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## Food Security and Agriculture Core Course



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# RESILIENCE

*Photo: Morgana Wingard*

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## OBJECTIVES

- Articulate how shock, stressors and relative risk have an impact on outcomes we seek to achieve
- Identify how the agriculture sector programs contribute to the resilience capacities
- Understand how resilience relates to the GFSS Sustainable Agricultural-led Growth and Nutrition objectives

Strengthening Resilience [Video](#)

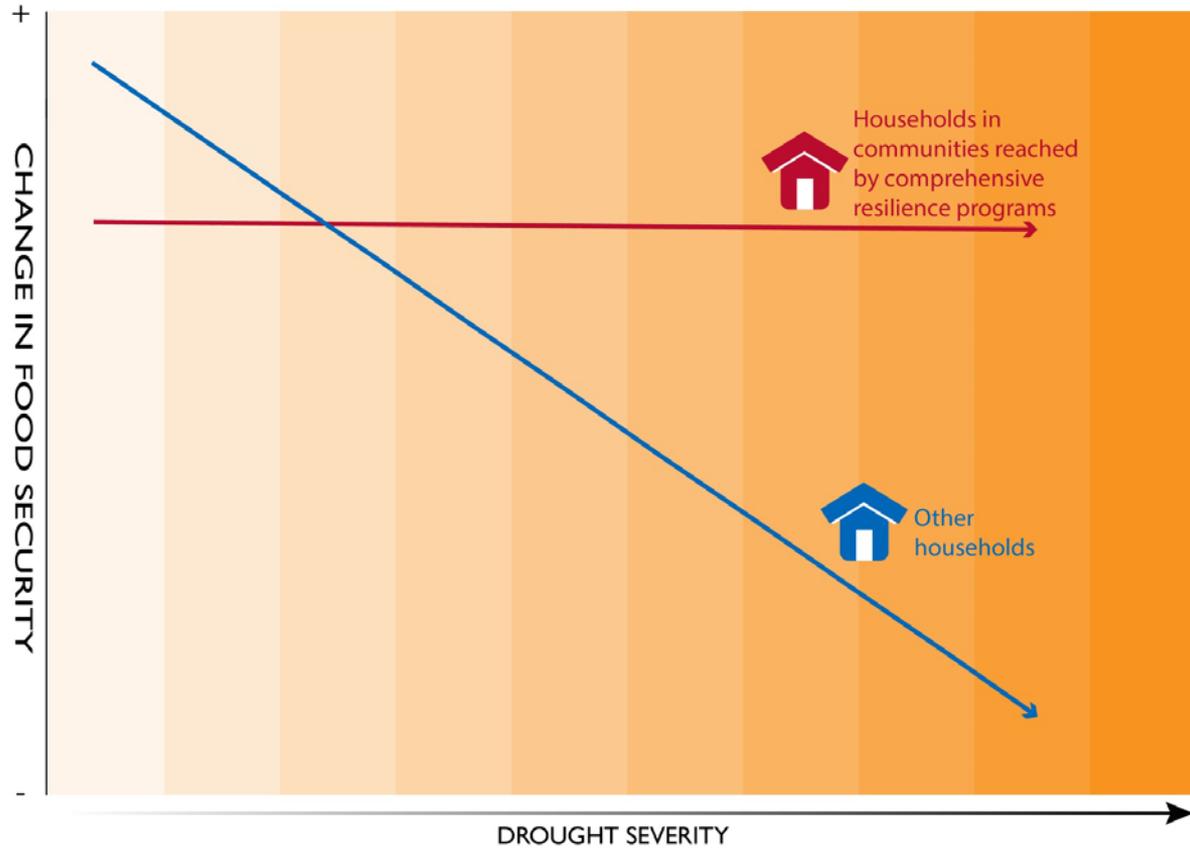




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## CHANGE IN FOOD SECURITY IN ETHIOPIA LOWLANDS DURING EL NINO DROUGHT



LEARN MORE: [WWW.USAID.GOV/RESILIENCE](http://WWW.USAID.GOV/RESILIENCE)



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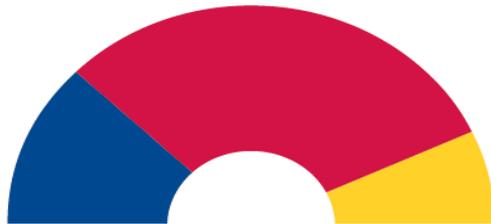
## GLOBAL FOOD SECURITY STRATEGY



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## SUSTAINABLE POVERTY ESCAPES



### Ethiopia

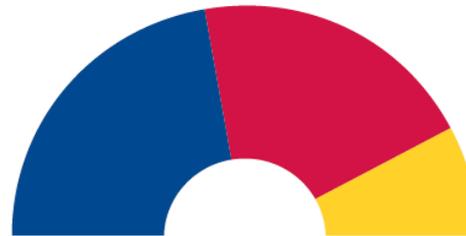
Households in rural areas, 1997–2009

- Remain out of poverty
- Fall back into poverty
- Churn around poverty line



### Bangladesh\*

Households in rural areas, 1997–2010



### Uganda

All households, 2005–2012

### Sources of resilience



Household resources:  
Owning **productive resources**, such as land and livestock.



Household characteristics:  
**Smaller households** and those in which the head of the household has an **education**.



Household activities:  
Engagement in **non-farm activities**.



Gender:  
**Female-headed** households are more likely to experience a sustained poverty escape than to backslide or to fall into poverty.



Transfers:  
Female-headed households receiving **remittances**.

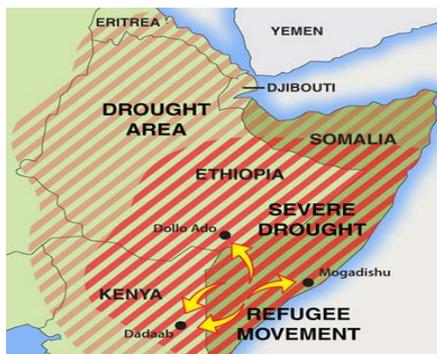


## DEFINING RESILIENCE

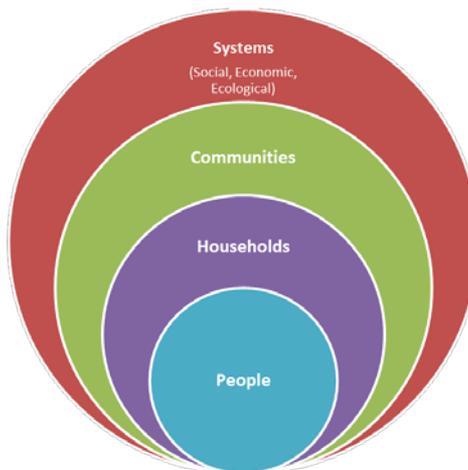
USAID defines resilience as “the **ability** of people, households, communities, countries and systems **to mitigate, adapt to and recover from shocks and stresses** in a manner that reduces chronic vulnerability and facilitates inclusive growth.”

– USAID’s *Building Resilience to Recurrent Crisis* (2012)

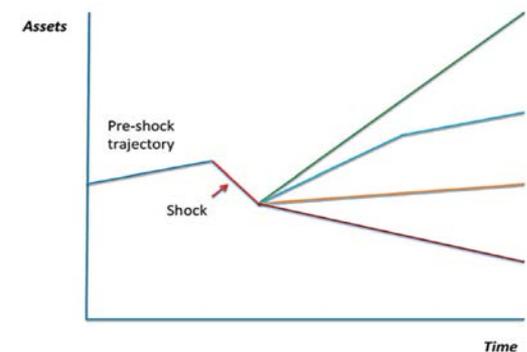
### Shocks and stresses



### Resilience Capacities (resources, assets, and strategies)



### Well-being Outcomes





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## SOURCES OF RESILIENCE



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Photo: USAID



## IR4: DETERMINANTS OF SUSTAINABLE AG PRODUCTIVITY GROWTH





## EXAMPLE: FMNR IN SAHEL

- Improves soil fertility and crop yields
- Provides animal fodder and shade for crops/livestock
- Reduces soil moisture loss and soil erosion



*Photo: ICRAF, P. Savadogo*





## IR 5: IMPROVED PROACTIVE RISK REDUCTION, MITIGATION AND MANAGEMENT

- Early warning, early action and preparedness
- Financial services (credit, remittances, savings, insurance)
- Asset accumulation, protection and management
- Social capital





## EARLY WARNING, EARLY ACTION AND PREPAREDNESS

- Early warning should be linked to early action and preparedness
- Examples:
  - Government-led shock-contingency plans and funding (e.g., Kenya-ASAL Drought Contingency Fund project)
  - Forecast-based financing
- Tools for early warning (e.g., FEWSNet, climate and weather services)





## SHOCK RESPONSIVE PROGRAMMING

In the life of a project.....

shocks are **more likely** to occur than not



price shock

conflict/political shock

drought

flood

pests (eg., fall army worm)

disease outbreak



Photo: ILRI/George Wamwere-Njoroge





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## OAA & CENTER FOR RESILIENCE

### **USAID Technical Resource:**

*Approaches and Tools to Shock Responsive Programming and Adaptive Mechanisms*



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## FINANCIAL SERVICES & FINANCIAL INCLUSION

- Insurance
  - Indemnity
  - Index
  - Sovereign risk
- Savings and credit (e.g., VSLAs, micro-credit, emergency loans)
- Remittances



Photo: CARE





## ASSET ACCUMULATION, PROTECTION AND MANAGEMENT

- Number and type is a strong predictor of resilience across contexts
- Strategies to increase
  - Livestock ladders
  - Land accumulation
  - Other market-based strategies
- Asset diversification



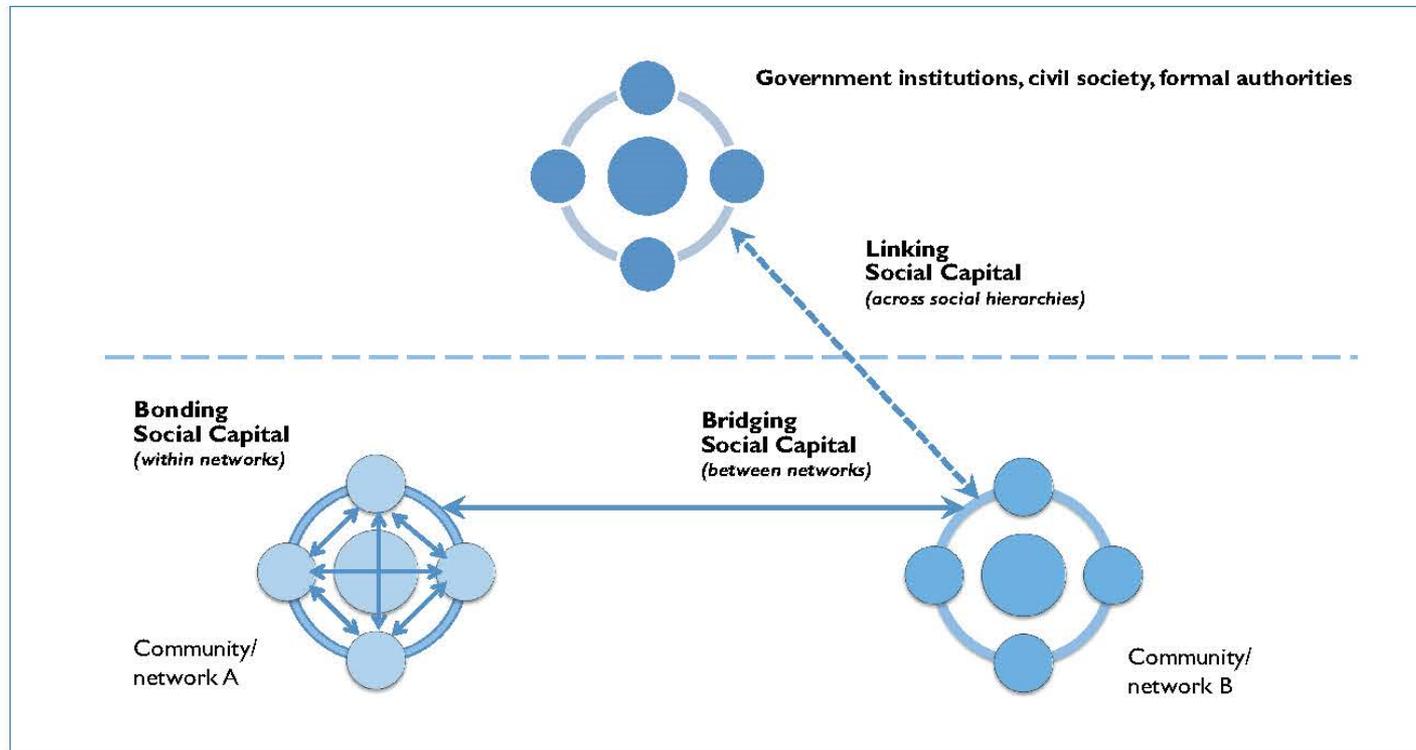
Photo: USAID





## SOCIAL CAPITAL & SOCIAL NETWORKS

### Bonding, bridging and linking social capital





## SOCIAL CAPITAL

### Example activities:

- Bonding
  - Providing “safe spaces” for women and girls to meet and share information
- Bridging (to link disparate groups)
  - Agricultural cooperatives
  - VSLAs
- Linking
  - Value chain approaches
  - Business networks



Photo: MCHIP/Karen Kasmauski



## IR 6: IMPROVED ADAPTATION TO AND RECOVERY FROM SHOCKS, STRESSES

- Access to and use of risk information
- Ecosystem and natural resource management
- Diversifying livelihood risk
- Social protection and safety nets
- Aspiration and empowerment
- Human capital

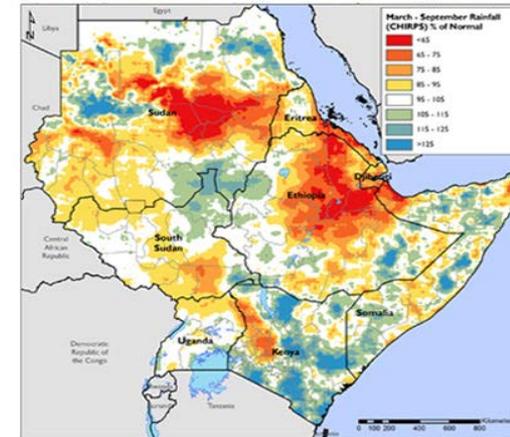




## ACCESS/USE OF RISK INFORMATION

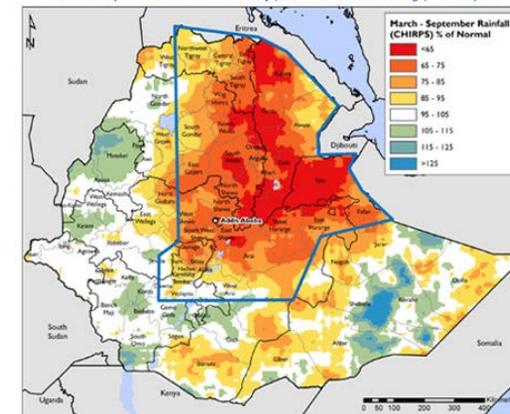
- Improved understanding of medium to longer-term changes and trends
  - Demographic trends, urbanization, land-use changes
  - Conflict dynamics, environmental change
- Information supply and user demand
- Timeframes for decision-making
- Building stakeholder capacity to use data

March - September 2015 rainfall anomaly (% of the 1981-2014 average) for East Africa



Source: FEWS NET/USGS

March - September 2015 rainfall anomaly (% of the 1981-2014 average) for Ethiopia



Source: FEWS NET/USGS





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## ECOSYSTEM & NRM MANAGEMENT



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Photo: USAID



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## LIVELIHOOD DIVERSIFICATION



Photo: USAID



Photo: Kelly Lynch



Photo: USAID Nepal



Photo: USAID/Wasif Hasan



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Diversify **livelihood risk**,  
not just the  
**number of livelihoods.**



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## DIVERSIFYING LIVELIHOOD RISK

- Negative coping strategies:
  - “***Hanging in***” or “***dropping out***”
- Positive adaptive pathways:
  - ***Stepping up*** within agriculture through agricultural diversification
  - ***Stepping partially out*** of agriculture
  - ***Moving out*** of agriculture





## SOCIAL PROTECTION/SAFETY NETS

- Enable poor and chronically vulnerable households to escape and remain out of poverty
- Can smooth household consumption
- Encourage engagement into higher risk/higher reward livelihoods and invest in increasing agricultural productivity





## ASPIRATION AND EMPOWERMENT

Sources of resilience that transcend technical sectors are important.





## HUMAN CAPITAL

- Investments in nutrition, health, and education
- Critical to breaking cycle of intergenerational poverty



*Photo: USAID/Louis Erwin Stippel*





## KEY TAKEAWAYS

- Elevation of resilience to a GFSS Objective reflects
  - prioritizing building resilience to recurrent crises
  - broader relevance of resilience to ending hunger and poverty
- Resilience is not an outcome but an essential set of **capacities** needed to achieve *and maintain* well-being outcomes in the face of compound and complex risk
- Resilience is sector agnostic, but its roots in USAID are firmly in food security
- Evidence is clear that strengthening resilience requires working across and transcending sectors



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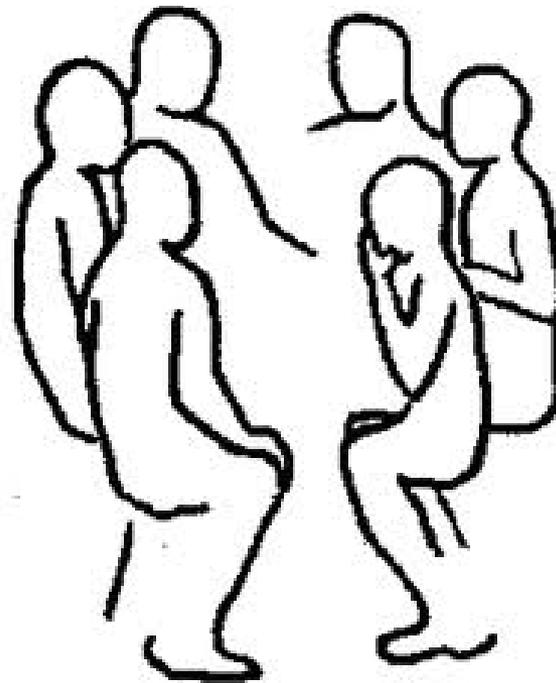
QUESTIONS?



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## SHOCKS AND STRESSES





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# INTEGRATING NUTRITION INTO AGRICULTURAL MARKET DEVELOPMENT ACTIVITIES

*Photo: Winrock International*

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## OPENING ACTIVITY

### **Nutrition-specific Interventions:**

- What do nutrition-specific interventions target?
- At what *level* (e.g., individual, household, societal) do nutrition-specific interventions operate?
- What are some examples of nutrition-specific interventions?

### **Nutrition-sensitive Interventions:**

- What do nutrition-sensitive interventions target?
- At what *level* (e.g., individual, household, societal) do nutrition-sensitive interventions operate?
- What are some *examples* of nutrition-sensitive interventions?





## OBJECTIVES

- Increase understanding of nutrition-specific and nutrition-sensitive programming
- Increase ability to identify and apply nutrition-sensitive agriculture best practice in program design
- Increase understanding of the Multi-Sectoral Nutrition Strategy and where to locate relevant resources





## WHY SHOULD WE CARE ABOUT NUTRITION?

45% of child deaths are due to undernutrition.

There are many short-term and long-term consequences.





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## THEY ARE FIVE



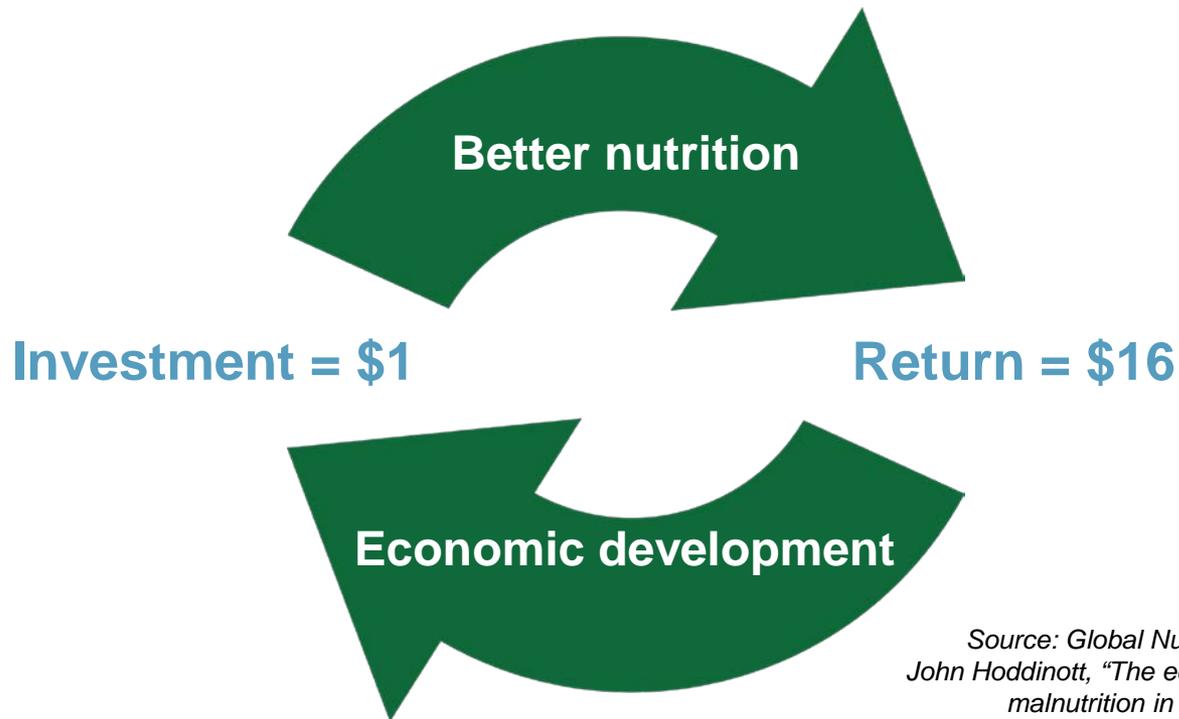
Source: Weber, Lauren. 2016. ["Two Boys With The Same Birth Story Will Live Vastly Different Lives."](#) *The Huffington Post*, June 29.



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## IMPROVED NUTRITION DRIVES ECONOMIC GROWTH



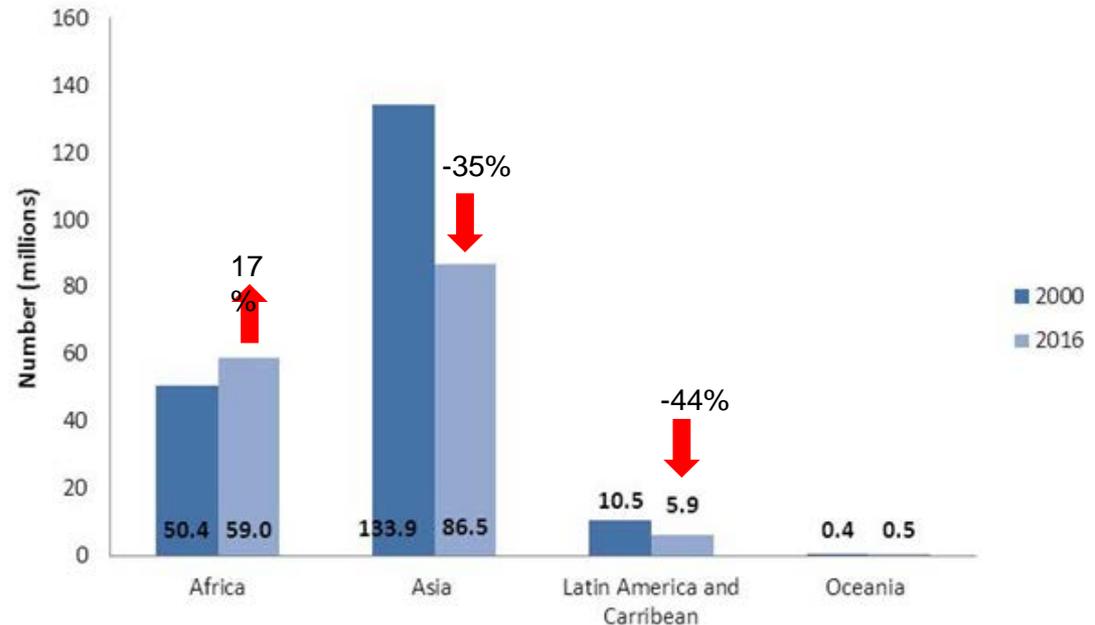
*Source: Global Nutrition Report (2016); John Hoddinott, "The economics of reducing malnutrition in Sub-Saharan Africa," May 13, 2016, produced for the Global Panel on Agriculture and Food Systems for Nutrition.*



## CHANGING TRENDS IN NUTRITION

- Africa is the only region where the number of stunted children has risen.
- Western Africa accounts for half of the stunting increase in Africa between 2000 and 2016.

Number (millions) of stunted children under five, by United Nations region

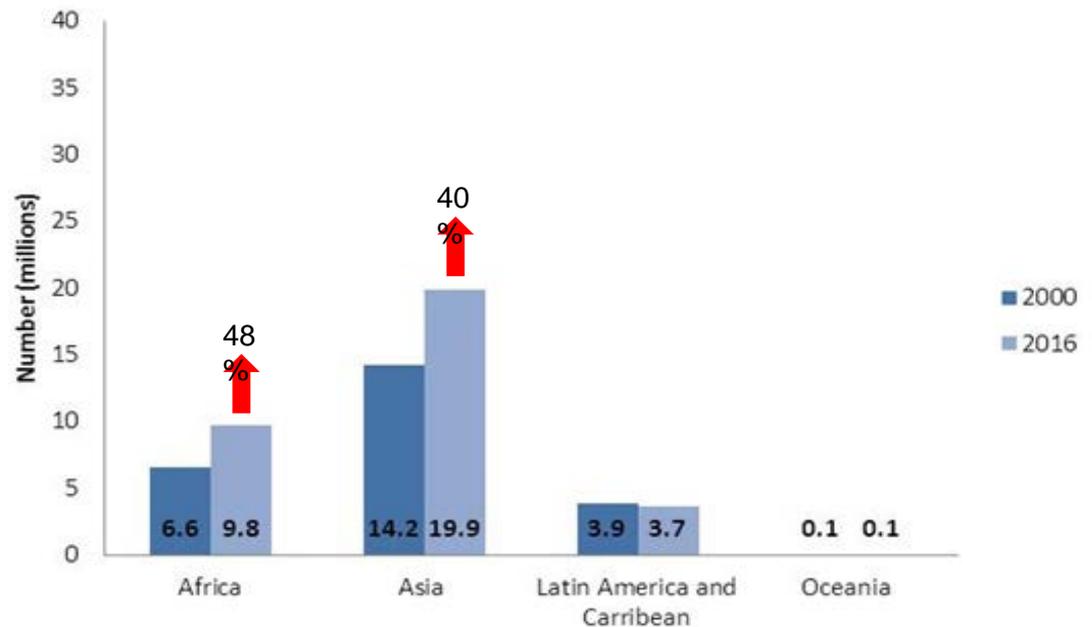


Source: UNICEF, WHO, World Bank Group – Joint Child Malnutrition Estimates 2017 edition

## CHANGING TRENDS IN NUTRITION

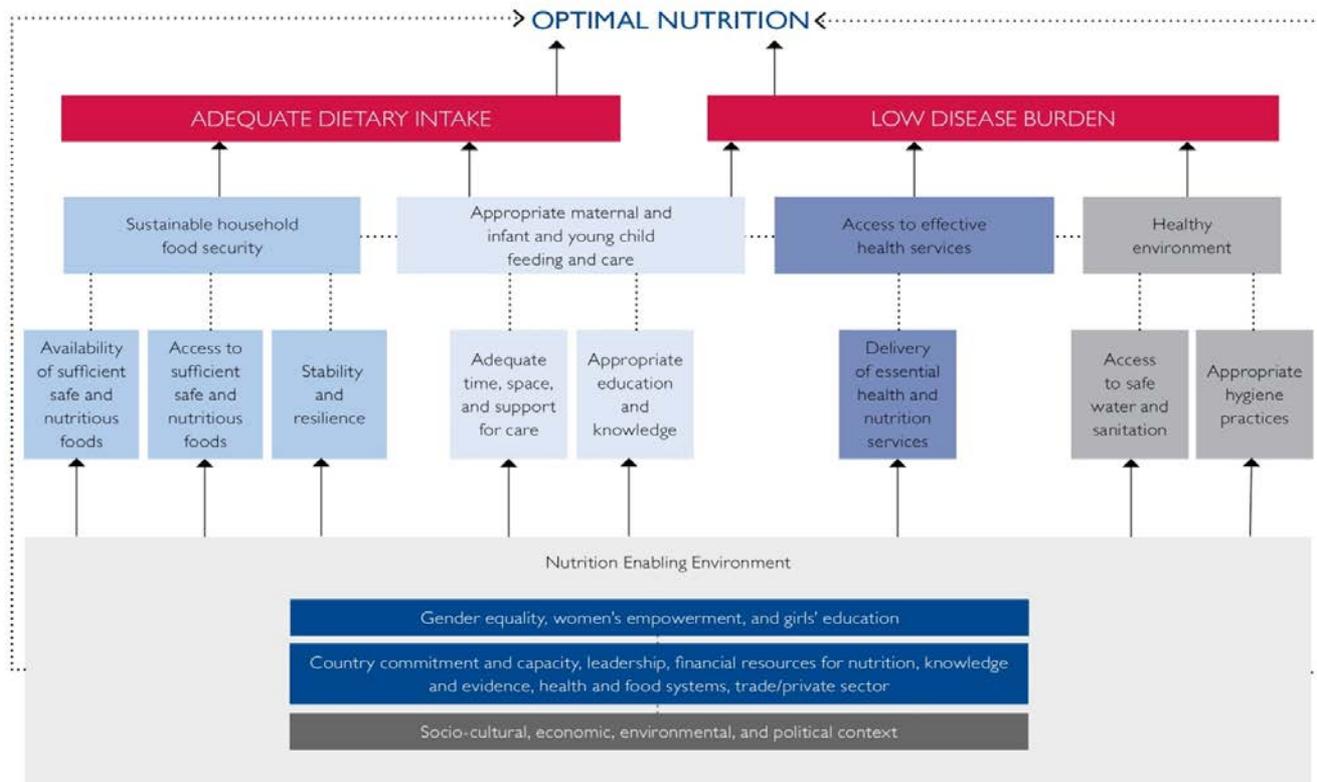
- Overweight children are on the rise in Africa and Asia.
- In Africa, the number of overweight children has increased by nearly 50% since 2000.

Number (millions) of overweight children under five, by United Nations region



Source: UNICEF, WHO, World Bank Group – Joint Child Malnutrition Estimates 2017 edition

# USAID MULTI-SECTORAL NUTRITION STRATEGY CONCEPTUAL FRAMEWORK





## HOW DOES AGRICULTURE AFFECT NUTRITION?

### Food consumed

- calories
- protein
- micronutrients
- safety



### Farm income invested in ...

- diverse diet and nutrient-rich foods
- health and WASH services and products



### Gender in agriculture

- maximizing women's control of income
- managing demand of women's time and energy





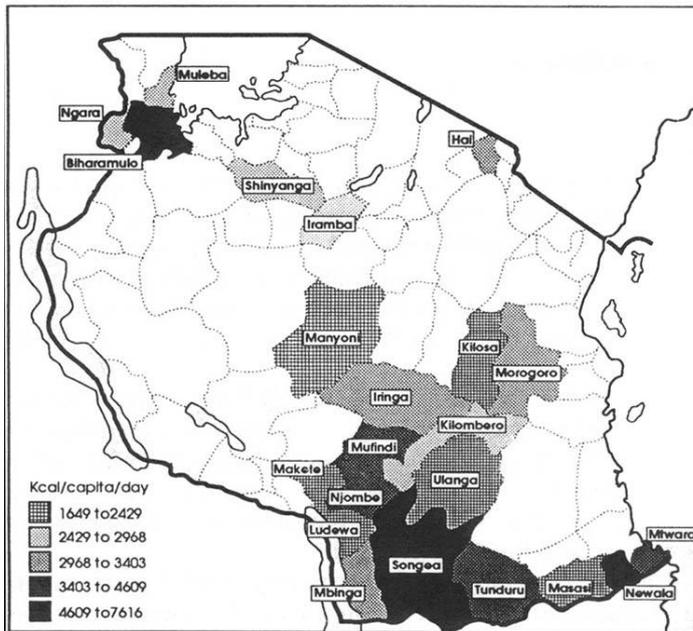
## AGRICULTURE AS A FOOD SOURCE: HOMESTEAD FOOD PRODUCTION

- Producer households more likely to consume a diversity of foods than non-producing households
- Home production associated with better household and women's dietary diversity; **however** market access may play a more important role in dietary quality
- Production decisions influenced by market prices, relative costs and risks, productive assets, preferences and cultural norms
- Processing and storage impact food access and nutrient content

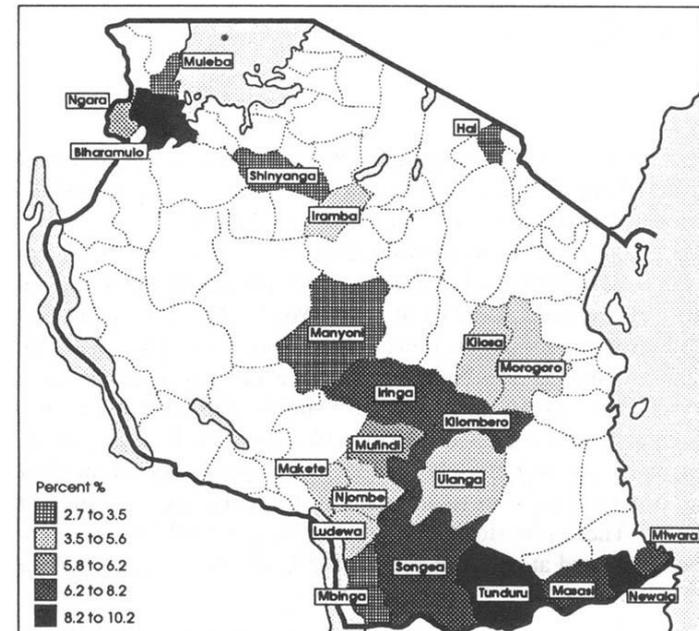




## HIGH AGRICULTURAL PRODUCTION AND MALNUTRITION CAN BE COUNTER-INTUITIVE



Food Production in Tanzania



Prevalence of Childhood Malnutrition in Tanzania





## AGRICULTURE AS A SOURCE OF INCOME

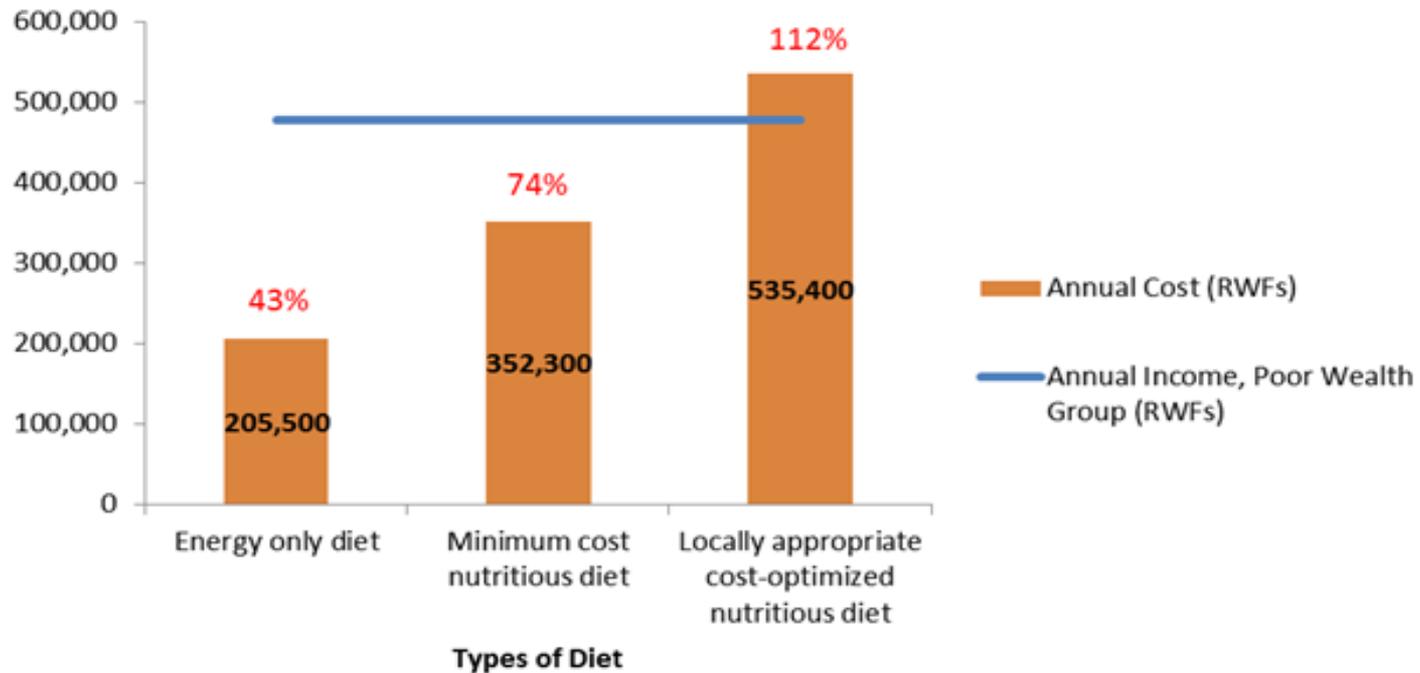
- Income can have a positive, negative or neutral effect on nutrition
- Role of markets
- Assumes services are accessible, affordable and of high quality





## COST OF GOOD NUTRITION

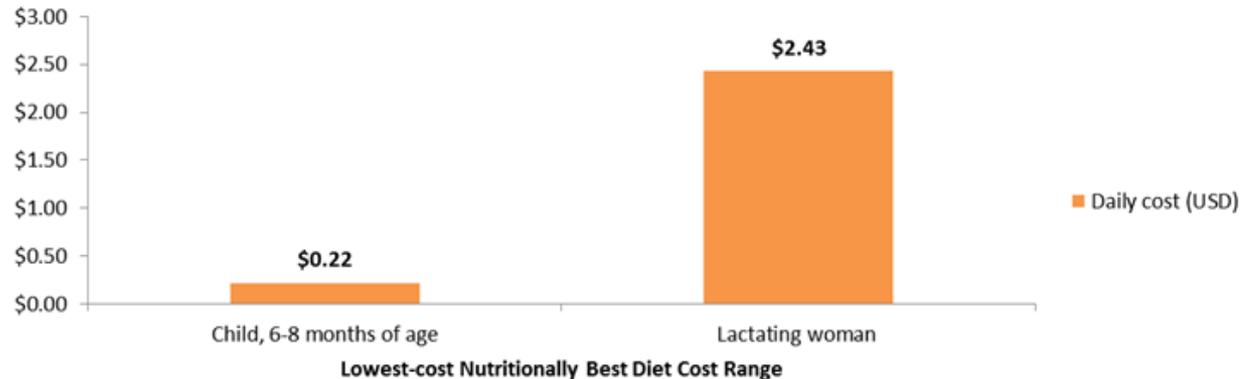
### Annual Cost of Diet for Typical Family in Burera District, Rwanda (2011)





## COST OF GOOD NUTRITION

### Lowest-cost Nutritionally Best Diet Western Highlands, Guatemala



- Average household size: 7
- 50% of population earns < \$3.13 / day
- 15% of population earns < \$1.50 / day
- Most expensive foods in lowest-cost nutritionally best diets: eggs, chicken, Incaparina (commercially produced fortified corn- and soy-based flour), tamalito (maize-based food), and tortilla



## AGRICULTURE AFFECTS GENDER

### Control over assets and use of income

- Involvement in decision-making improves diets for women and children

### Time use & childcare

- Tension between earning income and childcare

### Female energy expenditure

- Physical work compromises nutrition for pregnant and lactating women





## HOW DOES WASH AFFECT NUTRITION?

- WASH is critical to helping to improve nutrition outcomes
- Poor WASH can affect a child's nutritional status via:
  - Diarrhea
  - Intestinal parasitic infections
  - Environmental enteric dysfunction
  - Diverting time away from child care
- Simple WASH actions address both immediate and underlying determinants of malnutrition
- Food and agricultural systems provide opportunities to promote WASH and prevent exposure to contaminated food and water





## HOW DOES FOOD SAFETY ENHANCE HOUSEHOLD NUTRITION?

**QUIZ!**

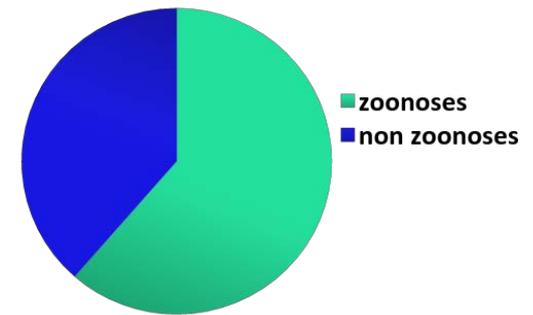
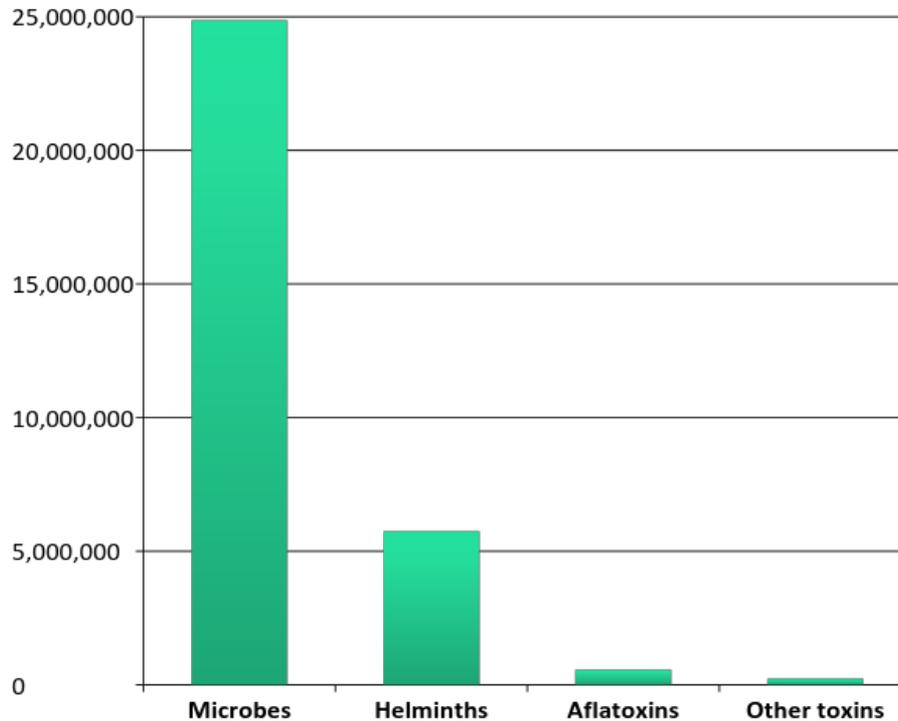
31 = 33

40% = 33%





## CAUSES OF FOODBORNE DISEASE





## FOOD SAFETY & HEALTH CONCERNS

- Diarrhea: Why is it important to control?
- Only up to 60% of diarrhea can be attributed to WASH-related issues. The remaining 40% may be related to food contamination.

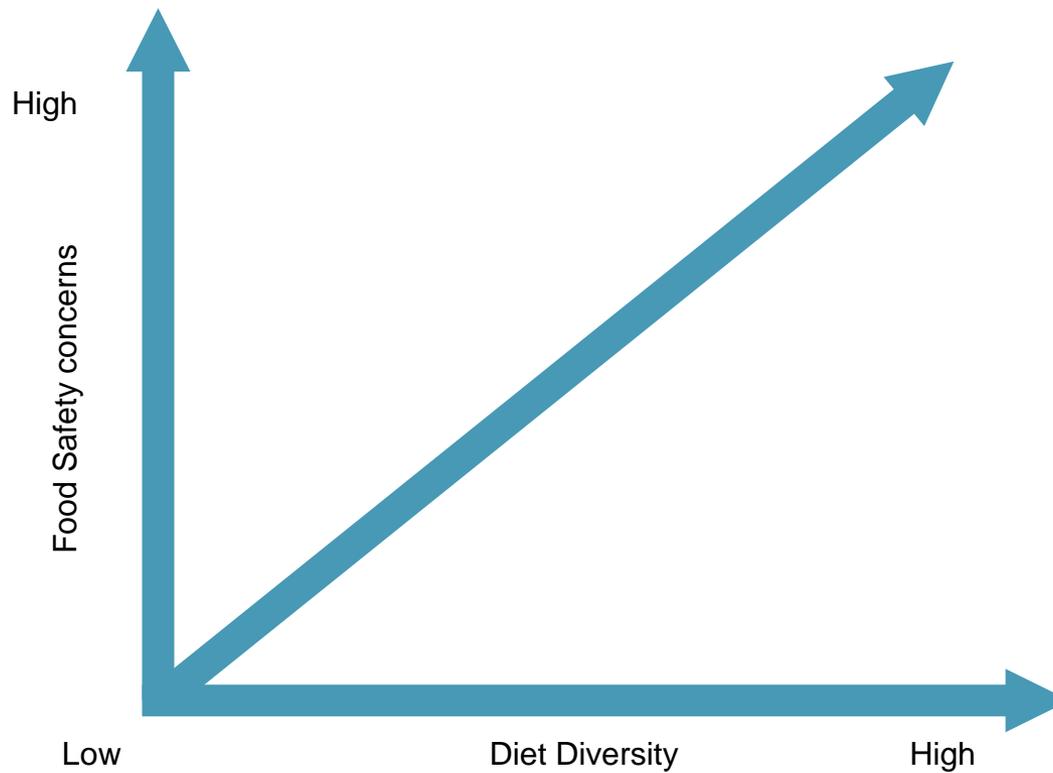


*Photo: USAID*





## FOOD SAFETY & DIET DIVERSITY





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## FOOD SAFETY, ENVIRONMENTS & PEOPLE



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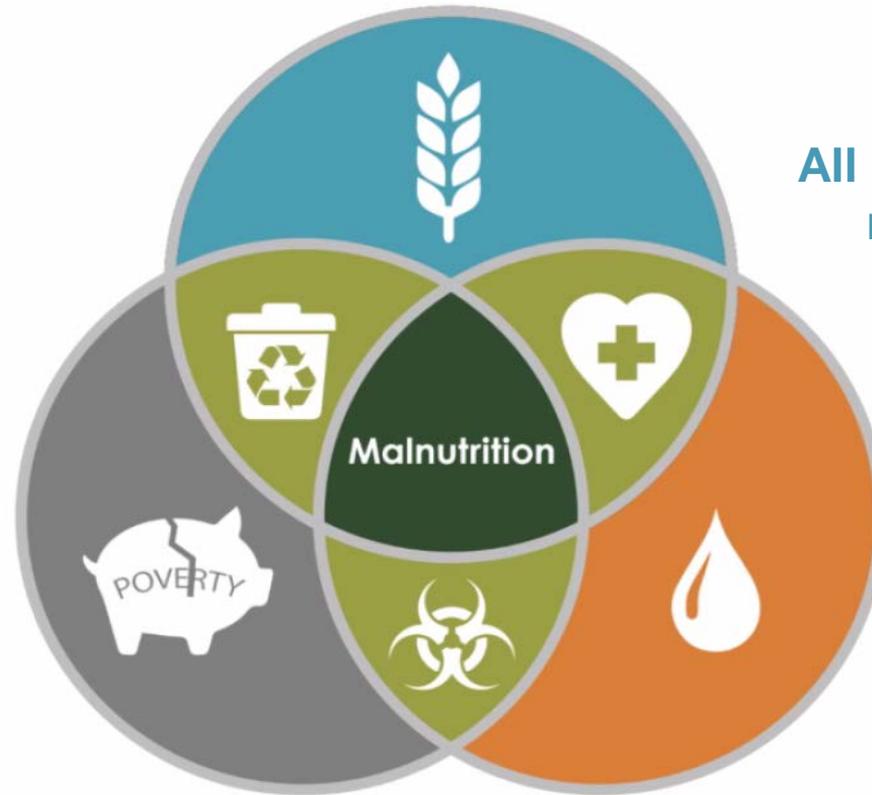


## KEY PRINCIPLES FOR LINKING AG/NUT





## CONSIDERATIONS FOR DESIGN



All sectors have a role to play!



# 1. KNOW YOUR CONTEXT

- Nutrition “status”: Who is malnourished?
- How they interact with food market systems
- Market and enabling environment constraints
- Sources of risk and stress
- Who is doing what where?
- Host country support and commitment
- Set and monitor realistic nutrition targets



*Job Aids and Tools | January 2015*

**A User Guide to Context Assessment Tools for Linking Agriculture and Nutrition**



*Job Aids and Tools | January 2015*

**Agriculture and Nutrition Context Assessment Tool Locator**



## 2. NUTRITION-SPECIFIC + SENSITIVE

- Evidence-based, nutrition-specific and nutrition-sensitive interventions must be simultaneously programmed
- Include nutrition-sensitive ag interventions, outcomes and indicators
- Link with nutrition-specific activities in co-located areas

Frameworks, principles and pathways should be referenced to help check assumptions and plan(s)





## 3. WASH

- Improvements in WASH practices and water resource management can positively affect nutritional outcomes



## 4. CONSULT AN EXPERT!

- Addressing nutrition can be complex
- [csinutritiondivision@usaid.gov](mailto:csinutritiondivision@usaid.gov)





## 5. SUSTAINABLE PRODUCTION & CONSUMPTION OF NUTRITIOUS FOODS

- Impact on local markets is crucial
- Avoid doing harm to the natural resource base: climate-smart ag!
- Generate demand and improve supply
- Strengthen the enabling environment to ensure food safety and quality





## 6. DIETARY DIVERSITY & ANIMAL SOURCE FOODS

Improving dietary diversity is key, especially nutrient-rich foods and a good source of protein, particularly animal source foods.



Photo: IFDC





## 7. PLACE BEHAVIOR CHANGE AT THE CENTER OF DESIGN

- Prioritize whose behavior(s) or practices might best address immediate and underlying contributors to undernutrition
- Learn more about behavior change through the Accelerating Behavior Change in Nutrition-Sensitive Agriculture online training!





## 8. THINK OUTSIDE THE ZOI

- Interventions must consider food sources produced outside the ZOI, but on which communities depend for optimal nutrition
- Integrated nutrition programming in Feed the Future ZOI must target:
  - availability
  - access
  - utilization
  - stability
  - affordability
  - local market infrastructure
  - food system





## 9. GENDER EQUALITY & WOMEN'S EMPOWERMENT

- Gender norms can limit opportunity
- Must engage women and men





## 10. IMPROVING HYGIENE

- Agricultural interventions can enhance nutrition, but can also unintentionally harm nutrition. Important to consider WASH and food safety, especially of ASFs.

## 11. FOOD AND AGRICULTURAL POLICIES

- Increase incentives
- Protect and empower women and the poor





## PROMOTE MULTI-SECTORAL COLLABORATION AND COORDINATION

### **Develop and support specific strategies for collaboration**

- clear terms and expectations
- linking nutrition-specific and nutrition-sensitive interventions and investments

### **What doesn't get measured doesn't get done**

**Coordination and collaboration is  
necessary at different levels!**





## CASE STUDY ACTIVITY: MATRIX

Participant's manual, page \_\_\_\_\_



Photo: USADF/Jennifer Katchmark





“THE AVOIDANCE OF  
SMALL MISTAKES MAKES THE  
LARGE ONES MORE SEVERE.”

– Nassim Nicholas Talib, Antifragile





## EVALUATIONS





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## U.S. GOVERNMENT PARTNERS





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