



USAID
FROM THE AMERICAN PEOPLE



Participate during the seminar

 #AgEvents



Follow us on Twitter
twitter.com/agrilinks



Like us on Facebook
facebook.com/agrilinks

Applying Peanut CRSP Research to USAID Initiatives

Presenter

Tim Williams, Peanut Collaborative Research
Support Program (PCRSP)

Moderator

Zachary Baquet, Knowledge Management
Specialist Bureau for Food Security, USAID

DR. JONATHAN WILLIAMS
PEANUT CRSP-DIRECTOR

Applying Peanut CRSP Research to USAID Initiatives

October 19, 2011



Picture: Peanut CRSP variety in Burkina Faso

Presentation Scope

Introduction



- CRSP
- Peanuts
- Peanut CRSP

Peanut CRSP Experience



- Production
- Processing and Markets
- Nutrition and Child Survival
- Mycotoxins and Public Health

Application Examples



- Peanut Butter Cottage Industry and School Snack Program
- Production: Improved Varieties
- Managing Mycotoxins through toxin-binding technology

Policy Recommendations



- Mycotoxin Management
- Holistic Production Model
- Emergency Food

1.

Introduction



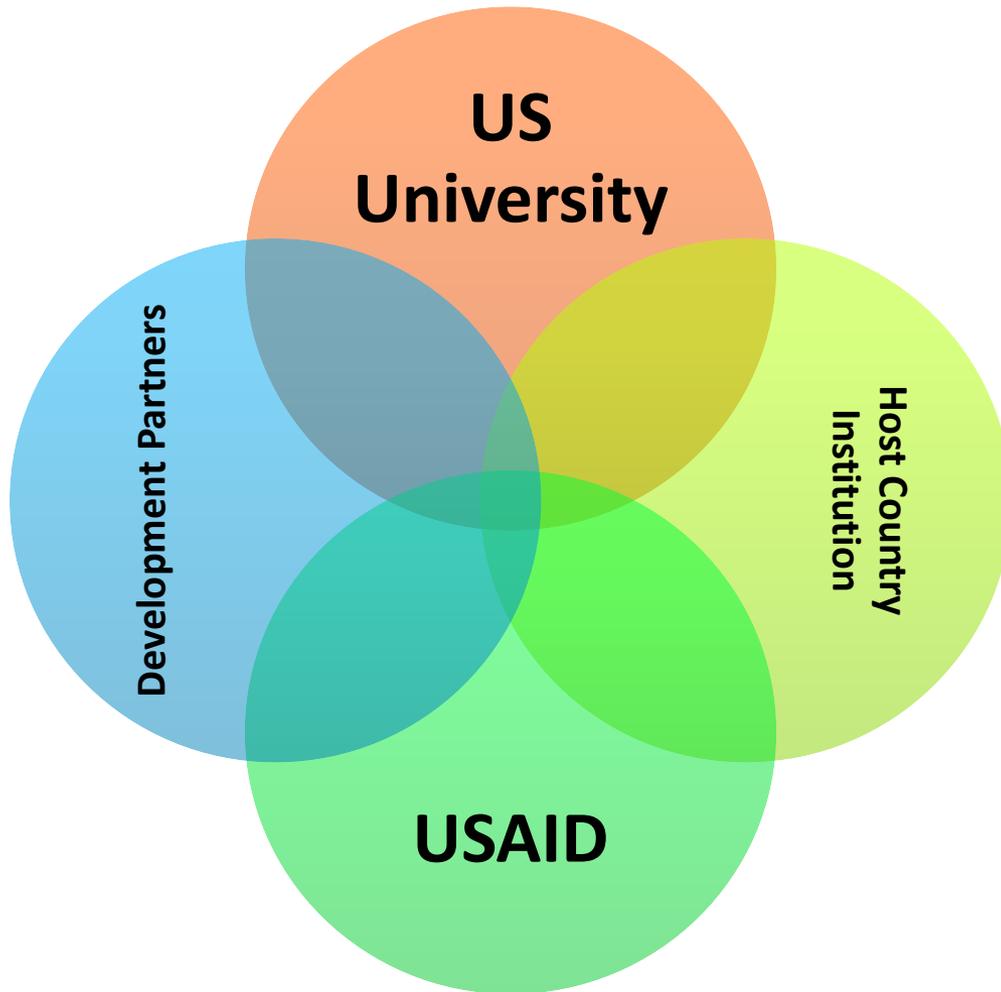
Collaborative Research Support Programs



CRSP
COLLABORATIVE RESEARCH
SUPPORT PROGRAMS

- **Title XII programs** that deploy the expertise and resources of US universities for development and the alleviation of poverty and hunger
- **Long term**
- **Partnership** of US universities with developing country institutions
- Expected **mutual benefits**





CRSP MODEL

FY 2010:

- ❑ **500** different institutions
- ❑ **70** countries
- ❑ **700** distinct partnerships

- 83 US Universities
- 177 Host Country Research Institutes
- 16 International NGOs
- 68 Host Country NGOs
- 19 US Government Offices
- 60 Host Country Government Offices
- 12 of the 16 CGIAR centers

Peanuts

“ a little peanut goes a long way ”

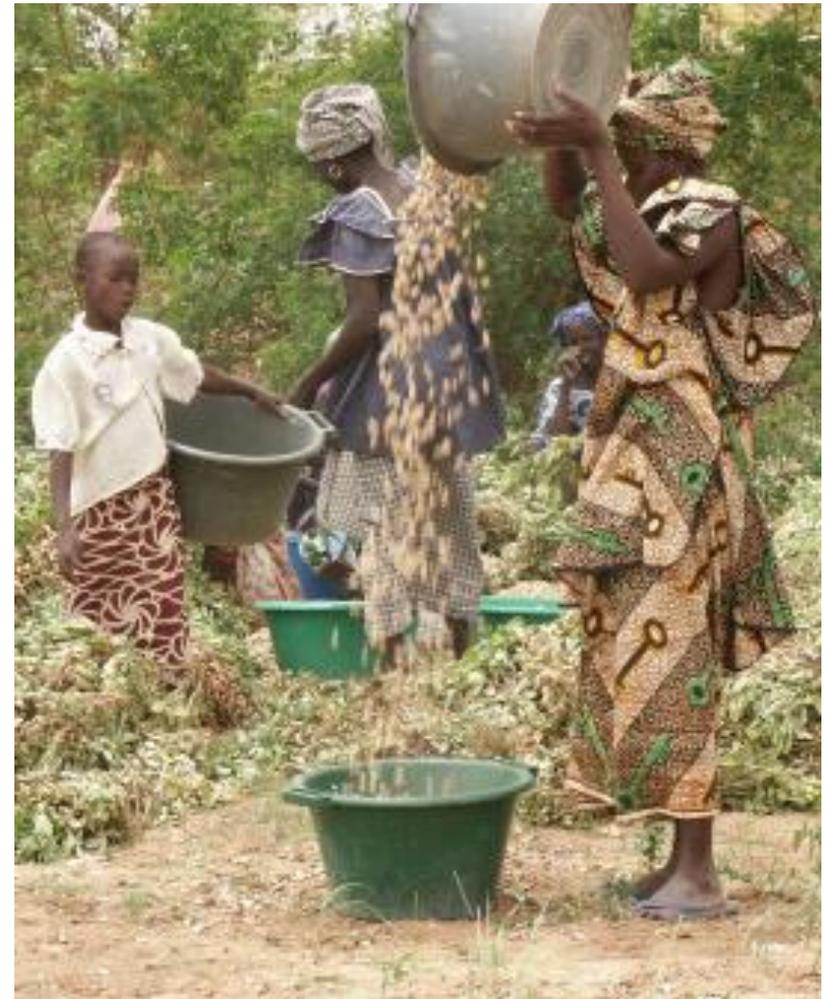
- **Protein**
- **Oil**
 - PCRSP results improve shelf life (High O/L)
 - Heart Health benefits
- **High Satiety**
- **Neutraceutical**
 - Low glycemic index
 - Obesity
 - Blood Pressure
 - peptides and argenine
 - Diabetes
- **Special Nutritional Values for Ready to Use Therapeutic Foods (RUTF)**
- **Flavor**



	Peanuts	Cassava	Corn
ENERGY (KCAL)	828.0	330.0	442.0
PROTEIN (G)	37.7	2.8	9.91
CARBS (G)	23.6	78.4	93.8
IRON (MG)	6.7	0.6	4.2
ZINC (MG)	4.8	0.7	2.2

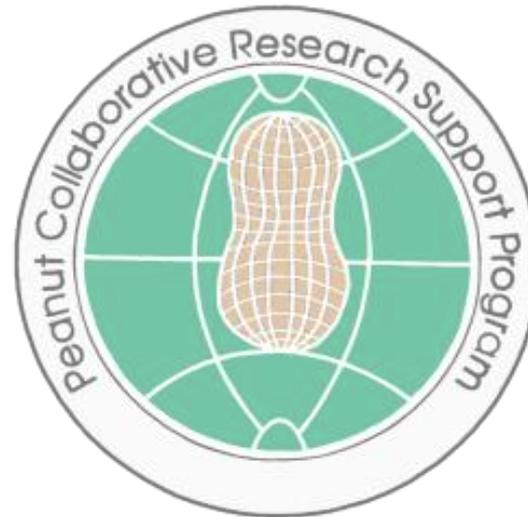
Peanuts in Developing Countries

- ❑ **2nd most important legume in world production**
- ❑ **>90% of peanut is on small farms in developing countries**
- ❑ **Women's crop in Africa**
 - In Africa often grown, processed and marketed by women – usually with poor government interest & official documents
 - Example: Minister of Agriculture of Kenya
- ❑ **Production potential is 3-4 times present yield**
- ❑ **>90% is consumed in producing country**
 - Often part of daily diet – cheap protein

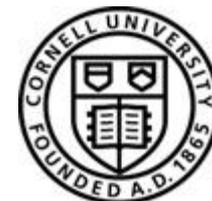


Peanut CRSP

- **Consortium** of 11 Universities
- **Collaborating** with 11 countries
- **Full Value Chain**
 - Production
 - Processing/Market Development/Access
 - Nutrition and Health
 - Mycotoxins
 - Capacity Development
- **Feed the Future** relevant



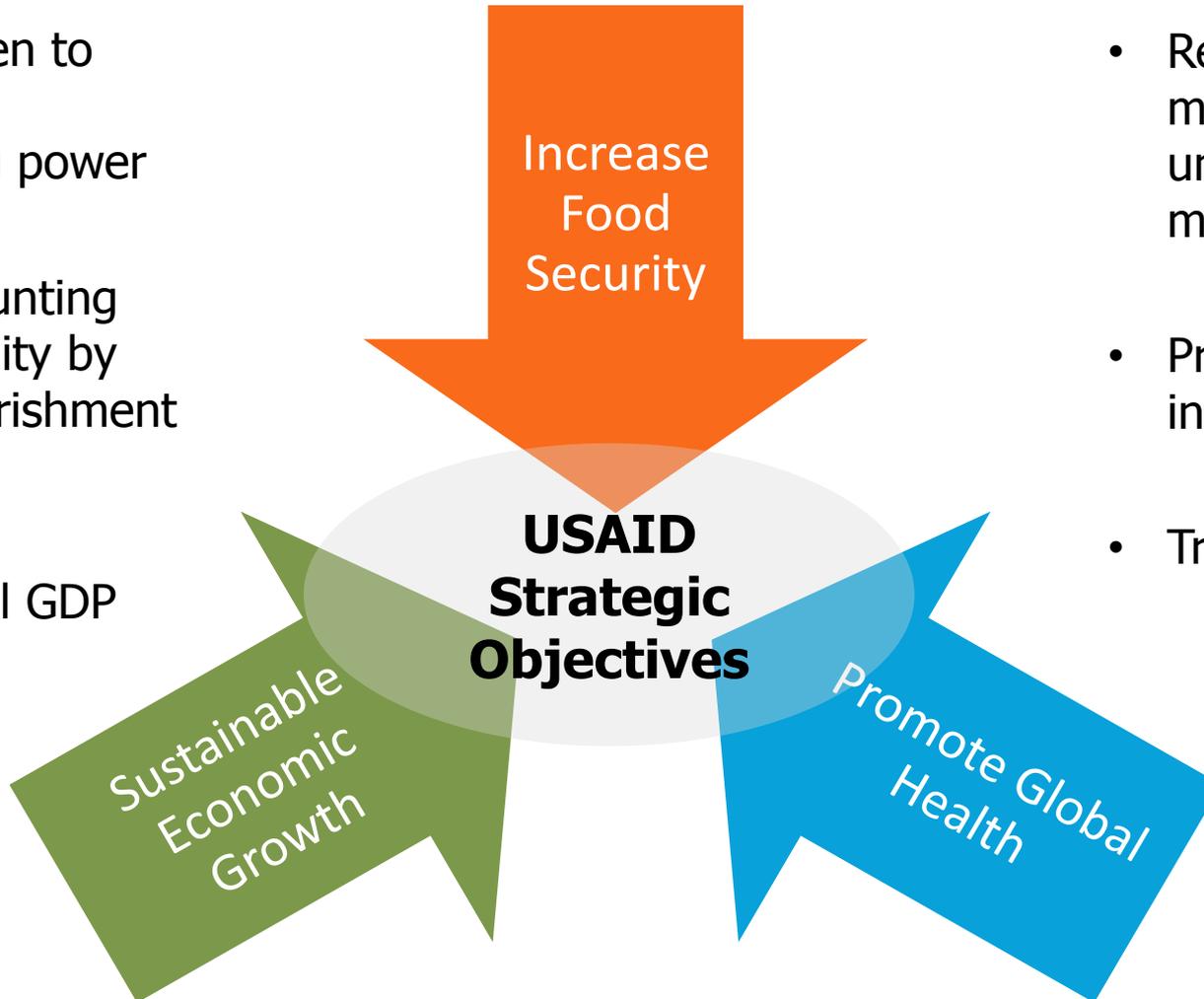
Haiti
Guyana
Brazil
Bolivia
Burkina Faso
Senegal
Ghana
Kenya
Uganda
Mali
Thailand



www.peanutcrsp.org

USAID and Peanut CRSP

- Help women to increase purchasing power
- Prevent stunting and mortality by better nourishment
- Increase Agricultural GDP



- Reduce maternal and under 5 mortality
- Prevent HIV infections
- Treat TB

2.

Peanut CRSP Experience



Peanut CRSP Experience

- ❑ Production
- ❑ Economic Development
 - ❑ Processing
 - ❑ Markets
 - ❑ Products
- ❑ Nutrition and Child Survival
- ❑ Mycotoxins and Public Health



Village working on peanuts in Uganda.

Production



Rosette Virus Resistant Groundnuts



Leaf spot disease in Groundnuts

- Peanut CRSP can increase yields by 2-3 times for African peanut farmers
- Sustainable production systems
 - Ghana soap-based fungicides
 - Resistant varieties
- Improved peanut varieties
 - Uganda



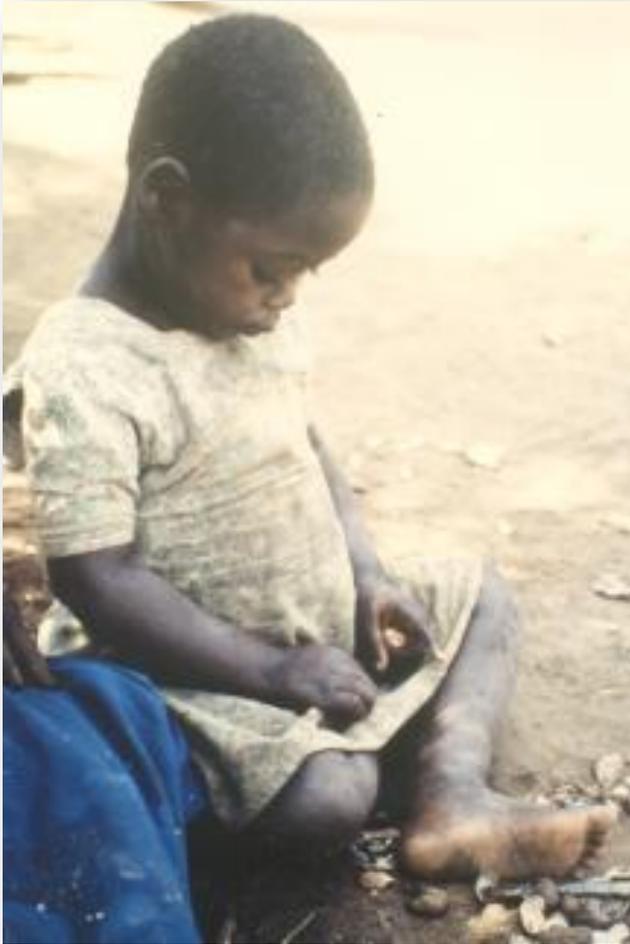
Processing, Markets and Products

- Processing systems
 - Aflatoxin clean-up
- Incubator models
 - Philippines
 - Uganda
 - Ghana
 - Guyana



Successful peanut products in the market-Peanut CRSP helped with marketing and processing

Nutrition and Child Survival



Child with peanuts

- Weaning foods
- Ready to Use Therapeutic Food (RUTF)
- Vitamin Fortified Peanut Butter (Vitamin A)
- School Snack
- Heart Health, Diabetes, Hypertension and Obesity



Mycotoxins and Public Health



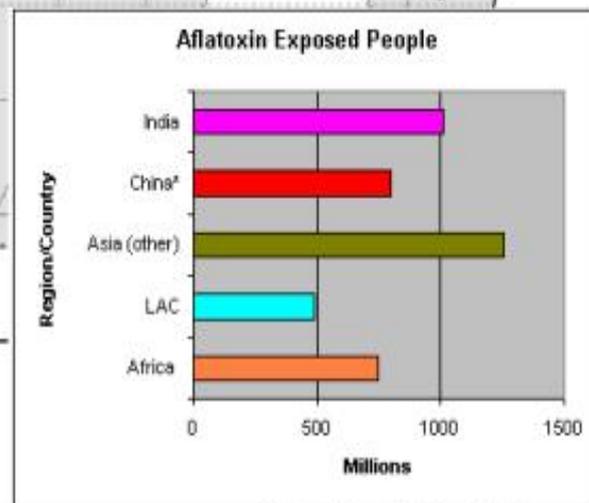
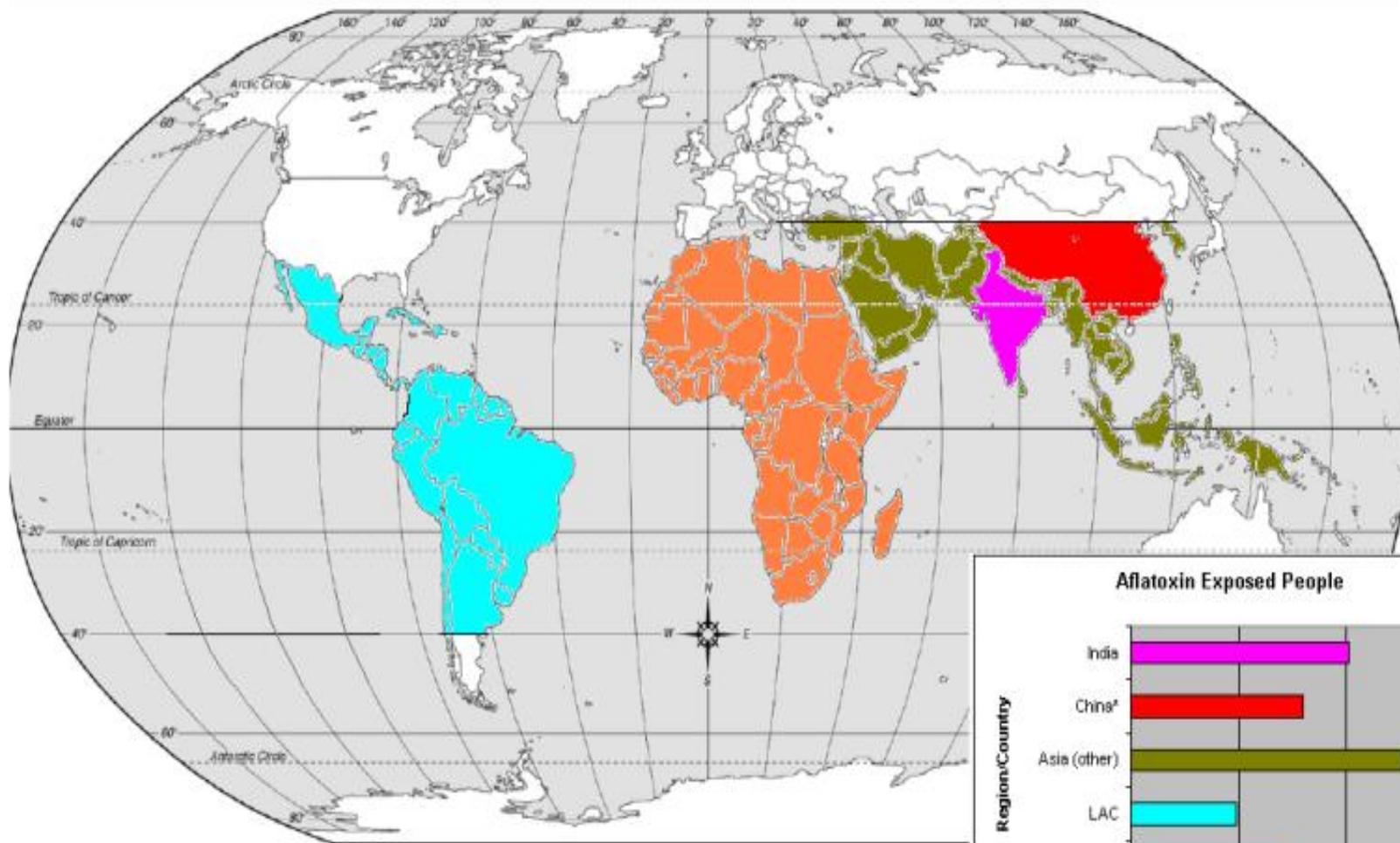
- ❑ Suppressed immunity
 - ❑ Decreased vitamins A and E
 - ❑ Increased malaria infection
 - ❑ Modified immunity in HIV suggesting rapid progression and higher transmission
- ❑ Increased TB in HIV patients
- ❑ Increased maternal anemia
- ❑ More underweight children under 5 years old

- 4.5 billion people exposed
- Mycotoxins come from fungi which affect:
 - Corn
 - Peanuts
 - Rice
 - Cassava
- Impacts
 - Nutrition
 - Immunity
 - Trade

Mycotoxins:

- ❑ Aflatoxin
- ❑ Fumonisin

Aflatoxin Exposure Demographics



China* - Estimated 66% of 1.2 billion people

3.

Applications Examples



GUYANA:

School Snacks and Peanut Butter Cottage Industry

- Fed 2750 students
- Employed 40 women full-time
- Established 27 peanut butter industry cottages
- Economic impact to the region



Peanut Butter Cottage Industry Model



Increased Production

Surplus

New Market

Industry Promotion

Change in Price

Policy Change

New Users

Industry Establishment



Women Employed

Nutrition Improved

Better Class Attendance

Economy Enhanced

Secondary Markets

UGANDA:

Feeding the Future with Peanuts

- Increased food security through increased production with improved varieties
- \$47 million in benefits from new peanut lines
- Sharing the technologies with the region



GLOBAL:

Toxin-binding technology

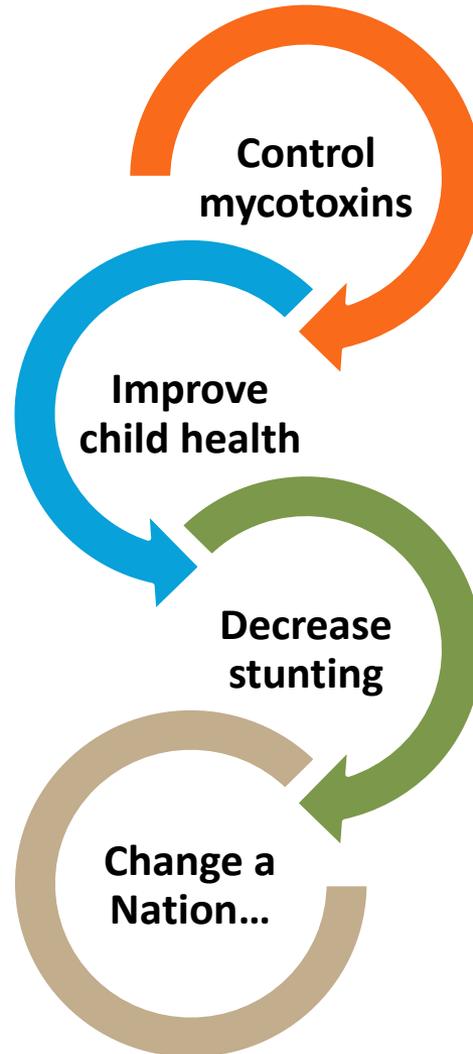
- Binds Aflatoxin making food safe for consumption
- Costs less than the price of salt
- Applied to food directly
- Impacts the poorest and most food insecure



4. Policy Recommendations



Mycotoxin Management



Aflatoxin Management

- Sowing varieties resistant to fungus
- Competitive Fungi
- Irrigation
- Integrated Pest Management

None of these methods are 100% effective – failure contamination can occur at every stage



- Moisture management
- Harvest time
- Harvest method

- Storage options
- Transportation
- Removal (sorting)

Pre-Harvest

Harvest

Post-Harvest

NEW Technology:

Toxin-binding agent

Corn and HIV



	Cassava	Groundnuts	Maize	Rice
All Causes	0.05	-0.21	-0.02	0.03
Infectious and parasitic diseases	-0.09	-0.19	0.44	-0.31
HIV/AIDS*	-0.22	-0.23	0.69	-0.42
Diarrhoeal diseases	0.22	-0.12	-0.41	0.23
Childhood-cluster diseases	0.13	0.27	-0.43	0.20
Meningitis	0.14	-0.02	-0.42	0.30
Hepatitis B (g)	-0.03	-0.18	-0.38	0.38
Hepatitis C (g)	0.01	-0.28	-0.39	0.40
Malaria	0.39	0.11	-0.43	0.29
Tropical-cluster diseases	0.58	-0.11	-0.22	-0.03
Respiratory infections	0.17	-0.11	-0.41	0.24
Nutritional deficiencies	0.11	-0.19	-0.20	0.19
Vitamin A deficiency	-0.09	-0.20	-0.25	0.43
Iron-deficiency anaemia	0.03	0.04	-0.26	0.39
Malignant neoplasms	-0.07	0.05	-0.22	0.47
Oesophagus cancer*	-0.33	-0.40	0.52	-0.40
Liver cancer*	0.14	0.27	-0.31	0.30

Battling mycotoxins on more than one front



Peanut farmer using a drying approach

- ❑ Mycotoxins impact immunity and nutrition and should be included in HIV, TB, and malaria programming
 - HIV and PEPFAR

- ❑ Nutrition programs should use binding agents to improve food safety thereby:
 - Decreasing child stunting
 - Increasing birth weight
 - Improving overall childhood nutrition

- ❑ Mothers must avoid aflatoxin during the “1,000 days”

Holistic Production Model



Looking through a comprehensive lens



Farmers working together on peanuts

- ❑ CRSP projects require a simultaneous multi-prong approach
 - Increased production
 - Identification of markets
 - Community acceptance and participation

- ❑ Project lens should be expanded and re-assessed

- ❑ Policy change should be considered from the start not approached at the end

- ❑ Think “outside the box”

Emergency Food

Peanuts



Local
Ingredients



Clay and Vitamins



top tarvat ion

Emergency Food



Uganda children playing in a peanut field awaiting for their mother who is weeding

☐ Peanuts are nutrient dense

- Low payload factor
- Low preparation energy requirement

☐ Peanut butters are an ideal medium for:

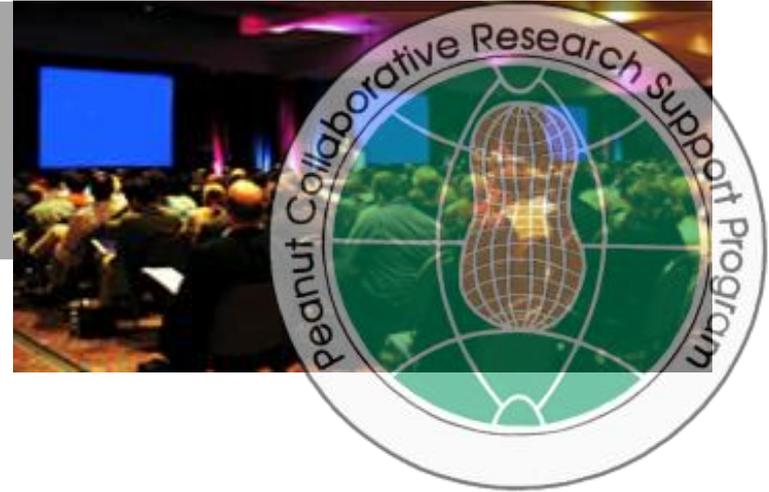
- Probiotic bacteria
- Vaccines

☐ Emergency food made with local ingredients

- Optimized formulas for specific uses (HIV, pregnant women, severe malnutrition)

The Future

Peanut CRSP 2011 Strategic Research Conference



- December 11-15, 2011
- Malta
- Partners, Researchers, USAID, Private Sector, Host Country Institutes

The conference will have three primary panel discussions and a special session on Mycotoxins:

Peanut CRSP Perspective

USAID Perspective

Partner and Developing Country Perspective

Mycotoxins Special Session

www.peanutcrsp.org/MALTA2011

The focus of the meeting is to bring together Peanut CRSP researchers, host country collaborators, partners, and USAID to discuss emerging and current needs of developing countries through the lens of a peanut development platform.

Peanut CRSP researchers and host-country collaborators will engage to identify priority activities which respond to USAID mandates, host-country conditions, and emerging issues. These activities will use one or more of the following three approaches:

- research/technology development
- capacity building
- technology transfer

Thank you



For more information about

Peanut CRSP

www.peanutcrsp.org



USAID
FROM THE AMERICAN PEOPLE

Agrilinks
AGRICULTURE
SECTOR COUNCIL

**Presentations and Screencasts will
be available for download on
Agrilinks.org**

Contact Us:

agrilinks@kdid.org

Zachary Baquet
USAID/BFS

zbaquet@usaid.gov

**Agrilinks and the Agriculture Sector Council Seminar
Series are products of the USAID Bureau for Food
Security program under the USAID/KDMD project.**

KDMD | Knowledge-Driven
Microenterprise
Development Project

Upcoming Events

November 30: Agriculture Sector Council Seminar



USAID
FROM THE AMERICAN PEOPLE

Agrilinks
AGRICULTURE
SECTOR COUNCIL

Visit the Agrilinks Blog at agrilinks.org/blogs



Achieving agriculture-led food security through knowledge sharing

USAID FROM THE AMERICAN PEOPLE

ABOUT BLOG EVENTS

Senior Leadership Highlight the Importance of Research to the Success of Feed the Future

SUBMITTED BY MEAGHAN MURPHY ON WED, JUNE 27, 2011 7:56AM | COMMENTS (0)



FEED THE FUTURE RESEARCH FORUM

Peter McPherson, President of the Association of Public and Land Grant Universities, opened the Feed the Future Research Forum welcoming the over 300 participants in the room. He highlighted the 10 themes raised through the e-consultation process that will be taken on through the forum, encouraging participants to think with specificity in the work sessions and throughout the three days, about the framework and partnerships needed to address them.

USAID Administrator Rajiv Shah reinforced this forum as an opportunity for the US government and USAID to continue deep listening, engagement with and learning from the convened community of experts. He challenged participants of the Forum to bring a lens of strategic focus and also discipline to identify the few "big ideas" and breakthroughs needed to guide the FTF research agenda. He highlighted a **new Leadership Initiative** announced earlier in the day which will support higher education initiatives and institutions, leadership development and capacity building. **Administrator Shah proposed several hypotheses to be considered over the coming days, including a focus on dramatic change in four systems globally:** 1) Rice and wheat system in the Indo-Gangetic Plain, 2) the Maize mixed systems of Central and Southern Africa, 3) Sudan and the Sahel, and 4) the Ethiopian Highlands. Also encouraged was a **hard look at what**




Achieving agriculture-led food security through knowledge sharing

USAID FROM THE AMERICAN PEOPLE

ABOUT BLOG EVENTS LIBRARY ?

Jessica Davis & Sarah Lupis of the Livestock-Climate Change CRSP discuss the project and their successful trip to the fair

SUBMITTED BY AGTEAM ON MON, OCTOBER 17, 2011 4:19PM | COMMENTS (0)

Jessica Davis, LCC-CRSP Director, and Sarah Lupis, LCC-CRSP Communications Director, provided a brief background of the Livestock-Climate Change CRSP. Currently based at Colorado State University, the Livestock-Climate Change CRSP aims to reduce vulnerability, increase adaptive capacity, and augment the income of livestock producers in regions where agricultural systems are changing, available resources are shrinking, and climate is having an impact. The CRSP focuses on small-scale livestock producers living in semi-arid ecosystems in regions in East and West Africa and Central Asia where livestock production is closely tied to the state of environmental, human, and animal health.




Blog Archive

- October 2011 (6)
- September 2011 (7)
- June 2011 (9)
- May 2011 (1)

Blog Team

-  **zbaquet**
USAID Bureau for Food Security | Knowledge Management Specialist
United States
-  **Ag Blogger**
United States
-  **Meaghan Murphy**
The QED Group, LLC | Agriculture and Food Security Portfolio Manager
United States

Sign up for Agrilinks News, Events and Announcements [SIGN UP](#)

IN THE COMMUNITY