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Synopsis: The Changing Demographics in Food Systems and Implications for Future Youth Engagement in Rwanda

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Food systems (FS) are critically important in sub-Sahara Africa (SSA), where they account for a significant share of the gross domestic product (GDP) and employment. Employment and job creation are strongly influenced by FS transformation, and they also help drive that transformation. This study documents the trends in FS employment in the past two decades observed in Rwanda, focusing on changes in the demographic structure and inclusiveness of FS employment. Key findings of the study are:

- Rwanda's economy expanded significantly—from US$3 billion in 2001 to US$13 billion in 2022.
- The population in Rwanda is growing fast, indicating the need for expanding agrifood systems (AFS) to guarantee food and nutrition security.
- Rwanda has a slow rate of urbanization, providing an opportunity for planned urban growth supporting a stronger AFS transformation.
- The agriculture sector continues to be the main source of employment for both men and women, and it is especially important for women and older adults.
- Rwanda's economic transformation has not yet produced substantial growth in nonfarm AFS jobs, unlike typical FS transitions; gains in the service sector have not sufficiently compensated for declining agricultural labor.
- Gender- and youth-responsive interventions, including easing access to land and credit, improving practical skills training, and enabling decent work, will improve inclusivity.
- Strengthening agricultural productivity, commercialization, and rural value addition and linking farming to broader economic growth are crucial to drive future AFS employment, boost incomes, and address emerging challenges.

Introduction

Food systems (FS) are critically important in sub-Sahara Africa (SSA), where they account for a significant share of the gross domestic product (GDP) and provide livelihoods for most of the population (Davis

et al. 2023). Furthermore, expansion in nonfarm components of FS provide an opportunity to transition out of agriculture, which is still the dominant sector in SSA.

FS are projected to grow in terms of both total production and employed labor. This growth is driven by a combination of push and pull factors such as population growth and urbanization. Guaranteeing the food and nutrition security of future populations in SSA will require rapid changes in FS, particularly in the downstream segment of agrifood value chains. Moreover, shifts in dietary preferences induced by rising per capita incomes and urbanization further necessitate the restructuring of these value chains. Growth in FS may also follow transformations in the rest of the economy, including input use intensification, evolving production methods, and improvements in labor and factor productivity.

Employment and job creation patterns are perhaps among the most important areas that are positively affected by FS transformation and vice versa. Historical patterns show that FS transformation, particularly growth in the off-farm segments of food value chains, provides ample employment and livelihood opportunities, particularly for women and youth. However, the extent, speed, and complementarity of the FS transformation and employment generation vary across countries, depending on investments made toward FS transformation, skill levels of workers, and institutional capacity, among other factors, all of which can be influenced by policies appropriate for transforming FS (Fanzo et al. 2021).

This study documents the trends in FS employment observed in the past two decades in Rwanda, focusing on changes in the demographic structure of employment and investigating how inclusive these changes were. The study also explores factors that substantially influence the trajectory of changes in FS—trends in economic performance in Rwanda, demographic changes in the overall population, and trends in urbanization.

Methodology

This study estimates both FS and agrifood system (AFS) employment using a methodology developed by Davis et al. (2023), which relies on two-digit aggregated employment data from ILO's International Standard Industry Classification (ISIC). In this approach, primary crop, livestock, fishing, and aquaculture production are classified as food production. The manufacture of food products, manufacture of beverages, food and beverage services, and production activities of households are considered as food manufacturing and services component of FS. In addition to these FS employment components, AFS adds workers in forestry and logging (nonfood production) and manufacture of nonfood agricultural items. Finally, employment associated with the transportation and trade of food and agricultural goods is added to obtain the total estimate.[1]

Data

This study covers the 2001 to 2022 period. Economywide and sector-level secondary data series were obtained for the study from the World Bank (World Bank 2023) and from the ILO (ILO 2023). We also use household-level data from the Integrated Household Living Conditions Survey (Enquetes Integrales sur les Conditions de Vie–EICV) (NISR 2023).

[1] Details of this methodology and the results are available in Bachewe, F., Mawia, H., and Niyonsingiza, J. 2024. *The Changing Demographics in Food Systems and Implications for Future Youth Engagement in Rwanda*. SFS4YOUTH Working Paper #3. Washington, DC: International Food Policy research institute. https://hdl.handle.net/10568/162766

Results

Trends in the drivers of food systems

Economy

Rwanda's economy grew more than fourfold (by 336 percent) during the 2001–2022 period, reachingUS$13 billion in 2022. Services is the most important sector in Rwanda's GDP while agriculture is the least important. The direction of change in the contribution of these sectors to GDP—with the agriculture sector share declining as the service sector share grows—is largely as expected, although the decline in the importance of agriculture in Rwanda is slow relative to other countries. Annual growth in GDP averaged 7.6 percent during the period. The services sector grew relatively rapidly, while growth in agriculture was slowest. Most of the growth in overall GDP and sectoral GDP was concentrated in the first half of the period, with slower growth in the second half (2012–2022).

Per capita GDP in Rwanda in 2022, at US$940, was 160 percent higher than per capita income in 2001. Annual growth in per capita GDP averaged 4.7 percent during the period. The low levels and poor performance in per capita income in Rwanda are also reflected in the poor performance of the country in standard poverty measures. Most (52 percent) Rwandans lived under poverty in 2016, the latest year with this data. This poverty measure is consistent with the poverty headcount ratio and the numbers indicate that not only a significant proportion of Rwandans live in poverty but also that poverty is declining slowly, implying income growth may have contributed to observed growth in FS in Rwanda.

Population

The population was 8.3 million in 2001 and 13.7 million in 2022 indicating of Rwanda's population grew by 67.5 percent during the period. Growth in population was 2.3 percent in an average year and slightly faster in the second half of the period – consistent with trends in the rest of SSA.

In 2022, young women and young men (ages 15–24) accounted for a similar share of 10 percent of the total population. At 20 percent, the proportion of mature women (ages 25–64) is higher than their male counterpart (18 percent). Rwanda's population is quite young: in 2022, 38.5 percent of the total population was under 15 years of age; 59 percent of the population under 25 years; and 73.4 percent under 35. However, the proportion of young people under 15 declined during the period. Similarly, the proportion of working-age youth men and women (15 to 24 years old) declined, all of which occurred in the first decade. The proportion of mature people (25 to 64) increased the most. In 2022, mature women constituted 20 percent of the population while mature men accounted for 18 percent. The proportion of old people (65+) also increased slightly, most of it in the first half of the period.

Urbanization

Urbanization creates opportunities for employment in FS beyond the farm, through creation of agriculture-related jobs, particularly in food logistics, food processing, food marketing, and services. While these changes occur, jobs on the farm typically become more remunerative and competitive even as they decline in terms of share. Kigali city expanded nearly 50 folds in areas between 1984 and 2016. High rural-to-urban migration from the surrounding provinces rapidly increased the population of the city. Urbanization was also boosted by Rwandans who returned after the 1994 genocide against the Tutsi from neighboring countries and later settled in the urban areas of Rwanda, especially in Kigali. The city is currently growing at 3.2 percent per year, and the population reached about 1.3 million in 2024. Despite the rapid

growth of Kigali city, Rwanda has a relatively low level of urbanization. Urban areas accounted for just 16 percent of the total population in 2001 and for 18 percent in 2022. Both the level and speed of urbanization in Rwanda are considerably low relative to the rest of SSA. In this regard, the slow urbanization in Rwanda calls for planned urbanization and expansion in agrifood systems, which accelerates the move from agrarian to industry and services dominated economic transformation.

Trends on unemployment rate

The unemployment rate in Rwanda averaged 12.5 percent during 2001-2022. It was highest in 2006, lowest in 2011, and it spiked in 2021 during the COVID-19 pandemic. The unemployment rate observed in Rwanda was significantly higher than average unemployment rates in SSA. The unemployment rate has been higher for women than men in all years, although the gender gap declined slightly during the period. Similarly, the unemployment rate for youth has been consistently higher than for mature people. However, the unemployment rate gap between youth and mature people is larger than the gender gap in unemployment rate, and youth unemployment increased considerably faster than unemployment among mature people, indicating a widening of this gap.

One of the United Nations Sustainable Development Goals (SDGs) is SDG 8.6, which has a target to "by 2020 substantially reduce the proportion of youth not in employment, education or training." The indicator 8.6.1 of this target is the "Proportion of youth (ages 15–24 years) not in education, employment, or training (percent)" (NEET). The data indicate that overall, NEET averaged 27.4 percent and increased slightly during the period. Among women, NEET averaged nearly 31 percent, compared with 24 percent among men, and the maximum share for men NEET (27 percent) was less than the minimum share of women NEET (29.5 percent) in any of the years during the period. However, the NEET gender gap declined due to the fairly stable share of women and the considerable increase in the share of men NEET.

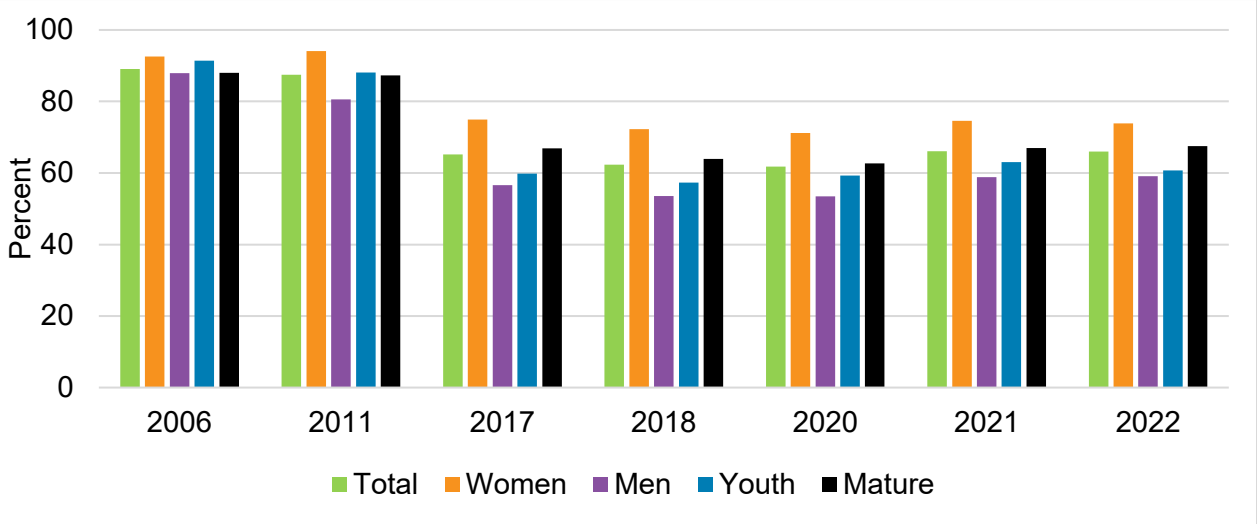
Trends in agrifood systems employment

Agricultural production averaged 60 percent of the total production over the period—declining from 76 percent in 2006 to 55 percent in 2022. However, agricultural employment remained the largest share of AFS employment, accounting for 85.2 percent of AFS employment in 2006 and 84 percent in 2022. Similarly, food production is the most important component of FS employment. Among the population categories, agricultural production was least important for men while it was most important for women, followed by mature people (Figure 2). Food production's order of importance in FS across categories of workers is similar to the importance of agriculture for AFS.

The share of AFS employment in Rwanda averaged 71 percent (70 percent in FS) during the 2006–2022 period. Both FS and AFS employment shares declined considerably during the period. Employment in AFS accounted for 89 percent (87.5 percent in FS) of total employment in Rwanda in 2006, and this number declined to 66 percent (64.8 percent in FS) in 2022. The respective average shares declined from 89 percent (87.5 percent) in the first half of the period to an average of 68 percent (67 percent) in the second half. This trend is mainly due to the considerable decline in the shares of those employed in the farming component (agricultural/food production) of AFS observed in Rwanda, which is consistent with predicted trends for this sector in an economy under transformation. However, the decline in farming employment was not accompanied by growth in the share employed in the nonfarm component of AFS (that is, those engaged in agricultural/food processing, food services, trade, and transportation) that is expected in transforming economies (Figure 2). The share of those employed in the nonfarm component of AFS averaged 11 percent during the same period and increased only marginally during the period—

accounting for 10.7 percent of total employment during the first half of the period (2006–2011) and 11.3 percent during the second half (2017–2022).

Figure 1. Trends in agrifood systems employment by gender and age (share employed)



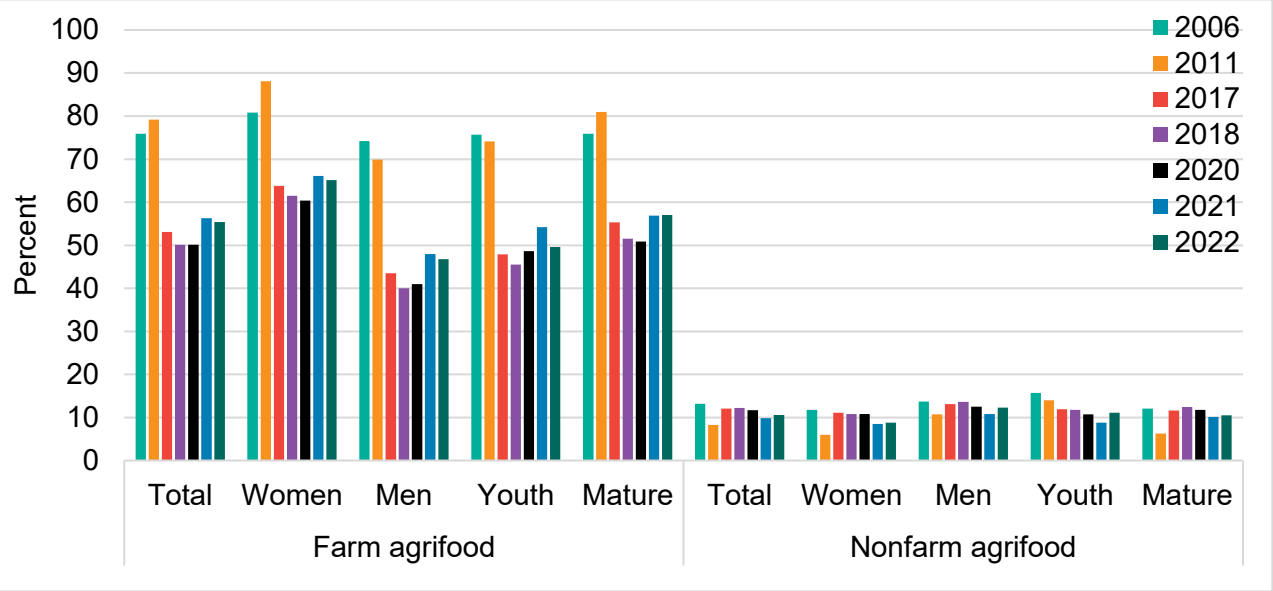
Source: Authors' analyses using NISR (2023) and ILO (2023) data.

Figure 2 indicates that the share of women working in AFS is always higher than the share of men (by at least 13 percent in all years except 2006). This is mainly due to the higher share of women working in the farming sector—with the share of women employed in the nonfarming component of FS/AFS always less than the share of men working in those sectors. The gender gap in the share employed in FS/AFS has increased over the period, mainly because of the relatively rapid decline in the share of men employed in agriculture.

Differences in FS/AFS employment between youth and mature people were considerably smaller. The share of youth employed in FS/AFS was larger than the share of mature people in the first half of the period, while the reverse held in the second half. Moreover, unlike the gender comparison, this narrowing and reversal of the youth–mature gap in FS/AFS employment is primarily the result of a large increase in mature people engaged in the nonfarming component of AFS, accompanied by a considerable decline in youth engaged in that component.

The share of AFS in total employment in Rwanda estimated in this study is close to what Davis et al. (2023) obtain in Africa overall. They find that agricultural production has on average accounted for nearly 50 percent of total employment but its share has been declining in Africa over time. They also find that AFS employment (without trade and transportation) accounted for 53 percent of total employment and for about 62 percent when including trade and transportation. Most of the differences between this study and Davis et al. (2023) are explained by the higher contribution of agriculture to total employment in Rwanda.

Figure 2. Farm/nonfarm agrifood employment by gender and age



Source: Authors' analyses using NISR (2023) and ILO (2023) data.

Conclusions

Findings of this study point to several short- and long-run policy implications. First, interventions that support women's roles in the home can ameliorate some of the factors that contribute to women's lower rate of participation in the labor force. Second, youth, particularly young women, find it difficult to access different inputs, such as land and credit, because of inexperience, lack of collateral, and unequal power relations that leave women with limited decision-making powers and fewer resources. Thus, supporting youth to overcome these difficulties while also providing them with practical training can help unlock their potential. The studies surveyed also point to training that focuses on managing youth's employment expectations. Furthermore, ensuring youth and women are included in dignified and fulfilling work will require transforming the FS/AFS to ensure these systems are sustainable, profitable, and marketable or attractive for these population categories. The identification of specific needs of youth and women is crucial, as it can aid in identifying interventions that ensure meaningful participation in FS/AFS.

Finally, this study indicates that a considerable share of Rwandans are engaged in farming, and farming will continue to be crucial for employment in the near future. Therefore, policymakers must reimagine agricultural policies to address current and future problems, to increase agricultural productivity and income through investments in agricultural intensification, commercialization, and rural value-addition activities, and thereby increase rural household income. Such increases in agricultural income can serve as a catalyst for agrifood employment, by increasing the demand for nonfarm goods and services, the growth of which serves as a bridge between growing farming, nonfarm FS/AFS, and non-AFS employment. Growth in services, in particular, is a sustainable source of employment, because most are nontradable goods that face little competition.

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