

Scaling Up Rice Fortification in Latin America and the Caribbean

Workshop, Santo Domingo, Dominican Republic, 2016

The Scaling Up Rice Fortification in Latin America and the Caribbean event, held in Santo Domingo, Dominican Republic (August 2016), brought together over 100 stakeholders including government decision-makers and technical staff, and national, regional and international technical experts from various institutions and agencies including the United Nations (UN), academia, and the private sector. Country delegations attended from Colombia, Cuba, Dominican Republic, Guatemala, Haiti, Honduras, Panama and Peru. Two representatives from El Salvador attended as observers. The workshop was organized with the support of a Technical Advisory Group including members from the Food Fortification Initiative (FFI), the Institute of Nutrition of Central America and Panama (INCAP), the United States Agency for International Development (USAID), the Pan American Health Organization (PAHO), the World Food Programme (WFP), the Peruvian National Nutrition Institute (INN), and the Ministry of Health of Costa Rica.

The objectives of the event were to:

- Share global and regional evidence and existing operational experience
- Support countries in the process of developing a country-specific plan for rice fortification
- Facilitate the process of consultation and exchange of experience between countries in the region
- Create a network for continued learning and knowledge-sharing to support national efforts for rice fortification after the workshop.

The two-day workshop consisted of plenary presentations, guided country group work exercises, and moderated question and answer discussion sessions. In preparation for the workshop, a Landscape Analysis for Rice Fortification was conducted for each country as a means of assessing the potential influenc-

ing factors in the feasibility, sustainability and impact of rice fortification in each of the eight participating countries. During the workshop, the participants were presented with the regional justification for considering rice fortification, the global evidence for rice fortification, and technical aspects related to food fortification in the context of the double burden, conceptual frameworks and public policy instruments and the different technologies for rice fortification. In addition, three different national implementation models were presented: Costa Rica (mandatory), India and Bangladesh (both social safety net programs), and Brazil (voluntary program).

The workshop presenters and facilitators collaboratively reviewed all the presentations during a preparatory meeting.

FIGURE 1: Map of countries represented at the workshop





Miguel Barreto (Regional Director, World Food Programme, Regional Bureau for Latin America and the Caribbean) speaking at the opening of the at the Rice Fortification Workshop in the Dominican Republic 2016

Highlights of the workshop

The Vice President of the Dominican Republic, the Honorable Margarita Cedeño, who spoke fervently on the need for diversified interventions, inaugurated the event together with Lauren Landis, Global Director of WFP's Nutrition Division, and Miguel Barreto, WFP Regional Director for Latin America and the Caribbean.

“We are betting on food security and on fortified rice”

Margarita Cedeño,
Vice-President, Dominican Republic

The opening presentation, “Micronutrient Situation in Latin America and the Caribbean” by Daniel López de Romaña of the Nutrition Research Institute of Peru, emphasized the health and economic risks posed by micronutrient deficiencies and illustrated the substantial gains of implementing adequate nutritional interventions to address them. A paper devoted to this work can be found on page 122 of this supplement.

The presentation “Global strategies for the prevention of micronutrient deficiencies with emphasis on rice fortification” by Gerardo Zamora, Technical Officer of the Evidence and Programme Guidance Division at the World Health Organization

(WHO) in Geneva, described the guideline development process at WHO currently underway for rice fortification. The WHO recommendations for the prevention of micronutrient deficiencies through food fortification strategies were also presented. It is expected that the rice fortification guidelines put forth by WHO will establish a reference framework for governments and organizations to implement and tailor at the local level.

The presentation “Food fortification in the context of the double burden of malnutrition” by Omar Dary, Senior Nutrition Adviser at the United States Agency for International Development (USAID) confirmed that rice fortification is not at odds with existing efforts to combat the growing prevalence of overweight and obesity in the region. It was emphasized that the prevention of all forms of malnutrition depends on dietary diversity and the promotion of healthy lifestyles. In the context of Latin America, rice possesses all the necessary characteristics to be considered a suitable vehicle for micronutrient fortification.

The presentation “A bio-economic optimization model for improving the coherence and efficiency of micronutrient intervention programs in developing countries” by Stephen Vosti, Adjunct Professor of Agricultural and Resource Economics at the University of California, Davis, presented a methodology to estimate the benefits and costs of micronutrient intervention programs, and an economic optimization model for selecting efficient potential combinations of these programs, reflected in an article on page 176 of this issue.

As described in the presentation “Food fortification: summary of the evidence, current situation and challenges” by Helena Pachón, Research Associate Professor at Emory University and FFI, and Becky L Tsang, Technical Officer, FFI Asia, food fortification with micronutrients has the potential to impact public health, especially with iron. More information on this subject can be found on page 150 of this supplement.

Ana Victoria Román and Monica Guamuch from the Institute of Nutrition of Central America and Panama delivered the presentation “Conceptual frameworks and public policy instruments for the support of food fortification in Latin America: lessons learned and future challenges.” Dr Román's contribution built upon Dr Pachón's by explaining the types of technical regulations and norms applicable to each delivery strategy. Different legal frameworks already in existence for food fortification were presented, as well as related public policies that could be built upon or referenced to support rice fortification as countries implement their programs. In turn, Dr Guamuch addressed the lessons learned in going from policies and legislation to the implementation of the program. It was established that legislation does not suffice and that political commitment to the strategy is a vital component for its development, implementation, and sustainability and to strengthen the programs as they are implemented. Emphasis was also placed on the importance of

how rice production is organized in the country; program implementation is always easier when production is centralized. As a closing point, it was noted that control and inspection of fortified rice production is a key factor to sustain motivation and compromise from producers and to ensure that the nutrition goals set are met.

The first day of the workshop concluded with a presentation on Technologies for Rice Fortification. Hector Cori, Nutrition Science Director for DSM, presented the different rice fortification methods, including parboiling, dusting, coating and extrusion, and the benefits, limitations and costs associated with each method. Mr Jose Solera, Director of Operations at NTQ, presented the experience of a private company in Costa Rica that distributes most of the fortified rice in the country and uses coating technology. The lessons learned as part of the process, namely the importance of public-private collaboration and of training industrial partners on how to work with the product, the need for continuous monitoring of product quality conducted by a qualified laboratory and the importance of using a fortified kernel that is indistinguishable by the consumer, were also shared.

National rice fortification program models

Three national rice fortification program models were presented on Day 2 of the workshop. The case of Costa Rica was discussed to illustrate a mandatory program, followed by a presentation on India and Bangladesh, where fortified rice is distributed

through social protection programs. A presentation about the experience of Brazil in promoting voluntary rice fortification was delivered as a third potential model for countries to contemplate based on their nutritional objectives.

Mandatory rice fortification

Melanie Ascencio (Ministry of Health, Costa Rica) and Jose Antonio Martínez (ANINSA) presented the mandatory rice fortification model of Costa Rica. Costa Rica has a long trajectory in the implementation of mandatory fortification programs. Given the high consumption of rice across all population groups, the Ministry of Health (MoH) of Costa Rica identified it as a suitable vehicle for micronutrient fortification to achieve a positive public health impact. For this reason the MoH who approached ANINSA, the National Association of Rice Producers, and CONARROZ, the National Rice Corporation of Costa Rica, to collaborate on the effort (more information can be found on page 217 of this supplement).

Distribution of fortified rice through social protection programs

Rizwan Yusufali of the WFP Regional Bureau in Asia presented the examples of Bangladesh and India, where fortified rice is delivered through social protection programs.

In Bangladesh, the National Strategy for the Prevention of Micronutrient Deficiencies includes food fortification. As was

Panelists at the Rice Fortification Workshop in the Dominican Republic, 2016





Regional and global experts and speakers at the Rice Fortification Workshop in the Dominican Republic, 2016

the case in Costa Rica, the initiative involved multi-stakeholder engagement, consisting of research, government, private sector and corporate partnerships. A research study was conducted early on to generate country-specific evidence on acceptance by the targeted population; encourage the distribution of the subsidized fortified rice targeting improved health; document nutrition and productivity benefits; and facilitate expansion and scaling-up.

Among the key success factors of this program, implemented exclusively through Government Social Safety Nets, the following stand out: **1)** a multisector approach to implementation, **2)** working in partnership with development partners, **3)** receiving technical support from experienced UN agencies and private corporations, and **4)** addressing the commercial sustainability issues for fortified rice to guarantee local production of the fortified kernel. Moving forward, challenges persist, including cost, marketing and the implementation of quality assurance protocols.

The government of India also decided to deliver fortified rice through its social safety net scheme, using targeted public distribution through midday school meals and integrated child development services. A number of studies have been carried out in the country to assess the acceptability and efficacy of the intervention to support advocacy efforts in different departments and ministries at the national and state level. In the context of India, a number of factors supported the continuance of the effort, specifically **1)** creating domestic capacity for fortified kernel production, **2)** a local evidence base, **3)** a systematic ap-

proach to implementation, **4)** the creation of a multidisciplinary technical advisory group, and **5)** high visibility of the intervention through the dissemination of results. Prevailing issues to be resolved include increasing domestic production capacity, lowering incremental cost, and ensuring the long-term suitability of the intervention.

Both examples are valuable to the Latin America and the Caribbean region, where social protection programs abound and are well established.

Voluntary rice fortification

Caroline Manus from the Global Alliance for Improved Nutrition (GAIN) presented the experience in Brazil with voluntary rice fortification. PATH and GAIN joined forces to develop a scale-up model through commercial channels; Brazil was chosen as a pilot country for this private-sector-driven initiative because of a variety of factors, namely:

- Industry consolidation
- Mature retail sector
- The experience of PATH in the country and
- A significant prevalence of micronutrient malnutrition among the urban and rural populations.

The project had the overall goal of developing new markets and driving commercial models at scale for a variety of fortified rice products to be produced and distributed in the country. Five main steps were carried out for this project: **1)** PATH worked

with a private company to produce the fortified kernels, **2)** kernel technology was transferred to a local university, **3)** the project approached three large supermarket chains, and **4)** a social marketing campaign was developed based on extensive market research. The project was successful in reaching over 2.5 million consumers, engaging the three largest national retailers, establishing the foundational architecture for rice fortification and generating knowledge on the commercial implementation of this strategy. Through this project it was also concluded that a purely commercial, private-sector-driven initiative is not sufficient to reach a meaningful scale in a reasonably short time line (3–5 years) and that governance structure is a major determinant of reach.

Country group work

The afternoon of Day 2 was devoted in its entirety to country group work. Each country delegation worked with two facilitators on discussing the plans for their potential rice fortification program. Two exercises were carried out, the first was dedicated to identifying the challenges and national capacities and the second to the elaboration of a work plan. The exercises proved to be useful, allowing participants to think about and discuss, guided by an expert, diverse factors associated with launching a strategy, including a situation analysis (general awareness of micronutrient deficiencies, political will, human and financial resources, potential intervention model, acceptance, delivery mechanisms, among others). It should be noted that country landscape analyses (described in depth elsewhere in this supplement, see page 199), were commissioned in preparation for the workshop and used as an aid during the discussions.

Primary conclusions and lessons learned

Rice is a staple food in several countries of Latin America and the Caribbean. Cuba, Dominican Republic, Haiti, Panama, and Peru have very high consumption patterns *per capita*, while Colombia, Honduras and Guatemala have lower consumption per capita, but one that is substantial among the most vulnerable populations. Given that official guidelines for rice fortification are being prepared by WHO and sufficient scientific and practical evidence at country level is available to confirm the safety and efficacy of this approach, rice fortification is a viable complementary strategy to improve micronutrient health in the region.

“Rice fortification is a viable complementary strategy to improve micronutrient health in the region”

In the region, important opportunities were identified for the distribution of fortified rice through social protection programs, and some, such as the Dominican Republic, expressed interest in large-scale, mandatory, implementation. In order to achieve the reach and impact desired, it is important that all key actors understand the value and potential impact of the intervention, as well as its limitations, for eliminating micronutrient deficiencies. Particularly now, when the prevalence of overweight and obesity is one of the most pressing public health concerns, it should be noted that rice fortification is not at odds with existing overweight and obesity prevention efforts.

From a practical standpoint, neither governments nor millers should be left alone or expected to promote the strategy independently. All existing examples worldwide confirm that rice fortification efforts are most successful when partnerships are formed that include the public and private sector as well as other parties that can provide support in key areas such as advocacy, management, implementation and monitoring, among others. The question of financial resources is also a frequent barrier and concern to both the public and the private sector. Hence addressing it early on, and identifying novel ways to remedy high initial costs to one party, is absolutely necessary, as the long-term gains are dramatically more significant.

It is the hope of the organizing committee of this workshop that we built upon the existing interest in rice fortification in the region, and that the plans started at the workshop will mature into well designed, sustainable programs that can contribute to the improvement of the micronutrient status in the region.