Agri-Food Systems Transformations and Food Security

James F Oehmke, Dave Tschirley
Abdoulaye Dia

The views expressed are those of the author and do not necessarily represent the views of the United States Agency for International Development.
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?
Transforming Grain Production
Transforming Rural Communities
Preserving Biodiversity
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
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
TOP-LINE GOALS

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%, 1992/4-2012/14
- 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 UNDPs 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 is very country and context dependent.
Small Group Activity: Critical characteristics of agricultural transformation

- Discuss & identify:
  - 2-3 critical facets of agricultural transformation that are priorities for your countries
  - 2-3 ways that USAID can help promote agricultural transformation

- Identify a notetaker and be prepared to share highlights of your discussion.
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
Difference: Demographics

Demographics: Nigeria 2015 and 2050
Difference: Deindustrialization

• 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 to 70% of dietary costs. Meats, dairy, fruit & vegetables.
- Food is becoming more processed, >50%
Difference: Importance of food markets

• Happening earlier and more quickly
• Increased importance of small food markets servicing rural smallholders
  – Where markets work, dietary change at poverty level incomes (Tschirley, Reardon et al ESA)
  – Where markets don’t work, lack of change at above-poverty incomes (Weatherspoon et al Rwanda)
Unprocessed non-perishable
Low processed non-perishable
High processed non-perishable
Unprocessed
Low processed
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
• S. 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
Small Group Activity: Critical characteristics of agricultural transformation

• Discuss & respond to these questions for your assigned trend:
  – How do particular trends generate opportunities for us to further promote ag transformation?
  – How do particular trends generate risks that we can affect what we do?

• Identify a notetaker and note your responses on flipchart paper. Be prepared to share highlights of your discussion.

15 Minutes