

Defeating Anemia



**Food
Fortification
Initiative**

Enhancing Grains for Healthier Lives

2015 Year in Review





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About this report

The Food Fortification Initiative (FFI) is a public, private, and civic partnership. We help country leaders plan, implement, and monitor fortification programs for industrially milled grains. Our focus is wheat flour, maize flour, and rice. These grains are most commonly fortified with iron to prevent nutritional anemia and folic acid to prevent neural tube birth defects.

This report was produced by our communications team including Sarah Zimmerman and Chang Lu; data collection by Kristin Marks, Timothy Nielsen, and Iju Shakya.



Nutritional Anemia



Costa Rica, Fiji, and Senegal are among the countries that have reported declines in anemia since fortifying flour.

On the cover, the left photo was taken in Costa Rica by [Sean Norton](#). The right photo was taken in Fiji by the Australia [Department of Foreign Affairs and Trade](#). On this page, the photo from Senegal was taken by [Rob Baird](#). Each photo is from Flickr with a Creative Commons license. ‘Defeating Anemia’ title is from an article in the third quarter 2015 issue of Milling Journal and used by permission.

Reducing Iron-Deficiency Anemia in the Real World

In controlled settings, there is no question about whether adding iron to food reduces the prevalence of iron deficiency anemia. When fortification is well implemented and people consume the expected amounts of fortified foods, iron deficiency anemia prevalence declines.

Whether this works in real-world settings has been the unanswered question. Monitoring a national program requires more effort than ensuring quality in a controlled study. And outside the research environment, people may not eat the expected amount of fortified food, which can affect the health impact.

2015 was a milestone year in addressing this challenge. Two scientific papers with our staff as lead authors made it clear that flour fortification in real-world settings reduces the prevalence of anemia if the programs are well implemented and monitored, if iron compounds are added at [recommended concentrations](#), and if coverage and consumption are optimized.

In a published letter to the editor, Richard Hurrell said the paper published in the *British Journal of Nutrition* “provided for the first time good evidence that anemia prevalence can be reduced in countries fortifying flour.” Hurrell is Professor Emeritus for Human Nutrition at ETH Zurich. The second paper was the first systematic review of the effectiveness of flour fortification on iron and anemia outcomes.

The papers were researched and written in collaboration with our partners at Emory University, the Global Alliance for Improved Nutrition (GAIN), and the US Centers for Disease Control and Prevention (CDC).

See the following pages for resources [you can use](#) as we work together to defeat nutritional anemia through food fortification.

Publications in 2015

- “Anemia prevalence may be reduced among countries that fortify flour,” peer-reviewed study in the [British Journal of Nutrition](#). Also see related FFI [press release](#).
- “Evidence of the effectiveness of flour fortification programs on iron status and anemia: a systematic review,” peer-reviewed study in [Nutrition Reviews](#). Also see related FFI [press release](#).
- “In the fight against anemia, iron fortification is a clutch player” commentary in [The Conversation US](#)
- “Can flour fortification programs reduce anemia?” blog in the [Oxford University Press](#)
- “Iron fortification programs and iron status,” peer-reviewed brief on [FFI website](#)

How Does Anemia Make You Feel?

“I feel dyspnea (difficulty breathing) and tachycardia (abnormally rapid heart rate) when I have to hurry up the stairs. **I cannot run a long distance to catch a bus or metro.** In my country we do not have mandatory food fortification for folic acid or iron or zinc.”

-Cevval Ulman



“Before my anemia was diagnosed, **physical activity was a huge chore.** I remember trying to climb a flight of stairs and feeling faint. I would be exhausted and dizzy by the time I reached the top. My body felt like I had just run a marathon while wearing weights on my arms and legs.”

-Sharon Dorsey

“When I was pregnant with my second child, on a few occasions I found myself **dizzy and on the verge of fainting.** The scariest part was that each time it happened when I was alone.”

-Danielle B. Suchdev



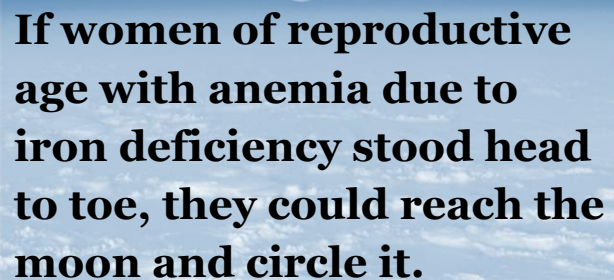
See [other examples](#) of how anemia affects daily life.

How Many People Have Anemia Related to Iron Deficiency?

The World Health Organization's (WHO) [Global Prevalence of Anemia in 2011](#) published in 2015 estimates that 42% of anemia in children, 49% of anemia in non-pregnant women of child-bearing age, and 50% of anemia in pregnant women ages 15-49 years is related to iron deficiency. That translates to:

- 114.7 million children
- 243.2 million non-pregnant women of child-bearing age and
- 16.2 million pregnant women with anemia

Consider the 243,187,000 non-pregnant women of child-bearing age with anemia related to iron deficiency. Assume each woman is 1.65 meters tall (5.41 feet). If they stood head to toe, they would extend 401,259 kilometers – enough to reach the moon and circle it.



If women of reproductive age with anemia due to iron deficiency stood head to toe, they could reach the moon and circle it.

Photo by [NASA](#) on Flickr Creative Commons License



New Video Resources

- A new video describes [how Costa Rica fortified foods to prevent anemia from iron deficiency](#). The information is presented by Reynaldo Martorell, Woodruff Professor of International Nutrition, Senior Advisor to the Emory Global Health Institute, and member of our Executive Management Team. The study from Costa Rica is [here](#).
- A [two-minute video](#) combines the 2015 research on anemia.

Neural Tube Defects



This child with spina bifida was at the Plaster House rehabilitation center near Arusha, Tanzania, in September 2015 when participants from the #FutureFortified Global Summit on Food Fortification were visiting. The Summit participants also toured the Arusha Lutheran Medical Center to better understand what children with spina bifida experience. Photo by Godwin Bamsa.

Nigeria Adds Folic Acid to Fortification Standards

In September 2015 Nigeria amended its existing standards for wheat flour, wheat semolina, and maize flour to include folic acid. This policy change reflects hard work by fortification advocates in the public, private, and civic sectors in Nigeria. When fully implemented, the result will be a lower prevalence of neural tube birth defects (NTDs) in this country.

Now only six of 85 countries with national grain fortification mandates omit folic acid from their standards. Congo, Philippines, United Kingdom, Venezuela, and Viet Nam do not include folic acid in wheat flour, and Papua New Guinea omits folic acid from fortified rice.

Birth Defect Surveillance

Data about how many pregnancies are affected by NTDs can be an important tool in advocating for cereal grains to be fortified with folic acid.

In 2015, we participated in two workshops focused on training country stakeholders to conduct birth defect surveillance. One was in Arusha, Tanzania, in March 2015. A special focus was data quality, analysis, and interpretation. The [workshop](#) was led by WHO and CDC with collaboration from Smarter Futures, which is a partnership for Africa of the International Federation for Spina Bifida and Hydrocephalus, AkzoNobel, Helen Keller International, the Government of the Netherlands, and FFI. See more at www.SmarterFutures.net.

This photo is from a regional program managers' meeting on prevention and surveillance of birth defects coordinated by the WHO regional office for South-East Asia and the CDC in April 2015 in New Delhi, India. We participated to discuss the proven strategy of

fortifying grains with folic acid to prevent NTDs.



Folic Acid: “The Best Thing Since Sliced Bread”

Our research in 2015 did not evaluate whether fortifying flour with folic acid prevents NTDs because that is well established. Every country that evaluates this effectiveness [reports a decrease](#) in NTDs after fortification begins. One [meta-analysis](#) showed that fortifying wheat flour with folic acid reduced the incidence of these severe birth defects by an average of 46%.

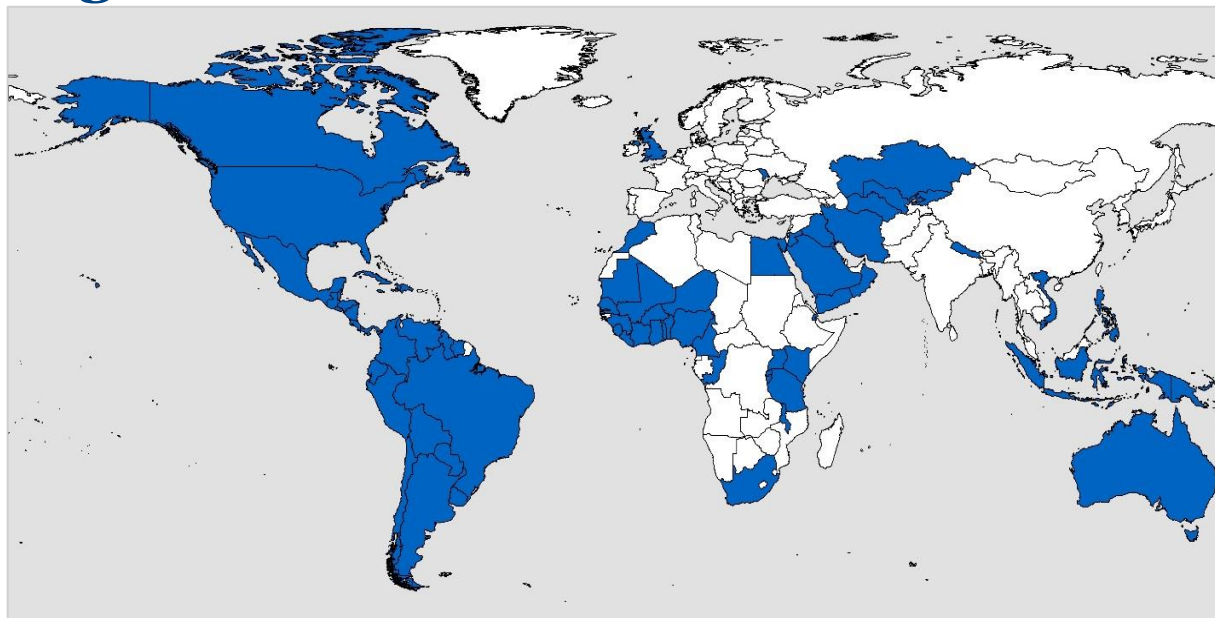
One common NTD is spina bifida in which the spine does not form correctly. This causes varying degrees of permanent disability. Another NTD is anencephaly in which the brain does not form properly. This is always fatal. A rare NTD is encephalocele in which part of the brain protrudes through the skull.



In a [video](#) made in 2015, Godfrey Oakley said fortifying flour to prevent these severe birth defects is the “best thing since sliced bread.” This expression is used to describe something that is extremely good. Godfrey is Director of the Center for Spina Bifida Research, Prevention, and Policy at Emory University.

In addition to healthy infants, fortifying with folic acid to prevent spina bifida saves millions of healthcare dollars. A [recent study](#) from the United States showed that the net benefit of adding folic acid to flour is US\$ 603 million annually.

Legislation



The countries in blue above have legislation that mandates fortification of industrially milled wheat flour, maize flour, and/or rice with at least iron and/or folic acid.

Burundi and Malawi Pass Fortification Legislation in 2015

Two countries – Burundi and Malawi – passed legislation in 2015 to require fortification of flour and other staple foods.

Burundi’s legislation applies to imported and domestically produced wheat, maize and cassava flours as well as cooking oil and sugar. Salt is fortified with iodine based on a previous presidential decree.

Though Burundi does not have an industrial cassava flour mill currently, including cassava flour in the fortification mandate was a strategic move for the future. Cassava is commonly consumed, and the country is seeking investors to build a large-scale cassava flour mill.

Malawi's mandate calls for fortification of wheat flour, maize flour, sugar, and oil. The Bureau of Standards and Ministry of Health inspectors are charged with enforcing compliance among domestic producers and importers.

Project Healthy Children (PHC) is a leading local partner in both countries.

When PHC begins a program, it hires a Country Coordinator to work side-by-side with local governments and industries until the program is implemented and monitored by national leaders. PHC also places a strong focus on regulatory monitoring. For example, Burundi will use a Fortification Monitoring Tool that PHC helped develop.



Burundi photo from UNICEF



Malawi photo from istockphoto

In Malawi, UNICEF also provided technical assistance while Irish Aid provided financial support.

Individuals from Burundi and Malawi have participated in Smarter Futures events since 2008, including advocacy meetings, workshops for quality assurance and quality control, and training for comparing costs and economic benefits of fortification.

Sample Legislation

In 2015 we posted examples of national legislation and standards on our website for your reference. See [samples](#) from 17 countries. Documents can be found in one or two of these languages: English, French, Portuguese, Russian, or Spanish.



Global Progress

In 2002 when FFI began, 44 countries had legislation to fortify wheat flour (see green map at left).

‘Mandatory’ means the legislation has the effect of mandating fortification of one or more types of wheat or maize flour or rice with at least iron or folic acid.

In January 2016 the Prime Minister of Viet Nam signed a decree for food fortification that included wheat flour, salt, and cooking oil. Consequently 85 countries had mandates in March 2016 to require fortification of at least one cereal grain. Of the total:

- 84 countries had legislation to fortify wheat flour
- 14 countries had legislation to fortify maize flour
- 6 countries had legislation to fortify rice

See the [Global Progress](#) page of our website for details and to download maps as images or PowerPoint slides.

Monitoring



Patrick Hackenberg and Heather Cook from the IGP Institute of Kansas State University worked on an online training course for flour fortification monitoring in 2015. This project is being reviewed by beta testers and will be available later in 2016. Photo by Helena Pachón.

Moving Beyond Legislation

While passing legislation is a significant milestone in national fortification progress, programs must be monitored to ensure compliance with the country standards.

In 2014 we began compiling data on fortification monitoring procedures from countries that mandate wheat flour, maize flour, and/or rice fortification. We ask if documented procedures are in place for monitoring at external, commercial, and import levels. We are

also interested in knowing if the results are compiled in annual reports and if recent impact evaluations have been conducted.

In 2015, we contacted the 84 countries with mandates to fortify at least one cereal grain to ask about six components of monitoring programs; 93% of the respondents answered affirmatively and included supporting documentation with their replies.

The table below represents the percentage of countries which affirmed use of the monitoring component in the first column for the specific cereal grain.

Monitoring component	Wheat (n=53) ^a	Maize (n=14) ^b	Rice (n=5) ^c
A <u>national committee</u> oversees the fortification program	67%	85%	75%
Rules and operating procedures for <u>external</u> monitoring of fortification at mill level by national authorities are stipulated in a document	78%	77%	50%
Rules and operating procedures for <u>commercial</u> monitoring of fortification at retail level by national authorities are stipulated in a document	62%	69%	25%
Rules and operating procedures for verification of fortification at <u>import</u> level by national authorities are stipulated in a document	67%	80%	50%
A <u>national report</u> on the status of fortification monitoring and compliance has been compiled in the last five years	35%	31%	25%
An <u>impact evaluation</u> of the fortification program has been completed	29%	23%	0%
^a 64% of countries that mandate fortification of wheat flour responded (53 of 83 countries) ^b 100% of countries that mandate fortification of maize flour responded (14 of 14 countries) ^c 83% of countries that mandate fortification of rice responded (5 of 6 countries)			

Flour Fortification Indicators Added to eCatalogue

The WHO maintains an electronic [catalogue of indicators](#) to help countries track performance of micronutrient programs. We contributed to several new indicators related to flour fortification which were added in 2015. Countries can adapt and adopt these as process and impact indicators. This new resource can be especially helpful for advisors or program managers engaged in monitoring and evaluation of flour fortification.

Scroll toward the end of the [list of indicators](#) to see those relevant to flour fortification. See this page for [instructions](#) on how to use the catalogue.

Coming in 2016

Two new monitoring tools are underway and planned for release in 2016. One is a flour fortification monitoring manual developed with partners at GAIN and CDC's International Micronutrient Malnutrition Prevention and Control (IMMPaCt) team. The tool is being reviewed now and should be available later in 2016.

We are also developing an online training course for flour fortification monitoring. This special project was funded by GAIN in collaboration with the IGP Institute of Kansas State University. In January 2016, we recruited 15 people to beta test the course. Their feedback will inform a revision process, after which the course will be made available to fortification stakeholders worldwide.

Click on the icons below for links to follow FFI on social media to know when the new tools are ready for your use.



Rice



Becky Tsang, center, our Technical Officer for Asia, and Quentin Johnson, left, our Training and Technical Support Coordinator, demonstrated a rapid assay for rice fortification at a marketplace booth in the #FutureFortified Global Summit on Food Fortification in Arusha, Tanzania, in September 2015. Photo by Helena Pachón.

Rapid Test Identifies Fortified Rice Kernels

We are expanding our work beyond wheat and maize flour to include rice fortification. In doing so, we realized that this evolving intervention had no field-friendly, quick way to test rice for fortification. Such a tool will be essential for monitoring as rice fortification becomes the industry standard.

Although several fortified rice kernel producers use rapid, qualitative tests in their laboratories, these could not be easily used in field settings. In 2015 we worked with these producers and other researchers to identify existing tests that use safe chemicals. Then we adapted them for use in field settings. As a result, two modified rice fortification tests are

available for use by regulatory and program staff. For example, the tests can be used by customs inspectors in countries where imported rice shipments are required to be fortified.

The tests identify the presence of iron in extruded and coated rice kernels. The tests can also identify whether rice has been dusted with vitamins and minerals. However dusting is not recommended in countries where rice is commonly rinsed before cooking.

Both tests involve adding readily available chemicals to a sample of rice. In less than two minutes, the iron in fortified rice kernels reacts with the chemicals and changes color. This lets the user know that the rice sample includes rice kernels fortified with iron. The presence of iron is considered a proxy for other vitamins and minerals included in the fortified kernels.

One test uses the same chemicals as a qualitative test of fortified flour commonly called the iron spot test. Using the same chemicals will simplify the monitoring procedures in countries where both flour and rice are fortified.

The University of Papua New Guinea has already adopted these procedures for use in a proposed monitoring exercise of imported fortified rice. Papua New Guinea is one of the six countries globally with mandatory legislation for rice fortification.

See the [documentation and Standard Operating Procedures](#) for these tests.

Sharing Rice Fortification Resources

To keep up with the developments in rice fortification, join the rice fortification resource platform. It includes a database on fortified rice studies, current rice fortification research, list of fortified rice kernel producers, and information on rice fortification activities. Contact Becky Tsang, FFI Technical Officer for Asia, with questions and comments.

Becky.tsang@ffinetwork.org

Percent Fortified



As an indicator of how well grain fortification programs are implemented, each year we estimate the amount of industrially milled wheat flour, maize flour, and rice that is fortified with at least iron or folic acid. The charts on the next page reflect our estimates for 2015 and 2014. These numbers include fortification in mandatory programs as well as voluntary efforts.

Egypt has stopped fortifying wheat flour, and this represents a 4.7 million metric ton decrease in fortified flour. This is a major factor contributing to the decreased estimate of the percentage of fortified wheat flour.

The increase in fortification of industrially milled maize flour is primarily due to revised data from Mexico, which is a major contributor to the global consumption of industrially milled maize.

Wheat flour	2014	2015
Global amount available for human consumption¹	349,073,060	349,765,488
Amount industrially milled²	285,287,955	286,640,416
Total fortified industrially milled²	85,256,830	80,667,513
% of industrially milled wheat flour that is fortified	29.9	28.1

Maize flour	2014	2015
Global amount available for human consumption¹	85,423,260	87,803,467
Amount industrially milled²	16,594,609	12,445,717
Total fortified industrially milled²	7,914,408	7,218,545
% of industrially milled maize flour that is fortified	47.7	58.0

Rice	2014	2015
Global amount available for human consumption¹	365,059,523	371,704,171
Amount industrially milled²	222,269,032	230,333,404
Total fortified industrially milled²	1,778,509	1,789,082
% of industrially milled rice that is fortified	0.8	0.8

Differences between 2015 – 2014		
Wheat Flour	Change in amount available for human consumption ³	692,428 (0.2%)
	Change in % of flour from industrial mills ⁴	0.2%
	Change in % of flour fortified ⁴	-1.8%
Maize Flour	Change in amount available for human consumption ³	2,380,207 (2.8%)
	Change in % of flour from industrial mills ⁴	-5.3%
	Change in % of flour fortified ⁴	10.3%
Rice	Change in amount available for human consumption ³	6,644,648 (1.8%)
	Change in % of rice from industrial mills ⁴	1.1%
	Change in % of rice fortified ⁴	0.0%

¹ metric tons; Food and Agriculture Organization of the United Nations (FAO) for 2011, the most recent year with data from the majority of countries.

² metric tons; FFI calculations. See next page.

³ metric tons; FAO data from 2010 and 2011.

⁴ FFI calculations.

How We Calculate Global Estimates

We begin with data from the Food and Agriculture Organization of the United Nations (FAO) about how much grain is available in the food supply for each country. For this report, 2011 data was used because it is the most recent year with information from the majority of countries.

Flour and rice available

To calculate the amount of wheat flour available, we multiply the metric tons of wheat available in each country by the country's average flour extraction rate. We use 75% as the default extraction rate unless we have country-specific data.

For maize, we use regional extraction rates of 67.5% for Africa and 72.5% for South/Central America, and the Caribbean. We use an extraction rate of 70% elsewhere.

No extraction rate adjustment is needed for rice as FAO data represents the "milled rice equivalent."

Industrially milled

We then adjust the numbers to reflect industrial production. We assume that 100% of wheat flour is industrially milled, with the exception of countries with a large number of small mills, such as India, Nepal, and Pakistan. In contrast, we assume that 0% of maize flour and rice are industrially milled unless we have country-specific data to indicate otherwise.

Percent fortified

We then ask national partners in governments, milling associations, non-governmental organizations, and United Nations agencies to estimate how much of each grain is fortified in their country.

We then compile the country figures into the global estimates on the previous page.

Advocacy and Technical Support

2015

21

- meetings which we organized or made presentations

21

- visits to national leaders, including 15 countries and 6 states in India

104

- individual requests for information were addressed by the Global Secretariat. If you have a question, please e-mail us at info@ffinetwork.org

Activities

Our focus is providing advocacy and technical support to multi-sector leaders of national fortification programs. We do that in regional meetings and conferences, visits with country leaders, and replies to individual inquires.

Examples



Kansas State University in the United States hosted a workshop on extrusion-based rice fortification in August 2015. The workshop was a collaborative dialogue between researchers, US government representatives, international agencies, non-profit organizations, and industry leaders. We provided technical information on rice fortification.



A Fortification Coverage Survey (FACT) was implemented in two Nigerian states in 2015. This photo was taken during the survey training by Helena Pachón, our Senior Nutrition Scientist, who collaborated with GAIN, the CDC, and Oxford Policy Management on the project.



Uganda did a great job of including fortification-related questions in the Uganda National Panel Survey. At left, Helena met with Uganda Ministry of Health officials to discuss analyzing the data. Pictured with Helena, from left, are Jacent Assimwe, Sarah Ngalombi, and Carolyn Balwanaki.



During a National Consultation on Wheat Flour Fortification, in New Delhi, India, Dr. Ajay Khera, Commissioner, Ministry of Health and Family Welfare, announced formation of a technical resource group which would work on guidelines to fortify wheat flour with iron, folic acid, and vitamin B12. We are advocating for the standards to comply with [WHO recommendations](#). For more information about the meeting in August 2015 see our [website](#).



Eighty flour millers and government food-control and nutrition staff from 10 countries participated in a training workshop on quality assurance and quality control for flour fortification in Harare, Zimbabwe, in May 2015. See the meeting report and presentations on our [website](#).

The meeting was hosted by the Ministry of Health, Zimbabwe, with support from Smarter Futures, UNICEF, GAIN, PHC, BioAnalyt GmbH, Muehlenchemie, Hexagon, DSM, and National Foods Zimbabwe.



The Scaling Up Nutrition (SUN) Business Network Asia Region meeting in Jakarta, Indonesia, in December 2015 drew delegates from 14 countries. Karen Codling, our Executive Officer for Asia, was a panelist during a fortification session to discuss global lessons learned on fortification. In this photo, the participants are holding Indonesian musical instruments.



Dr. Jun-Shi Chen, Research Professor at the National Institute for Nutrition and Food Safety, Chinese Center for Disease Control and Prevention (China CDC), and Scott Montgomery, our Director, looked for fortified foods at a Carrefour supermarket in Beijing, China. The retail chain supports voluntary fortification by providing preferred product placement for fortified products such as wheat flour, oil, and soy sauce. At left is Dr. Junsheng Huo, also a Professor in the National Institute for Nutrition and Food Safety at the China CDC.

This store visit concluded a one-day workshop organized by China CDC to discuss current and future fortification opportunities. The workshop was part of a trip in December 2015 when three of our staff and Lieven Bauwens, Secretary General of the International Federation for Spina Bifida and Hydrocephalus, met with national fortification stakeholders, including the Chinese Disabled Peoples Federation, UNICEF, China CDC, birth defects researchers, and private sector leaders Buhler and Wilmar. Photo by Karen Codling.

Country Profile



This girl in Solomon Islands represents the children who will benefit from improved nutrition due to fortification. Photo by Becky Tsang.

Solomon Islands – From Legislation to Practice

Solomon Islands' 2006-2007 Demographic Health Survey revealed that nearly one in two women of childbearing age and one in two children under age five years are anemic. Legislation to fortify wheat flour was passed in this Pacific island country in 2010 as a means of addressing these deficiencies but, without regulatory monitoring, the law was not implemented.

In 2014 Australia's Department of Foreign Affairs and Trade (DFAT) asked us to help make fortification a reality in Solomon Islands. Our team found that most wheat flour

consumed in the country was domestically produced, and the single local flour mill manufacturer was supportive of fortification.

Additionally we found that rice is more widely consumed than wheat flour across the provinces, making rice an important vehicle for fortification. Nearly all the rice is imported in Solomon Islands. The leading importing

The simple logo at right was created by Solrice (the leading rice importing company) for use by all fortified domestically produced products as well as rice and wheat flour importers in Solomon Islands.



company is willing to fortify its products if fortification becomes mandatory and is fairly monitored. Adequate monitoring will create equitable financial obligations among rice importers and help ensure equal coverage of nutritional benefits for consumers.



Signatories of the national memorandum of understanding for food fortification in Solomon Islands pose for a photo during the first Food Fortification National Committee meeting in February 2015. Photo by Steve Alufurai for Solomon Islands Ministry of Health and Medical Services.

With DFAT funding in 2014, we hired Jessica Leete as a consultant to work in Solomon Islands for eight months. She helped the Ministry of Health and Medical Services create a Food Fortification National Committee (FFNC) with representatives from the public and private sectors and development partners. The Committee's first meeting was in February 2015. The group continues to guide the program, including reviewing standards, suggesting revised legislation to include rice fortification, sharing a communications campaign, and training regulatory staff to monitor the program.

The local flour mill began fortifying wheat flour in Solomon Islands in July 2015. We provided technical training to improve capacity for internal monitoring by the mill and external and import monitoring by the government in August 2015. We continue to assist the FFNC as it works toward a successful fortification program. The impact of fortification will be evaluated in future health surveys.

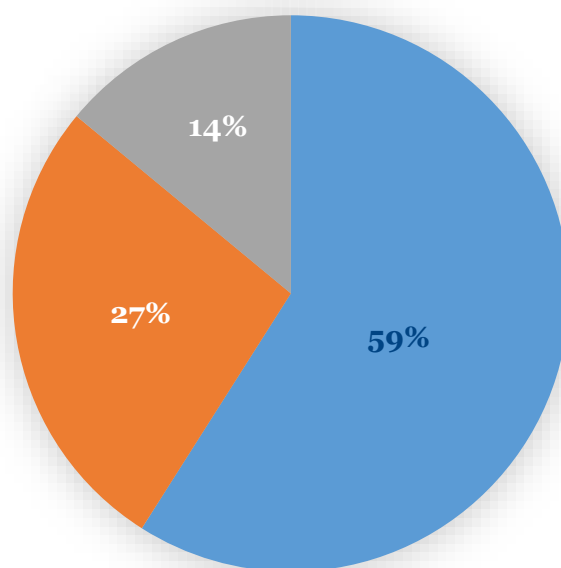


Quentin Johnson, left, our Training and Technical Support Coordinator, observes as newly trained flour millers in Solomon Islands perform the iron spot test, a qualitative method to indicate whether flour has been fortified. Photo by Becky Tsang.

Gift Profile

2015 CONTRIBUTIONS: US\$ 1.9 MILLION

■ Governments ■ Corporations ■ NGOs/UN agencies



Contributions to FFI are used to provide technical assistance for planning, implementing and monitoring successful fortification programs. For example, gifts during the 2015 calendar year allowed us to start an analysis of the rice supply chain in West Africa and lead a quality control and quality assurance training in Turkmenistan.

To Contribute

FFI is a global partnership representing the public, private, and civic sectors.

The CDC Foundation serves as the grant administrator for most of our contributions. The CDC Foundation is a US-based 501(c)(3) organization, and its Federal Identification Number is 58-2106707. For more information, please contact Hether Scheel, Advancement Officer, at hscheel@cdcfoundation.org

Annual Donors

Our annual donors include:

- Bühler
- Bunge Ltd.
- Cargill, Inc.
- CDC
 - National Center for Chronic Disease Prevention and Health Promotion
 - National Center on Birth Defects and Developmental Disabilities
- GAIN
- Interflour Group PTE, Ltd.
- Micronutrient Initiative
- UNICEF

The Smarter Futures partnership supports work in Africa through a matching grant program. The partnership includes AkzoNobel, the Government of the Netherlands, Helen Keller International, and the International Federation for Spina Bifida and Hydrocephalus in addition to FFI.

In-kind donations are also received annually from:

- Emory University
- International Association of Operative Millers (IAOM)
- Multiple in-country stakeholders

Leadership



Executive Management Team meetings in Atlanta include our Global Secretariat staff as well as guests from Atlanta-based partners such as the CDC and the Center for Spina Bifida Research, Prevention, and Policy at Emory University. This photo was taken in November 2015.

Executive Management Team

An Executive Management Team (EMT) representing global leaders in the public, private, and civic sectors provides our strategic direction. In addition to the 11 members listed below, WHO is an EMT observer.

Greg Harvey (Chair)

CEO

Interflour Group PTE, Ltd.

Peter Böhni

Managing Director, Ecole Polytechnique
Fédéral de Lausanne (EPFL or Swiss
Federal Institute of Technology),
Innovation Satellite

Bühler AG

Jule Taylor

Vice President, Corporate Plant
Operations

Cargill, Inc.

Greg S. Garrett

Director, Large-Scale Food Fortification

**Global Alliance for Improved
Nutrition (GAIN)**

Lieven Bauwens

Secretary General

**International Federation for Spina
Bifida and Hydrocephalus**

Werner Schultink

Chief of Nutrition

**United Nations Children's Fund
(UNICEF)**

Mauro Cerati

Vice President, Global Milling and Global
Account Development

Bunge Limited

Reynaldo Martorell

Woodruff Professor of International
Nutrition; Senior Advisor, Global Health
Institute

Emory University

Melinda Farris

Executive Vice President

**International Association of Operative
Millers (IAOM)**

Luz Maria De-Regil

Director, Research and Evaluation and Chief
Technical Advisor

The Micronutrient Initiative

Janet Collins

Director, Division of Nutrition, Physical
Activity, and Obesity (now retired)

**US Centers for Disease Control and
Prevention (CDC)**

Expanding Role in India

In 2015 Scott Montgomery, our Director, was named a senior advisor to the Tata Trusts in India. His role includes:

- Supporting large-scale efforts to add vitamins and minerals to food staples. This includes providing reliable market and technical information to inform state-specific plans.
- Working on supply chain strategies in states where fortification is launched. This will help ensure quality supplies are provided to public distribution programs as applicable.
- Providing an industry interface to ensure supply-side cooperation in fortification.
- Leading the wheat and rice fortification efforts related to technical, supply chain, and other implementation aspects.



Scott Montgomery

Haryana Demonstration Project

In 2015, we conducted a supply chain analysis for a wheat flour fortification demonstration project in the India state of Haryana. Project partners include the National Health Mission, Haryana; Post Graduate Institute of Medical Education and Research, Chandigarh; Survival for Women and Children Foundation, Chandigarh; WHO, India; CDC; and FFI.

The next step is collecting blood samples from 790 non-pregnant women of reproductive age. The second phase will be fortifying wheat flour with iron, folic acid, and vitamin B12. This phase will include fortification monitoring and continued birth defect surveillance. After four years of implementation, the third phase will be an evaluation.

Our Vision:

Smarter, stronger, healthier people worldwide by improving vitamin and mineral nutrition.

Our Mission:

Advocate for and support fortification of industrially milled cereal grains by collaborating with multi-sector partners.

www.FFInetwork.org

Suggested citation

Food Fortification Initiative. Defeating Anemia. 2015 Year In Review. FFI: Atlanta, USA 2016.

Accessed at:

http://www.ffinetwork.org/about/stay_informed/publications/documents/FFI2015Review.pdf

On the back, the top photo from Viet Nam was taken by [Gavin White](#) on Flickr. The bottom photos are from istockphoto.



Food Fortification Initiative

Enhancing Grains for Healthier Lives

