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USDA-FAS's Micronutrient Fortified Food Aid Products Pilot



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17 September, 2014 Bangkok, Thailand**



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USDA's Focus on Micronutrients

- In FY 2010, U.S. Congress allocated approximately \$14 million to develop more nutritious and micronutrient-fortified food aid products
- National Institute of Food and Agriculture's (NIFA) Food Aid Nutritional Education Program (FANEP) received approximately \$4 million
- Foreign Agricultural Service's (FAS) Micronutrient-Fortified Food Aid Products Pilot (MFFAPP) received \$10 million





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Micronutrient Fortified Food Aid Products Pilot (MFFAPP)

- Under MFFAPP, participants have access to resources to develop and field test new or improved micronutrient-fortified food aid products designed to meet the energy and nutrient needs of McGovern-Dole populations
- Through this pilot program, FAS hopes to identify new products that could be regularly provided in other McGovern-Dole countries around the world
- All \$10 million in MFFAPP funding was allocated after two solicitations in FY 11 and FY 12. FAS received 25 proposals and awarded six grants in five countries





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International Partnership for Human Development - Guinea-Bissau Phase One

- One year study developing and field testing a dairy based micronutrient fortified ready-to-use supplementary dairy paste on approximately 4,800 school age children 4 – 12 years old
- Pilot was designed to distribute product over one school year beginning in October 2012 and ending in June 2013
- Partnered with Global Food & Nutrition, Inc., Tufts University and Challenge Dairy Products
- Final report with results delivered to USDA in October 2013





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IPHD – MFFAPP Phase One Results

- Significant increases in school attendance and reduced drop-out rates
- Slight improvements in height and weight measurements
- Lack of improvement in iron and Vitamin A levels in the students
- Acceptability of the products by the students
- Local capacity built within the Ministry of Health and IPHD to facilitate future nutrition research
- Baseline data collection was informative and added to the limited evidence base about the extremely high levels of anemia and Vitamin A deficiencies in school children in Guinea-Bissau
- Conducted the first nutritional research study carried out within the McGovern-Dole framework
- Developed a new nutrition education curriculum used in phase two



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Hormel Foods Sales, LLC - Guatemala

- One year study developing and field testing a curry-flavored poultry-based supplementary spread called *Spammy*[™]
- Ready-to-eat with no cooking required and packaged in 85 gram recyclable aluminum cans, with two servings per can
- Tested on 200 children 3 – 6 years old for 20 weeks beginning in May 2012 and ending in October 2012
- Partnered with Food for the Poor, Caritas Guatemala and the Center for Study of Sensory Impairment, Aging and Metabolism (CeSSIAM)
- Final report with results delivered to FAS in September 2013





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Hormel – MFFAPP Results

- All participants showed greater-than-expected improvement in cognitive scores
- There was a 44% reduction in the number of school days missed due to illness
- Children receiving fortified *Spammy*[™] showed statistical improvements in vitamin D and B₁₂ levels
- 50% reduction in the number of underweight or severely underweight children
- Slight improvement in hemoglobin for the treatment and control groups
- Ferritin was not changed over the course of the study
- Positive correlations at the end of the study between Vitamin D and cognitive gain score and between ferritin and cognitive gain score within the treatment group; and
- Acceptability of the products by the students





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Meds and Food for Kids - Haiti

- Two year study developing and field testing a lipid-based ready-to-use supplementary food (RUSF) called Vita Mamba or “vitamin peanut butter” in Creole
- Determining the acceptability and feasibility of adding product to Haitian national school feeding program
- Tested product on 1,167 school age children 4 – 8 years for 100 days beginning in January 2013 and ending in June 2013
- Partnered with Edesia Global Nutrition Solutions, Washington University St. Louis and the Haitian government
- Final report with results delivered to FAS in January 2014





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MFK – MFFAPP Results

- Baseline measures showed high prevalence of under nutrition/thinness in subjects: anemia (73%); stunting (14%); underweight (14%); and wasting/low BMI (9%)
- Study demonstrated that Mamba significantly increased the change in Body Mass Index (BMI)
- Mamba was shown to significantly reduce the odds of wasting by 55%
- Mamba supplementation reduced the odds of ear infections and malaria morbidities
- Acceptability of the products by the students, parents and school staff
- No effect was found for anemia or hemoglobin concentration. MFK said, “which may in part be due to the inconsistent deworming and iron supplementation programs across schools.”
- No significant differences in absentee rates across groups were found





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International Partnership for Human Development - Guinea-Bissau Phase Two

- One year study developing and field testing a dairy based micronutrient fortified ready-to-use supplementary dairy paste – delivered with either 15% or 33% protein from dairy sources
- Tested product for three months on 533 preschool age children and 1,485 women, infants and children from village health centers
- Distribution began in February 2013 and ended in May 2013
- Partnered with Global Food & Nutrition, Inc., Challenge Dairy Products and Tufts University
- Final report with results delivered to FAS in February 2014





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IPHD – MFFAPP Phase Two Results

- Acceptability of the products by the students
- Aside from acceptability, study results differed by age groups. However, each age group experienced positive results
- **Preschool children (24-59 months)**
 - Both 15% and 33% supplements improved weight gain and MUAC
 - 15% increased vitamin A status and cognitive abilities
 - Both products were effective in reducing malaria
- **Village children (24-59 months)**
 - Both 15% and 33% supplements increased Vitamin A status
 - 33% supplement improved attendance more than the 15%
 - Both products reduced malaria and other illnesses
- **Village infants (6-23 months)**
 - Both supplements significantly improved hemoglobin levels
 - 33% supplement improved attendance more than 15%
 - Both products reduced malaria and diarrhea





IPHD – MFFAPP Phase Two Results cont'd

- **Non-pregnant (and lactating) Mothers**
 - Both supplements caused significant weight, height gain and increased MUAC
 - Both supplements reduced a decrease in hemoglobin levels that occurred across this age/physiologic group
 - 33% supplement improved attendance more than 15%
 - Both products reduced malaria and other illnesses
- **Pregnant Women**
 - Supplements did not have any significant impact on nutrition and micronutrient strategy – accuracy affected by not knowing participants' stage of pregnancy
 - Both supplements reduced malaria and colds
- No consistent differences between the 15% and 33% supplements across age groups
- Developed and delivered nutrition education curriculum in 16 villages and 9 preschools reaching 1,484 people
- Unexpected benefit – IPHD, CPDI, GF&N and Tufts University raised \$5,000 to build school building, kitchen, books and other supplies in Dandu



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Program for Appropriate Technology in Health (PATH) - Cambodia

- Three year study developing and field testing an improved rice fortification product, Ultra Rice, containing high levels of iron and Vitamin A
- Enhanced strain of Ultra Rice with:
 - Wider nutritional content
 - Greater physical similarity to traditional rice
 - Superior nutrient retention
 - Lower cost of production
- Tested product on approximately 4,000 school aged children 7 – 14 years old beginning in December 2012 and ending in July 2013
- Partnered with UN World Food Programme, the Institut de Recherche pour le Developpment and Abbott Laboratories
- Final report due to FAS in October 2014



Kansas State University - Tanzania

- Three year study developing and field testing new formulations of three fortified blended foods (FBFs):
 - Sorghum-soybean blend (SSB), sorghum-cowpea blend (SCB) and corn-soy blend (CSB 14)
- FBFs will be made into porridge mixes that can be used for supplemental feeding and nutrition programs for infants and children below the age of five
- 1,890 subjects divided in two age groups: children 6 – 24 months and 25 – 59 months with distribution beginning in July 2015 and ending in October 2015
- Partnering with Project Concern International
- Final report due to FAS in June 2016



Anticipated Next Steps

- As results of pilots continue coming in these new products will be closely examined for cost effectiveness, nutritional value and quality assurance
- USDA is working with the Farm Service Agency and USAID in adding new options to USG commodity list designed to better meet the nutritional needs of intended food aid recipients
- In FY15 FAS will conduct a 2-year *Evaluative Assessment for the Evaluation of MFFAPP* - comprehensive research and review assessment of all six pilots





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Thank you...questions?

