Africa’s Agrifood System and Youth Employment: Trends and Drivers of Change

F. Kwame Yeboah, Assistant Professor
Thomas S. Jayne, University Foundation Professor
Michigan State University

GIZ Webinar Series on Agricultural Value Chains
June 26, 2018
Youth bulge: Looming employment challenge

Age pyramid: rural SSA, 2015

62% < 25 years old

Source: United Nations, Department of Economic and Social Affairs, Population Division (2013).
Key Questions

A. What is the nature of the youth employment challenge?
B. How is Africa’s employment structure evolving?
C. What is the role of agriculture in the transformation process?
D. What megatrends would influence the employment generation potential of Agricultural Food System (AFS)?
A. Nature of Youth Employment Challenge in Africa

- Job creation lags behind labor force growth
  - Only 1/4 of 350 million new entrants will find formal wage jobs in SSA

- Poor quality of jobs

- Low educational quality
- Skills mismatch
  - Soft skills is critical
- Low awareness and skills to spot opportunities

---

- High labor force growth due to slow demographic transition - 3% per year in SSA
- 11 million youth to enter labor force each year in SSA till 2035 (Losch 2016)
B. How is Africa’s employment structure evolving?

![Bar chart showing the share of total FTE jobs in farming over time across different countries and time periods.]

Rapid declines in the share of the labor force in farming (full time equivalents (FTE)).
Farming is the single largest employer in most countries despite declining job shares.

Sectoral employment shares of total jobs in FTE:

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Farming</th>
<th>Off-farm AFS</th>
<th>Non-farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>2012/13</td>
<td>34</td>
<td>19</td>
<td>47</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2012/13</td>
<td>34</td>
<td>23</td>
<td>43</td>
</tr>
<tr>
<td>Rwanda</td>
<td>2010/11</td>
<td>9</td>
<td>37</td>
<td>54</td>
</tr>
<tr>
<td>Tanzania</td>
<td>2014/15</td>
<td>6</td>
<td>15</td>
<td>49</td>
</tr>
<tr>
<td>Uganda</td>
<td>2011/12</td>
<td>14</td>
<td>14</td>
<td>49</td>
</tr>
<tr>
<td>Zambia</td>
<td>2012</td>
<td>9</td>
<td>9</td>
<td>47</td>
</tr>
</tbody>
</table>
Most of economically active youth are engaged in farming.
Non-farm outside AFS: Rapid % job growth and largest source of jobs outside farming

Share of FTE jobs in non-farm sector over time

<table>
<thead>
<tr>
<th>Country</th>
<th>Base Year</th>
<th>End Year</th>
<th>Base Year</th>
<th>End Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana (2006-2013)</td>
<td>42</td>
<td>47</td>
<td>43</td>
<td>74</td>
</tr>
<tr>
<td>Nigeria (2004-2013)</td>
<td>27</td>
<td>37</td>
<td>33</td>
<td>36</td>
</tr>
<tr>
<td>Rwanda (2006-2011)</td>
<td>30</td>
<td>38</td>
<td>34</td>
<td>44</td>
</tr>
<tr>
<td>Tanzania (2009-2015)</td>
<td>30</td>
<td>38</td>
<td>34</td>
<td>44</td>
</tr>
<tr>
<td>Uganda (2006-2012)</td>
<td>30</td>
<td>38</td>
<td>34</td>
<td>44</td>
</tr>
<tr>
<td>Zambia (2006-2012)</td>
<td>30</td>
<td>38</td>
<td>34</td>
<td>44</td>
</tr>
</tbody>
</table>

% of total FTE jobs

Base year | End year
Off-farm AFS: Rapid rate of growth but from low base

Share of total FTE jobs in off-farm AFS over time

- Ghana (2006-2013)
- Rwanda (2006-2011)
- Tanzania (2009-2015)
- Uganda (2006-2012)
- Zambia (2006-2012)

< 20% of total FTE jobs
Majority of the off-farm AFS jobs in commerce and distribution, much less in agro-processing

<table>
<thead>
<tr>
<th>Country</th>
<th>Survey years</th>
<th>Return of jobs in millions</th>
<th>Farming</th>
<th>Off-farm within AFS</th>
<th>Non-farm outside AFS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>% of FTE jobs</td>
<td>Agro-processing</td>
<td>Downstream commerce and distribution</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% of FTE jobs</td>
<td>% of FTE jobs</td>
<td>% of FTE jobs</td>
</tr>
<tr>
<td>Ghana</td>
<td>2005/06</td>
<td>10.1</td>
<td>43.5</td>
<td>6.3</td>
<td>8.6</td>
</tr>
<tr>
<td></td>
<td>2012/13</td>
<td>13.9</td>
<td>34.3</td>
<td>3.7</td>
<td>15.5</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2003/04</td>
<td>34.6</td>
<td>21.8</td>
<td>1.4</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>2012/13</td>
<td>69.7</td>
<td>33.7</td>
<td>4.6</td>
<td>18.6</td>
</tr>
<tr>
<td>Rwanda</td>
<td>2005/06</td>
<td>6.1</td>
<td>65.7</td>
<td>0.4</td>
<td>7.4</td>
</tr>
<tr>
<td></td>
<td>2010/11</td>
<td>9.1</td>
<td>54.0</td>
<td>1.2</td>
<td>7.7</td>
</tr>
<tr>
<td>Tanzania</td>
<td>2008/09</td>
<td>18.2</td>
<td>60.8</td>
<td>1.7</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>2014/15</td>
<td>21.4</td>
<td>49.1</td>
<td>1.2</td>
<td>14.1</td>
</tr>
<tr>
<td>Uganda</td>
<td>2005/06</td>
<td>10.8</td>
<td>57.0</td>
<td>2.8</td>
<td>10.2</td>
</tr>
<tr>
<td></td>
<td>2011/12</td>
<td>15.9</td>
<td>48.1</td>
<td>3.3</td>
<td>12.3</td>
</tr>
<tr>
<td>Zambia</td>
<td>2005</td>
<td>4.7</td>
<td>61.2</td>
<td>1.6</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td>2012</td>
<td>5.3</td>
<td>46.7</td>
<td>2.1</td>
<td>7.1</td>
</tr>
</tbody>
</table>
C. What is the role of agriculture in the transformation process?

Farming's employment share declining most rapidly among countries enjoying highest agricultural productivity growth.

Source: Yeboah and Jayne, (2017)
C. What is the role of agriculture in the transformation process?

Non-farm labor productivity growth is highest among countries with high agricultural productivity growth.

Source: Yeboah and Jayne, 2016
<table>
<thead>
<tr>
<th></th>
<th>Fixed effect model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(i)</td>
</tr>
<tr>
<td>Log lag labor productivity in</td>
<td>-0.133*</td>
</tr>
<tr>
<td>agriculture</td>
<td>(-2.15)</td>
</tr>
<tr>
<td>Log lag labor productivity in</td>
<td>-0.0121</td>
</tr>
<tr>
<td>non-agriculture</td>
<td>(-0.23)</td>
</tr>
<tr>
<td>Other covariates</td>
<td></td>
</tr>
<tr>
<td>Index of governance (lagged)</td>
<td>-0.0205</td>
</tr>
<tr>
<td></td>
<td>(-0.45)</td>
</tr>
<tr>
<td>Time trend</td>
<td>-0.00961***</td>
</tr>
<tr>
<td></td>
<td>(-4.62)</td>
</tr>
<tr>
<td>Population density</td>
<td>-0.00181</td>
</tr>
<tr>
<td></td>
<td>(-1.51)</td>
</tr>
<tr>
<td>Road density</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-0.519**</td>
</tr>
<tr>
<td></td>
<td>(-3.07)</td>
</tr>
<tr>
<td>Number of observations</td>
<td>161</td>
</tr>
<tr>
<td>Number of Countries</td>
<td>11</td>
</tr>
<tr>
<td>Adjusted/Overall R-square</td>
<td>0.71</td>
</tr>
</tbody>
</table>

Lagged labor productivity in agriculture is a key driver of observed decline in agriculture employment share.

Source: Yeboah and Jayne, 2017
Upshot

- Because of its extensive forward and backward linkages with the rest of the economy, on farm productivity growth influences the following:
  - The rate of job creation in agricultural value chains
    - Employment in value chains is related to supply of competitively priced raw farm commodities
    - Growth in large scale agro-processing in Africa is hindered by a lack of supply of raw materials of consistent quality and quantity (Hollinger and Staatz, 2016).
  - The rate of job creation in non-farm sectors
    - Multiplier effects of agriculture

- Inclusive agricultural growth is needed to generate income and employment multipliers effects in overall economy
D. What megatrends would influence the employment generation potential of AFS?
1. Growing food demand vs rising reliance on food imports

- Food demand to expand by 55% in SSA and value of Africa’s agricultural and food system to reach 1 trillion by 2030 (World Bank, 2015)

- Rising reliance on imported foods
  - SSA food import rose from US$6 billion to US$ 45 billion between 2001 and 2014

- Opportunity to accelerate economic growth and job creation in import-substituting local production and marketing.

Source: ReNAPRI (2017)
1. Growing food demand vs rising reliance on food imports

• Challenge: How to integrate small-scale farmers and low-skilled rural youth into local and global supply chains?
  • Skills and capacity constraints
  • Physical infrastructure challenges (e.g. energy, road, cold storage)
  • Access to productive services (e.g. Finance, insurance, market)

• Reliance on food imports may impede job growth in upstream stages of AFS:
  • farming
  • agro-input supply
  • services for farmers
  • crop assembling and wholesale trading
  • agro-processing
2. Land Concentration/Rise of Medium Scale Farms

- Rapid shifts in farmland distribution and ownership patterns towards medium and large scale farms.
- Medium and large scale farms account for an increasing share of total agricultural land and value of marketed crop output.
- Medium scale farms tend to be more capitalized and less labor intensive in their production methods.

To the extent that overall agricultural production patterns continue to shift towards medium and large scale production, the projected number of jobs that will be generated may be smaller.
3. Land Scarcity and Soil Degradation

- Shrinking average farm size due to rising population density and land fragmentation
  - Farm size has declined by 30–40 per cent in over 40 SSA countries since 1970 (Hardey and Jayne, 2014)

- Land pressure ➔ continuous cultivation of land ➔ soil degradation

- 65% of arable land in SSA are already degraded affecting over 180 million smallholders with an estimated 68 million in lost revenue (Montpellier panel 2014)

- Persistent pattern of degradation could depress agricultural productivity growth and the resultant employment effect
4. Climate Change

• SSA projected to suffer greater effects from climate change
  • Variability in the quantity and timing of rainfall
  • Higher temperature regimes
  • Increased incidences of pest, weed and diseases of crops and livestock are also expected. (IPCC, 2007)

• Impact on agriculture uncertain and likely to vary spatially
  • Greater variability in agricultural production
  • Possible decline in crop productivity (Schlenker and Lobell, 2010)

• Potential employment effects will depend on how well farmers adapt to conditions that threaten productivity growth.
Conclusions

1. Africa’s economies are transforming with significant labor exit from farming since 2000s
   - Agricultural productivity growth has been a key driver. SSA experienced 4.68 real % growth rate from 2000 to 2015 -- triple the rate of previous decades

2. Farming’s influence on livelihoods and economic growth remains critical
   - Single largest employer of the labor force and young people
   - Performance of farming will influence the rate of off-farm job growth

3. Rapid % growth in off-farm AFS but from low base and employment is concentrated in commerce and distribution and less in agro-processing
   - On-farm productivity growth is critical for stimulating off-farm jobs in AFS
Conclusions (continued)

4. The rate of job creation in Africa’s AFS will be influenced by:
   - Access to land
   - Land degradation
   - Level of reliance on food imports
   - Climate change
Key areas for policy action

1. Promote broad-based agricultural productivity growth
   • By making farming more competitive, good jobs in farming will grow and good off-farm jobs will grow even faster
   • Multiplier effects: performance of farming will influence the pace of growth in non-farm and AFS jobs
Key areas for policy action (continued)

2. Strategic policies include

- Public investments that improve on-farm productivity:
  - Crop R&D
  - Extension systems
  - Infrastructure
  - Local policy analysis capacity
- Reduce policy barriers to private investment in value chains
- Strategies that improve skills and competitiveness of agri-food systems
  - Invest in people through quality education, vocational/training schools, mentoring programs, etc.
  - Review education curriculum to keep abreast of current labor market realities and new technologies
  - Dubious about picking particular value chains – rather focus on improving peoples’ ability to identify specific value chain opportunities themselves.
Key areas for policy action (continued)

3. Create conditions for responsive youth employment policymaking
   • Invest in actionable research on labor market conditions and impact evaluation
   • Strengthen youth voice in policy dialogue and program design
   • Education public to reform social norms that limit youth livelihood development
Thank you