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Food Security Innovation Center: Designs Based on Learning

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U.S. Agency for International Development

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What we do

1. *Help farmers produce more*
2. *Help farmers get more food to market*
3. ***Support Research & Development to improve smallholder agriculture in a changing climate***
4. *Strengthen Regional Trade*
5. *Create a better Policy Environment*
6. *Improve Access to Nutritious Food and Nutrition Services*

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Research Strategy

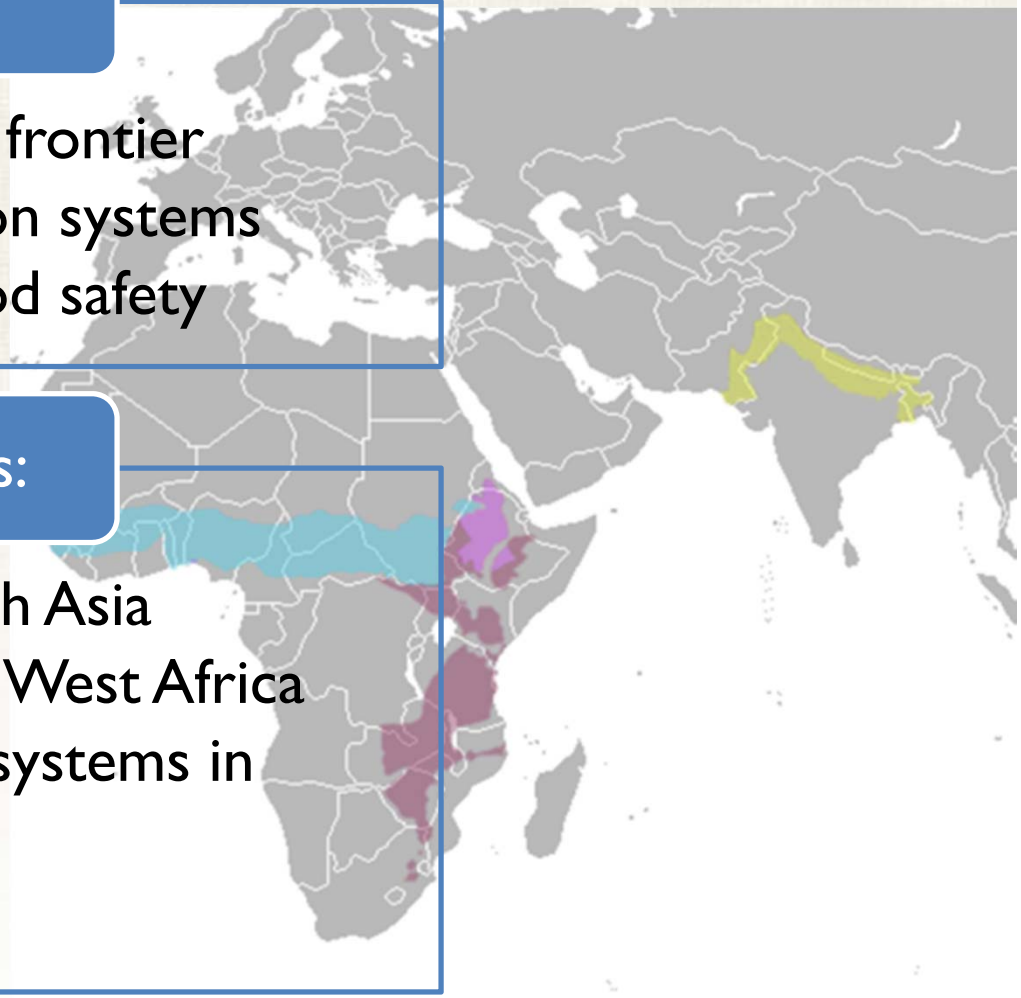
Overarching Goal: Sustainable Intensification

Three research themes:

- Advancing the productivity frontier
- Transforming key production systems
- Improving nutrition and food safety

Anchored by key geographies:

- Indo-gangetic plains in South Asia
- Sudano-sahelien systems in West Africa
- Maize and livestock mixed systems in East and Southern Africa
- Ethiopian highlands



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Feed the Future Food Security Innovation Center

- Created in response to BIFAD CRSP study recommendations
- Leads USAID's implementation of FTF Research Strategy in seven priority research areas
- Encourages a multi-disciplinary approach, better linkages among related projects, cross-project learning and management efficiencies
- Engages U.S. universities, international research centers, private sector, local agricultural research and educational institutions, development partners

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Learning from the Past-- Lessons for the Future

- Integrated Programs spanning partner types: U.S. Universities, IARCs, Private Sector, NARS, NGOs
  - Management by program area
  - Integrated governance—CGIAR CRPs-FTF ILs
  - Rebalanced partnerships—expanded opportunities for U.S. universities

- Sustainability: New Approaches to Capacity Building
  - How do we best impact human and institutional
  - What do new models look like
  - What's next?

- Supporting the Field: What tools do Missions need and how do we provide best practices that can be tailored to local/national needs?

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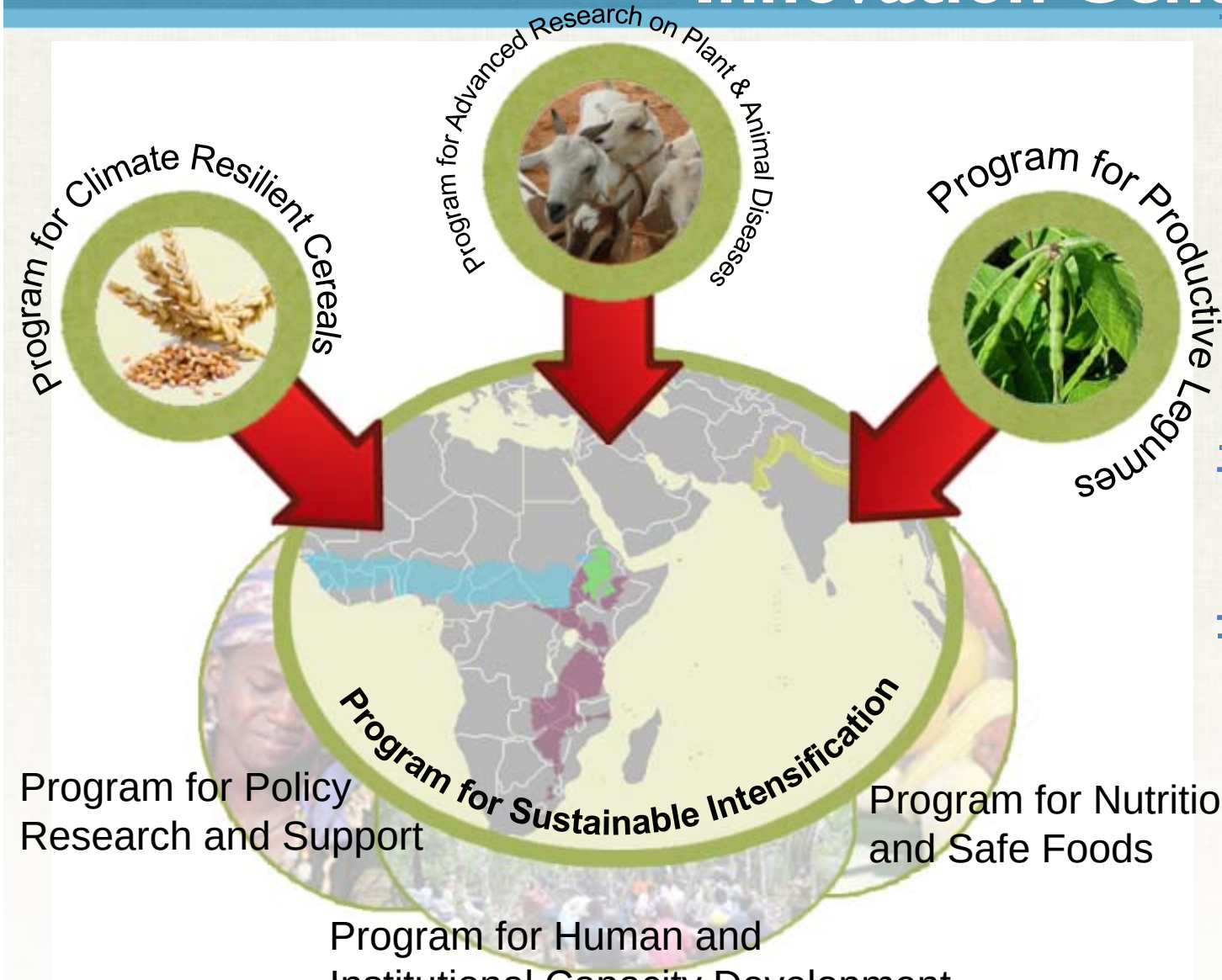
Food Security Innovation Center



3 Major Research Programs – "Big Ideas"

Program anchoring research in key farming systems

Integrated Cross-Cutting Programs

6

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Feed the Future Innovation Labs

- **Research** – the Feed the Future Innovation Labs conduct targeted research in support of the Feed the Future Research Strategy
- **Partnerships** – the Innovation Labs connect U.S. colleges and universities with developing country research institutions through research collaborations, student training and mentorship
- **Capacity Building** – Innovation Labs support graduate and undergraduate student training as well institutional strengthening, curriculum development and short-term training
- **Technology Scaling** – research outputs, including technologies and knowledge, feed into and strengthen Mission value chain programs and other technology dissemination activities
- Just one part of **broader FSIC Research portfolio**, which includes projects led by private sector, CGIAR, universities, NARS, NGOs

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Program for Research on Climate Resilient Cereals

Challenge: **Increase cereal yields and adaption to climate change for improved feed and fodder production**

- Cereals account for approximately two-thirds of all human energy intake
- An estimated 1.2 billion poor people depend on wheat

Solutions:

- Invest in development and dissemination of improved cereals
- Take advantage of emerging biotech and genomic tools
- Partner with private R&D companies and US universities
- Leverage BMGF investments
- Improve fodder quality for dual purpose use

Feed the Future Innovation Labs:

- Sorghum & Millet, Kansas State University
- Applied Wheat Genomics, Kansas State University
- Climate Resilient Millet, University of California, Davis
- Climate Resilient Sorghum, University of Georgia
- Climate Resilient Wheat, Washington State University

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Program for Research on Legume Productivity

Challenge: **Increase productivity and availability of legumes**

- Abiotic stresses decrease legume yields by up to 40%
- Pests and diseases can decrease yields by up to 35%
- The grain legume value chain directly benefits women, especially in Africa

Solutions:

- Elevate legumes as major investment area under the research strategy
- Tackle yield, climate resilience and biotic stresses for staple legumes
- Utilize private sector knowledge and skill in transgenic and emerging genomic tools

Feed the Future Innovation Labs:

- Grain Legumes, Michigan State University
- Peanut & Mycotoxin, University of Georgia
- Soybean Value Chain Research, U. of Illinois
- Climate Resilient Beans, Penn State University
- Climate Resilient Chickpea, UC Davis
- Climate Resilient Cowpea, UC Riverside

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Program for Advanced Approaches to Combat Pests and Diseases

Challenge: **Protect animals and tropical staples from major pests and diseases**

- Plant diseases on major food crops cause up to 40% of pre-harvest losses
- Over 90% of the world's wheat acreage is susceptible to wheat stem rusts
- Over 1.6 billion families depend on livestock for their income and nutrition

Solutions:

- Leverage US science and leadership in advanced genomic/biotech tools
- Utilize transgenic tools for critical plant diseases
- Build public sector capacity to use biotech tools

Feed the Future Innovation Labs:

- Genomics to Improve Poultry
- Rift Valley Fever Control in Agriculture

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Program for Research on Nutritious and Safe Foods

Challenge: **Sustainably increase production and consumption of highly nutritious foods and diversify diets**

- Fruits, vegetables and animal source foods provide critical micronutrients for child development
- One third of children under five in low income countries are stunted
- Half of all children and pregnant women are anemic

Solutions:

- Nutrition research on behavior, food utilization and household dynamics
- Research on production/consumption biofortified and nutrient-rich crops
- Develop options to strengthen post harvest handling and food safety
- Invest in horticulture, animal sourced food value chains

Feed the Future Innovation Labs

- Aquaculture & Fisheries, Oregon State University
- Nutrition, Tufts University
- Horticulture, University of California, Davis
- Reduction of Post-Harvest Loss, Kansas State University
- Food Processing, Purdue University
- Adapting Livestock Systems to Climate Change, Colorado State University

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Program for Policy and Markets Research and Support

Challenge: **Create supportive agricultural policy environments**

- Help countries embrace predictable, inclusive, evidence-based and transparent policy formulation and implementation

Solutions:

- Work with host-country governments and multilateral institutions to improve enabling policy environments
- Address land and natural resource governance and resilience policy, nutrition policy constraints.
- Improve function of and access to markets

Feed the Future Innovation Labs:

- Food Security Policy,
  Michigan State University

- Assets & Market Access BASIS
  University of California, Davis

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Program for Sustainable Intensification

Challenge: Fundamentally Transform Key Production Systems

- In Africa, 65% of agricultural land suffers from physical and chemical degradation
- African cereal and milk yields are less than half the global average

Solutions:

- Integrate research outputs, policy and nutrition in production systems
- Focus multiple interventions within targeted geographic areas
- Diversify major production systems with improved crops and animals
- Evaluate and disseminate improved soil and water management practices

Feed the Future Innovation Labs:

Sustainable Ag. & Natural Resource Management (SANREM), Virginia Tech
Integrated Pest Management, Virginia Tech
Small-Scale Irrigation, Texas A&M University

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NEW Sustainable Intensification (RFA closes May 15)
NEW Integrated Pest Management (RFA closes June 24)

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How can you partner with the Feed the Future Innovation Labs?

Opportunities for Title XII institutions

- Feed the Future Innovation Lab for Sustainable Intensification (closed May 15)
- Feed the Future Innovation Lab for Integrated Pest Management (closing June 24)
- New Livestock Research priority setting process – two upcoming opportunities for public input (announcements forthcoming):
  - **Crafting USAID's livestock research agenda – animal science priorities under Feed the Future**
    American Society for Animal Science, July 24, 2014, Kansas City, MO
  - **E-consultation on animal research priorities** – week of July 28, 2014
- USAID Mission staff – internal consultations on animal research

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Program for Human and Institutional Capacity Development

Challenge: Professional and organizational capacities are inadequate to address agricultural challenges and opportunities

- Public agricultural institutions are weak
- Private sector needs skilled employees
- Experienced faculty and managers are retiring
- Women hold few management positions

Solutions:

- Strengthen human and institutional capital base
- Support best practice development
- Support women in agricultural research
- Develop human skills through fellowships and long-term degree training

Example Projects:

- All the Feed the Future Innovation Labs have capacity development activities
- InnovATE – Agricultural Training & Education
- African Women in Agricultural Research and Development (AWARD)
- Borlaug Higher Education for Agricultural Research and Development

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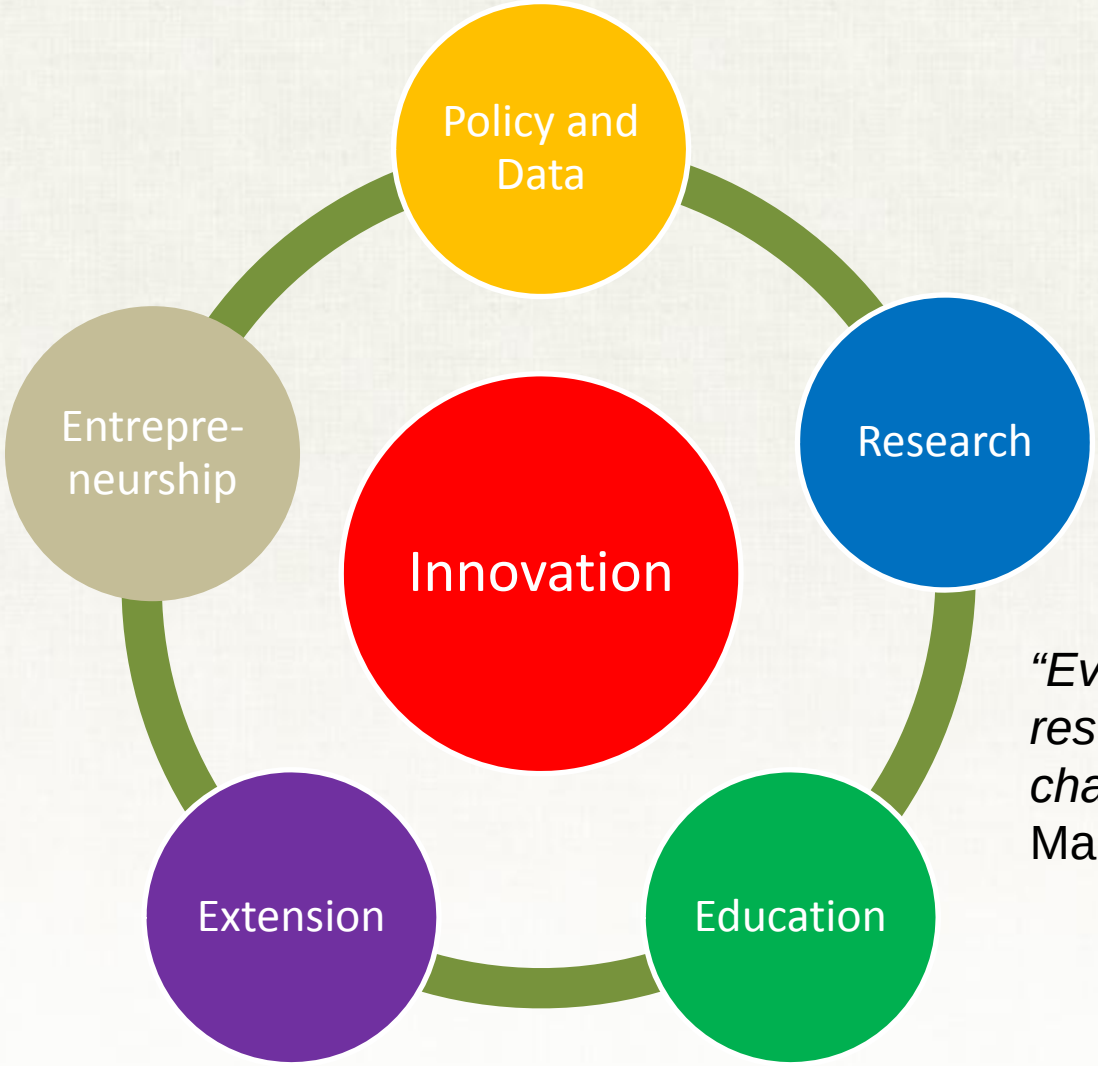
Approach – Investing in "Change Levers"



"Everything is the result of a change."
Marcus Aurelius

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Borlaug US Global Fellows Program

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www.BorlaugLEAP.org

Borlaug LEAP Fellow Daniel Ddumba with his US Mentor, Jeffrey Andresen at experiment site

Borlaug LEAP Fellow Gerardine Mukeshimana receives the 2012 BIFAD Student Research Award

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BORLAUG LEAP

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Borlaug LEAP Fellow Kelvin Kamfwa in his research plots at MSU

Borlaug LEAP Fellow Mary Njenga working with women in Kibera on fuel briquette technology

Borlaug LEAP Fellow Barbara Zawedde conducting molecular genetic diversity studies at BecA

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African Women in Agricultural Research and Development (AWARD)

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Borlaug Higher Education for Agricultural Research and Development

Photo: Borlaug Foundation

- Uganda
- Ghana
- Bangladesh
- Cambodia
- Mali
- Malawi
- Mozambique
- Liberia NEW
- Kenya NEW
- South Sudan NEW

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Modernizing Extension and Advisory Services

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Innovation for Agricultural Training and Education

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Please See our Feed the Future Website

Thank You!

www.feedthefuture.gov