Background

events and processes leading up to this meeting
Where it began....

• In some countries, flour fortification started without any baseline information on vitamin and mineral deficiencies

• In some countries, fortificants used were not appropriate to the food vehicle, the levels too low, or the compounds not suitable

• In some countries impact evaluation showed no impact because compliance by the mills was still low or only few people consumed the fortified flour
Where it began….

• A flour fortification programme in the early stages of implementation is always in a state of continuous change
• This makes it necessary to keep a finger on the pulse and have feedback loops
• FFI/Smarter Futures therefore wanted to develop a “toolkit” that will enable countries to see trends in programme and micronutrient status indicators over time especially in the early years of the programme to enable feedback, review and amending
Work already done:

- From 4 – 8 April, 2011, FFI/Smarter Futures held a QA/QC and M&S workshop in Dar es Salaam, Tanzania
- Teams from 9 countries and 18 FFI partner organizations participated in the QAQC training
- Several participants stayed on to review a first draft of a: *Toolkit for Developing a National Flour Fortification Monitoring and Surveillance System: a Purposive and Convenience Sampling Approach*
At the workshop, teams from Ethiopia, Kenya, Swaziland, Malawi, Mozambique, South Africa, Tanzania, Uganda and Zimbabwe reviewed the draft, reported on their findings and gave recommendations for improvements.

In addition, many colleagues from FFI/Smarter Futures partner organizations and scientists reviewed the guide and provided comments.

Based on all these, we now present the draft Guide for Developing a Flour Fortification Program Monitoring and Surveillance System.
Objectives of this Meeting

• to finalize the guide for a Population Based Flour Fortification Program Monitoring and Surveillance System (FFMSS),
• to develop a protocol to field test the guide and
• to select possible locations for the field-test.
Expected Outputs

• A final or near-final draft of the guide for a Population Based Flour Fortification Program Monitoring and Surveillance System (FFMSS).
• A final or near to final field-testing protocol for the FFMSS.
• Agreement on 1 or possibly 2 countries where the FFMSS will be field tested beginning in 2013.
So let us briefly review what the Guide is intended for.
The Guiding Principles

• the purpose of the Guide is to track trends in the effectiveness of a flour fortification program over time in populations documented to regularly consume fortified flour – not necessarily to provide statistically representative estimates of the prevalence or incidence of micronutrient deficiencies in the population at a point in time.

• If such information is deemed necessary statistically representative surveys may be carried out as needed and resources allow.
The Guide is based on the FAO/WHO Monitoring Framework
The Guide also follows the WHO Recommendations on wheat and maize flour fortification

http://www.who.int/nutrition/

Available in UN languages
- English
- Russian
- Chinese
- Spanish
- French
- Arabic

Suggested citation
Average levels of some nutrients to consider adding to fortified wheat flour

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Flour Extraction Rate</th>
<th>Compound</th>
<th>Level of nutrient to be added in parts per million (ppm) by estimated average per capita wheat flour availability (g/day)¹</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt;75² g/day</td>
</tr>
<tr>
<td>Iron</td>
<td>Low</td>
<td>NaFeEDTA</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ferrous Sulfate</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ferrous Fumarate</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electrolytic Iron</td>
<td>NR³</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>NaFeEDTA</td>
<td>40</td>
</tr>
<tr>
<td>Folic Acid</td>
<td>Low or High</td>
<td>Folic Acid</td>
<td>5.0</td>
</tr>
<tr>
<td>Vitamin B₁₂</td>
<td>Low or High</td>
<td>Cyanocobalamin</td>
<td>0.04</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>Low or High</td>
<td>Vitamin A Palmitate</td>
<td>5.9</td>
</tr>
<tr>
<td>Zinc³</td>
<td>Low</td>
<td>Zinc Oxide</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>Zinc Oxide</td>
<td>100</td>
</tr>
</tbody>
</table>

*based on extraction, fortificant compound, and estimated per capita flour availability
Introducing
our imaginary country:

“FORTIFITOPIA”
MAP of FORTIFITOPIA

- Big City B
- Big city A
- Capital

SEA
The Flour Fortification Programme in “Fortifitopia”

- QAQC in place in the mills
- Start of mandatory flour fortification
- Regulatory staff trained and regulatory monitoring operational

Time ~ 5-10 yrs.

Pre-fortification nutrient deficiency Baseline survey

Impact Evaluation surveys
Question: Are people buying the fortified flour or bread?
QAQC in place in the mills

Pre-fortification nutrient deficiency Baseline survey

Start of mandatory flour fortification

Population Coverage Monitoring

Impact evaluation surveys

Regulatory staff trained and regulatory monitoring operational

TIME ~ 5-10 yrs.
80% coverage threshold

Pre-fortification nutrient deficiency Baseline survey

QAQC in place in the mills

Start of mandatory flour fortification and FFMSS

Population Coverage Monitoring

Regulatory staff trained and regulatory monitoring operational

TIME ~ 5-10 yrs.

~1 year periods with ≥80% population coverage of fortified flour in a given area

Impact evaluation surveys
Question: People are consuming the flour, but does that have any effect on their health?
80% coverage threshold

Pre-fortification nutrient deficiency Baseline survey

QAQC in place in the mills

Start of mandatory flour fortification

Impact evaluation surveys

Annual Impact Trend Surveillance in sentinel populations (starting with early consumers)

Regulatory staff trained and regulatory monitoring operational

TIME ~ 5-10 yrs.
MAP of FORTIFITIOPIA

- Capital
- Big City A
- Big City B

= fortified flour on market
= FFMSS Sentinel site

SEA
• The FFMSS should enable you to set up a viable annual impact trend surveillance system in the areas where the flour is consumed, that can act as your early warning and feedback loop.

• You are the ones who can tell us how it would work in a specific country’s situation and how it would utilize and build on already available systems.

• In developing a plan to field-test this methodology you will also review if the document provides you with all the information you need to do so.
We really need good monitoring & surveillance for the 75 countries already require iron and/or folic acid in wheat flour

In 10 years, from 33 to 75 countries!