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Feed the Future Food Security Innovation Center

USAID Agricultural Research Portfolio



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USAID
FROM THE AMERICAN PEOPLE

The Global Challenge

- ✓ About **870 million** people suffer from chronic hunger
- ✓ More than **3.5 million** children die from undernutrition each year
- ✓ The world's population will increase to more than **9 billion by 2050**
- ✓ Food production will have to **increase by 60%** to feed the world

Climate change already impacting yields - through drought, high temperatures and unpredictable climate

As arable land is lost to urbanization and other uses, we need to produce **more food on less land**

Water, energy, labor and fertilizer availability are constraining production

System diversification and intensification needed to improve nutrition, incomes

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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

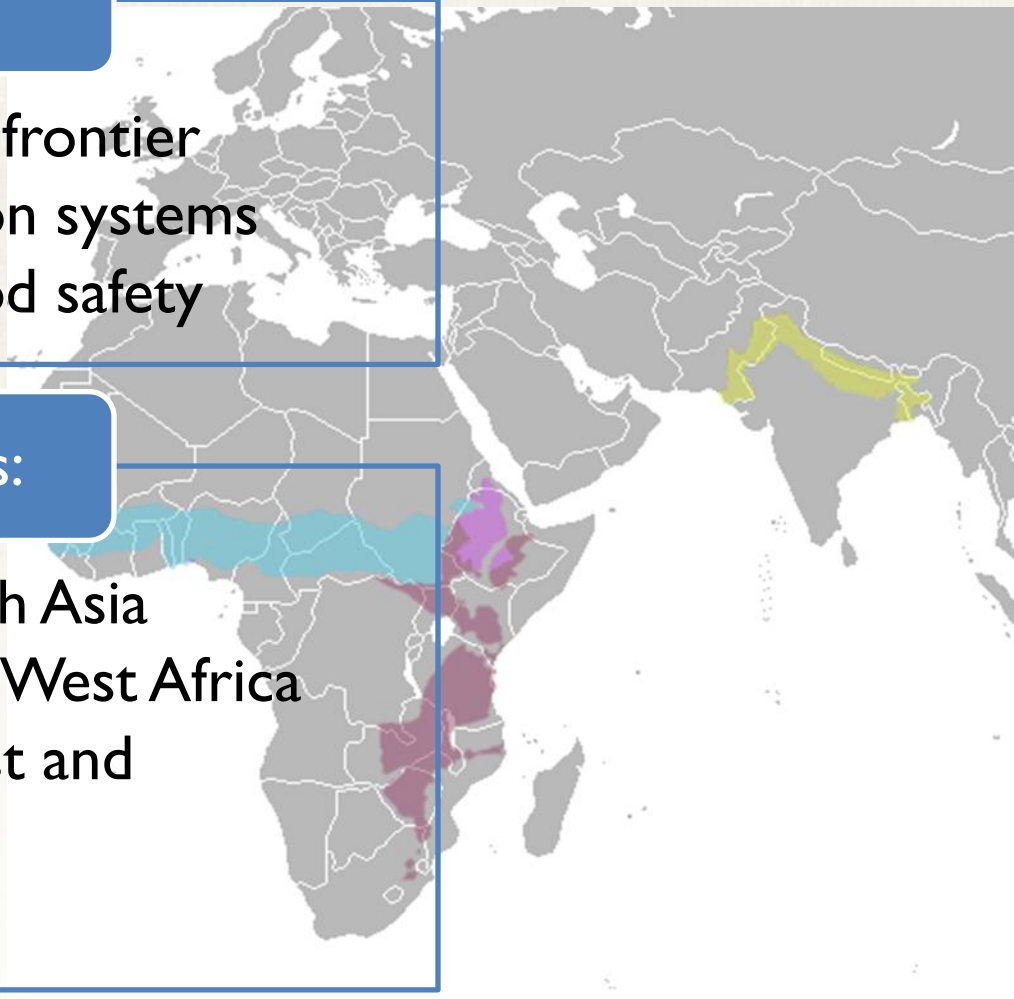
Overarching Goal: Sustainable Intensification

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-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, think tanks

Food Security Innovation Center Program Areas

Seven interlinked research and capacity programs aimed at:

- Sustainably transforming agricultural production systems
- Ensuring access to nutritious and safe foods
- Creating enabling and supportive policies
- Addressing the emerging challenges of climate change and natural resource scarcity

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Program for Research on Climate Resilient Cereals

Challenge: **Increase cereal yields and adapt to climate change**

- 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

Example Projects:

- Rice, wheat, maize, dryland cereal CRPs
- Arcadia – abiotic stress tolerant rice
- Drought/heat tolerant maize and wheat
- New Sorghum and Millet Innovation Lab
- UC Davis Abiotic Stress Tolerant Millet

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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.

Example Projects:

- Grain Legumes Innovation Lab
- Peanut & Mycotoxins Innovation Lab
- AATF Bt Cowpea
- CGIAR Grain Legumes CRP

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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 wheat stem rusts

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

Example Projects:

- Virus Resistant Cassava for Africa
- East Coast Fever vaccine development (USDA)
- Venganza—Wheat Stem Rust & Mycotoxins
- Late blight resistant potato

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Program for Research on Safe and Nutritious Foods

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

- Fruits and vegetables 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 nutrition, horticulture, animal sourced foods

Example Projects:

- Meat, Milk & Fish and Nutrition CRPs
- Horticulture, Livestock, AquaFish & Nutrition Innovation Labs
- World Vegetable Center

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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 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, through crops and animals
- Evaluate and disseminate improved soil and water management practices

Example Projects:

- Integrated Pest Management Innovation Lab
- Africa RISING
- Cereal Systems Initiative for South Asia
- Sustainable Agriculture and NRM Innovation Lab

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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

Example Projects:

- Feed the Future Policy Plan
- Assets and Market Access Innovation Lab
- Program for Biosafety Systems
- New Alliance partnerships

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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:

- InnovATE – Agricultural Training & Education
- African Women in Agricultural Research and Development (AWARD)
- Borlaug Higher Education for Agricultural Research and Development

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Scaling Technologies

Challenge: Bringing proven agricultural technologies to scale – a set of global opportunities and country-based actions

Partners: Country governments, CGIAR, Innovation Labs (US Universities), private sector, Mission value chain implementing partners, other donors

Solutions:

- New Alliance Technology Platform
- Mission scaling plans, constraints to policy and technology adoption
- Alignment of research priorities, including CGIAR and University partners

Learning Agenda:

- Technology Matrix (wiki)
- Private sector pathways for dissemination of publicly funded technologies
- Sustainable intensification model
- Identify opportunities for regional technology spillovers
- Create favorable conditions for technology and policy adoption

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Thank You!

www.feedthefuture.gov