INTRODUCTION & GLOBAL FOOD SECURITY STRATEGY

Food Security and Agriculture Core Course

Photo: Morgana Wingard
AGRI-FOOD SYSTEMS
TRANSFORMATIONS & FOOD SECURITY
TAKEAWAYS

• The vision of agricultural transformation is in the eye of the beholder
  – “Transformation” takes complex forms
  – And affects many systems

• There are multiple drivers and measures of transformation
  – Including policy levers as drivers
  – And different drivers affect different systems differently

• Why can’t we get there the old fashioned way—driven by on-farm technical change?
  – On-farm technical change is still a key component
  – But not sufficient to catalyze
  – Increasing importance of value chains and market systems
WHAT ARE WE TRANSFORMING?

From subsistence agriculture to something with higher incomes, more and better food …

But to what, and how?
PRESERVING BIODIVERSITY

Photo: Julie Larsen Mahe
TRANSFORMING ECOLOGIES
PLANNED “GREEN” URBAN COMMUNITIES IN RURAL AREAS
TRANSFORMING RURAL SOCIAL SYSTEMS

When men are oppressed, it's a tragedy. When women are oppressed, it's tradition.

Letty Cottin Pogrebin
TRANSFORMING NUTRITION?
NOT ALL BOWLS ARE EQUAL

Photo: Morgana Wingard
TRANSFORMING EMPLOYMENT SYSTEMS
AND MANY MORE TRANSFORMATIONS

- Behavioral systems
- Migration patterns and system
- Rural market systems
- Rural food systems employment
- Rural service employment
- Non-commodity rural economies
THERE ARE MULTIPLE DRIVERS, POLICY LEVERS AND INDICATORS
Brazil

- World’s 3rd largest agricultural exporter and 8th largest economy
- 1992/94 – 2012/14 Food production up 125%
- Poverty: 3.7% (2014)
- Stunting: 7.1% (2007)
- Underweight: 2.2% (2007)

Niger

- Reclaimed 5,000,000 ha, 1/3 of arable land
- Food production up 158%, 1992/94 – 2012/14
- Poverty: 35.7 ppt (1994–2014)
- Stunting: 11.2 ppt (2000–2014)
- Underweight: 5.7 ppt (2000–2014)

Which country has an exemplary transformation that can be a model for your Feed the Future country?

- 2017 resurgence of deforestation
- 7% of global agricultural GHG emissions

- Ranks last on UNDP’s 2015 Human Development Index
TAKEAWAYS

• “Transformation” takes complex forms
  - And affects many systems

• There are multiple drivers and measures of transformation
  - Including policy levers as drivers
  - And different drivers affect different systems differently
  - The “optimal” transformation and policy drivers are very country- and context-dependent
HOW DO WE GET THERE?
TRENDS AND OPPORTUNITIES

• Green Revolution pattern:
  - Via research and technology driven increases in farm productivity (e.g., research to develop semi-dwarf rice)
  - Accompanied by manufacturing-led urban jobs growth
  - Capturing urban agglomeration economies

• But today’s transformations will be different
TODAY’S TRANSFORMATIONS WILL BE DIFFERENT

- Declining terms of agricultural trade
- Demographics
- De-industrialization
- Global climate change
- Lengthening food supply chains & dietary change
DIFFERENCE: DECLINING AGRICULTURAL TERMS OF TRADE

Inflation-adjusted corn, wheat, and soybean prices, 1912-2014

Index, 1940 = 100

Corn
Wheat
Soybeans

DIFFERENCE: DEMOGRAPHICS

Nigeria 2015 and 2050
DIFFERENCE: DEINDUSTRIALIZATION

2015 Chinese cell phone manufacturing technology reduces work force by up to 90%
DIFFERENCE: LENGTHENING FOOD SUPPLY CHAINS

• Food is becoming more purchased: about 50% of food by value in rural Africa to 70% in Asia

• Food is becoming more perishable: 50%–70% of dietary costs; meats, dairy, fruit & vegetables

• Food is becoming more processed: >50%
Unprocessed non-perishable
High processed non-perishable
Low processed perishable
Low processed non-perishable
Unprocessed perishable
High processed perishable

Source: Author calculations from LSMS data sets
Average Number of Days/Week a Food Item Is Consumed by Household Income Group. 
DIFFERENCE:
WHERE VALUE IS CREATED

- Africa: Farm value is 40% of retail food cost
- South Africa: Wheat 13%–18% of retail bread cost
- Yet, debate on Ag Research is 90% on-farm
DIFFERENCE: IMPORTANCE OF SECONDARY, TERTIARY CITIES

• 60% of urban pop. in 2nd, 3rd cities
• Critical points in rural-rural, rural-urban, and urban-rural food flows
• Employment and growth centers
• Sustainable escape from rural poverty
THEN WHAT PATH TO TAKE?

- On-farm productivity
- Value chain productivity
- Rural job creation (food and non-food)
- Rural preparation for migration to city
- Development of rural towns and small cities
- Develop food market systems plus a broader set of rural goods and market services to support urban and rural growth
TAKEAWAYS

• “Transformation” takes complex forms
• And affects many systems
• There are multiple drivers and measures of transformation
  - Including policy levers as drivers
  - And different drivers affect different systems differently
• We can’t get there the old fashioned way, but we can get there
  - Better on-farm/off-farm balance
  - Market systems
FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

www.feedthefuture.gov