



Enhancing Grains for Healthier Lives

Worksheet for Feasibility, Implementation, and Monitoring of Imported Fortified Rice

When rice is shipped, the imported commodity is usually milled rice, rather than paddy rice. At various points in the imported rice supply chain, rice can be fortified with vitamins and mineral to improve the nutrient intake of consumers. This worksheet will guide stakeholders in countries considering mandating fortification of rice imports.

Part A: Decide if Imported Rice is a Suitable Vehicle for Food Fortification

Understand the sources of rice in the country and which consumers eat imported rice. What percentage of the rice consumed in the country is imported, and how much is milled domestically? If a small percentage of rice is imported or if the imported rice is specialty rice that is not consumed by the target population, requiring fortification of rice imports may not be useful.

Part B: Describe the Rice Milling Industry

Unless the country does not grow any rice at all, even countries that predominantly import rice may have a small rice milling industry. Thus, it is important to describe even a small (or nonexistent) rice milling industry. In other cases, rice is imported into countries and further milled before selling in the market. If possible, count the number of rice mills in the country, record their milling capacities and utilization, and note whether any central storage facilities exist.

Part C: Describe the Rice Import Industry

Understanding how many rice importers are active in the country and who those importers are will assist efforts in industry communications and inform general expectations for import monitoring. In some countries, a rice importers association may facilitate data collection. Typical annual import amounts (as well as variability across years, to understand market fluctuations) will provide grain availability data if no consumption data is available. Industry data on import amounts can also provide a validation against FAO, USDA, and Customs availability data, as well as provide consumption estimates if consumption data is unavailable. Packaging and storage of imported rice (e.g. bulk vs. packaged) will inform whether fortification should be implemented either in country of export or after importation.

Part D: Identify Roles and Responsibilities for Domestic Fortified Rice Production and Imported Food Control

Feasibility of a mandatory rice fortification program hinges on not just the supply/demand logistics of the rice supply (Parts B and C), but also the strength of the government's regulatory monitoring system (specifically the imported food control system) to enforce a fortified rice supply. Although a country's rice may be primarily imported, it is still important to understand how rice would be fortified

domestically if there is a local industry. Rice importers will be reluctant to fortify if they feel that their domestic competitors will not be held to the rice fortification standards. Observe whether the country has a national self-sufficiency policy that supports the domestic rice industry through subsidies or taxes on imported rice.

Without the government's commitment to enforce a fortification program, mandatory legislation may fail to introduce fortified rice to the market. Enforcement activities include auditing fortified rice producers through process documentation as well as physical inspections to check nutrient quantities in the fortified foods. Physical inspections will need some laboratory capacity and resourcing.

Because rice is an agricultural product, multiple government bodies may have responsibilities to monitor the production and import of rice. For example, in the Solomon Islands, Biosecurity/Quarantine under the Ministry of Agriculture is responsible for monitoring rice production and rice imports, while Food Safety under the Ministry of Health is responsible for monitoring fortified rice. Understanding the distinctions between the government body responsibilities will inform which government body must enforce fortification.

Questions in Part D aim to understand the country capacity to monitor for fortified rice in both the domestic rice production and import food control system.

Part E: After Introducing Fortification: Tips for Incorporating Fortified Rice in the Existing Monitoring System

A successful regulated fortification program should also be incorporated in the existing regulatory system for imported foods, rather than stand as its own regulatory system with separate staff, funding, and activities. A regulatory system that folds in fortification into existing Standard Operating Procedures and documentation will be more sustainable long-term in achieving fortification as an industry standard. However, additional training on these added items may be necessary.

This document is based on Food Fortification Initiative meetings and discussions with officials in the Solomon Islands Government (Customs and Excise, Environmental Health), rice importers, and development agencies (Food and Agriculture Organization, Australia's Department of Foreign Affairs and Trade). Almost all the commercialized rice in Solomon Islands is imported, with small quantities of rice grown domestically for self-consumption or local commercial sale.

Worksheet: Feasibility, Implementation, and Monitoring of Imported Fortified Rice

Part A: Decide if Imported Rice is a Suitable Vehicle for Food Fortification

Rice availability/consumption data

- | | |
|--|---|
| 1. How much rice is consumed ¹ in the country? | _____ MT ³ rice consumed (milled equiv.) |
| 2. How much rice is imported into the country? | _____ MT rice imported (milled equiv.) |
| 3. How much rice is grown domestically in the country? | _____ MT rice grown domestically (milled equiv.) |
| 4. What is the average paddy-to-rice conversion ² ? | _____ % |

Rice consumption patterns

- | | |
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| 5. Do rice consumption amounts differ between geographic populations? (e.g. Highlands vs. lowlands, urban vs. rural, high income vs. low income) <i>Include consumption differences if possible.</i> | No <input type="checkbox"/> Yes <input type="checkbox"/> Describe: |
| 6. Is there any difference between imported rice and domestically grown rice?
a. Appearance (e.g. varieties, percent broken, etc.)?
b. Price? | No <input type="checkbox"/> Yes <input type="checkbox"/> Describe: |

Part B: Describe the Rice Milling Industry

Rice milling industry data sources

- | | |
|---|--|
| 7. Is there a rice milling association? | No <input type="checkbox"/> Yes <input type="checkbox"/> Describe: |
|---|--|

Industry structure

- | | |
|---|---|
| 8. How many mills are in the country? | _____ rice mills |
| 9. How many mills have > 20 MT/day milling capacity? | _____ rice mills > 20 MT/day milling capacity |
| 10. What proportion of the country's milling takes place in > 20 MT/day capacity mills? | _____ % of total rice milled by > 20 MT/day capacity mills |
| 11. What is the milling utilization of the > 20 MT/day capacity mills? | _____ % milling utilization / _____ out of 365 days annually / _____ out of 30 days monthly |
| 12. How many mills have < 20 MT/day milling capacity? | _____ rice mills < 20 MT/day milling capacity |
| 13. What proportion of the country's milling takes place in < 20 MT/day capacity mills? | _____ % of total rice milled by < 20 MT/day capacity mills |
| 14. What is the milling utilization of the < 20 MT/day capacity mills? | _____ % milling utilization / _____ out of 365 days annually / _____ out of 30 days monthly |
| 15. What proportion of rice milled in-country is second milling of imported rice? | _____ % of total rice milled in-country |
| 16. <i>If possible, map out the locations of the mills in the country</i> | (Attach map) |

Part C: Describe the Rice Import Industry

Rice milling industry data sources

- | | |
|---|--|
| 17. Is there a rice importers association? | No <input type="checkbox"/> Yes <input type="checkbox"/> Describe: |
| 18. Are rice importers registered with Customs, Quarantine, or another government body? | No <input type="checkbox"/> Yes <input type="checkbox"/> Describe: |

¹ Where consumption data is not available, *availability* data (e.g. from USDA or FAO) may be considered instead.

² Paddy rice is husked rice. Conversion rates to milled rice ranges approximately between 50-65% - i.e. 100 MT of paddy rice is equivalent to 50-65 MT of milled rice.

³ Metric tons

<i>Industry structure</i>	
19. How many rice importers exist and are operational? Does this differ from the number officially registered?	____ rice importers ____ operational importers ____ registered importers
20. What kinds and quantities of rice does each company import annually?	<i>For questions 20-24, see Annex 1, a suggested data collection sheet for rice import data by company.</i>
21. What countries (and in what quantities) does the rice come from?	
22. How often do rice shipments arrive?	
23. How much imported rice arrives in bulk containers?	
24. How much imported rice arrives already pre-packaged?	
Part D: Identify Roles and Responsibilities for Domestic Fortified Rice Production and Imported Food Control	
<i>Government oversight</i>	
25. What government body is responsible for the monitoring of domestically produced fortified rice?	Describe:
26. What government body is responsible for the monitoring of imported rice?	Describe:
27. Which government body is responsible for the monitoring of imported foods? There may be more than one.	Describe:
28. How does Customs inform the relevant government body of imported rice shipments?	Describe:
29. Is there adequate staffing of government personnel to monitor imported foods?	No <input type="checkbox"/> Yes <input type="checkbox"/> Describe:
<i>National laboratory capacity</i>	
30. Is there a national laboratory that can assist with qualitative or quantitative analysis of imported, fortified rice samples?	Qualitative <input type="checkbox"/> Quantitative <input type="checkbox"/> Describe:
31. Does the laboratory have adequate resourcing to perform these qualitative or quantitative tests?	No <input type="checkbox"/> Yes <input type="checkbox"/>
Part E: After Introducing Fortification: Tips for Incorporating Fortified Rice in the Existing Monitoring System	
32. Is there a communications strategy to inform importers of the requirement to fortify?	No <input type="checkbox"/> Yes <input type="checkbox"/>
33. Has a "grace period" been identified to allow the importers a feasible implementation period?	No <input type="checkbox"/> Yes <input type="checkbox"/>
34. Are there existing government mechanisms that can be used to inform importers?	No <input type="checkbox"/> Yes <input type="checkbox"/> Describe:
35. Are there existing import food control forms that can be modified to include monitoring for rice fortification?	No <input type="checkbox"/> Yes <input type="checkbox"/> Describe:
36. Is training on additional monitoring practices in the import food control system necessary?	No <input type="checkbox"/> Yes <input type="checkbox"/> Describe:

Annex 1: Sample data collection sheet for rice importer data⁴

Categories will need to be edited according to the rice varieties most commonly consumed/imported in the country

Importer name	Rice varieties and grades imported	MT imported annually, milled rice	# of shipments by month	MT imported annually, rice variety 1	# of shipments by month	Bulk or pre-packaged?	Countries of origin (list % for each)

⁴ MT, metric ton