Observations on the African Diet Transformation and its Implications

David Tschirley, Thomas Reardon, Michael Dolislager, Jason Snyder

Presentation at CAADP Annual Trends and Outlook Report (ATOR) 2014 Methodology Workshop: Towards a Middle Income Africa, Long Term Growth Outlook and Strategies
12 December 2014
Approach

Urbanization & per capita income growth

Diet & other transformations (farm, midstream, downstream)
Approach

Urbanization & per capita income growth

Rate of change

Policy

Private Investment

Public Investment

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Rate & nature of transformations
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Rate & nature of transformations
Implications for ...

• What value chains are likely to be growing?
• What kinds of **private investment** do they need / are they likely to attract?
• What are the **employment** effects likely to be?
• What **skills** will these (in-between) entrepreneurs & wage employees need?
• What are the **nutritional** implications?
• What are the **energy and water** use implications (sustainability)?
• What are the policy and public investment challenges?
Focus

- African urbanization and income growth
  - *African income growth is not being captured just by an urban elite*
- Agribusiness opportunities
  - *Growing and changing demand among the poor is driving major agrifood system change now*
- Imports
  - *The story is very mixed and not necessarily a cause for generalized alarm*
- Jobs
  - *Distinguish between stock and flow*

*Primarily focused on East and Southern Africa*
Urbanization

• Africa is urbanizing rapidly
• Occurring more rapidly in smaller cities and towns than in large cities
  • Good for rural-urban linkages
• Urban demand is already > 50% of the food market in ESA
  • Least urbanized area of Africa
  • 70% West Africa
• **Food security – including rural – is increasingly about rural-urban supply chains**
Income growth

• Widely known that growth has been much faster over past 15 years

• Its distribution across HHs in ESA – the equity of growth in the region - has been:
  • Generally unequal, but
  • Highly variable, and
  • Overall, broad enough to drive rapid transformation if it continues
If growth continues like this ...

Populations and shares by income class in East and Southern Africa, 2010 and 2040 assuming continuation of rate and distribution of recent GDP growth

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<tr>
<td>ESA-wide</td>
<td>100%</td>
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<td>$0-$2 (poor as per int’l poverty line)</td>
<td>72.5%</td>
<td>19.3%</td>
</tr>
<tr>
<td>$2-$4</td>
<td>19.9%</td>
<td>28.7%</td>
</tr>
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<td>$4-$10</td>
<td>6.5%</td>
<td>33.9%</td>
</tr>
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<td>12.0%</td>
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<tr>
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Source: Author calculations from PovcalNet
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The rise of processed foods

Categorization scheme used in LSMS data

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<tr>
<td><strong>Non-perishable</strong></td>
<td>Legumes</td>
<td>Maize meal</td>
<td>Veg oils</td>
</tr>
<tr>
<td></td>
<td>Maize grain</td>
<td>Milled Rice</td>
<td>Breads</td>
</tr>
<tr>
<td></td>
<td>others</td>
<td>Sugar</td>
<td>Food away from home</td>
</tr>
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<td></td>
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<td>Others</td>
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<td>Beef</td>
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<tr>
<td></td>
<td>Fresh fish</td>
<td>Other meat (incl. poultry)</td>
<td>Dairy</td>
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<tr>
<td></td>
<td>Fruit</td>
<td>Dried/pkgd fish</td>
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The rise of processed foods

• Processed foods have penetrated
  • Deeply (69% share of all purchased food)
  • Broadly
    • comparable in rural- and urban areas,
    • among poor and upper class
• Dramatic change in consumption patterns below the international poverty line
Kernel regression results on purchased food budget shares, additionally weighted by population across 5 countries of ESA

Source: Author calculations from LSMS data sets
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Most diet change has already occurred by the time a household rises up to the international poverty line

Source: Author calculations from LSMS data sets
Measure of market impact

- Velocity of diet change (V)
  - Sum of squares of slopes of the six budget share lines
- Total food expenditure (E)
- Each measured all along the total expenditure distribution
- Impact on food system change = V*E
ESA measure of total impact on food system change by level of income

Source: Author calculations from LSMS data sets
ESA measure of total impact on food system change by level of income

This group – all below international poverty line – is driving food system change

→ Major implications for structural change now, over coming decade, and beyond

Source: Author calculations from LSMS data sets
## Expenditure elasticities by perishability and processing classification, income class, and rural/urban (2010)

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<td>0.95</td>
<td>0.39</td>
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• Jobs
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*Primarily focused on East and Southern Africa*
Will imports capture the surge in demand?

• A very mixed picture
• Anecdotally
  • Lilongwe & Dar es Salaam
    • Lots of locally (and regionally) processed foods competing with imports in market
      • In markets and supermarkets
  • Maputo
    • Very few locally processed foods
      • What about other cities?
Will imports capture the surge in demand? (2)

- We found in the region that net import shares in food consumption *fall* with income in urban areas.
- Why?
  - Local cereals ➔ imported cereals, BUT
  - Bennett’s Law: Cereals ➔ meat, dairy (also fresh produce)
    - all largely locally produced
  - These patterns *entirely consistent* with sharp rise in *per capita* food imports
    - Can rise > 4x to 2040 without changing share in consumption
Net Agricultural Imports as Share of Agricultural Production, Countries of ESA, 1980 - 2011

Source: Author calculations from FAOSTAT
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If our focus is youth employment we need to look at job flows (change), not just the stock of jobs
Employment in SSA

Source: Author calculation from McMillan & Harttgen estimate of 10 percentage point drop in ag share in workforce, 2000-2010
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Employment in SSA

• Fox et al (2013) deliver nearly identical results – new jobs, 2005-2010
Employment in SSA (2)


![Bar chart showing the percentage of new jobs in agriculture (Ag), non-agriculture household enterprise (Non-ag: hh enterprise), and non-agriculture wage (Non-ag: wage). The chart indicates that 70% of new jobs are non-agriculture.]
Employment in SSA (2)


![Bar chart showing employment distributions across different sectors in SSA (2005-2010)]
Implications

• Change is happening very rapidly **now**
  • Driven by rapid diet change **among the poor**
  • Huge opportunities for farmers, traders, transporters, processors

• What does Africa have to do to get the **whole agrifood system** productivity growth needed to capture these opportunities?
  • Rise of processed and perishable foods +
  • Predominance of urban markets =
  • Not just a farm productivity issue
Implications (2)

- The emerging Quiet Revolution
  - In-between sector
  - Local micro-small-medium businesses
- Non-western multi-nationals becoming major players
  - OLAM, Export Trading Group, others
  - South Africans (Shoprite/Checkers, Tiger Brands, SAB, others)
- Also well known players such as Walmart, Carrefour, Nestle, Parmalat
Implications (3)

- Can micro, small, medium local firms compete?
  - This matters to employment
    - Capital intensity
  - Note Reardon’s idea of “first proliferation and then consolidation” of number of firms
    - Can the rate of consolidation be managed (slowed??) with a view to employment?
    - What packages of assistance can be delivered?
  - Need to produce more sophisticated goods (Ousmane)
Implications (4)

• Can farmers respond?
  • Rural-urban linkages
    • Roads, information, urban marketing infrastructure and governance
  • Productivity enhancers instead of subsidies
  • Declining agricultural workforce ratios suggest some response has already started
Questions?
Diet Transformation (change in level and composition of food demand)

- Level and location of food system investment
- Level and location of food system employment
- Nutritional status: Non-communicable diseases
- Energy and water use and sustainability