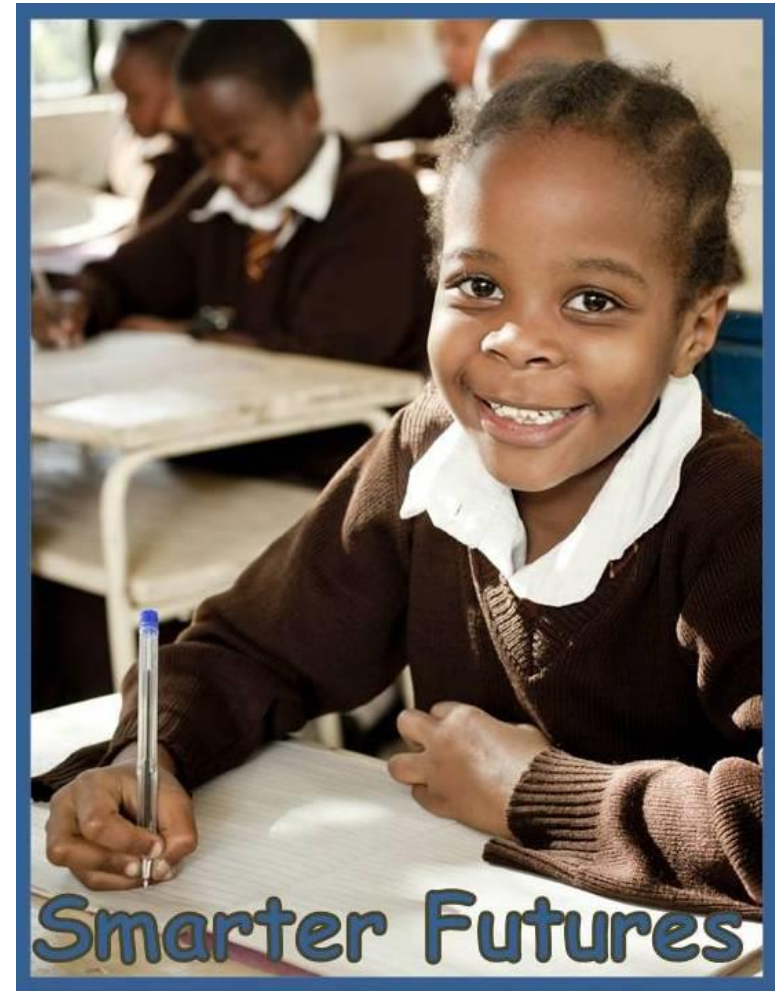


# Food Fortification Legislation and Standards – Theoretical considerations

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(with contributions from Philip  
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# Why does a country need food standards, regulations and laws?

- Standards provide a specification for foods that will be safe and nutritious to consume.
- Standards guide the food industry to produce and import safe foods.
- Standards help to create a “level playing field” for the food industry.
- Standards facilitate free trade across national boundaries and help eliminate protectionism

# Why does a country need food standards, regulations and laws 2?

- Laws create the legal framework for both standards and regulations.
- Regulations provide the food control authorities to be able to inspect and monitor the production of fortified foods to a standard
- Regulations provide the authorities with the mechanism to enforce the standards through inspection and corrective actions

## 2 Commonly asked Questions

- What to add?
- How much to add?
- There have been 2 international scientific workshops and 1 WHO/FAO publication to provide guidance and answers to these 2 questions based on most current nutrition and science knowledge.
  - Cuernavaca, Mexico, 2004 on Iron and Folic Acid
  - WHO/FAO Guidelines on Food Fortification with Micronutrients, 2006
  - Stone Mountain, Atlanta, USA 2008 on 5 micronutrients

# WHO FAO Guidelines on Food Fortification with Micronutrients

- Resource for governments and agencies implementing or considering food fortification
- Source of information for scientists, nutritionists, technologists and the food industry.
- General principles for effective fortification programs

# Atlanta Workshop 2008

- Focused on 5 micronutrients
  - Vitamins: A, B12, Folic Acid
  - Minerals: Iron, Zinc
- 6 scientific working groups:
  - One for each micronutrient
  - One on consumption data
- Groups composed of representatives from academia, international agencies, milling industry, vitamin, mineral and premix suppliers

# Wheat and maize flour fortification

- Is a preventive food-based approach to improve micronutrient status of populations over time
- Can be integrated with other interventions in the efforts to reduce vitamin and mineral deficiencies
- Should be considered when industrially produced flour is regularly consumed by large population groups
- Most effective if mandated at the national level

# Nutrients to add: Decisions to be taken

- Nutritional needs and deficiencies of the population;
- Usual consumption profile of “fortifiable” flour and food
- Sensory and physical effects of the fortificant nutrients on flour and flour products
- Fortification of other food vehicles
- Consumption of vitamin and mineral supplements
- Costs

Fortifiable flour is defined as flour produced in registered mills with a rated capacity of 20 tons per day



# Flour Fortification Programmes

- Should include appropriate Quality Assurance and Quality Control (QA/QC) systems at mills
- Regulatory and public health monitoring of the nutrient content of fortified foods
- Assessment of the nutritional/health impacts of the fortification strategies.

# 2008 Workshop Recommendations

Nutrient	Type of flour (extraction)	Fortificant	Level of nutrient to be added (parts per million) By per capita wheat flour intake (g/day)			
			<75 g/day	75-149 g/day	150-300 g/day	>300 g/day
Iron	Low	NaFeEDTA Sulfate/Fumarate Electrolytic	40 60 NR	40 60 NR	20 30 60	15 20 40
	High	NaFeEDTA	40	40	20	15
Zinc	Low	Zinc Oxide	95	55	40	30
	High	Zinc Oxide	100	100	80	70
Folic Acid	Low or High	Folic Acid	5.0	2.6	1.3	1.0
Vitamin B12	Low or High	Cyancobalamin	0.04	0.02	0.01	0.008
Vitamin A	Low or High	Vitamin A palmitate	5.9	3.0	1.5	1.0

# Atlanta Workshop Recommendations: WHO Consensus Statement issued

- Following a review of the scientific papers, the findings and recommendations of the Atlanta workshop, the Micronutrient Unit of the World Health Organization issued a consensus statement on the recommendations of the Atlanta workshop in 2009.

# Statement Development Process

- Statement prepared by the core group led by
  - WHO's Department of Nutrition for Health and Development in close collaboration with FAO, the nutrition section of UNICEF, GAIN, MI and FFI
  - The core group evaluated the commissioned scientific reviews prepared by expert working groups
  - Approved by WHO Guideline Review Committee in interim period year 2008
  - These recommendations remain valid until today
  - WHO headquarters in Geneva will initiate a review following formal *WHO Handbook for Guideline Development* procedures in 2010
  - WHO currently reviewing the Recommendations for fortification of wheat flour and maize flour
  - Updated recommendations expected to be published 2016/2017

# Recommendations on Wheat and Maize Flour Fortification Meeting Report: Interim Consensus Statement

<http://www.who.int/nutrition/>  
Available in UN languages

*English*

*Russian*

*Chinese*

*French*

*Spanish*

Suggested citation

WHO, FAO, UNICEF, GAIN, MI, & FFI. Recommendations on wheat and maize flour fortification. Meeting Report: Interim Consensus Statement. Geneva, World Health Organization, 2009 ([http://www.who.int/nutrition/publications/micronutrients/wheat\\_maize\\_fo.rt.pdf](http://www.who.int/nutrition/publications/micronutrients/wheat_maize_fo.rt.pdf), accessed [date]).

The image shows the cover of a report from the World Health Organization. The title is 'Recommendations on Wheat and Maize Flour Fortification Meeting Report: Interim Consensus Statement'. The WHO logo is at the top left. Below the title, there are three sections: 'PURPOSE', 'THE FFI SECOND TECHNICAL WORKSHOP ON WHEAT FLOUR FORTIFICATION', and 'RECOMMENDATIONS FOR WHEAT AND MAIZE FLOUR FORTIFICATION'. The 'PURPOSE' section states that the report is based on scientific reviews prepared for a Flour Fortification Initiative (FFI) technical workshop held in Stone Mountain, GA, USA in 2008. The 'THE FFI SECOND TECHNICAL WORKSHOP ON WHEAT FLOUR FORTIFICATION' section describes the workshop, which was held in Coahuila, Mexico in December 2004. The 'RECOMMENDATIONS FOR WHEAT AND MAIZE FLOUR FORTIFICATION' section states that wheat and maize flour fortification is a preventive food-based approach to improve micronutrient status of populations over time that can be integrated with other interventions in the efforts to reduce vitamin and mineral deficiencies when identified as public health problems.