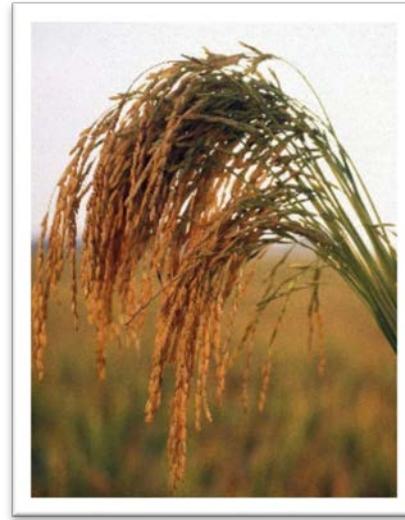


New Grain



2014 Year in Review



Food Fortification Initiative
Enhancing Grains for Healthier Lives

New Name

New Grain

The original focus of the FFI multi-sector partnership was on fortifying industrially milled wheat flour — the most commonly consumed cereal grain in the world. ¹

In time, we included advocacy and technical support for fortification of maize flour, which is very similar to wheat flour when it comes to fortification. We formally added rice to our work in 2014.

Since rice is generally eaten as whole kernels rather than flour, it was not reflected in our original name: the Flour Fortification Initiative (FFI).

New Name

In May 2014 we launched our new name to reflect this expanded scope of work. We are now the **Food Fortification Initiative**, and we still use the FFI initials.

Our new tagline, *Enhancing Grains for Healthier Lives*, is a reminder that our focus is grains, and our ultimate goal is to foster healthier lives.

More Impact

Working through our partnerships to fortify rice increases the potential health impact of fortification beyond populations who mostly consume wheat or maize.

In 59 countries, an average of more than 75 grams of rice per person per day is available for human consumption. ¹ The highest average is in Bangladesh with 475 grams.

The total population of these 59 countries is 4.1 billion. If fortification of industrially milled rice reaches half of that population, 2 billion people would have improved nutrition in their daily diets.

http://www.ffinetwork.org/about/stay_informed/releases/Rebranding.html



Women and children in Cambodia are examples of people who are more likely to benefit from fortification of a combination of wheat flour and rice than wheat flour alone. Photo by Meg Ivankovich, Emory University.

¹ Food and Agriculture Organization of the United Nations (FAO)

New Frontier in Grain Fortification

Wheat flour has been fortified for decades to prevent vitamin and mineral deficiencies. Health consequences of these deficiencies include nutritional anemia, pellagra, and beriberi. Beginning in 1996, folic acid was added to wheat flour to reduce the risk of devastating neural tube defects such as spina bifida.

While fortifying wheat flour and maize flour is similar, the technology for fortifying rice is still emerging. This new frontier in grain fortification is largely considered an untapped opportunity to improve health.



Individuals from India were among 200 representatives from nine countries attending a “Scaling Up Rice Fortification in Asia” workshop in September 2014.

The collaborating committee which organized this event was a great example of partnership. The group included FFI, the Global Alliance for Improve Nutrition (GAIN), the Micronutrient Initiative (MI), PATH, the United Nations Children’s Fund (UNICEF), and the United Nations World Food Program (WFP). See all presentations from the meeting at: http://www.ffinetwork.org/about/calendar/2014/RiceMtg_Bangkok.html

Rice Fortification Resources

Presentations from the “Scaling Up Rice Fortification in Asia” workshop:

http://www.ffinetwork.org/about/calendar/2014/RiceMtg_Bangkok.html

Three-page, peer-reviewed document summarizing studies of rice fortification’s impact on nutrition:

http://www.ffinetwork.org/about/faq/documents/Rice_Fortification_Nutrition_ImpactOct2014.pdf

Answers to Frequently Asked Questions:

http://www.ffinetwork.org/about/faq/faq_rice_industry.html

Technical considerations for rice fortification in public health:

<http://www.nyas.org/Publications/Annals/Detail.aspx?cid=493d93c2-ec8b-44c1-88a5-1d0483c3106b>

Fortified Rice: A Game Changer video:

<https://www.youtube.com/watch?v=6yvrYM9bJyg>



Technical workshop in Moldova, September 2014

Africa Network Meeting in South Africa, December 2014

Second International Workshop on Micronutrients and Child Health in India, November 2014

New Grain, New Name, Same Commitment

One thing has not changed in the midst of adding a new grain to our work and a new name to our brand: we are still committed to working with partners to provide advocacy and training for planning, implementing, and monitoring fortification programs.

We often provide such support through workshops we help organize as well as partners' workshops where we are invited to present. These photos are from six of the **26** times in the 2014 calendar year that FFI either led or participated in workshops.



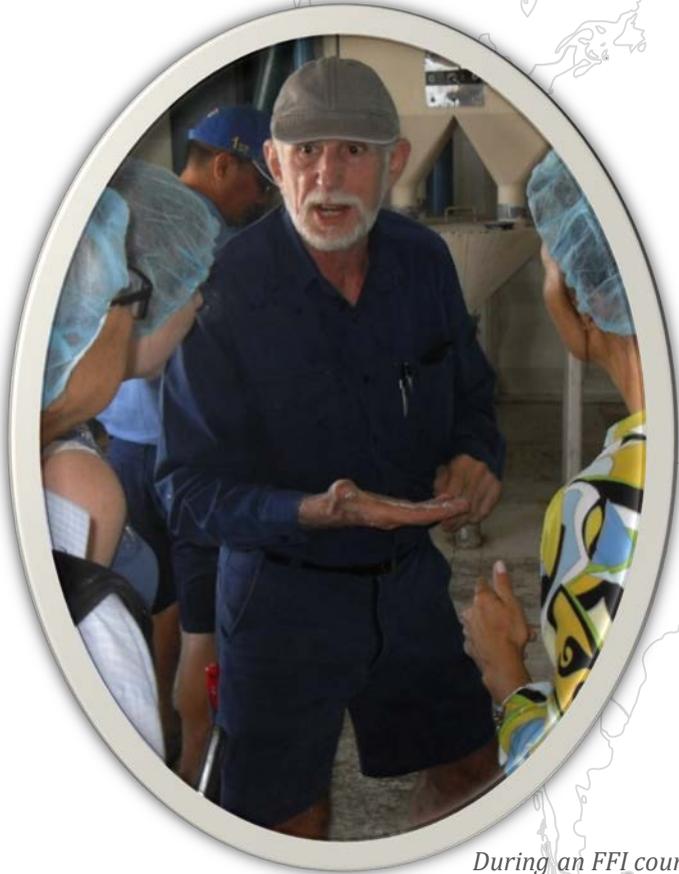
Micronutrient Forum in Ethiopia, June 2014

International Rice Congress in Thailand, November 2014

World Health Organization Guideline Development Group in Mexico, November 2014

Country Visits in 2014

In addition to workshops and conferences, our 13 staff members visited leaders in the **18** countries highlighted below to address key concerns.



During an FFI country visit to the Solomon Islands in July 2014, Des Devenport, Mill Manager at Delite Flour Mill, discussed plans to expand his wheat milling capacity and include fortification. With support from the Government of Australia's Department of Foreign Affairs and Trade, we are helping Solomon Island leaders develop plans for fortification of rice as well as wheat flour. Photo by Helena Pachón, FFI.

Individual Questions

In 2014, we addressed 47 individual requests for information. The requests were most commonly for research purposes, assistance in program implementation, clarification of fortification definitions, use of FFI materials, industry data, and technical guidance. If you have a question, please e-mail us at info@ffinetwork.org.

We are also frequently asked for maps showing which countries have mandatory grain fortification. You can download those maps from http://www.ffinetwork.org/global_progress/index.php



One strength of being a partnership is the ease of seeking expert advice from others when questions arise.

For example, in 2014 Nicolas Tsikhlikis, Chief Operations Officer and Partner at The Modern Flour Mills and Macaroni Factories in Jordan, requested information because some country leaders were considering removing folic acid from the wheat flour standard.

We connected Nicolas with experts at the US Centers for Disease Control and Prevention (CDC) and the regional World Health Organization (WHO) office. With the information provided, the country opted to continue fortifying with folic acid.

Photo by Andrew Gorman for FFI.



47 requests for information

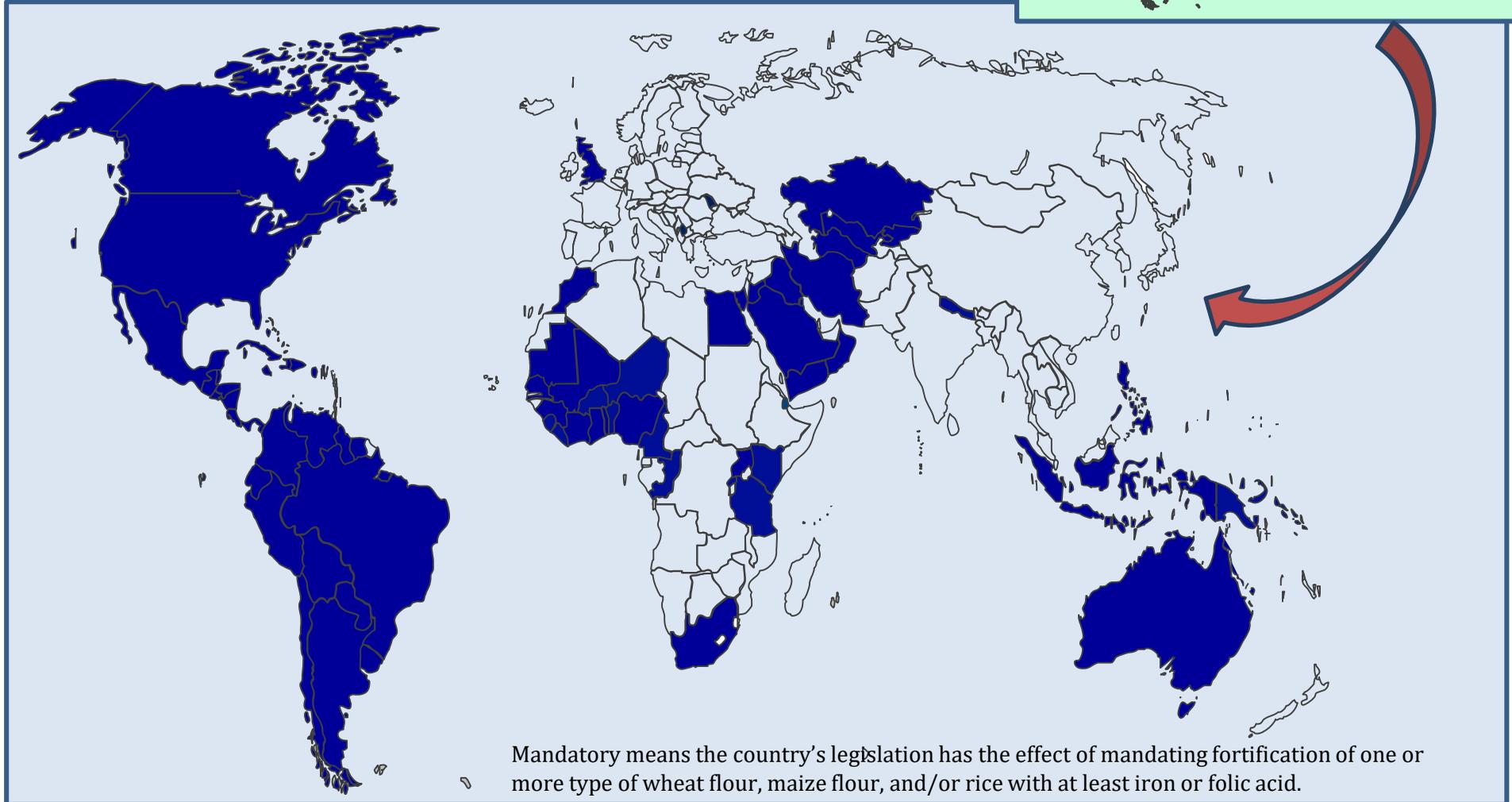
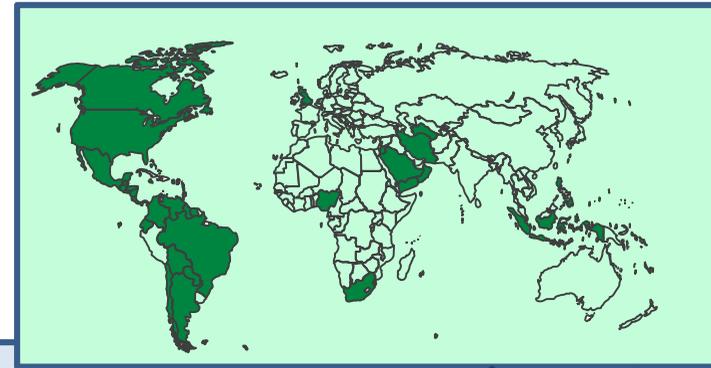
Global Progress

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

In 2014 the **82** countries highlighted below have mandates requiring grain fortification. Of the total:

- **81** countries plus the Punjab province in Pakistan have legislation to fortify wheat flour
- **12** countries have legislation to fortify maize flour
- **6** countries have legislation to fortify rice

http://www.ffinetwork.org/global_progress/index.php





Africa Leads Fortification Progress

During the past 12 years, countries in Africa have made tremendous progress with grain fortification. In 2002, only two countries in Africa (South Africa and Nigeria) had legislation that required fortification of industrially milled wheat flour. Now 24 countries in Africa have such legislation, and six of those countries also require fortification of industrially milled maize flour.

In addition, at least half the wheat flour in three countries in Africa (Democratic Republic of Congo, Gambia, and Namibia) is fortified through voluntary efforts.

The people pictured above gathered for an Africa Network Meeting in South Africa in December 2014 to celebrate the progress African countries have made in fortifying industrially milled wheat and maize flour. They were also equipped to advocate for continual improvement in fortification programs.

http://www.ffinetwork.org/about/calendar/2014/Africa_Network.html

The meeting was another great example of partnerships. It was organized by Smarter Futures, a partnership for Africa of the International Federation for Spina Bifida and Hydrocephalus (IF), AkzoNobel, Helen Keller International (HKI), the Government of the Netherlands, and FFI. Other partners including GAIN and MI sponsored participants to attend the meeting.

The Smarter Futures partnership began in 2009 and was scaled up in 2012 to continue through 2017. In a 2014 evaluation, it received one of the highest rankings possible from the Dutch government in a weighted composite score of development results, sustainability, and innovation.

http://www.ffinetwork.org/about/stay_informed/releases/Schokland.html

Photo by Andrew Gorman for FFI.

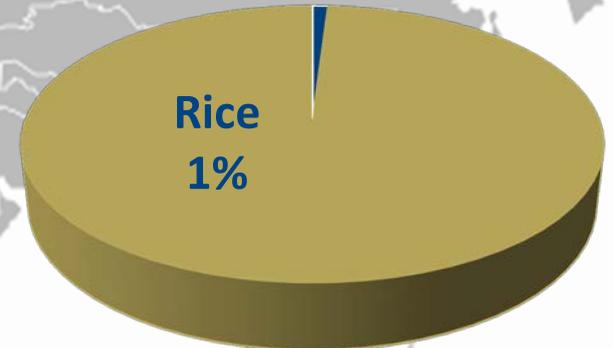
Beyond Legislation

While passing fortification legislation is a major country accomplishment, grain products have to be effectively fortified for a health impact to be expected. Consequently, another measure of success is the percent of industrially milled grain that is fortified.

The charts below represent the percent of industrially milled wheat flour, maize flour, and rice that is fortified globally. See the next page for details on how we calculate these estimates.

These estimates include grain that is fortified through mandatory and voluntary efforts. For example, about 12% of the industrially milled wheat flour in India is fortified, and that is included in the percentage below.

In 2004, about 18% of the world's industrially milled wheat flour was fortified. We do not have previous estimates of the amount of industrially milled maize flour or rice that was fortified. We will include each of these three grains in our future annual updates.



How We Calculate Global Estimates

We begin with FAO data about how much of each grain is in the food supply for each country. For this report, the most recent data (2010) was used.

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 UN agencies to estimate how much of each grain is fortified in their country.

We then compile the country figures into the global estimates at right.

Industrially milled wheat flour

Total industrially milled wheat flour (metric tons)	290,713,117
Total fortified, industrially milled wheat flour (metric tons)	86,194,702
Percent fortified	29.6%

Industrially milled maize flour

Total industrially milled maize flour (metric tons)	16,594,609
Total fortified, industrially milled maize flour (metric tons)	7,914,408
Percent fortified	47.7%

Industrially milled rice

Total industrially milled rice (metric tons)	222,269,032
Total fortified, industrially milled rice (metric tons)	1,778,509
Percent fortified	0.8%

Monitor for Quality and Impact

In 2014 we began collecting data on fortification monitoring procedures from countries that mandate wheat flour, maize flour, and/or rice fortification. The table at right summarizes the responses.

We are trying to understand 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.

We hope this process will affirm the importance of monitoring fortification programs. To help countries without fortification monitoring in place, we will work with our partners to develop a framework outlining what should be included in effective monitoring documents.

We contacted the 82 countries that mandate fortification of at least one cereal grain to ask about six components of monitoring programs; 90% of the respondents included supporting documentation with their replies.

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

Monitoring component	Wheat (n=48) ^a	Maize (n=12) ^b	Rice (n=5) ^c
A <u>national committee</u> oversees the fortification program	65%	82%	40%
Rules and operating procedures for <u>external</u> monitoring of fortification at mill level by national authorities are stipulated in a document	76%	64%	20%
Rules and operating procedures for <u>commercial</u> monitoring of fortification at retail level by national authorities are stipulated in a document	61%	55%	20%
Rules and operating procedures for verification of fortification at <u>import</u> level by national authorities are stipulated in a document	69%	88%	20%
A <u>national report</u> on the status of fortification monitoring and compliance been compiled in the last five years	35%	27%	0%
An <u>impact evaluation</u> of the fortification program been completed	30%	18%	0%

^a 59% of countries that mandate fortification of wheat flour responded (48 of 81 countries)

^b 100% of countries that mandate fortification of maize flour responded (12 of 12 countries)

^c 83% of countries that mandate fortification of rice responded (5 of 6 countries)

New Monitoring Case Studies

Three new case studies verify that industrial flour mills in Chile, Indonesia, and the Republic of South Africa have rigorous internal controls to confirm that their products comply with country standards for fortification. We collaborated with UNICEF and the CDC from the concept through dissemination of these case studies.

Research for the case studies included interviewing government personnel responsible for monitoring fortification and visiting mills, bakeries, food retail outlets, inspection laboratories, and companies that produce vitamin and mineral premix.

Chile

- Comprehensive external monitoring plan
- Focuses on monitoring at point of production and on-site warehouses
- See the full report at <http://www.ffinetwork.org/monitor/Documents/ChileCS.pdf>

Indonesia

- Extensive commercial monitoring
- Assesses whether flour sold at retail establishments is properly fortified
- See the full report at <http://www.ffinetwork.org/monitor/Documents/IndonesiaCS.pdf>

South Africa

- Health impact evaluation completed
- Results used to reconsider the levels and type of iron used in fortification
- See the full report at <http://www.ffinetwork.org/monitor/Documents/SouthAfricaCS.pdf>

While the internal monitoring in each country studied was rigorous, other types of monitoring were inconsistently applied. Differences are expected as not all monitoring components (internal, external, commercial, import) are needed for every grain fortification program.

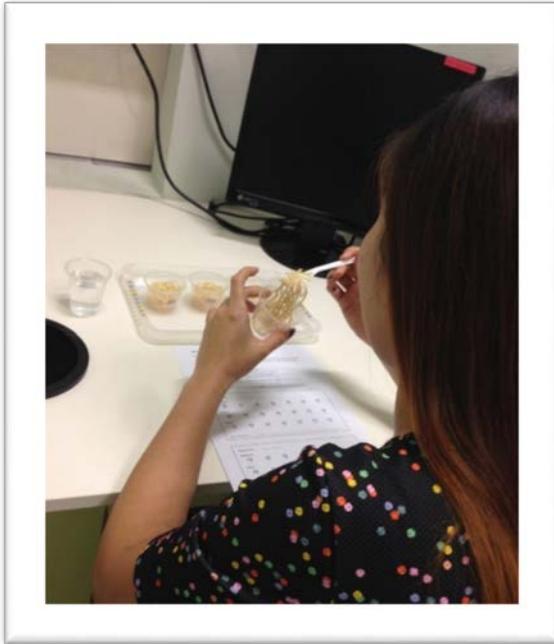
All national fortification programs need internal monitoring at the mill to identify and resolve issues quickly before problems become widespread. They also require external monitoring which involves government authorities (such as food safety inspectors) inspecting mills periodically to ensure that fortification meets the country's specifications.

However, import monitoring is only needed where a substantial portion of the domestic flour or rice supply is imported. Similarly, commercial monitoring may only be needed in regions bordering countries where fortification is not mandatory. Commercial monitoring may not be needed if most flour is distributed to bakeries rather than sold at retail outlets.

More Resources

- Examples of monitoring documents from countries with rules and procedures for the external, commercial, and import-level monitoring of cereal grains.
<http://www.ffinetwork.org/monitor/Examples.html>
- Monitor for Quality and Impact section of our website:
<http://www.ffinetwork.org/monitor/index.html>
- FORTIMAS: An Approach for Tracking the Population Coverage and Impact of a Flour Fortification Program.
<http://www.smarterfutures.net/fortimas>
- Chapter eight of the Guidelines on Food Fortification with Micronutrients published by the World Health Organization and the Food and Agricultural Organization of the United Nations.
<http://www.who.int/nutrition/publications/micronutrients/9241594012/en/>

New Resources



A panelist evaluates instant noodles made with fortified flour as part of a shelf life study. Photo by the Food Innovation and Resource Centre of Singapore Polytechnic.

Instant Noodles Studies

Financial support from MI and Mühlenchemie allowed us to commission the Food Innovation and Resource Centre (FIRC) of the Singapore Polytechnic to study the shelf life of instant noodles made with fortified flour.

The study indicates that instant noodles made with fortified flour have a shelf life of at least 12 months. This result complements an earlier study that showed that instant noodles made with fortified flour are very similar to instant noodles made with unfortified flour when it comes to taste, appearance and other sensory properties.

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

Communications Toolkit

In 2014, a student at Emory University's Rollins School of Public Health completed a Fortification Communications Toolkit as her master's thesis project. The toolkit is designed to help advocates plan a communications strategy for selected target audiences, including consumers as well as key decision makers and influencers. Advocating for fortification involves more than simply sharing scientific information; it requires inspiring people to take action.

<http://www.ffinetwork.org/plan/Communications.html>

The in-kind contribution we receive from Emory University provides office space for three staff based in our Global Secretariat in Atlanta, Georgia, USA. Being at the school also helps us recruit graduate students to assist with our work.



This illustration is adapted from multiple resources for the Fortification Communications Toolkit.

Gift Profile

Contributions to FFI provide technical assistance for planning, implementing and monitoring successful fortification programs. For example, gifts during the 2014 calendar year allowed us to help the Philippines determine its capacity to fortify rice and assist the Uganda National Working Group on Food Fortification develop a monitoring and evaluation plan for wheat and maize flour fortification.

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.
- MI
- UNICEF

Donations from 1 January to 31 December 2014 also included gifts from:

- Alapala
- Australia Department of Foreign Affairs and Trade

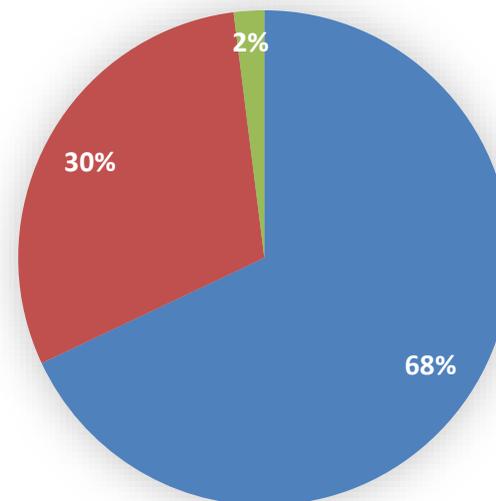
The Smarter Futures partnership supports work in Africa through a matching grant program. The partnership includes AkzoNobel, the Government of the Netherlands, HKI, IF, and FFI.

In-kind donations are also received annually from:

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

2014 CONTRIBUTIONS: US\$ 2.03 MILLION

■ Governments ■ Corporations ■ NGOs/UN agencies



To contribute:

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

The CDC Foundation serves as the grant administrator for most contributions to FFI. 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

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, the World Health Organization is an EMT observer.

Greg Harvey (Chair)

CEO

Interflour Group PTE, Ltd.

Lieven Bauwens

Secretary General

International Federation for Spina
Bifida and Hydrocephalus

Peter Böhni

*Managing Director EPFL Innovation
Satellite and Head Corporate
Technology Value Nutrition*

Bühler AG

Melinda Farris

Executive Vice President

International Association of Operative
Millers

Luz Maria De-Regil

*Director, Research and Evaluation and
Chief Technical Advisor*
Micronutrient Initiative

Reynaldo Martorell

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

Jule Taylor

Vice-President, Corporate Plant Operations
Cargill, Inc.

Greg S. Garrett

Director, Large-Scale Food Fortification
Global Alliance for Improved Nutrition (GAIN)

Anthony Williams

Director, Edible Grains, Bunge Food and Ingredients
Bunge Limited

Janet Collins

*Director, Division of Nutrition, Physical Activity, and
Obesity*
US Centers for Disease Control and Prevention
(CDC)

Werner Schultink

Chief of Nutrition
United Nations Children's Fund (UNICEF)



In focus groups for our rebranding in 2014, EMT members said a key part of their FFI experience is networking with people from other sectors. That is illustrated here as Greg Harvey, left, meets with Lieven Bauwens in October 2014. Greg is CEO of Interflour, and Lieven is Secretary General of the International Federation for Spina Bifida and Hydrocephalus. Photo by Sarah Zimmerman, FFI.

About this report

This report was produced by the FFI communication team including Sarah Zimmerman and Emily Witt; data collection by Kristin Marks and Timothy Nielsen.

Front cover photo of long grain rice by Keith Weller for the United States Department of Agriculture on Flickr. Back cover photos from istock.com.

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http://www.ffinetwork.org/about/stay_informed/publications/documents/FFI2014Review.pdf



Food Fortification Initiative

Enhancing Grains for Healthier Lives

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



SMARTER



STRONGER



HEALTHIER