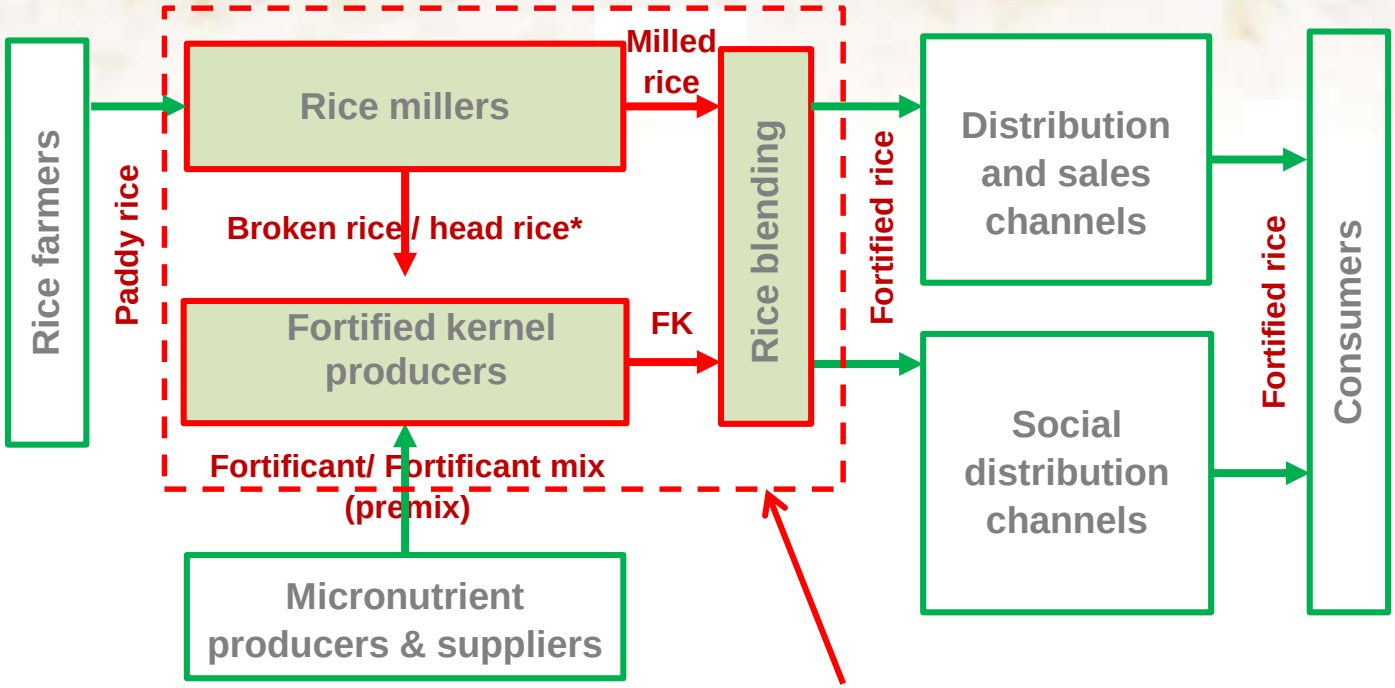
* For extrusion technology broken rice can be used to produce fortified kernels, with coating technology head rice is required

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?

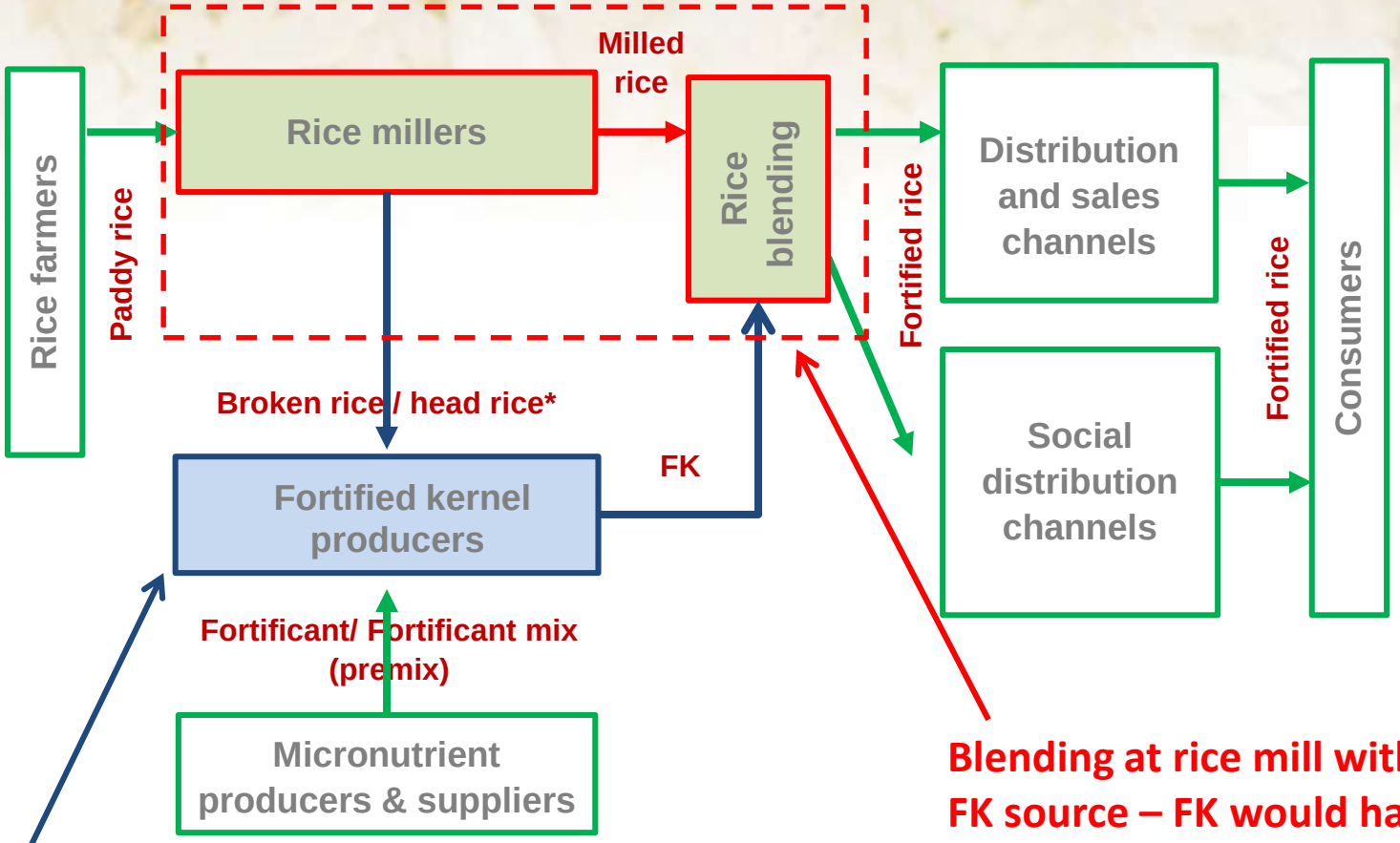
Examples of how opportunities within the supply chain can be explored under different contexts

Small number of rice millers and/or high production volume at a mill



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

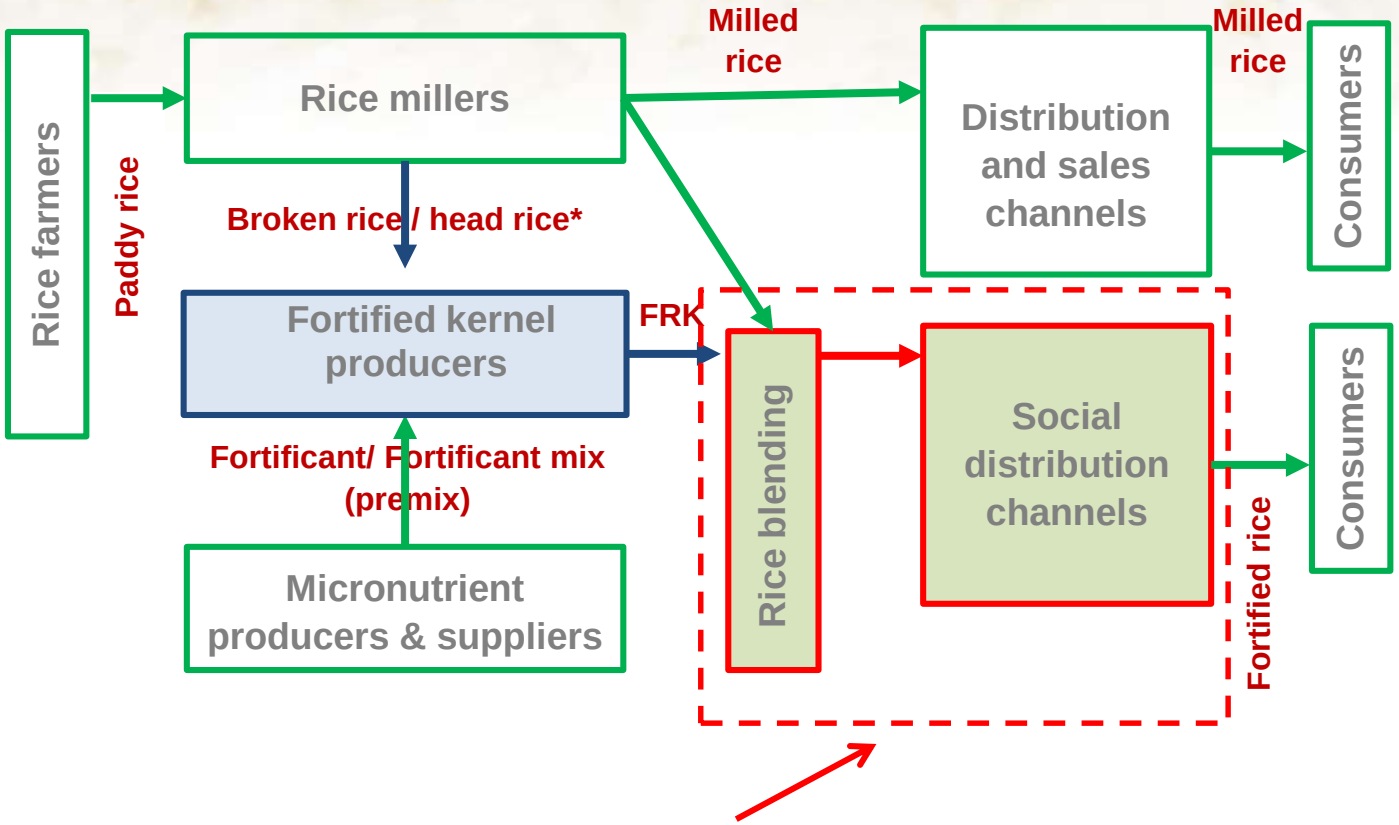
Large number of rice millers and/or small milling volumes at multiple locations



Blending at rice mill with an external FK source – FK would have to be sourced and distributed to multiple milling locations.

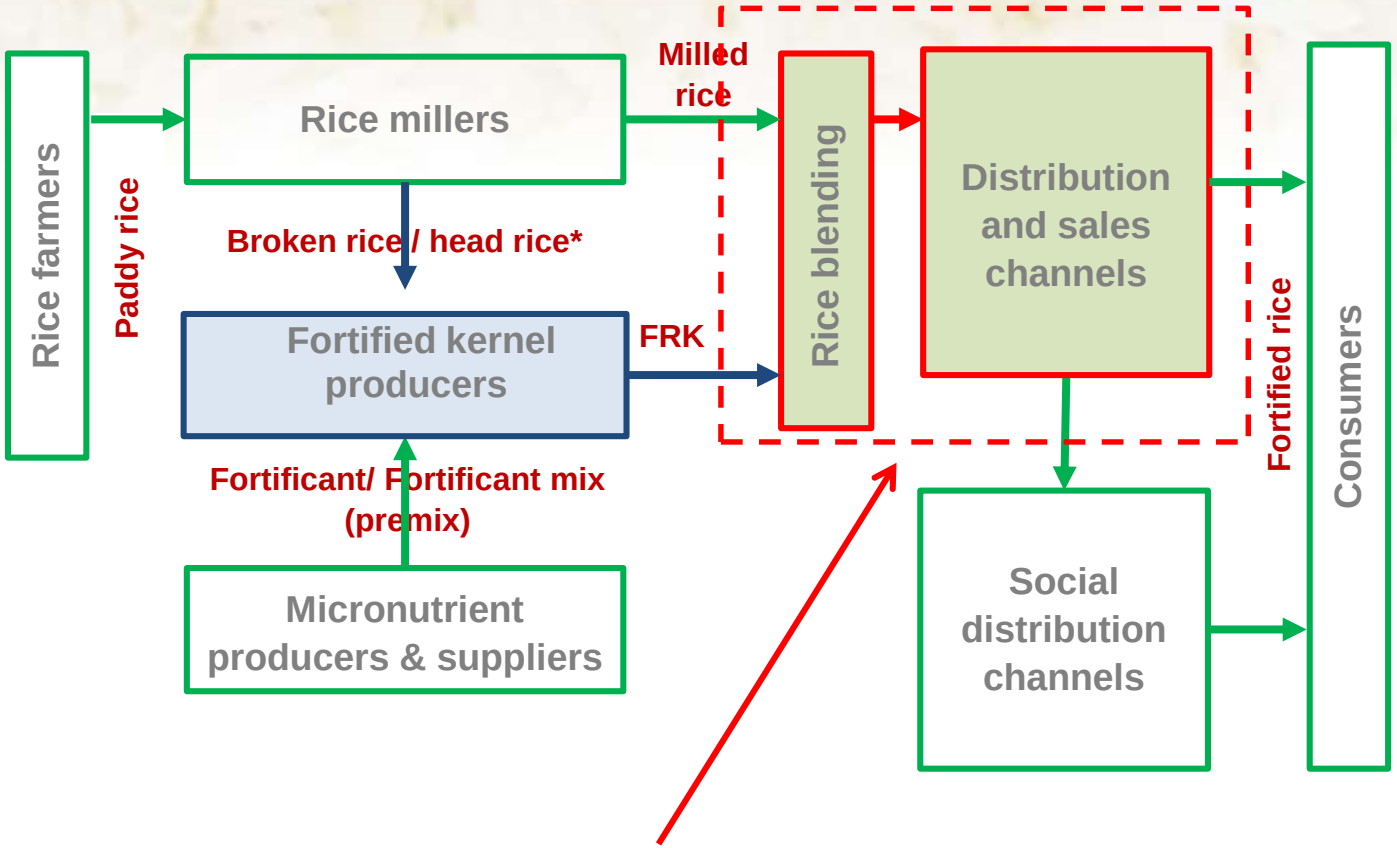
An independent FK facility or larger rice mill supplying FK to multiple mills. Additional transport costs for broken/head rice to FK facility and FK to blending locations would be incurred

Existence of social safety net programs



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

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Thank you

Terima kasih

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