

Addressing pandemic micronutrient deficiencies through flour fortification

by the International Federation for Spina Bifida and Hydrocephalus (IFSBH)

Flour fortification involves adding essential vitamins and minerals to flour as it is milled, which in turn makes foods prepared with fortified flour more nutritious.

Iron, zinc, folic acid, and other B vitamins are commonly added to wheat and maize flours. The potential for fortified foods to help address global nutritional deficiencies has long been acknowledged, with fortification strategies increasingly being prioritised as our interest and understanding of micronutrient malnutrition, and its fundamental role in the overall burden of global disease, has developed. Almost 20 years ago, the World Health Organisation (WHO) identified iron, iodine, vitamin A and zinc deficiencies as being ‘among the world’s most serious health risk factors,’ (World Health Report, 2000).

More than two billion people worldwide are now affected by micronutrient deficiencies. Contrary to popular belief, these dietary deficiencies are a global public health concern, not just an issue unique to developing countries, although undoubtedly this is where their burden is most keenly felt.

In an ideal world, everyone would eat a well-balanced, healthy diet, rich in all essential micronutrients to maintain good health. However, this ideal is over simplistic, and in reality a complex combination of social, environmental and economic factors make this basic prerequisite for good health unachievable for many. Food fortification has been utilised in industrialised societies for over three quarters of a century to replace vital nutrients lost as a result of food processing, so fortification is by no means a new concept. It is undoubtedly the most cost-effective way to ensure that people get enough vitamins and minerals through a non-health intervention.

Smarter Futures

Smarter Futures is a public-private-civic partnership that supports similar partnerships of flour millers, governments, vitamin and mineral suppliers, international organisations, and academic institutions to make fortification of wheat flour a reality in Africa. In countries, these partnerships are known as National Fortification Alliances. It is a sustainable fortification project, providing technical support and training for flour millers, government food control staff, academic institutions and other stakeholders in Africa involved in the fortification of wheat and maize flour with vitamins and minerals.

The project aims to improve the nutritional value of people’s diets through the fortification of flour, improving health and well-being and the health of future generations in Africa by the most successful, economically viable, cost effective and most

importantly, sustainable means possible.

The Smarter Futures is the brainchild of project partners, the Food Fortification Initiative (FFI), AkzoNobel, Helen Keller International, and the International Federation for Spina Bifida and Hydrocephalus (IF), co-financed by the Ministry of Foreign Affairs of the Netherlands, and supported both financially and technically by many other organisations, including the Laboratory of Cereal Technology, Ghent University, Belgium. The project partners are all committed to the primary prevention of health concerns caused by vitamin and mineral deficiencies, such as Neural Tube Defects (NTDs), impaired learning capacity and decreased productivity.

Prevention is the best cure

Fortification is a highly successful means of addressing such deficiencies, as it delivers essential nutrients and does not require consumers to actively change their eating or buying habits.

Whilst the fortification of staple foods benefits the health of people across the population, the key beneficiaries of the Smarter



Futures project are women of childbearing age, adolescents (especially girls) and young children. It is in these groups particularly where the greatest public health consequences are felt, through maternal health, foetal development, child growth and cognitive development, infant mortality and immunity to infection. Fortification ensure that women get iron, folic acid and other essential vitamins and minerals well before they get pregnant.

In the last 10 years, 41 countries have benefitted as a result of training, meetings and events conducted by the Smarter Futures team, with 27 of these countries subsequently implementing mandatory fortification, with a further 5 opting to fortify voluntarily. As a result, this unique partnership has gained

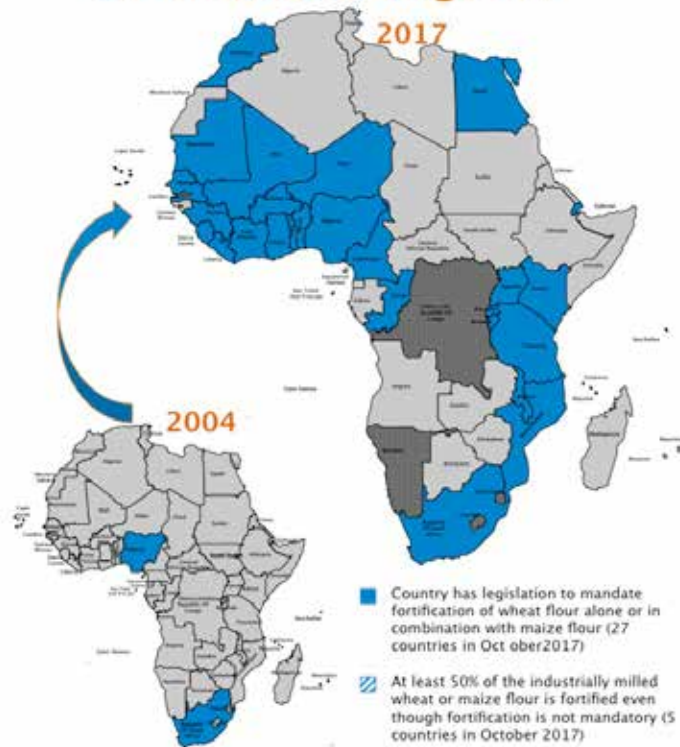
recognition for its proactive approach to encouraging and facilitating cross-sector discussion, identifying areas for development and progressing implementation of fortification across Africa, solidifying its position as a key player in global fortification. To facilitate the flour fortification advocacy in Africa, Smarter Futures launched an advocacy toolkit, “Fortify Grains to Prevent Neural Tube Defects in Africa”. The progress in Africa during this time far exceeds that made elsewhere in the world, particularly that in Europe.

Achieving an effective public health impact

Smarter Futures signature activity are the multi-sectoral, multi-country Quality Assurance and Quality Control (QA/QC) training workshops that it has organised annually. The workshop methodology is designed to ensure that wheat and maize flour fortification programmes are implemented correctly to achieve an effective public health impact.

The aim of the workshops is to increase the capacity and commitment of wheat and maize flour millers to implement adequate QA and QC systems, so that they are consistently producing a safe, high quality product that meets national standards and specifications. Similarly, the regulatory authorities attending the workshops will have increased capacity and commitment to monitor fortified food production in an effective, efficient and sustainable way. The workshops have been shown to foster an improved dialogue between wheat and maize flour millers and relevant government regulatory authorities, and an improved understanding of requirements, roles and responsibilities of the national stakeholders. Over the years, QA/QC workshops have been held in Dakar, Senegal; Dar es Salaam, Tanzania; Casablanca, Morocco; Harare, Zimbabwe, Kampala, Uganda and Lusaka, Zambia for varying sub-regional groups of countries.

Flour Fortification in Africa: 13 Years of Progress



27th International Conference for Spina Bifida and Hydrocephalus

Following on from the success of the Global Fortification Summit held in Arusha, Tanzania in September 2015, and involvement in the subsequent Post Summit Technical Advisory Group (TAG), 2016 was a groundbreaking year for the Smarter Futures partnership. Staff have been involved in international activities, such as the 27th International Conference for Spina Bifida and Hydrocephalus in Ghent (where Dr Filip Van Bockstaele detailed the extensive work being done in Africa), and advocacy work with UN agencies, including WHO. A number of monitoring and training missions were also undertaken by the partnership, including quality control/ quality assurance and capacity building visits organised by partner, Helen Keller International to Côte d'Ivoire, Guinea, Mali, Burkina Faso, Sénégal, Nigeria, Benin, Togo, and Niger.

These visits resulted in the training of many stakeholders (including importers and food inspectors), in addition to achieving measurable improvements in capacity building, industry standards and compliance.

The partnership has taken a number of steps to progress research and training relating to fortification, with partners Akzo Nobel developing a new portable kit to test the iron content of flour (reducing testing timescales from a day, to a few minutes), and partners FFI, Kansas State University and GAIN developing and implementing a new online QA/QC training tool suitable for both individual and group training.

Looking forward

Looking forward, Smarter Futures continues to develop new areas of work towards the progression of fortification, including

expanding its remit to encompass strategies for maize and rice fortification, following feasibility studies conducted in 2016.

However, challenges still remain to overcome barriers preventing the implementation of effective mandatory fortification programmes in a number of countries.

As such, the project will continue to advocate on the significant preventative health benefits of mandatory fortification and the subsequent cost benefits at country level, through active community engagement in advocacy activities and the provision of cost benefit analysis workshops and associated training

Through methods such as; helping to build capacity for monitoring, surveillance and training, based on the FORTIMAS (Fortification Monitoring and Surveillance) methodology; providing technical support and problems solving assistance at country level; sharing and promoting examples of good practice, and supporting those already fortifying (but not yet fully compliant with WHO guidance), to increase compliance with mandatory legislation and consequently improving the effectiveness of their existing programmes.

Smarter Futures continues to build on the progress made to date, and remains committed to using its effective collective action model, building capacity and advocacy to enable countries to implement sustainable fortification programmes. Over the coming years, the project aims to increase the number of countries implementing mandatory fortification strategies, with a particular focus on countries with high per capita consumption of wheat and or maize flour. These include Algeria, Angola, Botswana, DRC (south eastern region), Ethiopia, Namibia, Rwanda, Sudan, Tunisia and Zambia. 🌐

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