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The U.S. Government's Global Hunger & Food Security Initiative

GLOBAL LEARNING AND EVIDENCE EXCHANGE
M A R K E T S Y S T E M S

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Agri-Food Systems Transformations and Food Security

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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





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What are we transforming?

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

But to what, and how?





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Transforming Grain Production





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Transforming Rural Communities





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Preserving Biodiversity





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Transforming Ecologies





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Planned 'green' urban communities in rural areas

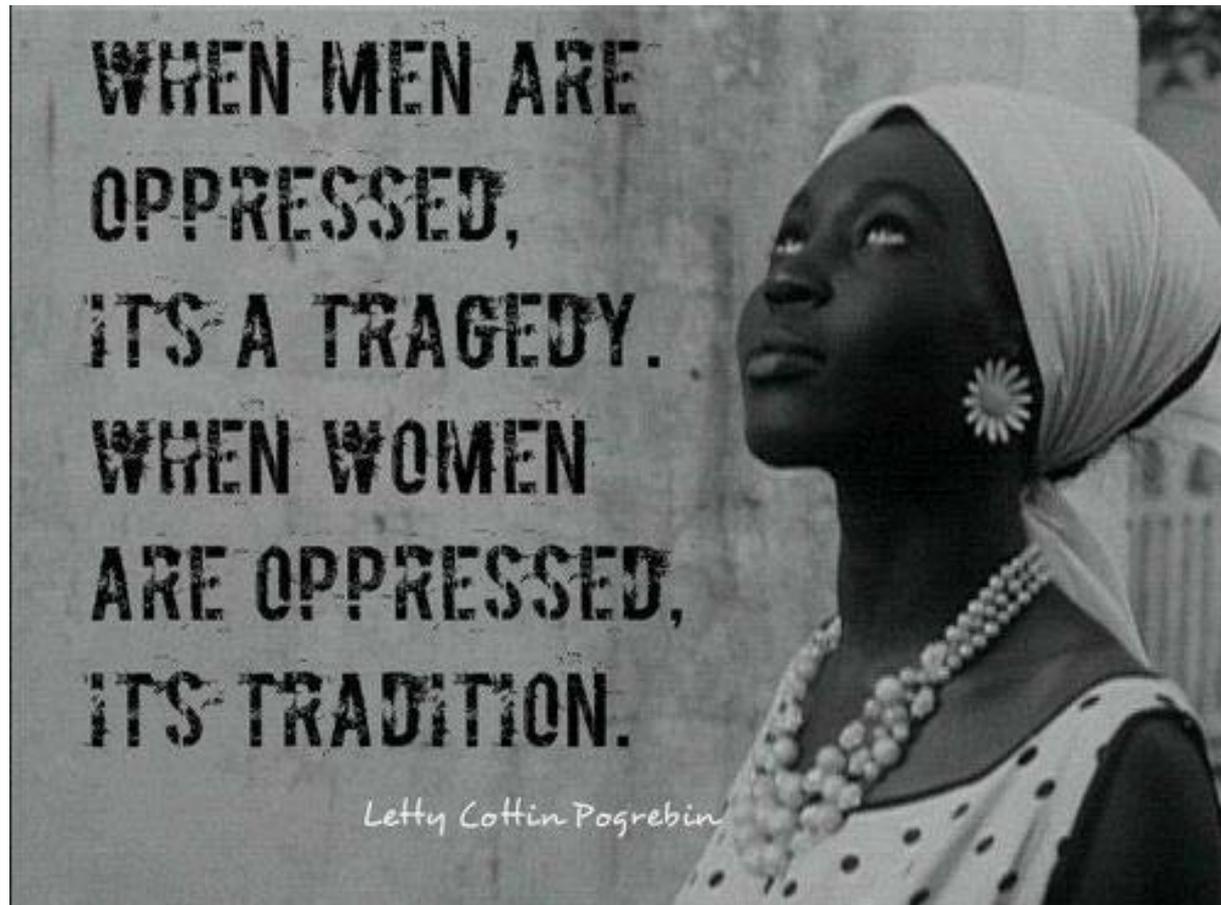




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Transforming Rural Social Systems





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Transforming Nutrition? Not all bowls are equal



© Reuters



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 3d 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 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 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.

10 Minutes



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

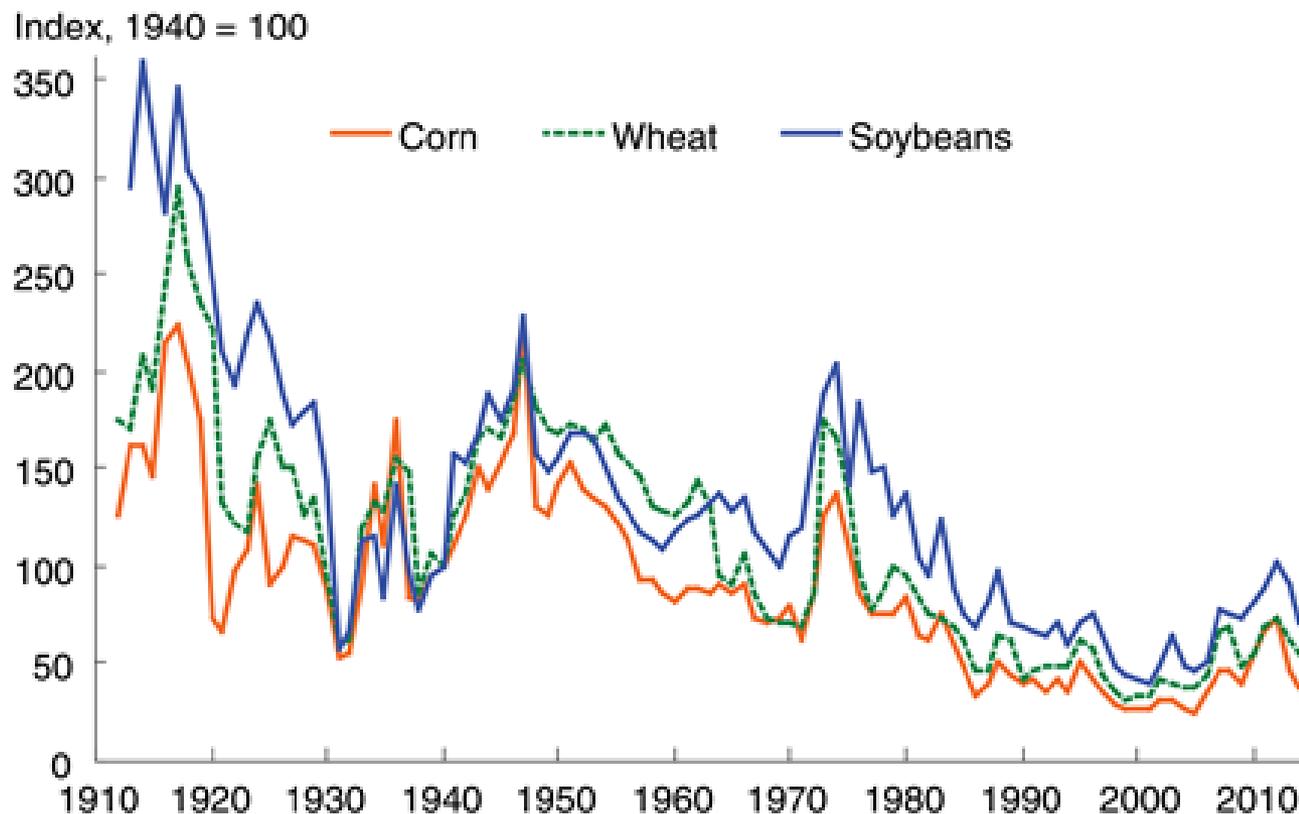


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Difference: Declining agricultural terms of trade

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

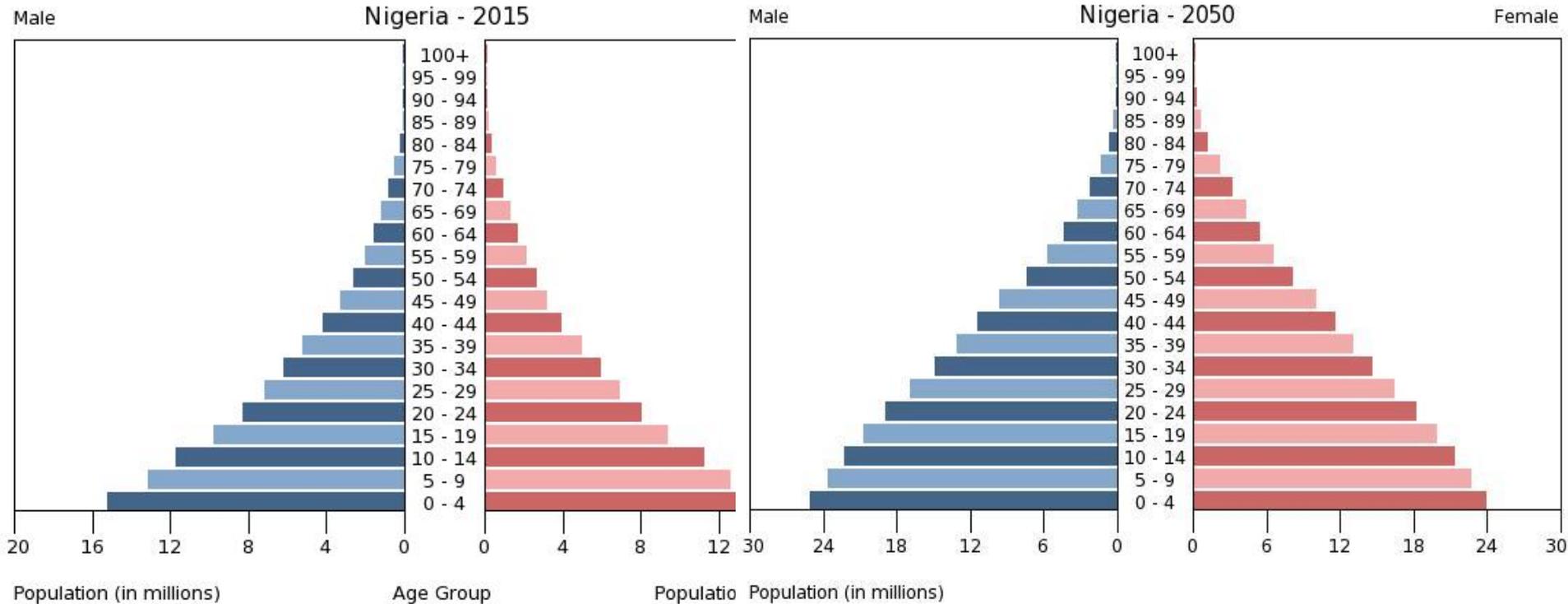


Source: USDA, Economic Research Service calculations using data from USDA, National Agricultural Statistics Service and U.S. Department of Labor, Bureau of Labor Statistics.



Difference: Demographics

Demographics: Nigeria 2015 and 2050





Difference: Deindustrialization

- Deindustrialization
 - 2015 Chinese cell-phone manufacturing technology reduces work force by up to 90%





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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

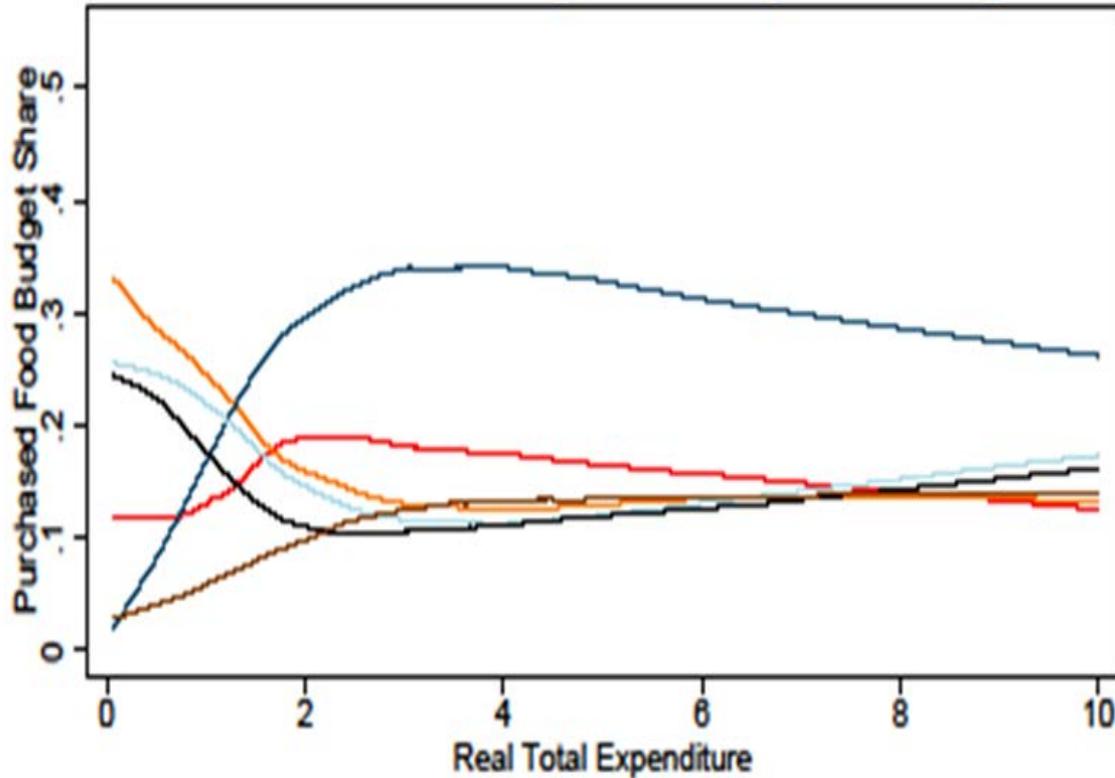
- Happening earlier and more quickly
- Increased importance of small food markets servicing rural smallholders
 - Where markets work, dietary change at poverty level incomes (Tschirley, Reardon et al ESA)
 - Where markets don't work, lack of change at above-poverty incomes (Weatherspoon et al Rwanda)



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ESA Purchased Food Budget Share by Processing Levels



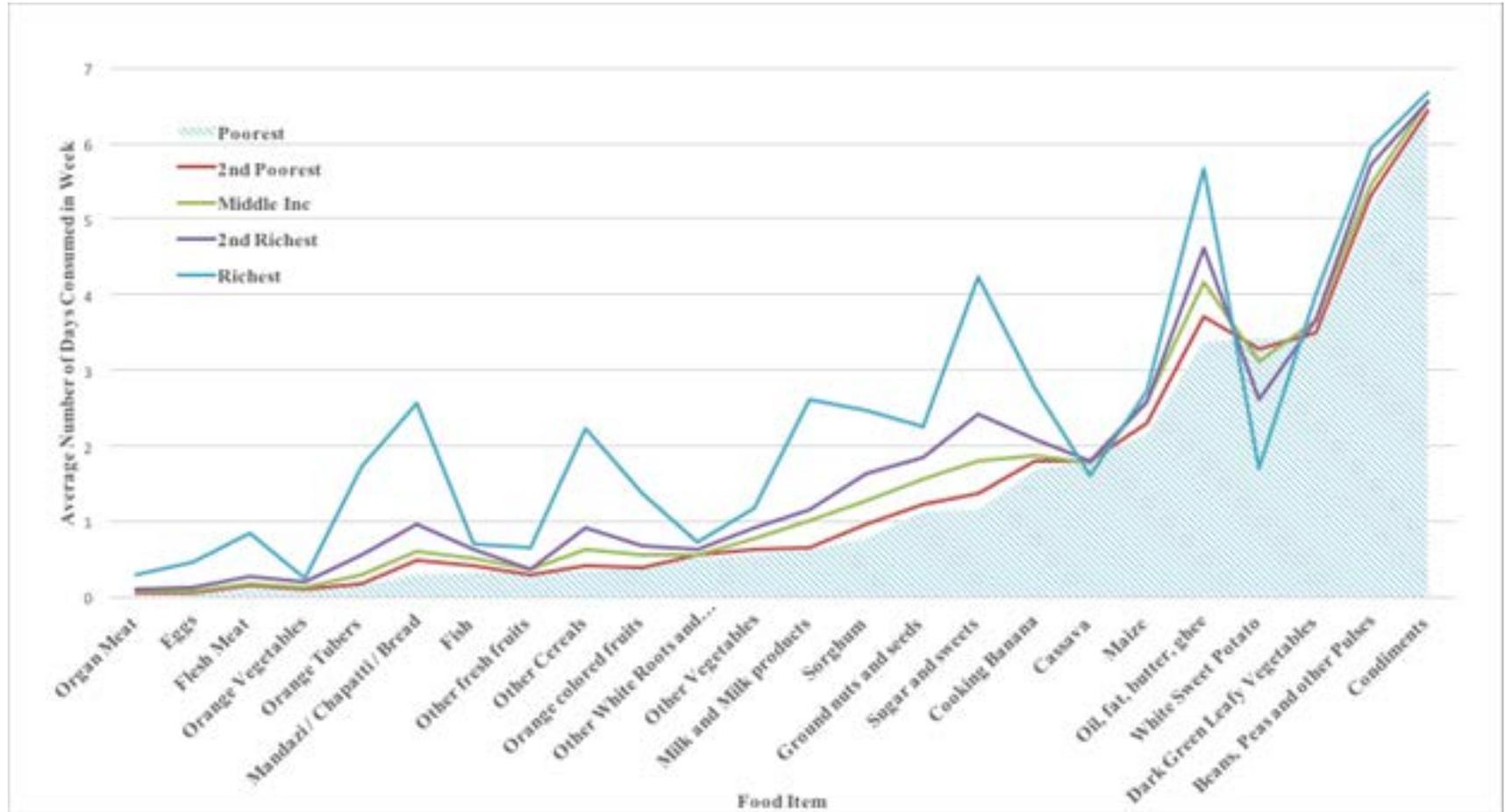
- Unprocessed non-perishable
- High processed non-perishable
- Low processed
- High processed perishable
- Unprocessed
- perishable

Source: Author calculations from LSMS data sets



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Average Number of Days/Week a Food Item is Consumed by Household Income Group

Source: Weatherspoon et al 2017.



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