



Food Matrices and Nutritional Bioavailability Roundtable Keynote Address (on behalf of Rufino Perez, Food Technologist, USAID)

Sands Expo
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2017 CONTEXT: FOUR FOOD EMERGENCIES

“Already at the beginning of the year we are facing the largest humanitarian crisis since the creation of the United Nations. Now, more than 20 million people across four countries face starvation and famine.”

- USG/ERC Stephen O'Brien

Statement to the Security Council on Missions to Yemen, South Sudan, Somalia and Kenya and an Update on the Oslo Conference on Nigeria and the Lake Chad Region, March 10th, 2017

Current famine is the worst humanitarian crisis since 1945



SOUTH SUDAN

The Situation:

- 5.5 million people facing severe food insecurity from May to July 2017¹
- FEWSNet estimates that 276,343 children are likely to be affected by severe acute malnutrition (SAM) in 2017²

The Response:

- In March 2017 WFP assisted a total of 2 million people through general food distributions (GFD), **blanket/targeted supplementary feeding for children and pregnant and lactating women**, purchase for progress and school meal programmes³
- In FY 2017 USAID/Food for Peace has provided \$321.6 million in assistance and 156,309 MT of food aid⁴
- UNICEF and partners aim to admit 207,256 children aged 6 to 59 months with SAM to therapeutic care in 2017⁵ “MSF teams have encountered extremely high levels of malnutrition and have launched an emergency response to treat malnourished children.”⁶

1 & 3 WFP South Sudan Situation Report #175, 5 May 2017

2 Famine Early Warning Systems Network, ‘South Sudan Food Security Outlook’, October 2016 to May 2017

4 Matt Nims, Acting Director of the Office of Food for Peace, presentation at USG Food Aid Consultative Group Meeting, 1 June 2017

5 UNICEF South Sudan country page, unicef.org

6 “South Sudan” msf.org, 21 February 2017

SOMALIA

The Situation:

- A total of 3.2 million people are expected to experience Crisis and Emergency levels of food insecurity through June 2017.¹
- In February 2017, UNICEF projected that 944,000 children would be moderately or severely acutely malnourished in 2017, including 185,000 children suffering from SAM.²

The Response:

- In April 2017, WFP reached 2.3 million beneficiaries—680,000 of these were women and children who received preventative and curative nutrition assistance.³
- In FY17 USAID/FFP has provided \$128.8 million in assistance and 37,140 MT of food aid.⁴
- Through UNICEF, USAID/FFP has been providing in-kind RUTF for treatment of SAM.⁵

1 & 3 WFP Somalia Drought Response Situation Report #4, 24 May 2017

2 UNICEF Somalia, 30 March 2017

4 & 5 Matt Nims, Acting Director of the Office of Food for Peace, presentation at USG Food Aid Consultative Group Meeting, 1 June 2017

NORTHEAST NIGERIA

The Situation:

- 1.2 million malnourished children under 5 (MAM and SAM) and pregnant and lactating women need assistance in Borno, Adamawa and Yobe States¹
- 450,000 children under the age of five likely to suffer from severe acute malnutrition²

The Response:

- USAID/FFP has provided \$117.4 million in assistance and 3,120 MT of food aid in FY17³
- USAID/FFP is providing ready-to-use therapeutic food for children and programming to help families use local foods to meet nutrition needs⁴
- UNICEF conducted a mass malnutrition screening campaign which reached 175,699 children with a total of 1,912 children identified with SAM⁵
- UNICEF reports a total of 38,212 children under 5 with severe acute malnutrition (SAM) have been admitted into the therapeutic feeding program⁶

¹ OCHA Nigeria: Humanitarian Dashboard, January-April 2017

² WFP Nigeria Situation Report #13, 1-15 May 2017

³ & ⁴ Matt Nims, Acting Director of the Office of Food for Peace, presentation at USG Food Aid Consultative Group Meeting, 1 June 2017

⁵ & ⁶ UNICEF Nigeria Humanitarian SITREP #9, 1-15 May 2017)

YEMEN

The Situation:

- 17 million people in Yemen are food insecure, including 6.8 million who are severely food insecure¹
- Compounding the food insecurity and malnutrition crisis, in just over one month, close to 70,000 cholera cases were reported with nearly 600 fatalities. The number of suspected cases is expected to reach 130,000 within the next two weeks²

The Response:

- To date in 2017 WFP delivered targeted supplementary feeding program activities to 97,488 children 6-59 months and 59,719 pregnant and lactating women. 43,041 children have been admitted into the WFP blanket supplementary feeding program³
- In FY17 USAID/FFP has provided \$183 million in assistance and 136,620 MT of food aid⁴
- Through UN and NGO partners USAID/FFP aims to reach 7 million Yemenis every month with U.S. sources wheat, peas, and vegetable oil, food vouchers and therapeutic nutritional products to reach the high number of malnourished individuals⁵

1 & 3 WFP Yemen Situation Report #30, 15 May 2017

2 Statement by UNICEF Regional Director, Geert Cappelaere, 2 June 2017

4 & 5 (Source: Matt Nims, Acting Director of the Office of Food for Peace, presentation at USG Food Aid Consultative Group Meeting, 1 June 2017)

4 FOOD EMERGENCIES AND THE INTER-AGENCY WORKING GROUP FOR SPECIALIZED NUTRITIOUS FOOD PRODUCTS

We have also worked with our international partners to identify strategic opportunities to make global humanitarian assistance more effective and efficient, including prioritizing needs and reducing duplication and costs. This will make every dollar the U.S. Provides work even harder and help more people.

- Statement to the US Senate Committee on Foreign Relations by Gregory C. Gottlieb, Acting Assistant Administrator, Bureau For Democracy, Conflict, And Humanitarian Assistance, March 22, 2017



Image Source: UNICEF

US Administration Proposed Changes to Food Aid

- Elimination of McGovern-Dole programme, the International Food for Education programme (School Children Feeding)
- Elimination of Food for Peace programme which reaches 40 million people in 61 different countries
- Total value of both programmes is \$1.9 billion
- Quote from General James Mattis: *“If you cut foreign aid, buy more ammunition ‘cause you are going to need it”*

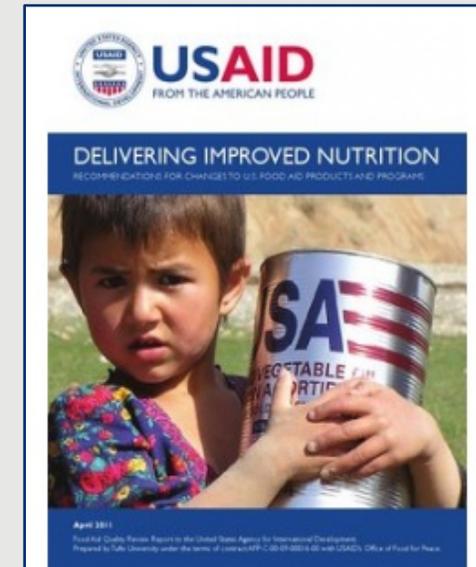


Photo courtesy of USAID

FAQR Overview

Food Aid Quality Review – Context Overview

- FAQR Phase I: Title II food aid ‘fit for purpose?’
 - **April 2009 – October 2011**
 - *Delivering Improved Nutrition: Recommendations for Changes to U.S. Food Aid*
 - Scientific consultations
 - Identifying differences across specifications
- FAQR Phase II: Implement field studies, inter-agency mechanisms,
 - **October 2011 – January 2016**
 - Multiple field studies
 - Stakeholder consultations
- FAQR Phase III: Finalize studies, guidance, portals
 - **February 2016 – January 2019**



FAQR Phase III Activities 2017 - 2018

- International Interagency Harmonization Meeting- **June 2017**
- Workshop at the annual Institute of Food Technologists (IFT) conference -**June 2017**
- Health and Humanitarian Logistics Conference - **June 2017**
- 2 symposium at the 2017 International Congress of Nutrition (ICN)-
October 2017
- U.S.G. Interagency Working Group Meeting- **Fall 2017**
- Results Dissemination from the Burkina Faso Study- **Winter 2018**
- Evidence Summit- **Fall 2018**

Current Phase III of FAQR:

- i) Complete rigorous field-testing of new products,
- ii) Assess product cost-effectiveness under emergency and non-emergency conditions,
- iii) Explore options for accelerating response to sudden-onset crises,
- iv) Establish updated food safety standards to be included in product specifications,
- v) Identify innovations in packaging, food processing, etc. that offer future directions for industry partnership with government on food aid.

Workshop Roundtable Rationale

Improving the Nutritional Value of Foods in the USAID Food Air Basket:

- Optimization of Macro and Micro Ingredients
- Food Matrices
- Novel Ingredients
- Novel Food Processing Technologies

Food Matrices Work stream– Relevance to Food Aid

- Increase understanding the ‘real’ effect of consuming the widely distributed food aid products on health outcomes of beneficiaries.
- Enable to design/improve to better food products that can carry energy **and** nutrition more effectively.
- Cost Effectiveness: Assist achieving higher cost-benefit ratio in programming.

Food Matrices – Current Plans 2017

- **Literature Review:** Completion and identification of current knowledge gaps regarding food matrices and its effect on nutrient bioavailability.
- **Stakeholder collaboration:** Develop and maintain contact with different stakeholders i.e. academia, food industry (including pet food and pharmaceutical), human and humanitarian agencies to learn more about 'real life' problems and solutions applied in this field of work.
- **Bioavailability Studies:** Plan and implement in-vitro bioavailability studies using CaCO₂ cell model to understand the bioavailability of key micronutrients nutrients like iron & vitamin A from actual fortified foods being served in field trials.
- **IFT Roundtable:** Preparation and conduct the one-day symposium with invited experts at IFT 2017: Preparation of a Proceedings Report of the workshop outcome
- **Analytical Methods:** Use of analytical methods such Bostwick viscosity studies with fortified foods being field tested.

Bioavailability, absorption (food matrices):

Explore ways to improve food digestibility, caloric density and absorption of nutrients

- Physiological use of nutrients
- Amylase addition
- Extrusion techniques
- Other food ingredients (for shelf-life, digestibility) such as sorghum, cow peas, millet, and other global indigenous crops



Food Matrices – Challenges/issues

- Limited data and information available on other foods and crops that directly relate to the current and future food aid products.
- WHO Sugar Reduction policy and potential impact on special foods in USA and UN agencies Food Aid Baskets

What's Next?

Guideline Document: Sugars intake for adults and children.
Geneva: World Health Organization; 2015.

- Recommendations
- WHO recommends a reduced intake of free sugars throughout the life course (***strong recommendation 1***).
- In both adults and children, WHO recommends reducing the intake of free sugars to less than 10% of total energy intake (***strong recommendation 2***).
- WHO suggests a further reduction of the intake of free sugars to below 5% of total energy intake (***conditional recommendation 3***).
- Source: http://apps.who.int/iris/bitstream/10665/149782/1/9789241549028_eng.pdf?ua=1

2017 WHO Sugar Reduction Guidelines

Severe and Moderate Acute Malnutrition

“These recommendations do not apply to individuals in need of therapeutic diets, including for the management of severe and moderate acute malnutrition”.

“Specific guidelines for the management of severe and moderate acute malnutrition are being developed separately”.

It is not clear what is being proposed under the “specific guidelines”.

Potential options for free sugar reduction

- Formula modifications to reduce free sugar in existing formulations.
- Potential inclusion of plant based materials containing protein, complex carbohydrates and non caloric ingredients such as fibre, etc.
- Use of existing alternative carbohydrates such as malto-dextrins may present additional challenges for gut health. In particular children whose immune systems may be compromised due to food insecurity and poor water and sanitation.
- Any product development activities to reduce free sugars will require additional testing for acceptability by beneficiaries as well an assessment of food safety

BIG QUESTIONS TO BE ANSWERED:

- What industry R&D can help inform USG decisions on food aid optimization for nutrition?
- What innovations in packaging and food processing represent low-hanging fruits?
- What novel ingredients or additives should be explored?
- What is the best way to determine projected costs for proposed/new ingredients, products or processes?

AGENDA – Morning Session

State-of-the-Art in Food Aid products

- Food Aid Scenario – Scope for Improvement: Webb
- Iron Bioavailability issues in food matrices: Moretti
- Challenges to improve nutritional value of food aid products using animal proteins: Alavi for Silver
- Role of processed macronutrients in overall nutrients bioavailability: Singh
- Roundtable Discussion #1 (State of the Art)
- Roundtable Discussion #2 Working lunch (Gaps and Challenges in Food Aid)

AGENDA – Afternoon Session

Looking Ahead: Making Food Aid More Effective

- Maximize vitamin A, Folic Acid and other micronutrient utilization in the body: McBurney
- Nutrient Delivery Techniques: McClements
- Role of Processing in Altering Food Matrices and Influencing Bioavailability of Nutrients: Wu
- USDA-NIFA – Promoting Evidence Based Research: Carter
- Roundtable Discussion #3 (Next Steps)
- Wrap up and Closing Remarks(Moderators)