

NATIONAL FOOD FORTIFICATION

WORKSHOP REPORT

March 22 - 23, 2017



World Food
Programme



Food and Agriculture
Organization of the
United Nations



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March 22 - 23, 2017

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Ministry of Health, Nutrition and Indigenous medicine
In collaboration with
World Food Programme
Food Fortification Initiative

Executive Summary

Despite several evidence-based interventions, Sri Lanka continues to face a substantial challenge in combating and controlling micronutrient deficiencies (MNDs), particularly iron deficiency anaemia. It is largely prevalent among pregnant women, adolescent girls and young children, with over half the population are estimated to be affected by anaemia. Despite the government implementing various interventions in the recent past, there has been stagnation in the reduction of the prevalence of MNDs.

Increasing the micronutrient density of food through fortification has great potential to improve the daily intake of essential vitamins and minerals for the general population and addressing widespread micronutrient deficiencies. At the Copenhagen Consensus in 2008, food fortification was ranked as one of the top three international development priorities and as one of the most cost-effective strategies to reduce micronutrient deficiencies. However, it is a medium-term strategy and does not replace the need to promote dietary diversity and provide supplements.

Sri Lanka has had a long experience with food fortification, beginning with the mandatory iodization of salt as passed under the Food Act of 1995. However, despite various meetings and debates over the last decades, limited actions have taken place to introduce mandatory fortification of other key staple foods, including rice and wheat. Both are vehicles of high potential as they are consumed in adequate and predictable amounts, affordable, palatable, and culturally acceptable.

To take stock of all the achievements and bottlenecks to regularize and determine the way forward for rice and wheat flour fortification, the Ministry of Health, Nutrition and Indigenous Medicine (MoH) held a national workshop on food fortification on 22-23 March 2017. It was widely agreed by over 100 multi-sector participants that concrete actions are needed to realize the vision of taking food fortification at scale.

The group work operated in three phases: the first phase was the identification of an appropriate delivery option; phase 2 consisted of the agreement on programme components necessary for selected delivery options; and phase 3 consisted of the identification of necessary actions for the implementation of selected delivery options by programme components.

The groups agreed that although fortification of rice has a high potential to reach a large segment of the population, there are several challenges associated with it and hence mandatory fortification may not be feasible at this stage. Therefore, the best alternative is to introduce it under existing social safety net programmes. On the other hand, it was agreed that wheat flour fortification could be made mandatory as wheat flour production is only handled by two producers. It was noted that a large hurdle in fortification is the consumer acceptance of fortified foods since many misconceptions exist. Sustained political will is also required to ensure the programme's success to provide public awareness of the nutritional benefits of fortification, and to monitor and enforce implementation.

Regional experience in both India and Bangladesh recognize that pursuing a multi-stakeholder strategy is an efficient way to implement a successful fortification food programme. Sri Lanka should consider restructuring the existing coordination bodies such as the Technical Advisory Group (TAG) and Food Fortification Committee to be more inclusive of other stakeholders (NGOs, academia, and the private sector).

As a way forward, advocacy, policy development, standard setting, and its enforcement and monitoring will need to be strengthened. To formalize the process, a cabinet endorsement of the work plan outlined in the report will be sought before to introduce the product to the market.

List of Abbreviations

| | |
|-------|---|
| CSR | Corporate social responsibility DALYDisability-adjusted life years |
| ENOH | Environmental, Occupational Health, and Food Safety |
| FAO | Food and Agriculture Organization of the United Nations |
| FFI | Food Fortification Initiative |
| FFRC | Food Fortification Resource Center |
| FSSAI | Food Safety and Standards Authority India |
| IPHT | Institute of Post-Harvest Technology of Sri Lanka |
| MDGs | Millennium Development Goals |
| MDMS | Midday Meal Scheme |
| MNDs | micronutrient deficiencies |
| MoAg | Ministry of Agriculture |
| MoH | The Ministry of Health, Nutrition and Indigenous Medicine |
| NGOs | Non-Governmental Organizations |
| PPT | Power-Point |
| RRI | Rice Research Institute |
| SDG-F | The United Nations Sustainable Development Goals Fund |
| TAG | The Technical Advisory Group |
| WFP | The World Food Programme |

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The United Nations Sustainable Development Goals Fund (SDG-F) funded the Sri Lanka national food fortification workshop. The World Food Programme (WFP) and Food and Agriculture Organization of the United Nations (FAO) in collaboration with the Government of Sri Lanka are implementing the SDG-F Joint Programme for “Scaling Up Nutrition through a Multi-Sector Approach.”

The Ministry of Health, Nutrition and Indigenous Medicine (MoH) organized the workshop with the support of WFP and the Food Fortification Initiative (FFI) on the 22 and 23 March 2017. The workshop brought together over 100 participants from several national government ministries, Non-Governmental Organizations (NGOs), private sector companies, civil society organizations, academia, and international experts from the region. It served as a platform for stakeholders to discuss and propose cohesive policy recommendations to the government and agree on a country work plan for wheat flour and rice fortification.

The Technical Advisory Group (TAG) for food fortification, comprising of Dr L.H.B Denuwara (Director, Nutrition Division), Dr Rasanjalee Hettiarachchi (Director, Nutrition Coordination Division), Dr Renuka Jayatissa (Head, Nutrition Department Medical Research Institute), Dr Rohan Karawita (Director, National Food Promotion Board), and Dr Renuka Silva (Senior Lecturer, Department of Applied Nutrition, Faculty of Livestock, Fisheries & Nutrition, Wayamba University of Sri Lanka), guided the organization and management of the workshop, under the overall support from Dr Lakshman Siyambalagoda (Additional Secretary, MoHr and Chair of the TAG). Dr Erandi Weerasekera (Medical Officer, Nutrition Division and Secretary to TAG) coordinated the workshop organization.

The TAG was supported by Ms. Anusara Singhkumarwong (International Nutrition Officer, WFP), Mr Saman Kalupahana (Nutrition Programme and Policy Officer, WFP), Ms Karen Codling (Executive Officer for Asia-Pacific, FFI) and Ms Becky Tsang (Technical Officer for Asia Pacific, FFI). Facilitators from FFI also presented the global update on food fortification. Dr Renuka Jayatissa in her capacity as an expert on the topic of food fortification also provided extensive support to lead the workshop discussions. Special acknowledgement goes to the late Dr Senarath Mahamithwa, who was the convener of the TAG and the key person in bringing the discussion on rice and wheat flour fortification to the forefront, until his passing in October 2016.

Panel members from MoH, Ministry of Agriculture (MoAg), University of Peradeniya, Rice Research Institute (RRI), and the Institute of Post-Harvest Technology of Sri Lanka (IPHT) shared their knowledge and expertise on the rice landscape in the country and factors to be considered when planning the scale up rice fortification programme. The session was facilitated by Dr Renuka Silva.

To facilitate regional knowledge sharing, participants from India, Ms Smita Makad (Head, Food Fortification Resource Centre (FFRC) India), Ms Ranjana Chopra (Commissioner-cum- Secretary, School & Mass Education Department, Government of Odisha, and India), Ms Shariqua Yunus (Nutrition Officer, WFP India) and Mr Rezaul Karim (WFP Bangladesh) attended the workshop. They presented evidence, current status, and challenges of rice fortification in their respective countries. Ms Katrien Ghoos (Senior Regional Nutrition Advisor, WFP Asia & Pacific Regional Office) also participated and presented the regional overview and progress on rice fortification. The panel on regional experience was moderated by Prof. Chandrani Liyanage (Nutrition consultant – FAO).

A special thanks goes to Mr M. I. M. Rafeek (Secretary, Ministry of National Policy and Economic Affairs), Mr Nalaka Kaluwewa (Senior Additional Secretary to the President), Dr Laxman Siyambalagoda, and Ms Brenda Barton (WFP Country Representative) for their inspiring speeches and support.

Introduction

This workshop was held to develop a national work plan to scale up food fortification, as recommended by the Ministry of Health's appointed TAG for food fortification. MoH, in partnership with WFP and FFI, hosted the two-day workshop in Colombo on 22 – 23 March 2017, bringing together over 100 participants, including leading policymakers, technical experts, industry representatives, and national and international partners (Annex 1). **Dr Rasanjalee Hettiarachchi (Director, Nutrition Coordination Division)** in her welcome remarks on both days of the workshop highlighted the opportunity of the workshop to explore how rice and wheat flour fortification can bridge Sri Lanka's micronutrient gap and reduce the high levels of micronutrient malnutrition currently prevalent within the country. She noted the importance of a multi-sectoral approach to scale up the effort to address the issue of micronutrient deficiencies (MNDs) in Sri Lanka.

MNDs is a substantial challenge for many countries in the developing world and has become the main risk factor for many diseases and constrained development, which in turn leads to decreased physical and cognitive performance and increased risk of morbidity and mortality amongst children. MNDs affect all age groups, but are particularly detrimental for young children and women of reproductive age because of high nutrient demands during growth and the prenatal period. The burden of MNDs is high in many developing countries. It has been estimated that iron-deficiency anaemia (IDA), vitamin A deficiency and iodine deficiency are jointly responsible for the loss of 45.5 million disability-adjusted life years (DALYs) worldwide.

Increasing the micronutrient density of food through fortification has a great potential to improve the daily intake of essential vitamins and minerals for the general population, thereby addressing widespread micronutrient deficiencies'. – Dr L. Syambalagoda

Despite several evidence-based interventions, Sri Lanka continues to face a substantial challenge in combating and controlling MNDs, particularly anaemia. It is largely prevalent among pregnant women, adolescent girls and young children.

In the opening session on the first day of the workshop (22 March), **Dr Lakshman Syambalagoda (Additional Secretary, MoH and Chair of the TAG)** highlighted the dire need for fortification of a number of appropriate food vehicles in Sri Lanka, due to the high prevalence of MNDs in the country. However, he noted that there remains significant resistance from various stakeholder groups towards food fortification due to several misconceptions, including the belief that fortified food can cause cancer, which has not been proved with sufficient scientific evidence. He emphasized the need to create a strong atmosphere of understanding towards the potential of food fortification and its safety prior to scaling up a food fortification programme in Sri Lanka.

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- Allen L, de Benoist B, Dary O, Hurrell R. Guidelines on food fortification with micronutrients. World Health Organization and Food and Agricultural Organization of the United Nations, 2006
 - World Health Organization. The World Health Report 2002: reducing risks, promoting healthy life: overview. Geneva: WHO, 2002 (WHO/WHR/02.1)
 - (MRI (2012). National nutrition and micronutrient survey MDG Report 2014

*‘To sustainably resolve the issues of malnutrition in Sri Lanka, a multi-sectoral commitment is required –
Ms. Brenda Barton*

Ms Brenda Barton (WFP Country Representative) on both days of the workshop emphasized the fact that undernutrition remains a critical issue in Sri Lanka, partly due to the increasing challenges on the food system from repeated natural disasters, which have led people to consume less nutritious meals. She noted that ‘Sri Lanka’s universal health care and free education policies over the last few decades have helped the country to achieve most of the related targets of the Millennium Development

Goals (MDGs). However, undernutrition, including MNDs, remains a setback in these achievements .

Mr M.I.M Rafeek (Secretary of the Ministry of National Policy and Economic affairs) in his speech on the second day recognized that malnutrition can interrupt human and economic development, and therefore, food fortification through a multi-sectoral approach has potential to help the country in achieving the Sustainable Development Goals (SDGs). Further **Mr Nalaka Kaluwewa (Senior Additional Secretary to the President)**, who was representing the National Nutrition Secretariat, noted the importance of ensuring the effort by all partners and that the appropriate implementation of the programme, and its monitoring, is indispensable.

*Developing a fortification work plan with the contribution of a cluster of ministries’ policy makers is essential.’
– Mr. M.I.M Rafeek*

It was noted by all the speakers that given the long-standing discussions within MoH and amongst other stakeholders regarding mandatory wheat flour fortification and an interest to introduce rice fortification as strategies to combat MNDs, it is timely to build upon the current momentum to progress the agenda for fortification in Sri Lanka.



Figure 1: Opening Remarks Day 1 (Right to Left):
Dr. Syambalago, Dr Rasanjalee, Ms. Barton, Dr. Denuwara, and Dr. Jayalal



Figure 2: Opening Remarks Day 1 (Right to Left):
Dr. Erandi, Ms Chopra, Mr Nalaka, Mr Rafeek, Dr Jayalal, Ms. Brenda and Dr. Denuwara

Day I

Session I: Status of Food Fortification in Sri Lanka

I.1: Guidelines and Required Standards of Fortification in Sri Lanka – Dr Lakshman Gamlath, Director- Environmental, Occupational Health, and Food Safety (ENOH) –MoH

Dr Gamlath introduced the concept of food fortification as the process of adding micronutrients to food. Food fortification should be considered as a part of the package, provided along with other forms of interventions, including encouraging dietary diversity and providing supplements. Fortification is a cost-effective strategy the government can employ to reduce MND deficiencies in the country. The common consumption of wheat, maize, and rice globally have made fortification of these staples an efficient strategy in improving micronutrient intake.

He noted that food fortification remains a strictly voluntary operation currently in Sri Lanka with edible salt as an exception. The food regulations of 1995 made salt a mandatory food fortification item to address issues of iodine deficiency disorder, including mental retardation, goitre, and cretinism. Salt in Sri Lanka must be iodized with a content of 15-30 mg/kg. The Food Labelling and Advertising Regulations of 2005 set up a legal framework for food fortification to operate (Figure 3) but with limited information on how ENOH will monitor and enforce activities.

I.2 Progress and Implementation of Food Fortification in Sri Lanka - Dr Renuka Jayatissa, Head, Nutrition Department Medical Research Institute (MRI)

Dr Jayatissa shared her knowledge and expertise on MNDs situation in Sri Lanka as well as the efforts towards making food fortification a public health strategy over the past decade. Findings from recent surveys highlighted a high pervasiveness of anaemia in Sri Lanka across all age groups (figure 4). The national nutrition and micronutrient survey in 2012 revealed that 15 percent of children aged 6-59 months suffered from anaemia; 52% of those cases attributed to iron deficiency.

In the recent nutrition survey (2015), 31.8 percent of pregnant and lactating (PLW) women were found to be anaemic. Anaemia is also found in 1 in 10 (11.7 percent) school children aged 6 – 12 years. The 2012 nutrition survey also recorded a 5.1% prevalence of zinc deficiency and a 47.6% calcium deficiency in children between 6-59 months. Iron, vitamin A, iodine, and zinc deficiencies have affected urban and rural regions alike. In addition, similar levels of MNDs exist in both poor and rich communities, demonstrating that the issue persists irrespective of economic status.

Figure 3: Legal Framework (Food labelling and advertising regulations 2005

Clause 07 – Subject to the approval of chief food authority on limits of fortification, no label or advertisement relating to any food shall indicate that it is a fortified food, unless any nutrient added to the food is not a natural constituent of the food.

Clause 06(b) – No label or advertisement relating to any food shall contain a statement or claim thereon, that such food is a sufficient source of one or more nutrient unless the quantity of such food that could reasonably be expected to be consumed in one day contains one third of the recommended daily dietary allowance of such nutrient.

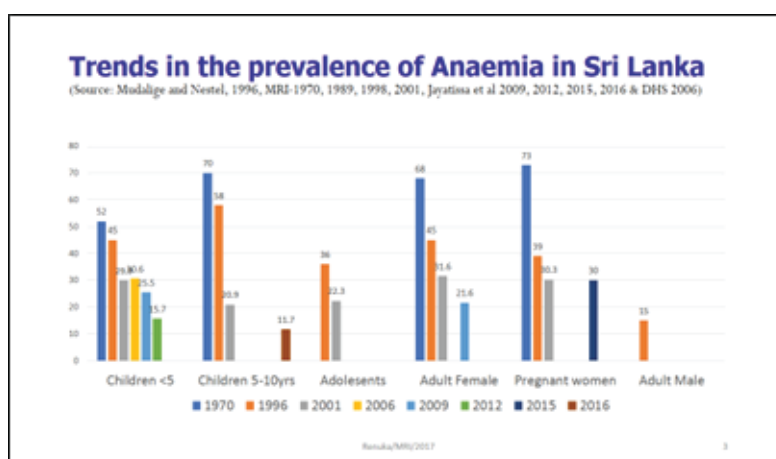


Figure 4: Trends in the prevalence of Anemia in Sri Lanka – (presentation by Dr. Renuka Jayatissa)



Figure 5: Dr Renuka Jayatissa presenting the progress and implementation of food fortification in Sri Lanka

In the recent nutrition survey (2015), 31.8 percent of pregnant and lactating (PLW) women were found to be anaemic and 19.1 iron deficient. Anaemia is also found in 1 in 10 (11.7 percent) school children aged 6 – 12 years . Survey data of vitamin A, iodine, and zinc deficiencies data are not available for pregnant and lactating women or school children populations.

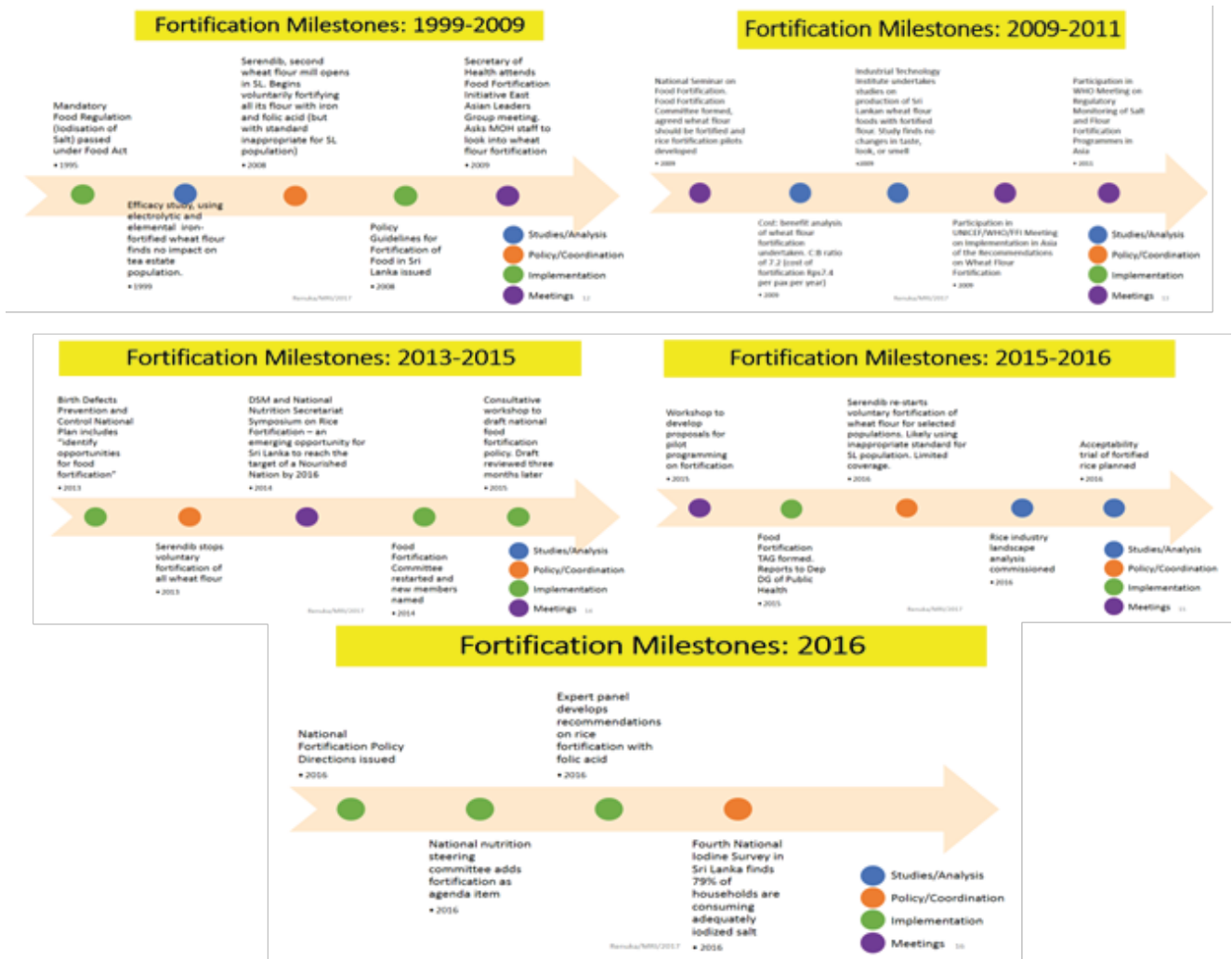
Past Strategies:

The government has tackled the higher prevalence of MNDs by implementing various interventions during the recent past, such as iron and folic acid supplementation to pre-pregnant women, pregnant and lactating women (PLW), vitamin A supplementation to children under 5 years of age and lactating women, targeted fortification of *Thriposha* (an extruded fortified blended food) provided to pregnant women and children aged 6-59 months who are underweight, distribution of deworming tablets to children under 5 years of age and PLW women, and universal salt iodization. Despite these multi-pronged efforts there has been stagnation in the reduction in the prevalence of MNDs. Making fortified staples such as rice and wheat flour available in the marketplace, in conjunction with targeted supplementation to vulnerable groups presents a more holistic strategy.

Since the early 1990s, several efforts were made to introduce food fortification in Sri Lanka starting with the mandatory food regulation for iodisation of salt passed under the Food Act (1995). Figure 6 outlines the timeline and actions involved in the discussion of food fortification in the country.

MRI (2015). National nutrition survey amongst Pregnant and Lactating Women in Sri Lanka. Ministry of Health
 MRI (2016). Preliminary findings of the national nutrition survey amongst primary school children. Ministry of Health
 MRI (2015). National nutrition survey amongst Pregnant and Lactating Women in Sri Lanka. Ministry of Health
 MRI (2016). Preliminary findings of the national nutrition survey amongst primary school children. Ministry of Health

Figure 6: Summary of food fortification milestones in Sri Lanka - 1999 – 2016 (presented by Dr Jayatissa)



In summary Dr. Jayatissa highlighted that limited action has ensued despite numerous meetings and discussions on the topic. This has occurred due to a lack of coordination between committees and a lack of clear guidelines. In addition, data gaps in the rice milling industry structure do not clarify whether fortification is feasible, halting progress on this particular issue. Finally, she also noted that a false perception persists that wheat flour fortification will promote wheat flour consumption. This is a false statement as there is no evidence for a change in consumption patterns since fortification was practiced.

She emphasized the need for a coherent and coordinated effort to ensure the implementation of actions required to move this agenda forward.

Session 2: Landscape of Rice and Wheat Flour Fortification

2.1: Wheat Flour Fortification in Sri Lanka – Dr Renuka Jayatissa, Head, Nutrition Department, MRI

As highlighted by Dr Jayatissa, although general per capita wheat flour consumption in Sri Lanka is low, individuals in urban areas are increasingly including wheat in their diet. Wheat flour consumption is also relatively high in the vulnerable estate population, making wheat an appropriate carrier for fortification. Wheat flour as a vehicle for fortification is also extremely feasible given the centralization of milling and distribution in Sri Lanka.

There are only two wheat mills in the country (Prima and Serendib), and one of them is already voluntarily fortifying some of its flour with iron and folic acid. Mandatory wheat flour fortification is feasible and regulations can be effectively implemented.

2.2: Overview of Rice Landscape in Sri Lanka – Ms Anusara Singhkumarwong, Nutrition Officer - WFP

Rice Fortification: Attractiveness

Rice fortification is, in principal, a highly effective health strategy. Fortifying rice with essential nutrients and minerals is an efficient method to improve a population’s micronutrient intake without instilling significant shifts in dietary habits. Fortifying food staples ensure improved micronutrient intake for vulnerable populations who do not have access to nutrient rich foods.

Ms Anusara Singhkumarwong in her presentation highlighted the attractiveness of rice as a vehicle of fortification in Sri Lanka. Market attractiveness for rice fortification is defined as the extent to which there is: adequate per capita rice consumption; widespread micronutrient deficiencies, creating an urgency to act; a supportive policy environment, and sufficient market size for fortified rice. The existence of government-sponsored or -managed social safety nets can provide a foundation for the growth of a large-scale market.

Sri Lanka is an attractive market space for fortified rice (figure 7). Firstly, the issue of micronutrients deficiencies, such as iron deficiency, is high on the government agenda. Overall, it is estimated that over 10 million people (50% of the total 20 million population) are at risk of anaemia as presented by Dr Jayatissa.

Rice is a staple food in Sri Lanka, with an average per capita consumption of 300 g/person/day, making up 42% of total caloric intake (2,536 kcal/capita/day) and providing 30% (20 g) of the total protein intake. Rice is the perfect vehicle for fortification because it is regularly eaten at predictable amounts, affordable, palatable, and culturally acceptable.

Although rice fortification cannot use the same technologies as wheat or maize flour fortification, the process for rice fortification does already exist, using extrusion technology. Rice fortification is a practical option to implement in mills whose production is larger than 5 MT/hour.

A supportive policy environment is essential for successful implementation of staple food fortification programmes. The National Nutrition Policy (2010) identified food fortification as one of the mechanisms to ensure micronutrients in the population’s diet. Food fortification is also not new in the country with salt fortification being mandatory and a targeted fortification



Figure 7: Availability of wheat flour in Sri Lanka - Presentation by Dr Renuka Jayatissa

| Market attractiveness: “how big is the prize?” – Sri Lanka is an attractive market space | |
|--|---|
| Area of study | Key findings |
| 1 Market size | <ul style="list-style-type: none"> • Big rice consumption country – 103 kg/capita/year • Geographical variation of anemia – ranging between 25 – 45%; and across life cycle • Big domestic market – annual output = 2.7 Million MT/Annum |
| 2 Social safety net | <ul style="list-style-type: none"> • Several programmes – School feeding, food package for mother, Samurdhi (for people living below poverty) • However, none involves centralized large scale rice distribution |
| 3 Relevant supportive policies | <ul style="list-style-type: none"> • Nutrition policy includes fortification; Policy directions for fortification in place • However, regulation around rice import/export exist |
| 4 Consumer awareness | <ul style="list-style-type: none"> • Most rice is purchase unbranded and from local mills • Urban vs rural preference and purchase mode • Limited knowledge (not just consumer but also high level) |

Figure 8: Summary of market attractiveness for rice fortification - Presentation by Ms Anusara Singhkumarwong

of Thripasha already in place. Nevertheless, availability of fortified food in the market is not well regulated and more work is needed to maximize the potential of food fortification in the country.

Mandatory fortification has the highest potential for coverage and public health benefits, while distributing fortified food through the national social safety nets allows the possibility to reach the most vulnerable groups. In Sri Lanka, several social safety net programmes exist but with the exception of the World Food Programme’s (WFP’s) supported school meal programme in the Northern Province, none of these social safety net programmes includes a direct food transfer (instead providing cash or vouchers).

Rice Fortification: Complexity

Sri Lanka needs to confront several complexities before it can establish a rice fortification programme.

Firstly, policy makers need to have access to more data on the number of rice mills and the proportions of rice they mill before pursuing a national rice fortification plan. Only commercial mills whose production exceeds 40 t/day are likely capable of fortifying rice. Information on the actual capability of small and medium scale mills in fortification is unknown. Such data is difficult to collect due to the fragmented nature of Sri Lanka’s supply chain, where there are over 7,000 registered mills. The large number of rice mills in Sri Lanka suggests mandatory fortification would be almost impossible to adequately monitor and enforce/regulate. It is estimated that twenty to thirty large mills cover about 30-35% (or more) of all the rice produced in the country, but the remaining rice milled by small- and medium-scale mills leaves a large (65% or more) gap in coverage. The majority of mills (> 5,000) are custom mills with the production capacity of about 0.5 MT/day. A public–private partnership of the government with leading mills could lead to fortified rice available in the market through voluntary fortification, but would likely require government support to millers in order to achieve large scale fortification.

Although some nine varieties of rice are consumed in Sri Lanka (figure 8), 75% of rice is consumed as white Nadu, white Kekulu or red Kekulu. If rice fortification was to be introduced into Sri Lanka with a public health objective, at least these three types of rice would need to be fortified, with appropriate looking fortified kernels.

Options of using social safety nets as a possible entry point need to be further explored. Given that none of the existing social programmes use rice as a part of their transfer modality – additional information on the supply chain of the various social safety net programmes will be required to identify suitable entry points for fortified rice.

Ms Anusara in her presentation noted that the rice market in Sri Lanka is highly regulated, with the government often controlling the amount of rice being imported through taxation to protect the domestic rice industry. For instance, as a result of drought and subsequent reduce rice production capacity in 2016 – 2017, the Sri Lanka’s Ministry of Finance reduced the country’s rice import tariffs (for Samba, Nadu and Red Kekulu varieties) from 70 LKR/KG to 5 LKR/KG in an attempt to incentivize Sri Lankan traders to import rice into Sri Lankan. The Government announced that it will maintain the new lower tariffs until the required 685,000 tonnes of rice are imported to meet national food needs.

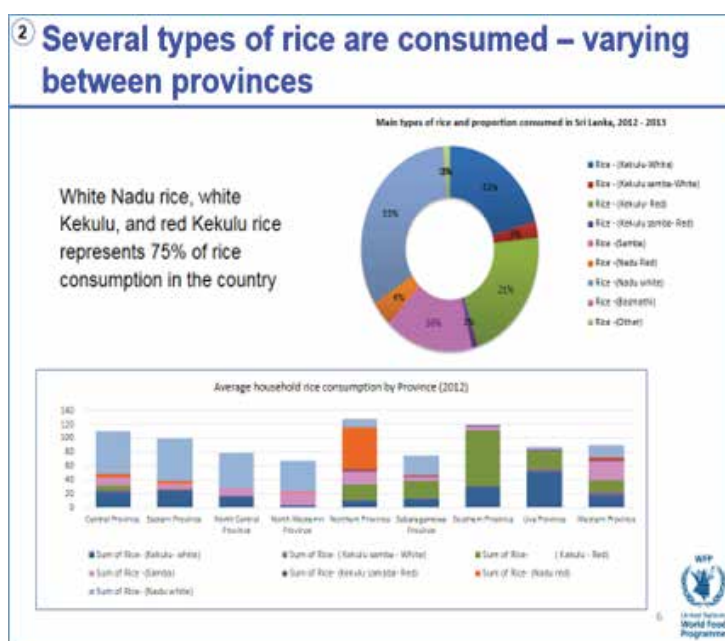


Figure 9: Types of rice consumed in Sri Lanka - presented by Ms Anusara Singhkumarwong (source: Department of Census and Statistic – Income and expenditure survey 2012/2013).

¹⁰ World Food Programme (2017). Sri Lanka Market Assessment Report – December 2017.

¹¹ Alavi, S, et al., (2008). Rice Fortification in Developing Countries: A Critical Review of the Technical and Economic Feasibility. USAID

¹²World Food Programme (2017). Sri Lanka Market Assessment Report – December 2017.

Rice imports are taxed to protect the local market, hence if a rice fortification programme was started, and if fortified kernels were imported (rather than being domestically made) they should be imported as supplements rather than rice which is subject to highly scrutinized import controls and taxes. A precedent already exists for this as micronutrient premix for the manufacture of Thripasha, a fortified blended food, has been imported as a supplement for several years.

Fortification of rice is expected to increase the net price of rice. The costs of blending fortified kernels into rice, transportation of fortified kernels, quality control for fortification etc. is expected to increase the price of rice by US\$ 1.09 – 2.18/ year (168 LKR – 327 LKR)/ year, for individual rice consumption of 300 g/day. However, the actual price increment is also subjected to the country context and additional cost of marketing in a voluntary fortification context would also need to be factored. In Sri Lanka, the market price of rice (such as white rice) has gradually been increasing from 58.9 LKR/KG in January 2012 to 81.2 LKR/KG in April 2017, representing an increase of 40 percent in the past 5 years. Further the rice price is subject to a seasonal fluctuation of between 10-15%. The cost of fortification will have to be added on to the current market price. There is a need to carry out further cost analyses to find the concrete cost increments from fortification, and further discussion on who could absorb the cost when needed.

Another large hurdle remains in public perception of fortified foods. Misconceptions exist that fortified foods contains chemicals. Consumer acceptance of fortified rice is imperative to the success of the programme and yet many still mistrust the fortification process. Therefore, it is very important that fortified foods retain the same texture, taste, and smell as non-fortified foods to appease the target population. Developing fortified rice should also keep in mind the preference for rice types, which differ from region to region.

2.3: Panel Discussion on Rice Landscape in Sri Lanka - Facilitated by Dr Renuka Silva

To further discuss the landscape for rice fortification in Sri Lanka, an expert panel included Prof. D.A.N. Dharmasena, University of Peradeniya; Dr Amitha. P. Benthota, Rice Research Institute - RRI; Prof. L.H.P. Gooneratne, University of Peradeniya; Mr. Mahesh Dissanayake – Institute of Post-Harvest Technology (IPHT); Dr Jaanaki Gooneratne – DPP Lanka; and Dr Lakshman Gamlath - Director- EnOH –MoH.

Dr Amitha P. Benthota (Director, RRI) confirmed the scale of rice market in Sri Lanka, with over 4.8 million MT paddy production in 2015, representing nearly 70% of all total cereals produced in Sri Lanka.

Sri Lanka is self-sufficient in terms of rice production, where she highlighted the increasing trends in rice production and declining need for imports.

Dr Jaanaki Gooneratne (DPP Lanka), highlighted the fact that there are several types of rice varieties being consumed in Sri Lanka. However only 25% of the rice being consumed are of red varieties, while the rest are white varieties. This shows that there is not much of a need to produce kernels that need to be mixed with red rice. It may be sufficient to produce fortified kernels with off-white colour and medium size to meet the ranges of the white requirements.

Mr. Mahesh Dissanayake (Institute of Post-Harvest Technology) presented on the status of the rice milling industry. He advised that only commercial mills (semi modern, modern and extra modern) are capable of fortification. He also explained that about 20 leading mills in Sri Lanka have the production capacity of about 50 MT/day, and around 200 large mills have capacity of between 20 – 50 MT/day.

| No | Type of Mill | Day Capacity/MT | Mills available | Total capacity |
|--------------------------|--------------|-----------------|-------------------|----------------|
| 01 | Small scale | 5-10 | 1000 | 7500 |
| 02 | Medium scale | 10-20 | 400 | 6000 |
| 03 | Large scale | 20-50 | 200 | 7000 |
| 04 | Leading | Over 50 | 20 | 2000 |
| 05 | Custom mills | 0.4 | 5500 | 2200 |
| Milling Capacity per Day | | | 24700 MT of paddy | |

Figure 10: Rice milling capacity in Sri Lanka - taken from the presentation of Mr. Mahesh Dissanayake – Institute of Post-Harvest Technology

Discussion ensued on whether the increased price of fortified rice would prove too detrimental to rice fortification as a comprehensive public health strategy. **Professor L.H.P. Gunaratne (Professor of Agriculture, University of Peradeniya)** highlighted that normal rice prices already have a high price fluctuation regardless of any value addition. Therefore, the cost of fortification could then be hidden in the normal price fluctuation trends.

¹³World Food Programme (2017). Sri Lanka Market Assessment Report – December 2017.

¹⁴Alavi, S, et al., (2008). Rice Fortification in Developing Countries: A Critical Review of the Technical and Economic Feasibility. USAID

¹⁵World Food Programme (2017). Sri Lanka Market Assessment Report – December 2017.

Professor Nimal Dharmasena (Professor in Postharvest Engineering & Technology, University of Peradeniya), an expert on the rice industry, noted that out of the 4.8 million MT of paddy rice produced in Sri Lanka, about 0.36 million MT are produced for own consumption by about 1.8 million rice farmers who make up about 17% of the population. Approximately 220 millers in the country are responsible for about 55% of the total production. However, 12% of the mills are not in operation at a given time within the year, and especially small and medium mills do not operate throughout the year. While 93% of rice is commercially sold, fortification is unlikely feasible in the small- medium-scale mills. Fortification should be implemented with large mills that are capable of producing quality fortified rice with appropriate quality control/assurance practices.

In summary, the presentation by Anusara and panel discussion highlighted that rice fortification is an attractive solution for Sri Lanka given the widespread prevalence of anaemia, high level of government commitment to address the issue, considerable number of mills with capacity to blend the rice, and rice being the main staple food.

However, it was noted that to successfully scale up the effort, significant hurdles must be overcome – further understanding of the rice supply chain is needed, misconception amongst various stakeholders including consumers must be addressed, social safety net system will have to be explored further to identify the best way to introduce fortified rice to people that need them, and public-private partnership will need to be established.

Session 3: Global and Regional Experience

3.1 Global Experience – Ms Becky Tsang, Technical Officer-Asia Region, FFI



Figure 11: Panel members (right to left - Ms Becky, Ms. Katrien, Ms. Smita, Ms Chopra, and Mr. Rezaul)

An overview on the current status and lessons learned of global wheat flour and rice fortification programmes was presented by **Ms Becky Tsang** of the Food Fortification Initiative. It was noted that mandatory fortification is far more effective in addressing MNDs. It does so by equalizing the costs for millers as well as equalizing access to fortified foods by providing coverage to disadvantaged communities. Mandatory fortification ensures universal standards for fortification including optimal nutrient levels are in place. It also has the added benefit that it does not require consumers to change their dietary behaviour.

Conversely, **voluntary fortification**, where processors have the choice on whether to fortify food or not, has not been successful in improving public health. Voluntary fortification prompts minimal coverage because low-income populations are not willing to

incur the extra costs of purchasing fortified foods. Higher-income populations who tend to purchase fortified foods are less likely to have MNDs.

Ms Tsang also highlighted that mandatory cereal fortification legislation has been passed in 86 countries, all of which, except one, include wheat flour in their legislation. Ninety-four percent of those countries include both folic acid and iron in their standards. On the other hand, the only countries that mandate rice fortification are Costa Rica, the Philippines, Papua New Guinea, Nicaragua, Panama, and the United States. There are far fewer countries with legislation for rice fortification and that is due to it being a new technology, and because many countries that consume rice have fragmented milling supply chains. (Annex). However, there are a lot of smaller programmes or pilot projects on rice fortification to test feasibility or acceptability and here are also a few countries where fortified rice is available in the marketplace on a voluntary basis, although coverage of fortified rice in these countries is not very high (figure 12).

It was noted, based on the experience of more than 80 years (since the 1940s in the United States) on fortification of cereal grains, one of the key lessons learned is around its safety. **None of the countries with mandatory fortification recorded issues regarding toxicity in the products.** Countries have found that it is safe for pregnant women to consume supplements as well as fortified food due to their higher nutrient demands. For example, pregnant women already have greater folic acid needs compared to the general population and other women who are at higher risk for birth defects are already recommended folic acid amounts that are five times the levels in supplements. Countries such as the United States and Australia have fortified their foods for a long time and have not found any negative long-term effects. In particular, in relation to concerns over toxicity or safety of folic acid fortification, several countries concluded that fortification with folic acid was indeed safe.

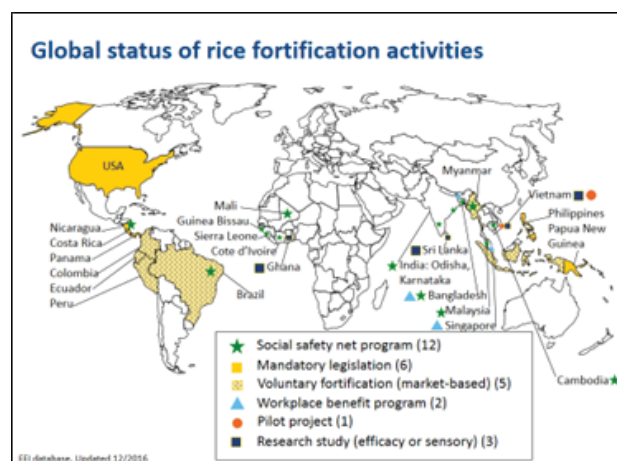


Figure 12: Global Status of Rice Fortification – Presentation by Ms. Becky Tsang

Ms Tsang also noted that **setting standards in mandatory fortification** is an important step; based on experience in Asia, it was found that it is important to set correct, effective standards from the beginning. To help countries with setting standards, the World Health Organization (WHO) published recommendations for the fortification of wheat flour and maize flour in 2009. A WHO/Food and Agriculture Organization (FAO) guideline from 2006 is also available and provides broader guidelines on monitoring and evaluation, nutrient compounds, and other fortification programme details. Currently, the WHO is working on rice fortification guidelines, which are due to be released soon.

Another advantage of food fortification is its **affordability**. Based on information collected from the fortificant providers and millers, the estimated cost is 3 USD (450 LKR) to fortify one MT of wheat flour. This is equal to an average person paying approximately 2 LKR for 50 grams of wheat per day. For rice, the cost is higher – approximately 20 USD/MT (3,000 LKR), but this equals to an average of less than 1 LKR per day. However, the return on investment is significant. The Copenhagen Consensus in 2008 reported that adding iron in a fortification programme provided a median cost benefit ratio of 1:8.7 across ten countries. Iron provides economic benefits in the form of improved adult productivity and improved child cognition.

Sustained political will is required to ensure success in a food fortification programme. A government’s commitment is vital as implementation requires long term monitoring and coordination. The survival of the programme will depend on the political will to defend it. Nonetheless, participation from the private sector is needed to ensure sustainability by making the programme non-reliant on government funding. If there has been a commitment from the government to pursue mandatory fortification, there needs to be sustained political will and strong, long-term fortification campaigns. Any legislative or regulatory actions take a long time to pass due to the lengthy administrative process. Furthermore, there will always be people who will have negative things to say about fortification. But it takes a strong government backing with strong technical officers that are willing to keep progressing the fortification agenda and counter those arguments with global evidence.

3.2 Regional Experience – Ms Katrien Ghoo - Senior Regional Nutrition Advisor, WFP Asia & Pacific Regional Office

Ms Katrien Ghoo shared her experience on rice fortification within the Asia region. Analysis on past rice fortification experience in South and South East Asia identified seven components that aid its implementation (figure 13):

1. **Commitment:** Commitment from decision makers and industry partners to implement or explore the possibility of rice fortification as a strategy to address widespread micronutrient deficiencies. This component is essential and is a pre-requisite for making rice fortification a reality. Several countries in the region, including Bhutan, Cambodia, Lao PDR, Myanmar, Nepal, and Timor-Leste, have included rice fortification in their national policies and strategies, displaying high level of commitment and interest.
2. **Policy and regulations:** A policy and regulatory environment that is supportive of large-scale fortification is crucial to achieve a positive impact through the intervention strategy, ensuring the existence of a fair trade and business environment. This process and stage varies from country to country in the region. For instance in Bhutan and Myanmar, rice fortification standards are in draft.
3. **Production:** Functional and cost-effective supply chains for fortified kernels and fortified rice are an essential driver for scaling up rice fortification. Myanmar has selected two varieties of rice to be fortified, and fortified kernel production capacity is now in place.
4. **Market development and distribution:** The identification and operationalization of fortified rice distribution channels (e.g. social safety nets, commercial market) to reach groups who can most benefit from rice fortification is the key to provide necessary incentives for production and supply. In Bhutan, the government school feeding programme is being used as a delivery channel; in Myanmar fortified rice was commercially launched in March 2016 and it is also distributed through a nutrition programme for HIV patients.

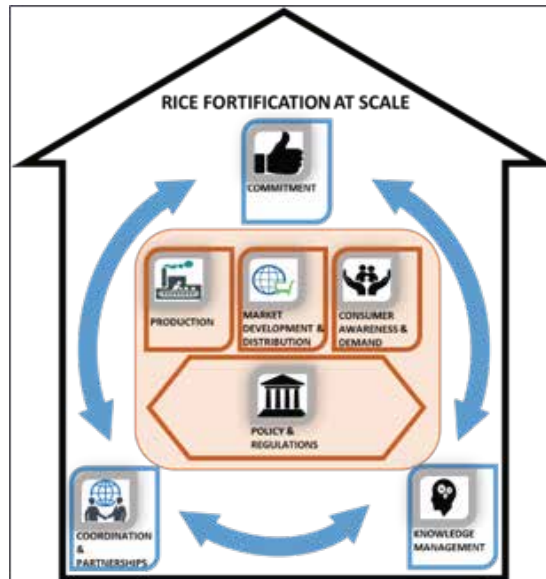


Figure 13: Framework for scaling up rice fortification – Presentation by Katrien Ghoo

¹⁶ UK: SACN folate and disease prevention report 2006; Australia: Consideration of Mandatory Fortification with FA - Final assessment report Oct 2006; Netherlands HCN_2008; EFSA: EFSA Report on Risks and Benefits of Fortification of Food with FA. October 2009; Ireland: Report of the Implementation Group on Folic Acid Food Fortification to the Department of Health and Children, Ireland 2008; NZ: Scientific evaluation of comments on submissions received on the future of folic acid for fortification in New Zealand- July 2012; Most recently, Australia published the health impact monitoring results from adding folic acid and iodine. These are the first results since their fortification program began in 2009. Their results showed significant reductions in serious birth defects in the population and updated systematic reviews confirming that fortification is safe.

5. **Consumer awareness/demand:** Consumer awareness and demand is essential for voluntary fortification, so that the target population understands the nutrition benefits of fortified foods and demands fortified rice, as well as to mitigate the risk of misconceptions that can surface when fortification programmes are introduced. In Myanmar, the Consumer Union is involved in raising awareness.
6. **Knowledge management:** The documentation and sharing of evidence and programmatic experiences of rice fortification strategies in different contexts will be essential to expedite progress. It was noted that this needs to be strengthened as there is limited information available.
7. **Coordination and partnership:** Multi-sectoral coordination and public-private partnerships are necessary to enable the implementation and scale up of rice fortification programmes.

It was highlighted by Ms Katrien that not all the components are needed, and this depends primarily on the country context. For instance, in the initial phase - commitment, coordination and partnerships, market development and distribution, delivery option and policies (strategy) are required; in the intermediate phase - policies, regulatory mechanisms and production (blending) are needed; and in the scale up phase, production of fortified kernels) and consumer awareness (under voluntary programmes) are essential.

These components also affect and determine the cost of rice fortification. The series of core cost components specifically related to making fortified rice available at different steps depends very heavily on the existing rice supply chain. Location, rice prices, energy prices, cost of capital, transport costs, etc. all have their impact and are very context specific. As such, it is *not possible to provide one conclusive cost figure that can be applied globally or in Asia*. It is highly likely and expected that the costs involved in rice fortification will decrease substantially when large-scale production is reached creating economies of scale and when competitive markets are created.

3.3 Lessons from India – Ms Smita Makad – Head, Food Fortification Resource Centre and Ms Ranjana Chopra - Commissioner-cum- Secretary, School & Mass Education Department, India

Experience from India at the national level was shared by Ms Smita Makad. She noted that despite several public health interventions to address iodine deficiency, vitamin A deficiency, and anaemia, India still suffers from a ‘triple burden of malnutrition’ with high levels of under-nutrition, micronutrient malnutrition, and over-nutrition. The Indian government has focused its public health interventions on the promotion of dietary diversity, micronutrients supplements, and food fortification. Food fortification is considered to be effective since it is a sustainable and cost-effective solution. In India, fortification is widely accepted because it does not change the taste, odour, colour, or texture of the food. It is especially **effective because it is a preventative measure**.

The Food Safety and Standards Authority India (FSSAI) is responsible for leading food fortification efforts in India. FSSAI has created a dedicated FFRC as a ‘resource hub’ in partnership with several stakeholders to build consensus, engage all stakeholders, and share innovations on food fortification; to foster knowledge on food standards and food safety, technology and processes, premix and equipment procurement, quality assurance and control; to build the capacity for strengthening ‘Regulatory Monitoring’; to provide evidence-based policy recommendations for scaling up staple foods fortification in the public funded programmes like the Public Distribution System, Integrated Child Development Service and Midday Meal Scheme (MDMS); and to promote awareness on good nutrition, fortification, and creating markets for fortified foods.

An online portal for knowledge dissemination, coordination and collaboration has also been set up. FSSAI has also established fortification standards for five staple foods including wheat flour, rice, oil, milk, and salt. **In order to engage private sector and to endorse fortified food that comply with standards, a logo was launched**. The multi-stakeholder platform was influential in ensuring the programme’s success. Since food fortification is still voluntary in India, it was important to facilitate and nudge those in the food industry to adopt food fortification. To make food fortification possible, a two-pronged strategy is used: 1) by **identifying the high impact lever** – food business and states to induce supply, and the government’s nutrition programme and open market to create demand; 2) **start on getting traction** with the top 10 states first, then scale up to expand the programme. For instance, rice fortification is currently being implemented in two states in India, Karnataka and Odisha (figure 14). However, there’s increasing interest from other states such as New Delhi and Tamil Nadu.

¹⁷costing Rs 4.58/ child per meal (exclusive of cost of rice for 100gm per child/ meal)

¹⁸costing Rs 6.83/ child per meal (exclusive of cost of rice for 150gm/ child/ meal)

The case of rice fortification in Odisha was shared by *Ms Ranjana Chopra*. Rice Fortification is being implemented through the MDMS, a national school meal programme targeted at school going children of Primary (class I-V) and Upper Primary (Class VI-VIII) and National Child Labour Project Schools (Government., Government-aided, local body, Madrasa & National Child Labour Project Schools). The programmes in Odisha reaches 3.25 million primary school children and 1.67 million upper primary school children. More than 70 percent of children in the school age group are anaemic in Odisha. A study found gaps of about 50-70 percent between the intake and recommended dietary allowances for micronutrients in school age children. Rice is the preferred staple in State and the process of milling and polishing of rice removes the micronutrient rich bran layers, about 75-90% of vitamin B1, vitamin B6, vitamin E and niacin.

| Fortification | OIL | MILK | SALT | WHEAT | RICE |
|----------------|-----|------|------|-------|------|
| A&N Islands | | | | √ | |
| Andhra Pradesh | √ | | | | |
| Bihar | | | | | |
| Chattisgarh | | | √ | | |
| Goa | √ | √ | | | |
| Gujarat | √ | | √ | √ | |
| Haryana | √ | √ | | √ | |
| Karnataka | √ | √ | √ | | √ |
| Kerala | | | | √ | |
| Madhya Pradesh | √ | | | √ | |
| Maharashtra | √ | | | | |
| Odisha | | | | √ | √ |
| Punjab | | | | √ | |
| Rajasthan | √ | √ | √ | √ | |
| Tamil Nadu | √ | | √ | | |
| Tripura | | | √ | | |
| Uttar Pradesh | √ | | √ | √ | |
| Uttarakhand | | | √ | | |
| West Bengal | | √ | | √ | |

Figure 14: Status of food fortification in Indian States- Presentation by Ms Smita Makad

In the MDMS in Odisha, a rice-based hot cooked meal is provided to 6-14 year old children attending school and is consumed in adequate quantities - 100 grams per child per day by the primary school children and 150 grams per child per day by the upper primary school children. The State decided to pilot rice fortification in the MDMS programme for a period of 2 years and 9 months, starting from December 2012 to October 2015 with the support of WFP, targeting 99,231 children in 1,473 schools in Gajapati district. Rice is fortified with 10 mg of iron per 100 g and in total 5,352 MT of rice was fortified and distributed to schools for consumption. As a part of the pilot programme, an impact evaluation using a quasi-experimental design was carried out. **The evaluation found a reduction in overall prevalence of anaemia** in Gajapati from **65% to 45%**. Of the **total reduction in the prevalence of anaemia**, a **6% reduction** was attributable to consumption of fortified rice in the school meals in Gajapati. No acceptability issues with regard to consumption of fortified rice were reported. Due to the success of the programme, a replicable model was developed to mainstream fortification of the rice provided in the MDMS. The Gajapati project has initiated policy level discussions at the national level on rice fortification as well as generated interest on rice fortification amongst other states. Currently, rice fortification is being scaled up to 14 tribal districts in Odisha.

3.4 Bangladesh – Mr. Rezaul Kareem - Programme Policy Officer, WFP

Following the experience from India, Mr. Rezaul Kareem presented the Bangladesh experience and on-going effort. It was highlighted that Bangladesh suffers from high rates of MNDs, particularly anaemia. Data found that approximately 67% of women in Bangladesh consumed inadequate amounts of micro and macronutrients. The Bangladeshi government's strategy to combat these trends has been a combination of food supplementation, food fortification and dietary diversification. Rice is considered one of the most preferred vehicles for fortification given the high level of national average per capita consumption (416 g/person/day). In order to scale rice fortification in Bangladesh, the country is working towards six outcomes simultaneously: 1) Fortified rice mainstreamed in government social safety net programmes (SSNs); 2) Fortified rice integrated into WFP assisted programmes; 3) Fortified rice introduced under garment factories' corporate social responsibility (CSR) programmes; 4) Market demand for fortified rice is strengthened; 5) Blending capacity for fortified rice is established; and 6) Production of fortified kernels is established.

As an initial step, a multi-stakeholder system was set up (figure 15). The Bangladeshi government, via various expert ministries, led coordination efforts to plan guidelines and to set up necessary training. Standards for rice fortification, which were essential to assist private sector companies in marketing fortified rice, was adopted based on a series of consultations between government agencies, research agencies, nutrition working groups, consumer associations, etc. To facilitate production of fortified rice, a locally designed blending unit was developed at a low-cost (USD 10,000) making it affordable to local traders/millers. This was followed by local production of fortified rice kernels, with an investment by private partners to install extruders (USD 100,000 initial investment) to produce 30 MT/month. Currently another unit is being established to increase the production capacity. To expand the rice fortification programme the government has allocated funding for its social protection programme; a framework of agreement to contract private millers for blending is being set up; provision of fortified rice to garment workers through CSR is being supported; and monitoring oversight of internal and external quality control systems will be improved. Some of the challenges faced include increment in cost, 3- 5% of the cost of normal rice, marketing of product for the poor in remote areas, and quality assurance practices need to be in place.



Figure 15: Multi-stakeholder platform in Bangladesh - Presentation by Mr Rezaul Karim

Summary of global and regional experience include:

- Mandatory fortification is far more effective than voluntary fortification in addressing MNDs but also depends on robust regulatory monitoring of compliance
- No countries with mandatory fortification, including folic acid fortification, recorded issues regarding toxicity of the products
- Setting standards in mandatory fortification is essential and should be done right from the beginning.
- Sustained political will is required to ensure success in a food fortification programs.
- Fortification, particularly mandatory fortification, is affordable, and has a high cost benefit ratio.
- To ensure effective programme implementation, seven factors need to be considered: commitment, policy and regulation, production, market development and distribution, consumer awareness and demand, knowledge management, and coordination and partnership
- Multi-stakeholder collaboration and communication facilitates the success of fortification programmes
- Fair and consistent regulatory monitoring and enforcement of national standards by the government creates a fair and safe environment for the private sector to effectively fortify
- India experience found a reduction in overall prevalence of anemia through a rice fortification school feeding pilot
- No acceptability issues with regard to consumption of fortified rice were reported
- Challenges to rice fortification include fragmented rice milling industry, increment in cost of fortified product, marketing of product for the poor in remote areas, and quality assurance

Session 4: Working Groups - Next Steps for Rice and Wheat Flour Fortification in Sri Lanka

Following the speakers' presentations, participants of the workshop were asked to develop detailed action plans that would facilitate the implementation of food fortification in Sri Lanka. Participants were divided into three groups (annex 4) and assigned a focus of either wheat flour or rice fortification. Two groups worked on rice flour and one group worked on wheat flour. The group work aimed to compile a list of future policy recommendations.



Figure 16: Group discussion

questionnaire. **Group A and Group B, selected Social Safety Net and Voluntary Fortification respectively for rice fortification, while Group C selected Mandatory Fortification for wheat flour.** This is based on extensive deliberations using the data provided through the previous session, and factsheets (also in annex).

Phase 2: Agreement on programme components necessary for selected delivery option. Based on the chosen delivery option, participants were then asked to compile a list of programme components needed to implement that delivery option. Possible programme components included whether it was necessary to have a legal requirement or standard for fortification or funding for promotion of the fortified food.

Phase 3: Identification of necessary actions for implementation of selected delivery option, by programme component. In this phase, participants had to outline an action plan to implement all of the programme components selected in phase 2. Participants were provided with a worksheet with questions to guide them into possible actions. They then recorded all significant actions in a PPT template provided, including indicating the stakeholder responsible. Findings from the group work were presented on Day 2 of the workshop. Details of the group work outcome is provided in the following section – Fortification Workplan.

The group work operated in three phases:

Phase 1: Identification of an appropriate delivery option. First all the groups had to pick the most appropriate delivery option – (i) mandatory fortification, (ii) fortification of food in social safety nets or (iii) voluntary fortification for a respective food vehicle (wheat flour or rice). Participants chose the most appropriate delivery option for Sri Lanka based on their answers to a questionnaire (example of rice questionnaire provided in annex 5.1). Attached to the questionnaire was an interpretation sheet to aid the participants in comprehending the results of their



Day 2

Session 5: Draft Policy Directions for Fortification in Sri Lanka – Dr L.H.B Denuwara, Director Nutrition Division

Food fortification as a public health strategy aims to improve micronutrient intake and contribute to prevention of micronutrient deficiencies in Sri Lanka. In order to do so, one must identify a suitable vehicle for fortification, provide necessary technical support for fortification and implement a monitoring and evaluation strategy for the programme. **Dr L. B. H Denuwara** suggested a policy direction that Sri Lanka can take in order to achieve its aims.

The first step is to identify which foods to fortify and which nutrients to be added to fortified food. According to the policy direction presented by Dr Denuwara, the government should prioritize the addition of iron and folic acid. Vitamin D and calcium should be considered but are not urgent. Dr Denuwara identified rice as the best vehicle of fortification, but also considered wheat as a viable vehicle of fortification. Fortified food needs to comply with the standards laid out in figure 17.

Dr Denuwara revealed that the Government of Sri Lanka already recognizes fortification as a national strategy in preventing MNDs, facilitating the inclusion of rice and wheat flour fortification in the strategy. The Fortification Policy Directions (2017 – to be published), which provides the framework for food fortification within the broader framework of the national nutrition policy, as developed by MoH should be implemented in all fortification programmes.

He also laid out certain factors to consider when formulating an action plan. Efforts will need to be taken to obtain tariff concessions and duty waivers in order to market fortified foods at an affordable price. It is important that fortified foods remain accessible to the target population.

In the past, countries with successfully implemented rice fortification programmes set up a multi-stakeholder strategy. Sri Lanka should set up a system where governmental agencies, academia, NGOs and the private sector all assist in the process. The government should facilitate cooperation between the different groups.

Industrial Standards

- Micronutrient concentration needs to remain stable during storage, transport and display at sales outlets for a stipulated period
- Fortified food will need to be acceptable to the consumer in appearance, taste, and smell
- The fortified product will need to comply with all the provisions of the Food Act

Figure 17: Industrial Standard - excerpt from the Food Fortification Policy Direction (2017) - to be published

Session 6: Recommendations and way forward policy discussion – Dr Renuka Jayatissa, MRI

Key recommendations and conclusions from the workshop were presented by Dr Renuka Jayatissa, which also formulated an action plan of next steps for the Sri Lankan government to follow.

Throughout the discussions during the workshop participants agreed to propose to MoH and other relevant ministries to pursue rice fortification on a voluntary basis, and within existing social safety nets programmes such as the School Meal Programme. It was agreed that although rice is the key staple of Sri Lanka, existing milling infrastructure may not permit mandatory fortification to occur in the near future. Around 2,000 commercial mills exist in Sri Lanka but only an estimated 30% of rice is produced in large mills. It is not feasible at this moment to enforce fortification nationwide due to insufficient information on the abilities of all the rice mills in Sri Lanka to effectively and safely fortify. However, social safety nets may provide an initial opportunity to reach vulnerable groups with fortified rice. Supply chains for social safety nets will need to be examined to identify and make use of opportunities for incorporating rice fortification. In the meantime, the Sri Lankan government should also encourage the private sector to voluntarily fortify rice and create a marketplace favourable to fortified food that will at least reach educated consumers.

| Prevalence of anaemia and the estimated number affected among school children, pregnant women and non-pregnant women in Sri Lanka | | | |
|---|----------------|------------------------|---|
| Population groups | Prevalence (%) | Estimated No. affected | Degree of severity of public health problem |
| Preschool children (2012) | 16.7 | 298,100 | Mild (5-19.9%) |
| Primary school children (2016) | 11.7 | 245,700 | Mild (5-19.9%) |
| Adolescents (2006) | 24.4 | 1,024,000 | Moderate (20-39.9%) |
| Non-pregnant women (2009) | 22.2 | 932,400 | Moderate (20-39.9%) |
| Pregnant women (2015) | 30.0 | 105,000 | Moderate (20-39.9%) |
| Adult men (1996) | 16.0 | 672,000 | Mild (5-19.9%) |
| Overall | | 3,277,200 | |

Figure 18: Summary of prevalence of anemia and severity of the problem in Sri Lanka – Presentation by Dr. Renuka Jayatissa

Wheat flour on the other hand should be fortified on mandatory basis. Although wheat flour is not consumed in the same amounts as rice, trends show that consumption is increasing among urban and estate communities. The supply chain of wheat flour is well known, and because there are only 2 mills in the country it is feasible to fortify all wheat flour in Sri Lanka and control and regulate the fortification process to achieve required standards.

Future policy will need to consider measures to prevent increases in cost due to fortification. The success of fortified food rests on its affordability. This is especially the case since vulnerable populations tend to be of lower socio-economic backgrounds. Efforts should thus be taken to obtain tariff concessions and duty waivers for items such as vitamin and mineral premix and to encourage competition to lower the price for the benefit of the target population.

It is also important to educate consumers and expel myths on fortified food. The target population will refrain from purchasing and consuming fortified products if they continue to believe that fortified food is toxic. A public education campaign disseminating accurate knowledge on the topic will need to accompany mandatory fortification efforts. Based on the feedback from private sector (millers) that attended the session, one of the key requests is that even though they are willing to invest in the technology, support from the government to raise awareness of the public will be needed.

It was also agreed that a detailed summary of next steps, laid out in the table below with responsible agencies noted in brackets, will be articulated in this workshop report and presented to the Government for consensus and approval. In order to finalize this process, the following review will be undertaken.

1. **Wrap up policy discussion:** The work plan that has resulted from the discussion will be presented in this report to the Nutrition Steering Committee of the Ministry of Health for feedback and confirmation.
2. **Submission of workshop report and memo to the cabinet:** The workshop report and memo will then be submitted to the Cabinet to gain Government approval on the way forward for food fortification.
3. **Endorsement of the work plan:** Each ministry of government will need to be coordinated by the Technical Advisory Group to carry out appropriate tasks with a degree of accountability and responsibility for each of the tasks assigned. The private sector will also be informed about the initiative and requested actions for their involvement.

Further detail of steps for ways forward on the fortification of wheat, rice and inclusion in the social safety net programme are explained in the following table.

| | Mandatory Wheat Flour Fortification | Social Safety Net Rice Initially through Mid-Day Meal | Voluntary Rice Fortification |
|----------------------|--|---|---|
| Policy/ Directive | <ul style="list-style-type: none"> • Include in National Nutrition Policy [<i>Nutrition Division of MOH</i>] • Include in Multisectoral Nutrition Action Plan [<i>Presidential Nutrition Secretariat</i>] • Request tax exemption for premix from Ministry of Finance similar to Thripasha [<i>MOH</i>] • Set max retail price for fortified flour [<i>Consumer Affairs Authority</i>] | | |
| Legal Requirement | <ul style="list-style-type: none"> • Develop Regulation for mandatory wheat flour fortification under Food Act [<i>Food Advisory Committee</i>] • Gazette regulation [<i>MOH- Minister</i>] | <ul style="list-style-type: none"> • Depending on the SSN identified, develop Cabinet Paper for rice fortification in the SSN [<i>Presidential Secretariat and the relevant Ministry in charge of the SSN</i>] | <ul style="list-style-type: none"> • Develop policy guidelines [<i>MOH</i>] • Approval of policy guidelines [<i>Min of Policy and Planning</i>] • Send policy guidelines to Cabinet for final approval [<i>Min of Policy and Planning</i>] |

| | | | |
|----------------------------------|---|--|---|
| <p>Standard</p> | <ul style="list-style-type: none"> • Develop standards for fortified wheat flour (draft, consultation, endorsement) – following procedure for setting standards <i>[Food Advisory Committee and Sri Lanka Standards Institute]</i> <p>NB. Reference findings of Expert Group on Folic Acid Fortification of Rice and WHO recommendations for Wheat and Maize Flour Fortification</p> <ul style="list-style-type: none"> • Develop standard for fortificant premix, including stability of iron – following procedure for setting standards <i>[Food Advisory Committee and Sri Lanka Standards Institution]</i> | <ul style="list-style-type: none"> • Develop standard for fortified rice <i>[Food advisory committee and Sri Lanka Standard Institute]</i> <p>NB. Reference findings of Expert Group on Folic Acid Fortification of Rice and existing guidelines for rice fortification</p> | <ul style="list-style-type: none"> • Develop standard for fortified rice <i>[Food advisory committee and Sri Lanka Standard Institute]</i> |
| <p>Funding for fortification</p> | | <ul style="list-style-type: none"> • Estimate budget needs for fortification of SSN rice and request budget from Treasury <p><i>[Relevant Ministry in charge of SSN]</i></p> <ul style="list-style-type: none"> • Request to WFP to fund fortification in identified social safety net programme <i>[Relevant Ministry in charge of SSN]</i> | <ul style="list-style-type: none"> • Private sector makes the decisions regarding fortification financing <i>[Private sector]</i> |
| <p>Funding for promotion</p> | <p>Fortified wheat flour and wheat flour foods should not be promoted but consumers should be aware of what and why fortification will take place. Thus:</p> <ul style="list-style-type: none"> • Public awareness campaign when Regulation is passed <i>[Consumer Affairs Authority, and Health Education Bureau, Nutrition Division & Nutrition Coordination Division of MOH]</i> | | <ul style="list-style-type: none"> • Request National Nutrition Secretariat to fund social marketing of voluntarily fortified food <i>[MOH]</i> • Advocate with private sector to voluntarily fortify food <i>[MOH]</i> • Request budget for advocacy with private sector from Treasury <i>[MOH]</i> <p>In the long term, private sector expected to bear the cost of any necessary promotion activities</p> |
| <p>Enforcement</p> | <ul style="list-style-type: none"> • Set food inspection guidelines, and sampling protocols <i>[Food Control Administration Unit, ENOH, MOH]</i> • Ensure accredited labs have protocols and equipment <i>[Govt Analysis Dept, Mo Justice]</i> | <ul style="list-style-type: none"> • Enforce fortification standard (inspection) <i>[Relevant ministry in charge of SSN]</i> | <ul style="list-style-type: none"> • Enforce fortification standard for domestically produced and imported fortified rice (inspection) <i>[Food Control Administration Unit, ENOH]</i> |

| | | | |
|---|--|---|--|
| Production and delivery of fortified food | <ul style="list-style-type: none"> • Meeting with two mills to inform of fortification requirements [DG Health Services & Food Advisory Committee] | <p>Phase I in one district and then scale up [Food Promotion Board and Ministry of Education]</p> <ul style="list-style-type: none"> • Import fortified kernels [Food Promotion Board] • Organize production of fortified rice and provide to Ministry of Education for school feeding [Food Promotion Board] | <ul style="list-style-type: none"> • Produce and deliver fortified rice [Private sector] • Undertake market analysis [MOH and National Nutrition Secretariat] • Create enabling environment for voluntary fortification (e.g. facilitate import of fortification equipment and fortificants [MOH and National Nutrition Secretariat]) |
| Implementation Monitoring | <ul style="list-style-type: none"> • Assess household use of flour and whether it is adequately fortified [MRI and academia] • Assess indicators of fortification (e.g. anaemia and iron deficiency, folate status) [MRI and academia] | <ul style="list-style-type: none"> • Verify implementation [Relevant ministry in charge of SSN] • Request funding for implementation monitoring from Treasury [Relevant ministry in charge of SSN] | <ul style="list-style-type: none"> • Assess purchase/ consumption of voluntarily fortified foods in national surveys [MRI/HIES] |
| Coordination | <ul style="list-style-type: none"> • Request the Secretary of MoH to mandate the Nutrition Steering Committee to coordinate food fortification [Nutrition Division, MOH] • Request the National Nutrition Secretariat to support coordination between ministries for fortification [Food Advisory committee] | | |
| Bottlenecks | | <ul style="list-style-type: none"> • Hold detailed discussions with the relevant ministries responsible for social safety nets and identify rice fortification options: <ul style="list-style-type: none"> • Mid Day Meal – Ministry of Education • Pregnant Women Food Voucher – Ministry of women and child affairs • Samurdhi Programme – Ministry of Social Welfare and Empowerment [Ministry of Health –Nutrition Division and Nutrition Secretariat] | |
| | | <ul style="list-style-type: none"> • Advocate to Treasury to provide funds to the Institute of Post-Harvest Technology to conduct an in-depth rice supply chain analysis to understand (i) if all rice milled through paddy marketing board and cooperative societies can be fortified, and (ii) verify how much rice is milled by large commercial mills. [MOH-MOA Secretaries] | |

Annex I: Workshop Objectives

Objectives

Objectives of the 'National Workshop on Flour and Rice Fortification' are as follows:

1. To identify practical ways forward to expand and scale up flour and rice fortification programme in Sri Lanka;
 - a. For flour: by facilitating exchanges between the relevant national technical committees to collectively identify next steps for progressing flour fortification to address MNDs in Sri Lanka;
 - b. For rice: to share the experience on rice fortification in Sri Lanka and within the region; and to collectively identify next steps for rice fortification in Sri Lanka.
2. To sensitize development partners, donors, academia, civil societies, and private sector to fortification lessons learned at global, regional and country levels;

The workshop will include discussions on the national, regional and global evidence base and current status of food fortification in Asia and globally, fortification technology and methods, components of the rice value chain, delivery options, standard setting, aspects of policy and legal environment, and lessons learned from other experience.

Participants

The Workshop will aim to include:

- Members of the Maternal Child Health Committee
- Members of the Food Advisory Committee
- Members of the Food Fortification Committee
- Representative from the Presidential Secretariat on Nutrition
- Senior health policy makers (DG of Public Health I, DG of Public Health II, Secretary of Health)
- Senior policy makers from other relevant sectors, such as agriculture, trade, finance
- Non-Governmental Partners and Civil Society Forum
- UN agencies (UNICEF, UNFPA, FAO and WHO)?
- Representative from Academia
- Donor representatives
- Private Sector

Proposed agenda

The 1.5 day workshop will be held in Colombo, Sri Lanka from the 22-23 March 2017.

On the first day, the workshop will target technical officers and members of the committees who will develop fortification work plans for endorsement. The context of flour and rice fortification in Sri Lanka will be reviewed to provide stakeholders with the necessary information to begin developing work plans, including the release of WFP's work on the rice milling landscape and pilot studies. The morning of the second day will be for the working groups to present their flour and rice fortification work plans for endorsement to senior policy makers.

Attendees will be provided briefs of all important decision-making information prior to the workshop to ensure that as much as possible can be devoted towards developing fortification work plans. Relevant background information includes:

- Overview of micronutrient malnutrition in Sri Lanka
- Overview of current micronutrient interventions in Sri Lanka
- Introduction to fortification: specific advantages of fortification to combat micronutrient malnutrition as a complement to other micronutrient interventions
- Global status and impact of flour and rice fortification
- Opportunities between flour and rice fortification

Annex 2: Workshop Agenda

22-23 March 2017

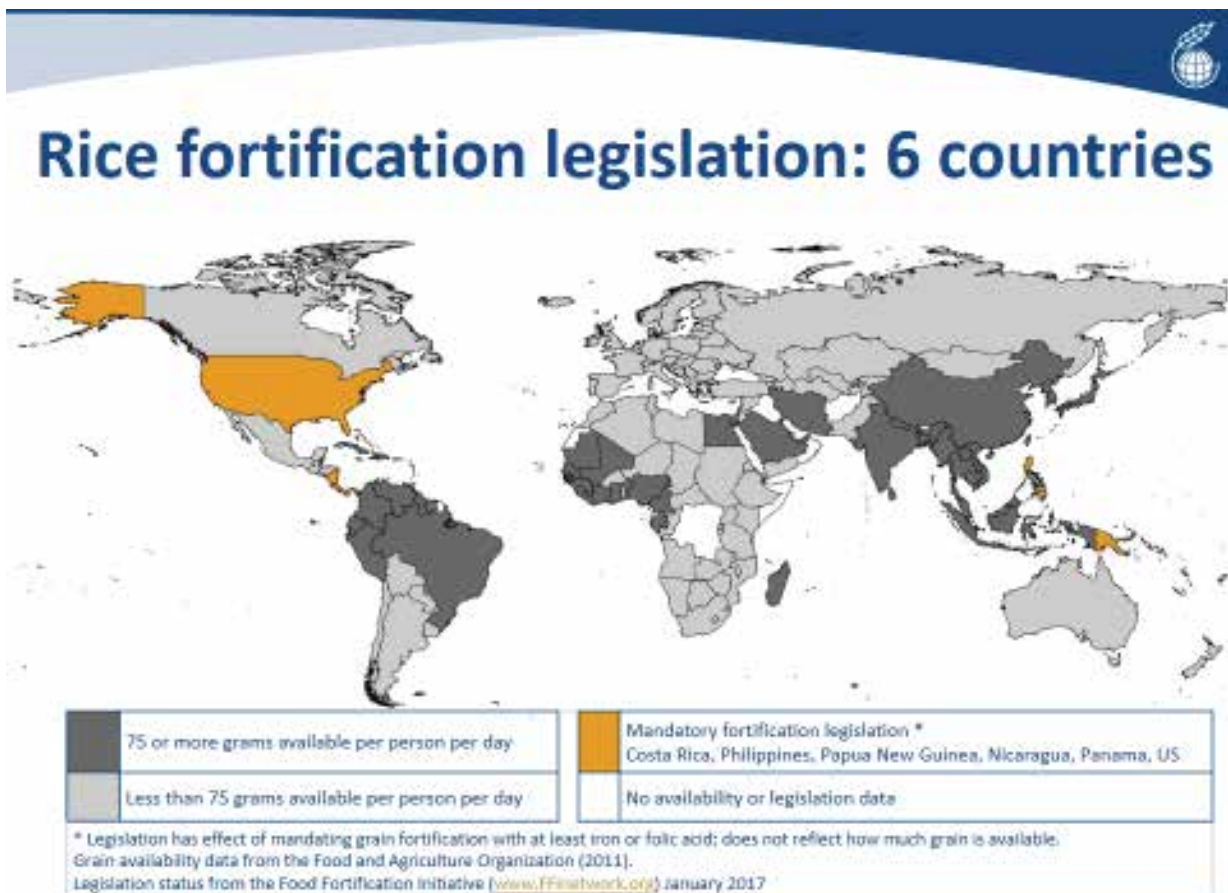
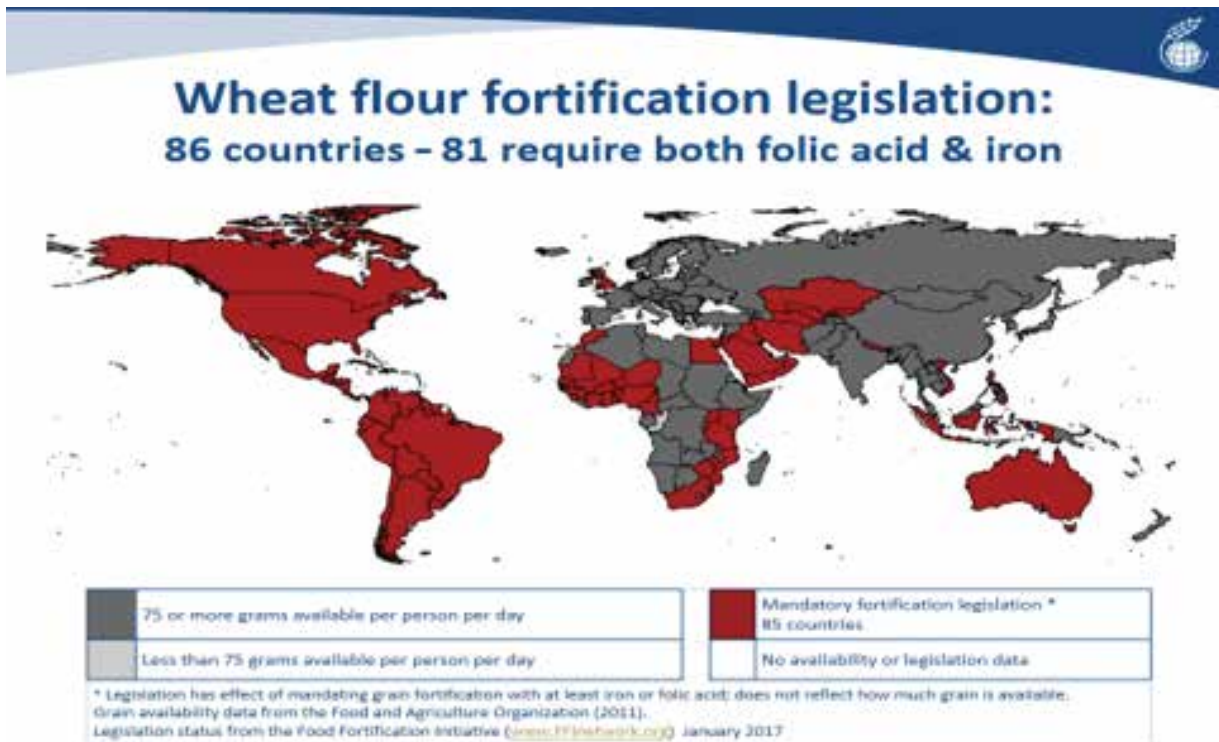
Day I

- | | |
|--------------|---|
| 8:30-9:00 | Registration |
| 9.00-9.10 | Welcome remarks and objective of the workshop Dr Rasanjalee Hettiarachchi, Nutrition coordination division |
| 9:10- 9.30 | Opening remarks Dr Siyambalagoda, Additional secretary medical services Dr J M W Jayasundara Bandara, DG-Health Health, Nutrition and Indigenous Medicine Ms Brenda Barton, Country Director and Representative World Food Programme |
| 9:30-10:00 | Progress and implementation of fortification in Sri Lanka Dr Renuka Jayatissa – Medical Research Institute Ministry of Health, Nutrition and Indigenous Medicine |
| 10:00 -10:15 | Guidelines and required standards of fortification in Sri Lanka Dr Ananda Jayalal, Deputy Director General/ EnOH EnOH |
| 10:15-10:30 | Tea |
| 10:30 -10:45 | Landscape Analysis of rice industry in Sri Lanka Ms Anusara Singhkumarwong, Nutrition Officer World Food Programme |
| 10:45- 11:30 | Panel discussion - overview of rice fortification context in Sri Lanka Facilitator- Dr Renuka Silva Prof. D.A.N. Dharmasena, University of Peradeniya Dr A. P. Benthota, Rice Research Institute Prof: L.H.P. Gunarathne, University of Peradeniya Mr. Mahesh Dissanayake – Institute of Post-Harvest Technology Dr Jaanaki Gooneratne – DPP Lanka Dr Lakshman Gamlath - Director- EnOH -MoH |
| 11:30: 12:30 | Sharing of regional experience on food fortification Global overview of food fortification - Ms Becky Tsang, Food Fortification Initiative Regional experience in rice fortification - Katrien Ghoos, World Food Programme Experience from India - national and regional – Ms Smita Makad, FFSAI, India Ms Ranjana Chopra, Dept of School and Mass Education, Government of Orissa, India Experience from Bangladesh - MdBadrul Hasan, Ministry of Food, Bangladesh (Moderator- Dr Chandrani Liyanage) |
| 12:30 - 1:30 | LUNCH |
| 1: 30- 3:00 | Working groups: Agree on next steps for rice and wheat flour fortification in Sri Lanka Facilitator- Dr Renuka Jayatissa |

Day 2 (23 March)

| | |
|---------------|---|
| 8:30-9:00 | Registration |
| 9:00-9:20 | Welcome remarks and objective of the workshop Dr Rasanjalee Hettiarachchi, Nutrition coordination division |
| 9:15-9:30 | Opening Remarks Mr. Anura Jayawickrama, Secretary of Health Mr. M. I. M. Rafeek, Secretary National Policy and Economic Affairs Mr. Kingsley Fernando, Senior Additional Secretary to the President Dr Siyambalagoda, Additional secretary medical services Ms Brenda Barton, WFP Country Representative |
| 9.30-9:45 | Draft policy directions for fortification in Sri Lanka Dr L. Denuwara- MoH |
| 9:45 - 10. 15 | Fortification work plan for Sri Lanka and justification Dr Renuka Jayatissa, MoH-MRI |
| 10:15 - 10.45 | Tea |
| 10:15 - 11:00 | Workplan endorsement and way forward policy discussion Chair: Mr. Anura Jayawickrama, Secretary Health; co- chair: Dr Siyambalagoda and Dr Jayalal |
| 11:00 - 11:45 | Committed time for discussions on implementing work plan Depending on the needs on Wednesday, address outstanding questions/concerns. |
| 11:45 - 12:00 | Wrap up for policy discussion Dr Rasanjalee Hettiarachchi |
| 1:30 | Lunch |

Annex 3: Legislation landscape for wheat flour and rice fortification – Global overview



Annex 4: List of participants by group work

| Sector | Name | Organization | Designation |
|--------|-----------------------------|----------------------------------|--|
| | Mr. Nalaka Kaluwewa | National Nutrition Secretariat | Senior Additional Secretary to the President |
| | Dr. L. Siyambalagoda | MoH | Deputy Director General –Public Health Service |
| | Dr. Ananda Jayalal | MoH | Deputy Director General - EnOH |
| | Dr. L.B.H. Denuwara | MoH | Director- Nutrition Division |
| | Dr. Rasanjali Hettiarachchi | MoH | Director- Nutrition Coordination Division |
| | Dr. Lakshman Gamlath | MoH | Director EnOH |
| | Dr. T.S.K. Siriwardana | MoH | Director - NCD |
| | Dr. Pradeep Rathnasekara | MoH | Deputy Director MRI |
| | Dr. Renuka Jayatissa | MoH | Head- Nutrition Division MRI |
| | Dr. H. A. Ubeysekara | MoH | RDHS Galle |
| | Dr. Shanthi Gunawardena | MoH | Consultant Community Physician-NCD |
| | Dr. Amanthi Bandusena | MoH | Consultant Community Medicine-HEB |
| | Dr. Y Weerasekara | MoH | Consultant Community Medicine-NCD |
| | Dr. Anoma Basnayake | MoH | Consultant Community Medicine-NCD |
| | Dr. M.A.A.P. Alagiyawanna | MoH | Consultant Community Medicine-FHB |
| | Dr C.S Thilakarathne | MoH | Medical Officer |
| | Dr P.A.S Senaratne | MoH | Medical Officer |
| | Dr. W.P.K.P Weerasinghe | MoH | Medical Officer |
| | Dr. J. Mahipala | MoH | Medical Officer |
| | Dr Erandi S.W De Silva | MoH | Medical Officer |
| | Dr. C. Withana | MoH | Medical Officer |
| | Chalani Elangamage | MoH | Nutritionist |
| | T. Suntharavathany | MoH | Nutritionist |
| | J. M. Ranbanda | MoH | Nutrition Assistant |
| | Mr. K. Maheshan | MNPEA | Additional Secretary |
| | Ms. Gaya Adikari | National Nutrition Secretariat | Assistant Secretary to the President |
| | Dr. Rohan Karawita | MoA | Director-NFPB |
| | Ms. Renuka PeirisMoEd | Director- | Health & Nutrition |
| | Dr. Ilmi Hewajulige | Institute of Industrial Research | Director- Food Research |
| | Ms. Waruni De Costa | MoEd | Deputy Director – Health & Nutrition |
| | Ms. G.G.D.S. Priyankara | MoA | Deputy Director-NFPB |
| | Mr. Rohan Jayathilaka | Ministry of Trade and Commerce | Director- Development |
| | Mr. I.M.R. Dissanayake | MoA | Director-IPHT |
| | Mr. Ajith Dissanayake | Turiposha Limited | QA Manager |
| | Ms. Nelum Mendis | Sri Lanka Thriposha | Technical Officer |
| | Ms. K.P.D.N Saman Kumari | MoH | Développement Officer |
| | Ms. I.P Jayaweera | NFPB -MoA Programme. | Coordinator |
| | Ms. I.P Jayaweera | NFPB -MoA Programme. | Coordinator |
| | Dr Ajith Alegoy | MoH | CCP |
| | Sanjeewani Mirihajalle | MoH | Nutritionist |
| | Dr Thushore Amhagohge | MoH | PD Office- Sabaragamuwa |

| | | |
|--------------------------------|-------------------------------------|--------------------------------------|
| Ms. Lakmini Thilakathne | MCOD | Nutritionist |
| Mr. H.M.A.P. Rathnayake | IHPT-MoA | Additional Director |
| Dr. K.L.M.D. Seneviwickrama | MoH | CCP- Nutrition Division |
| Dr. Miraza Cardar | MoH | CCP-MRI |
| Dr. Amitha Benthota | Director Rice Research | Institute Director |
| Dr. Shanika Senanayake | Family Health Bureau-MoH | Medical Officer |
| Dr. Nipuni Amarasinghe | MoH | CCP-NCD |
| Dr. V. Mallawarachchi | MoH | CCP-NCD |
| Mr. Sarath Rupasinghe | MSBSW | Additional Secretary |
| Ms. Dharshanee Kumari | MoH | DO-NCD |
| Dr. L. L.Y. Abeywardena | MoH | Medical Officer |
| Dr. K.P.G. Perera | MoH | MO-MRI |
| Dr.S. Panduwawala | MoH | MO |
| Dr. Terence Madhujith | University of Peradeniya | Senior Lecture- Food Technology |
| Dr. Renuka Silva | University of Wayamba | Senior Lecture- Nutrition |
| Dr. Pulani Lanerol | University of Colombo | Senior Lecturer- Bio Chemistry |
| Prof. Pujitha Wickramasinghe | University of Kelaniya | Professor of Pediatrics |
| Prof. Sujeewa Amarasena | University of Ruhuna | Professor of Pediatrics |
| Prof. Harendra De Silva | University of Colombo | Professor of Pediatrics |
| Prof. L.H.P Gunrathne | University of Peradeniya | Professor of Agriculture Economic |
| Prof. Cahndarani Liyanage | University of Ruhuna | Professor in Nutrition |
| Dr. Anoma Chandrasekara | University for Wayamba | Senior Lecturer- Nutrition |
| Prof. D.A.N. Dharmarathne | University of Peradeniya | Professor in post harvest technology |
| Prof. Sagariak Ekanayae | University of Sri Jayawardenapua | Professor |
| Ms. Brenda Barton | WFP Sri Lanka | Country Representative |
| Ms. Anusara Singhkumarwong | WFP | Nutritionist |
| Ms. Sashrika Jayasinghe | WFP | Joint Prorgamme Coordinator |
| Mr. Laksiri Nanayakkara | WFP | Programme Officer |
| Ms. Priyanthi Chandrasekara | FAO | Project Manager |
| Dr. Gamini Jayakodi | UNICEF | Prorgamme Officer |
| Dr. Dula de Silva | SUNPF | CEO |
| R.P.M Sandamali Childfund S.L | Technical Specialist in | Nutrition |
| Ms. Dilka Periris World Vision | Sector Specialist - | Nutrition |
| Ms. Vishaka Thilakarathne | Nutrition Society Sri Lanka | President–Nutrition Society |
| Ms. Samantha Bandara | IPS | Research Officer Private Sector |
| Mr. Nimal Jayawardana | Harishchandra- Rice and Wheat Flour | Producer |
| Mr. W R Gayan Chaminda | SKS Rice Mills | |
| Mr. Surintha De Silva | T.S.R. DeSilva & Company | |
| Mr. S.H.M Rishard | Kaleofa Rice Mill, Polunnuwara | |
| Mr. Sajith Gunaratne | Prima Foods | |
| Mr. MSM. Khalid | Mariam Foods | |
| Mr. Chirath Prabhanya | Newrathne Rice mills | Foreign Delegates |
| Becky Tsang | FFI | Technical Officer |
| Rezaul Karim | WFP- Bangladesh | Head of Prorgamme |
| Venkat Subramanian | FFI | Consultant |
| Katrien Ghoose | WFP-RBB | Regional Nutrition Advisor |
| Karen Codling | FFI | Nutrition- RBB |
| Shariqua Yunus | WFP- India | Executive Officer |
| Ranjana Chopra | Government of Odisha-India | Programme Officer |
| SmitaMakad | FFRC, FSSAI -India | Secretary- Education |
| | | HEAD- FFRC |

Annex 5: Group Work Sheets

5.1. Group Work I: Choosing the Appropriate Delivery Option for Rice Fortification

The following are factors that need to be taken into consideration when deciding if rice fortification should be mandatory, voluntary or social safety net.

Using the available information on the rice fortification context fact sheet, answer the following questions (not all have known answers):

1. On average, what quantities of rice are consumed (grams per capita per day, g/c/d)?
 - i.) Under 75 g/c/d _____
 - ii.) 75-150 g/c/d _____
 - iii.) 150-300 g/c/d _____
 - iv.) 300+ g/c/d+ _____
 - a. Are there any subpopulations that consume over 75 g/c/d of rice?
Yes _____ No _____ Describe:
 - b. Are there any subpopulations that do not consume rice?
Yes _____ No _____ Describe:
2. Is there more than subpopulation (adolescents, women of childbearing age, children, etc) with anaemia prevalence over 20%?
Yes _____ No _____ Describe:
3. Do more than half of the districts have prevalence of anemia over 20%?
Yes _____ No _____ Describe:
4. Are there any voluntary fortification programmes in Sri Lanka that have led to a public health impact?
Yes _____ No _____ Describe:
5. Is more than 50% of rice milled in large mills that potentially could fortify rice?
Yes _____ No _____ Describe:
6. Is more than 25% of rice milled as self-sufficiency (by farmers at home or taken to contract/service millers)?
Yes _____ No _____ Describe:
7. Are there large-scale social safety net programmes that have the potential to improve diet (e.g. food distribution, cash transfers) in Sri Lanka?
Yes _____ No _____ Describe:
 - a. Can any be adapted to distribute or create access to fortified rice?
Yes _____ No _____ Describe:
8. Taking into consideration the number of places where rice fortification may take place (e.g. mills, warehouses, collection points, etc), is it feasible for the government to enforce fortification?
Yes _____ No _____ Describe:
9. Is there government funding and political will to enforce fortification of rice?
Yes _____ No _____ Describe
10. Is there government funding and political will to pay for social safety net fortification?
Yes _____ No _____ Describe:

5.2 Interpretation

Check off if you have answered “Yes” to the following questions: Yes to (any) 1, 1a, 1b = fortification of the food vehicle is an appropriate intervention

Yes to 2, 3 = the scale of the nutrition problem in Sri Lanka indicates widespread problem that should be addressed through a delivery option with high coverage (i.e. mandatory fortification and/or large-scale/multiple social safety nets)

Yes to 4 = voluntary fortification may be an appropriate delivery option

Yes to 7a, 10 = creating access to the fortified vehicle through a social safety net may be an appropriate delivery option

Yes to 5, 6 = the milling industry is consolidated and it would be feasible to fortify at least 50% of the food vehicle at point of milling.

Yes to 8, 9 = there is government capacity and will to enforce mandatory fortification

Which delivery option for wheat flour/rice does this working group propose for endorsement in Sri Lanka?

group propose for endorsement in Sri Lanka?

Mandatory _____ Social Safety Net (describe) _____ Voluntary _____
None _____

| Question | Yes | Interpretation |
|-----------|-----|----------------------------------|
| 1, 1a, 1b | | Fortification |
| 2 | | Mandatory/large scale safety net |
| 3 | | Mandatory/large scale safety net |
| 4 | | Voluntary |
| 5 | | Mandatory |
| 6 | | Mandatory |
| 7a | | Social safety net |
| 8 | | Mandatory |
| 9 | | Mandatory |
| 10 | | Social safety net |

5.3 Group Work II: Programme components for fortification implementation

What food vehicle and delivery option are you discussing?

Food vehicle: _____ Selected delivery option: _____

For the delivery option that you have selected, tick off which programme components are needed in Sri Lanka

| Components | Delivery options | | |
|---|------------------|-----------|-------------------|
| | Mandatory | Voluntary | Social Safety Net |
| Legal requirement | | | |
| (law/regulation requiring fortification) | | | |
| Policy/directive | | | |
| (from government/ ministry/division to require fortification) | | | |
| Standards | | | |
| (technical standard/regulation specifying nutrients to be added) | | | |
| Standards | | | |
| (technical standard/regulation specifying nutrients to be added) | | | |
| Funding for fortification | | | |
| (budget for fortificants, fortification equipment, internal quality assurance etc) | | | |
| Funding for promotion | | | |
| (budget to promote consumption of fortified food, advertise fortified brands etc) | | | |
| Enforcement | | | |
| (monitoring and penalties to ensure food is fortified to national standards) | | | |
| Production and delivery of fortified food | | | |
| (addition of nutrients to food as per national standards and distribution to markets/target population) | | | |

| | | | |
|---|--|--|--|
| Implementation monitoring | | | |
| (monitoring of programme implementation such as production, coverage, enforcement activities etc) | | | |
| Coordination | | | |
| (coordination of implementation by different stakeholders) | | | |

5.3 Group Work III: Workplan for fortification implementation

Based on the information/understanding currently available, develop a work plan of necessary actions to implement your selected delivery option for each programme component selected above. The questions below are intended to suggest necessary actions; additional or alternative actions may be necessary. Record necessary actions in the PPT template provided, including indicating stakeholder responsible. Identify bottlenecks to implementing the selected delivery option and how to address them.

Legal requirement:

What is the process for developing a legal requirement for fortification? For example:

- Who is responsible for creating the first draft?
- Who needs to review subsequent drafts to ensure broad support?
- Who coordinates the review and public consultation
- Who approves the final draft?
- What are other key legal requirement steps that need to be done?

Policy directive:

- What policy/ies is/are necessary to implement this delivery option
- Who is responsible for making the policy/ies?
- Who needs to approve the policy/ies?

Standard:

- What is the process for drafting a food/fortification standard?
- Who approves the food/fortification standard?
- Would it be a regulation under the Food Law, or a stand-alone regulation?

Funding for fortification:

- Where should the funding for fortification come from?

Government _____ Private sector _____ Other (describe) _____

- Who estimates the required budget and when it's needed?
- Where should funds be raised?

Funding for promotion:

- Where should the funding for promotion of fortification come from?

Government _____ Private sector _____ Other (describe) _____

- Who estimates the required budget and when it's needed??
- Where should funds be raised?

Enforcement:

- Who is responsible for developing a system (or incorporating fortification into an existing system) for enforcing fortification
- Who is responsible for developing or modifying labeling regulations for fortified foods?
- Who is responsible for enforcing (monitoring and imposing penalties) fortification of domestically fortified foods?
(List multiple agencies and specific roles if more than one)
- Who is responsible for enforcing (monitoring and imposing penalties) fortification in imported foods (if required)? (List multiple agencies and specific roles if more than one)
- Who is responsible for enforcing standards/quality of fortificants (e.g. for Thriposha, fortified kernels)?
(List multiple agencies and specific roles if more than one)

Production and delivery of fortified food

- Of the social safety nets that can be adapted to include fortified food, how can they be adapted?
- Where should fortified kernels (for fortified rice) or fortificant premix (for fortified wheat flour) come from?
Import _____ Domestic production _____ Both _____
- Who is involved in the following steps and what actions are needed:
- Sourcing fortified kernels/fortificant premix
- Blending fortified kernels/fortificant premix with rice/wheat flour
- Transport of fortified food
- Storage of fortified food
- Are there any government procedures that will have to be taken into consideration when producing or delivering fortified food (e.g. tenders)?

Implementation monitoring

- Who is responsible for verifying that the programme is being implemented properly and with expected coverage?
- Where will the funding come from for an implementing monitoring plan?

Coordination

- Who is responsible for coordinating between multiple stakeholders?
- Who is ultimately responsible for the successful fortification of wheat flour or rice?

Bottlenecks

- Where there any bottlenecks in responding to any of the above questions?
Yes _____ No _____
- If so, what were they and how can they be resolved?

The United Nations Sustainable Development Goals Fund (SDG-F) is an international multi-agency and multi-donor development mechanism created in 2014 by UNDP with an initial contribution from the government of Spain to support sustainable development activities through integrated and multidimensional joint programmes. The main objective of the SDG-F is to bring together UN agencies, national governments, academia, civil society and business to address the challenges of poverty. The SDG-F Joint Programme for “Scaling Up Nutrition through a Multi-Sector Approach” is implemented by the World Food Programme and the Food and Agriculture Organization of the United Nations together with the Government in Sri Lanka.



World Food Programme



Food and Agriculture Organization of the United Nations



SDGF

SUSTAINABLE DEVELOPMENT GOALS FUND



cooperación española