



**FEED THE FUTURE**

The U.S. Government's Global Hunger & Food Security Initiative



# 173<sup>rd</sup> BIFAD Public Meeting

September 12, 2017  
8 am – 5 pm



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# Update on the Global Food Security Act



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## The U.S. Government's Global Food Security Research Strategy

*Reducing Global Hunger, Malnutrition, and Poverty Through Science, Technology & Innovation*

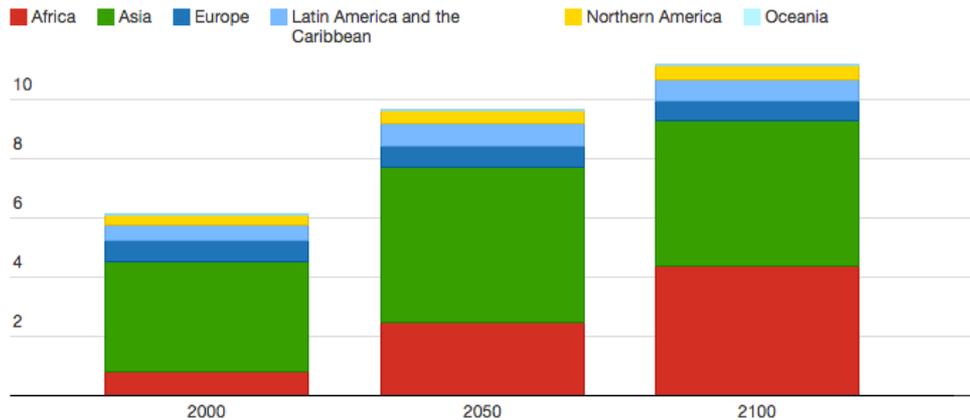
*Nora Lapitan, USAID/BFS*

*BIFAD meeting, September 12, 2017*



## Global Challenges

UN Regional Population Projections (Billions, 2000 - 2100)



Research investments ensure a pipeline of innovations to help achieve and sustain long-term food security.

- Research provides new technologies that can drive productivity gains.
- Research provides technologies to address tomorrow's food security challenges





## LESSONS LEARNED FROM FEED THE FUTURE RESEARCH STRATEGY IMPLEMENTATION

- From 2011-2016: Feed the Future research investments helped develop over 900 innovations; plus 50,000 innovations in the pipeline.
- Need greater coordination between research and technology-scaling efforts.
- Recognition that a variety of U.S. government funding and research agencies address fields and priorities relevant to food security.

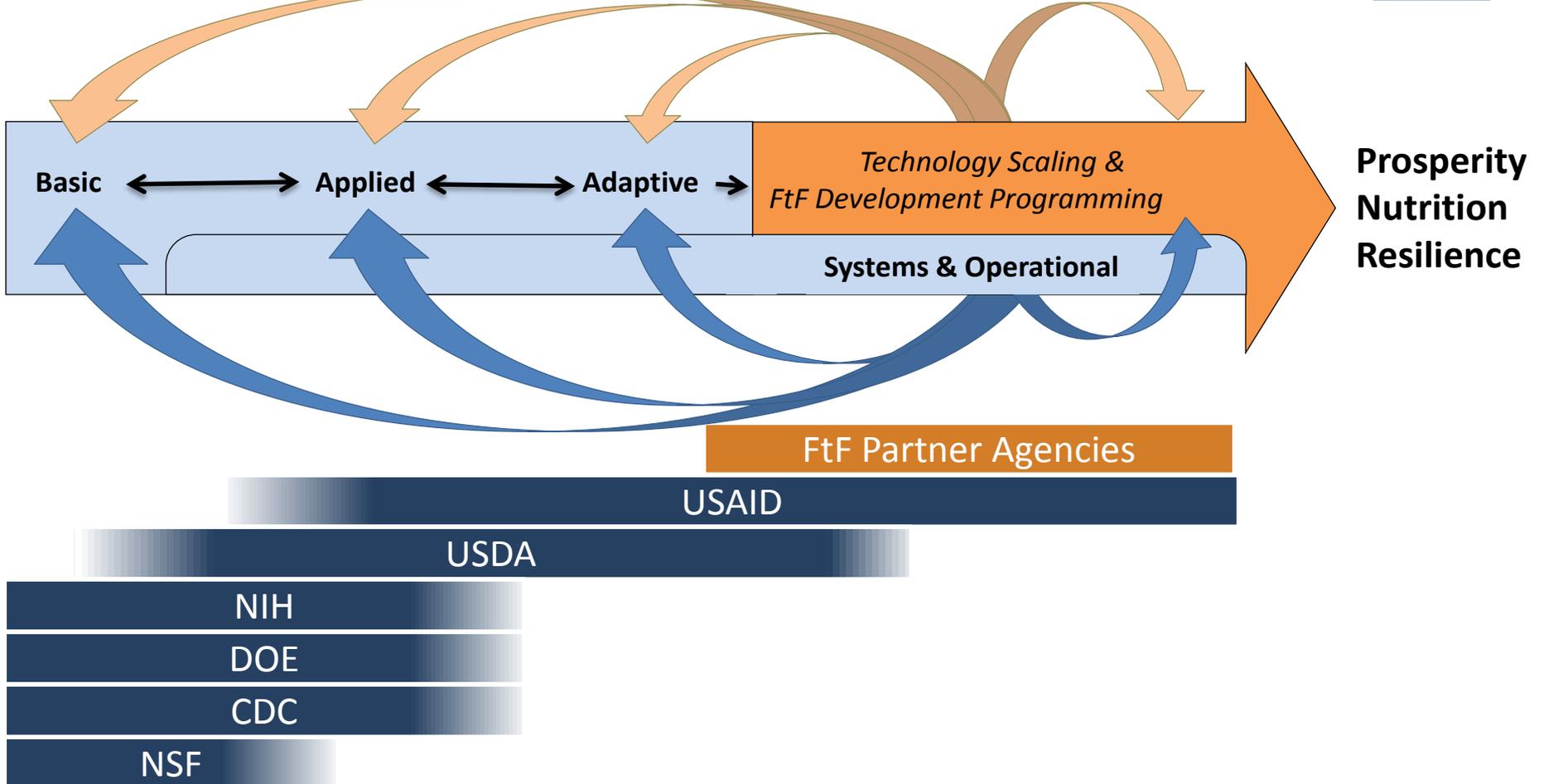




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## Research and Development Pipeline and Actors





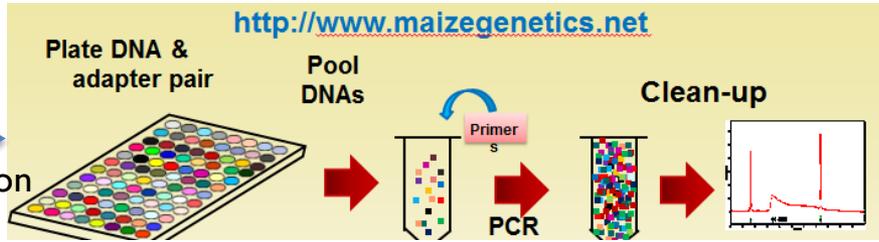
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# U.S. Agency Coordination Accelerates Innovations



**2009:** 2.3 billion bp of maize genome sequence: NSF



<http://www.maizegenetics.net>

**2011**



USDA-ARS/Cornell scientists with funding from NSF developed GBS which uncovers large numbers of DNA variation at low cost, and can be applied to a wide range of species.

**2012:** USAID funded CIMMYT, Purdue, and researchers from Nepal, Bangladesh, India, and Pakistan, with Pioneer and other seed companies to develop heat-tolerant maize lines using GBS and other genomic tools.

**2015-2016:** 37 high yielding heat tolerant maize hybrids licensed to NARS and seed companies.



Educating farmers on new maize hybrids as part of dissemination plan.

Global public goods benefit maize breeders worldwide.

Iowa State

Purdue

Other US universities



## Global Food Security Research Strategy addresses GFSS goals:

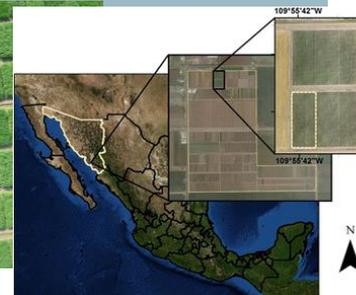
- Inclusive, agriculture-led economic growth
- Resilience among vulnerable populations
- Improved nutrition



## Technologies and practices that advance the productivity frontier to drive income growth, improve diets and promote natural resource conservation.

- Productivity of crop, livestock, and fish are still way below potential
- Opportunities in research:
  - Use of cutting-edge science to increase genetic gains
  - Improve quality of food and feed
  - Add post-harvest value to agricultural products
  - Sustainable intensification.
  - Ensure healthy agricultural landscapes
  - Identify policies to increase food system productivity

### Genotype to Phenotype: Opportunities in Big Data



## Technologies and Practices that Reduce, Manage, and Mitigate Risk to Support Resilient, Prosperous, Well-Nourished Individuals, Households, and Communities.

- Recurrent crisis leaves vulnerable individuals and communities in a cycle of hunger, poverty, and malnutrition.
- Opportunities in research:
  - Reduce, manage, and mitigate impacts of abiotic and biotic stress
  - Increase food safety
  - Diversify farming, economic and livelihood opportunities
  - Design effective financial services and social protection systems



FAW outbreak in Africa



Aflatoxin in grain legumes

- Example: Research by the Assets and Market Access Innovation Lab (UC-Davis)
- Index-based Insurance for Livestock
  - Addresses coping mechanisms that keep pastoralists in a poverty trap
  - Payout is based on an index rather than through a claims agent, using satellite-based measures of vegetative cover.
  - Survey results after first payment: compared to uninsured households, insured households were **27-36% less likely to reduce** the number of meals, **22-36% less likely to sell livestock**, **42-50% less likely to rely on food aid**.



## Improved knowledge of how to achieve human outcomes

- Opportunities to generate understanding of how human behavior, development context, and enabling environment influence the progress of food-insecure households and communities
  - Deepen understanding of pathways from agriculture to nutrition
  - Promote resilience in the face of conflict and fragility
  - Support information access, dissemination, and use
  - Policy analysis, political economy and decision research, research on policy impact
  - Empowering decision-making to foster positive change



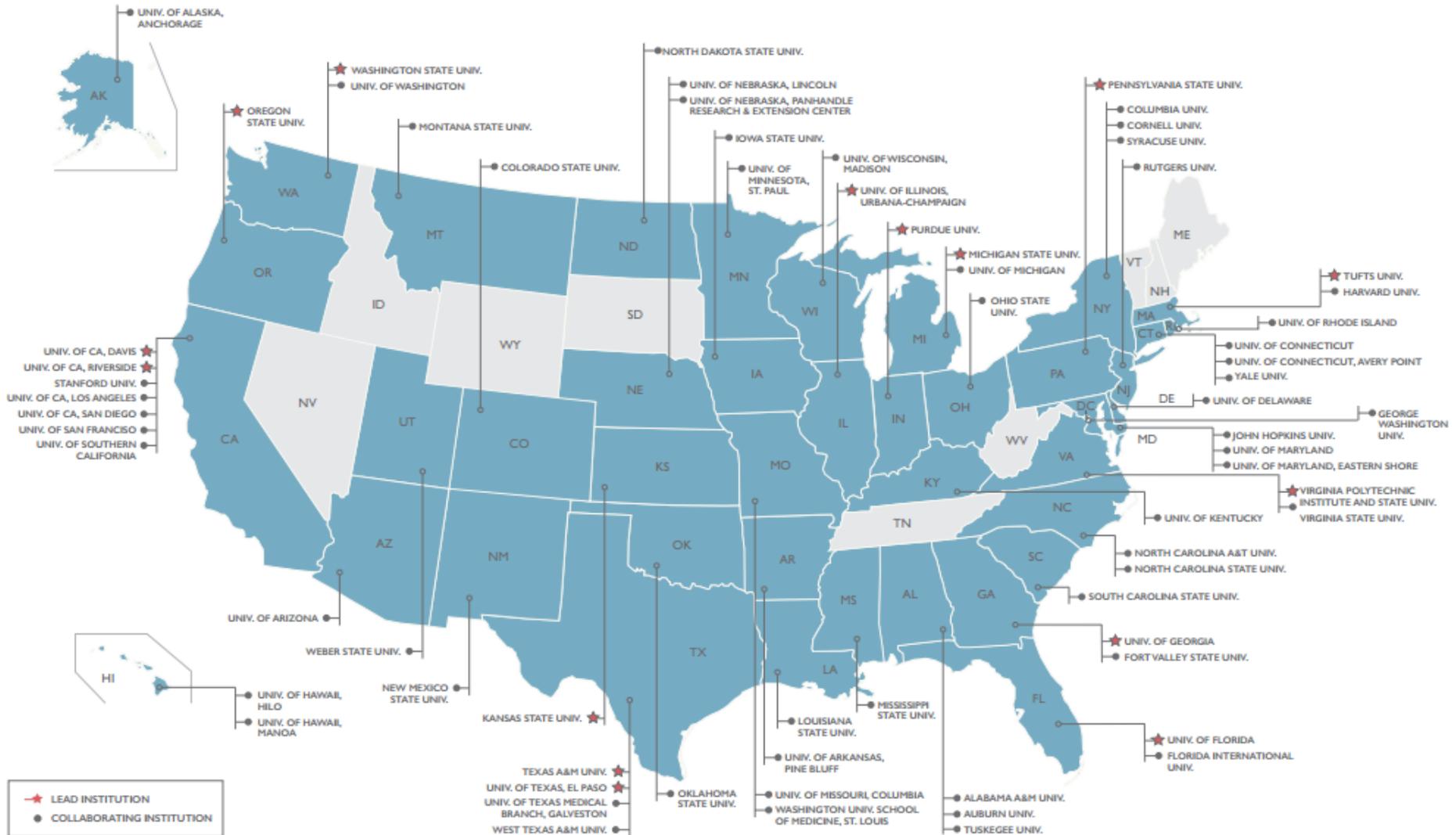
- U.S. government research funding agencies
- Other research funding organizations
  - Host-country governments
  - Other international donors
  - Philanthropic organizations
  - Private sector



- U.S. and global agricultural innovation systems that generate innovations
  - U.S. universities
  - U.S. government scientists
  - CGIAR
  - Private sector



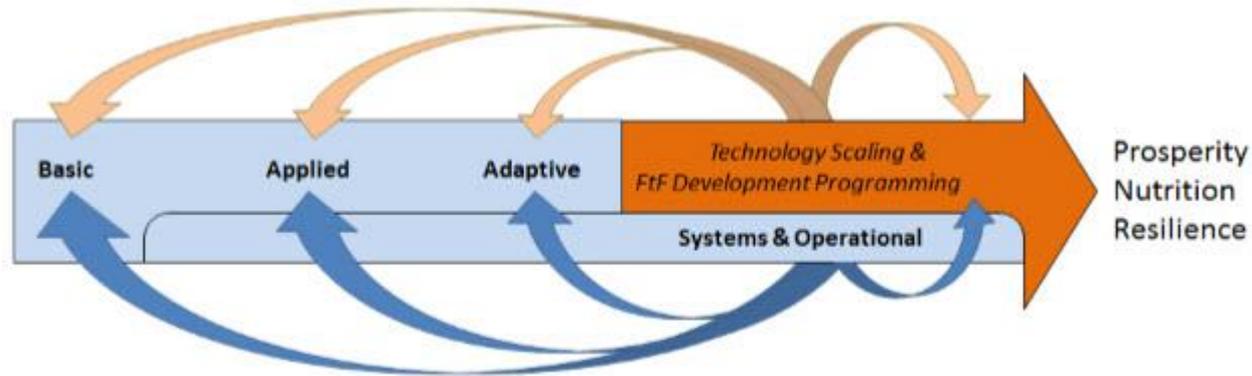
# FEED THE FUTURE WORKS WITH U.S. UNIVERSITIES TO FIGHT GLOBAL HUNGER



The Feed the Future initiative partners with universities throughout the world: This is a sampling of university partners located in the United States. For more information and updates, visit [www.feedthefuture.gov](http://www.feedthefuture.gov) or follow on Twitter @FeedtheFuture.

- **Agricultural innovation systems in Feed the Future partner countries**
  - Regional research organizations and partner-country universities
  - National agricultural Research Systems
  - Other technology-scaling actors
- **Feed the Future Agencies and Partners**





- **Embrace purpose-driven research.**
- Strengthen agricultural innovation systems.
- **Orient research efforts to support technology scaling.**
- Promote empowerment and equitable participation in science.
- Leverage data to accelerate research impacts.
- **Generate and sustain global public goods.**
- **Continuous learning, adaptation, and communication through monitoring and evaluation**



- Consult and coordinate among interested U.S. agencies and their respective partners to identify opportunities to coordinate research.
- Share information and monitoring and evaluation approaches to understand and communicate long-term food security impacts of research.



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*What is now proved was  
once only imagined.*

—William Blake





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**Cutting Edge  
Science for  
Development**