

Introduction

Now is the right time to scale up rice fortification in West Africa

Welcome to the third *Sight and Life* Rice Fortification Supplement, which focuses on the African continent, more specifically, the West African region. Following the previous supplements on Asia and Latin America, it is timely to take a closer look at the continent that has the largest *per capita* rice consumption after Asia yet where micronutrient deficiencies remain unacceptably high. This presents a significant opportunity for rice fortification. According to the 2016 Global Hunger Index (GHI) Africa Edition, despite a declining level of hunger across the continent since 2000, only three out of 42 countries in Africa have scores that fall into the ‘low’ hunger category, while 28 fall into the ‘serious’ category and five countries have scores in the ‘alarming’ category.¹

Preventing micronutrient malnutrition

Micronutrient deficiencies are often referred to as ‘hidden hunger’ because they develop gradually over time, and their devastating impact is not seen until irreversible damage has been done. Globally, it is estimated that more than two billion people suffer from hidden hunger, caused largely by a dietary deficiency of vitamins and minerals. Deficiencies in essential micronutrients, such as vitamins A, D, and folic acid, and minerals such as iron, zinc and iodine, can have devastating health consequences ranging from serious physical and cognitive disabilities to life-threatening disorders. These adverse effects go hand in hand with low productivity and net economic losses for households, communities and nations. Yet, micronutrient malnutrition is entirely preventable. We know how to ensure optimal nutrition: a diverse diet and, where this is not possible, or else in the short term, interventions such as food fortification and micronutrient supplementation become critical. Staple food fortification is ranked by the Copenhagen Consensus 2012 as one of the highest-return interventions in global development and is endorsed by the 2008 and 2013 Lancet Series on Maternal and Child Nutrition and by WHO, WFP, UNICEF, FAO and the World Bank.

“Micronutrient malnutrition is entirely preventable”

Not only are children’s lives and futures at stake if we do not accelerate progress: failing to address micronutrient deficiencies has high costs in lost GDP and higher budget outlays. When children are properly nourished, they can grow up to be healthy and productive, helping to lift their communities and their countries out of poverty. This publication provides a comprehensive overview of how fortifying rice with multiple essential vitamins and minerals can be an effective and sustainable strategy to improve micronutrient intake and can thus significantly contribute to improved health and economic status in Africa.

Rice fortification in Africa

In Africa, fortification is making tremendous progress. Many countries fortify wheat and maize flour, cooking oil, sugar and salt as part of their comprehensive nutrition strategy. As the continent experiences a rise in economic growth and emerging common markets, regional bodies are also harmonizing fortification standards. This facilitates trade across country borders and has proven particularly effective in West Africa where multiple partners work together to enhance fortification efforts.

Rice fortification is the new conversation for furthering fortification in Africa. It is the enrichment of rice with essential vitamins and minerals post-harvesting to increase its nutritional value, and the potential for using rice as a vehicle to further increase the intake of missing essential vitamins and minerals is significant. Rice fortification has come a long way since the 1930s – while technological limitations hindered the scaling up of rice fortification for several decades, today, affordable technology exists to produce fortified rice kernels that look and taste like non-fortified rice. As Peiman Milani from *Sight and Life* explains on page 48 in this issue, the latest technology offers the benefits of rice fortification without requiring consumers to change any of their buying, cooking or eating habits.

Africa has the largest per capita rice consumption outside Asia. Of the 40.4 million metric tons (MMT) of rice globally traded in 2015–2016, 11.7 MMT were exported to Africa.² Rice is a growing key staple food in 19 African countries, especially in West Africa. In this region, the prevalence and impact of micronutrient deficiencies are significant, and anemia rates, vitamin A deficiency and iodine deficiency remain a public health

concern. Fortified rice has the potential to reach 130 million people in 12 African countries, three-quarters of which are in West Africa.³ To date, six countries worldwide have mandatory rice fortification legislation and most of the efforts are pilot projects or programs that provide free or subsidized food to selected populations. Mali has tested the operational feasibility of blending imported fortified kernels with local rice. Read about this innovative project on page 94, and about WFP's partner, the inspiring social entrepreneur Salif Romano Niang, on page 76.

Opportunities and challenges

This supplement is based on the presentations given at a two-day workshop, Rice Fortification – An Opportunity to Improve Nutrition in West Africa, which took place in Dakar, Senegal on November 27–28, 2017. This two-day event was organized by the UN World Food Programme (WFP) with the support of an Organizing Committee that included members from the UN Food and Agriculture Organization (FAO), the Food Fortification Initiative (FFI), the Global Alliance for Improved Nutrition (GAIN), Helen Keller International (HKI), Nutrition International (NI), *Sight and Life* (SAL) and the United Nations Children's Fund (UNICEF). It brought together high-level country delegates, global and regional technical partners and global and regional donors to raise awareness and discuss opportunities and challenges around rice fortification and its potential role in improving dietary quality and reducing micronutrient deficiencies in the West Africa region. Representatives from the following West African countries were present: Benin, Côte d'Ivoire, Gambia, Ghana, Guinea-Bissau, Liberia, Mali, Nigeria and Senegal. One representative from Madagascar also attended.

The articles in this supplement examine the current situation pertaining to micronutrient deficiencies in West Africa. They explore food availability and consumption in the region and review the status of, and the lessons learned from, grain fortification and its application in West African countries. The various contributions both explain the principles of rice fortification and present the latest evidence on rice fortification. The supplement helpfully elucidates some of the misconceptions associated with rice fortification and also investigates important considerations for identification of the most appropriate delivery channels and technologies for fortified rice. The significance of developing standards and the factors that influence the cost of rice fortification are also explained. A special article is dedicated to the new WHO guidelines on rice fortification and the supplement concludes with a summary of the West Africa Rice Fortification workshop.

We are grateful to the leading public health professionals who have contributed original articles as well as articles that initially appeared in, or were updated from, the supplements on

Scaling Up Rice Fortification in Latin America published in 2017 and Scaling Up Rice Fortification in Asia published in 2015, in collaboration between *Sight and Life* and the WFP.

Now is the right time to scale up rice fortification in West Africa. The evidence base is sufficient; the feasibility and potential of scaling up is well documented and promising; and an increasing number of countries are interested and engaging with key stakeholders to make this a reality.

We invite you to join the discussion and hope this supplement will inspire you to become advocates for scaling up rice fortification in West Africa. **Join us on this journey.**

Guest editors:

Dora Panagides and Christophe Guyonnet, WFP headquarters
Anna Horner, WFP Regional Bureau for West and Central Africa
Kesso Gabrielle van Zutphen, *Sight and Life*

References

1. von Grebmer K, Bernstein J, Nabbaro D, Prasai N, Amin S, Yohannes Y, et al. 2016 Global Hunger Index: Africa edition. Washington, DC: IFPRI; 2017.
2. USDA. Foreign Agricultural Service. Grain: world markets and trade. 2016. Internet: <http://apps.fas.usda.gov/psdonline/circulars/grain.pdf> (accessed 4 July 2018).
3. FFI and GAIN. Feasibility and potential coverage of fortified rice in the Africa rice supply chain. 2016. Internet: http://ffinetwork.org/about/stay_informed/releases/images/Africa_Rice_Executive_summary.pdf (accessed 27 July 2018).