TASK FORCE- RWANDA

May 27, 2016

TRAINING WORKSHOP ON QA/ QC FOR FLOUR FORTIFICATION
## Guidelines on nutritional status

**NUTRITIONAL DEFICIENCIES CAUSE ANEMIA, STUNTING AND IMMUNE SYSTEM DISORDERS**

<table>
<thead>
<tr>
<th>Nutritional deficiency</th>
<th>Anemia</th>
<th>Stunting</th>
<th>Immune System Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td></td>
<td></td>
<td>Vitamin A</td>
</tr>
<tr>
<td>Folic Acid (Vitamin B-9)</td>
<td></td>
<td></td>
<td>Vitamin C</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td></td>
<td></td>
<td>Vitamin D</td>
</tr>
<tr>
<td>Carbohydrates</td>
<td></td>
<td></td>
<td>Pyridoxine (Vitamin B-6)</td>
</tr>
<tr>
<td>Proteins</td>
<td></td>
<td></td>
<td>Folic Acid (Vitamin B-9)</td>
</tr>
<tr>
<td>Fat</td>
<td></td>
<td></td>
<td>Vitamin B12</td>
</tr>
<tr>
<td>Vitamins A</td>
<td></td>
<td></td>
<td>Zinc</td>
</tr>
<tr>
<td>Vitamins D, E and C</td>
<td></td>
<td></td>
<td>Iron</td>
</tr>
<tr>
<td>Iron</td>
<td></td>
<td></td>
<td>Magnesium</td>
</tr>
<tr>
<td>Zinc</td>
<td></td>
<td></td>
<td>Magnesium</td>
</tr>
<tr>
<td>Calcium</td>
<td></td>
<td></td>
<td>Magnesium</td>
</tr>
<tr>
<td>Magnesium</td>
<td></td>
<td></td>
<td>Magnesium</td>
</tr>
<tr>
<td>Potassium</td>
<td></td>
<td></td>
<td>Copper</td>
</tr>
</tbody>
</table>

### When to address
- **Children:** 6 - 59 months
- **Women:** priority when pregnant and lactating
RWANDA IS ON ITS WAY TO MEET NUTRITION TARGETS,

Rwanda Vision 2020
Child malnutrition target

2007

2012

2017

The reality in 2010
Data: children < 5 years

Healthy immune system

Deficient immune system

Diarrhea
Fever
Respiratory infections
THE FORTIFICATION PROGRAM WILL ADDRESS MANY OF THESE DEFICIENCIES

- Iron
- Folic Acid
- Vitamin B12

- Carbohydrates
- Proteins
- Vitamin A
- Iron, Zinc

- Vitamin A
- Pyridoxine
- Folic Acid
- Vitamin B12
- Iron, Zinc
## Rwanda Nutrition Data

<table>
<thead>
<tr>
<th>Population (2012)</th>
<th>11.7 Million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population under 5 years of age (0-59 months, 2012)</td>
<td>1.9 Million</td>
</tr>
<tr>
<td>Prevalence of stunting among children under 5 (0-59 months)</td>
<td>51% &lt;sup&gt;2005&lt;/sup&gt;</td>
</tr>
<tr>
<td>Prevalence of underweight among children under 5 (0-59 months)</td>
<td>18% &lt;sup&gt;2005&lt;/sup&gt;</td>
</tr>
<tr>
<td>Prevalence of wasting among children under 5 (0-59 months)</td>
<td>5% &lt;sup&gt;2005&lt;/sup&gt;</td>
</tr>
<tr>
<td>Prevalence of anemia among children aged 6-59 months</td>
<td>52% &lt;sup&gt;2005&lt;/sup&gt;</td>
</tr>
<tr>
<td>Prevalence of anemia among women of reproductive age (15-49 years)</td>
<td>26% &lt;sup&gt;2005&lt;/sup&gt;</td>
</tr>
<tr>
<td>Prevalence of thinness among women of reproductive age (15-49 years)</td>
<td>10% &lt;sup&gt;2005&lt;/sup&gt;</td>
</tr>
<tr>
<td>Prevalence of children aged 0-5 months exclusively breastfed</td>
<td>88% &lt;sup&gt;2005&lt;/sup&gt;</td>
</tr>
<tr>
<td>Prevalence of breastfed children aged 6-23 months receiving a minimum acceptable diet</td>
<td>16% &lt;sup&gt;2005&lt;/sup&gt;</td>
</tr>
</tbody>
</table>
Trends in nutrition status of children under 5 years
Food intake averages

- Starchy foods
- Pulses
- Vegetables
- Oils
- Sugar
- Milk and milk products
- Fruits
- Meat.

**Note:** Diet in Rwanda is mainly based on starches and pulses, very little meat and fruits, poultry, milk and milk products are mainly consumed in every household.
Consequences for nutrient deficiencies after fortification

- Expected to **reduce** above mentioned diseases
- **Improvement of nutritional status!**
- 2014 fortification was adopted with a decree
- Need of nutrition survey!
Overview on national food intervention programmes

**Rwandan Government Has Engaged in Support of Fortified Food**

- **2011 / 2012**
  - East African Community develops draft Standards
  - National Fortification Alliance adopts logo

- **2013**
  - 5th Aug: Standards adopted by the Cabinet
  - Minister of Health requests governmental agencies to buy fortified food only

- **2014**
  - Hopes & Expectations
    - Governmental agencies buying fortified products only
    - Standards for (non)fortified flours strictly enforced
    - Decree on mandatory fortification of flour adopted
Kirehe, Eastern Province, a father of 5 children bought 25Kg fortified flour for his family.

Worth a celebration!
Overview on national food intervention programmes

1. Organizations that help in food programmes
   . USAID
   . CAAD: Comprehensive Africa Agricultural Development
   . WFP
   . UNICEF,
   . FAO, etc.

2. Fortified products
   • Maize meal
   • Vegetable edible oil: Vit A
   • Salt (import fortified salt): Iodine,

3. Performance of these programmes: good to improve nutrition status in Rwanda.

4. Goals: improving nutrition status of children under 5 years and pregnant mothers
Are fortifying?

• Yes, some products.
• **Fortified products**
• Maize meal
• Vegetable edible oil: Vit A
• Salt (import fortified salt): Iodine.
• Infant foods (porridge): SOSOMA Industries
  . **Industries:** MINIMEX (144MT/ day),
  . Biofortification.

. **Marketing and communication:** The Government and industry have taken initiative to sensitize schools, prisons, hospitals, police, army to use fortified foods.

. **Important fortificants:** Iron (NaFeEDTA) and vit A.
THE PRODUCTS ARE THERE

- Meeting East African and Rwandan mandatory standard
- Largely meeting the needs of young children
- Distributed across the country
- At a fair price

<table>
<thead>
<tr>
<th>Micronutrient</th>
<th>Chemical form</th>
<th>Amount of micronutrient added to maize flour, mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A - Retinol</td>
<td>Dry vitamin A palmitate 250 n.s</td>
<td>1</td>
</tr>
<tr>
<td>Vitamin B-1</td>
<td>Thiamine mononitrate</td>
<td>4.5</td>
</tr>
<tr>
<td>Vitamin B-2</td>
<td>Riboflavin</td>
<td>3</td>
</tr>
<tr>
<td>Vitamin B-3</td>
<td>Nicotinamide</td>
<td>25</td>
</tr>
<tr>
<td>Vitamin B-6</td>
<td>Pyridoxine hydrochloride</td>
<td>5</td>
</tr>
<tr>
<td>Vitamin B-9</td>
<td>Folic Acid</td>
<td>1</td>
</tr>
<tr>
<td>Vitamin B-12</td>
<td>Vitamin B12 - 0.1% W5</td>
<td>0.015</td>
</tr>
<tr>
<td>Iron</td>
<td>NaFeEDTA</td>
<td>20</td>
</tr>
<tr>
<td>Zinc</td>
<td>Zinc oxide</td>
<td>40</td>
</tr>
</tbody>
</table>
MINIMEX- maize meal fortification
Challenges

• Low **consumer awareness** about food fortification and its benefits. Most of time they ask:
  1. Is it safe?
  2. What are side effects?
  3. Does the taste change?
  4. Where does premix come from?
  5. What is the price?

• Government labs (RBS) are **not equipped to test micronutrients**!

• **Increase the price:** 3%

• Fortified is not mandatory!
Constraints

• Premix availability and affordability
• Many small uncontrolled mills.
• Consumer acceptability.
You are not fortifying?

• Yes, for some foods!
• **Foods**: cassava flour, sugar (?), sorghum flour, peanut flour, fish flour.
• Highly consumed.
• **Challenges**: awareness for processors and consumers, price, premix availability, etc.
• **Constraints**: processing facilities, test for micronutrients, standards, etc.
Conclusion

• RAISE CONSUMER AWARENESS.
• ACTIVATE THE LOCAL MILLERS PARTICIPATION IN FORTIFICATION.
• RWANDA VERY MUCH COMMITTED IN FOOD FORTIFICATION!
• ALL STAKEHOLDERS INVOLVED ARE WILLING TO APPLY FOOD FORTIFICATIONS.
• GOOD GOVERNEMENCE INVOLVE SENSITIZING THAN IMPOSING!
THANK YOU!

Murakoze!