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Article

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PEGNet Policy Brief, No. 25/2021

Provided in Cooperation with:

Kiel Institute for the World Economy – Leibniz Center for Research on Global Economic Challenges

Suggested Citation: O. Liverpool-Tasie, Lenis Saweda; Reardon, Thomas Anthony (2021) : Can the expansion of SMEs along Africa's food supply chains improve food and nutrition security?, PEGNet Policy Brief, No. 25/2021, Kiel Institute for the World Economy (IfW), Poverty Reduction, Equity and Growth Network (PEGNet), Kiel

This Version is available at:

<https://hdl.handle.net/10419/243117>

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KEY POINTS

- Domestic food supply chains dominate Africa's food supply and SMEs move most of this food.
- SMEs are an important source of employment in rural and urban areas.
- SMEs are an important mechanism to improve farmers' incomes.
- SMEs are important determinants of food quality and safety.
- Donors, policy makers and development practitioners do not need to create SMEs along African food supply chains – they are already there but need support.
- Donors, governments, and development practitioners should focus on infrastructure investments and policy reforms that lower transaction costs and risks of SMEs as well as on training and selective finance.

PEGNet

Policy Brief

Can the expansion of SMEs along Africa's food supply chains improve food and nutrition security?

Lenis Saweda O. Liverpool-Tasie & Thomas Reardon

In the last three decades, agrifood value chains (AVCs) have expanded and transformed in developing regions. Their growth is partly explained by rapid rates of urbanization, income growth, and market deregulation. AVC transformation across Africa has created huge markets for farmers, along with employment in various supply chain segments, including food processing, wholesaling, and logistics provision. It has also been formed and facilitated by huge investments by millions of small and medium enterprises (SMEs) in AVCs, alongside foreign direct investment (FDI) and domestic investment by large enterprises (LEs) (Reardon et al., 2019). Though most of Africa is still in the phase of the agrifood system transformation in which SMEs dominate the AVCs, there is limited attention to midstream SMEs in research and national or international policy. However, understanding these SMEs and their behaviors is important because they are crucial to overall food and nutrition security; i.e. food availability, access, utilization, stability, and quality (FAO, 2006). Failing to recognize the important role that SMEs play across Africa can result in the design of policies and programs with limited or negative impacts on food and nutrition security. This can undermine national and global efforts to promote food security for Africa's rapidly expanding population.

Despite the crucial role of SMEs along Africa's food supply chain, systematic surveys of wholesale, retail, and processing SMEs are extremely few, with fewer still that trace the impacts of these SMEs on welfare and food security. Thus, this policy brief summarizes key findings from several recent studies exploring how the transformation of Africa's food system (particularly the rise of SMEs along food supply chains) affects food and nutrition security. We present four key pathways through which SMEs affect the welfare of rural and urban households across Africa.

Domestic food supply chains dominate Africa's food supply and SMEs move most of this food

SMEs handle around 85% of the total marketed food supply in Sub-Saharan Africa (SSA) and this marketed food supply is in turn 80% of the total food consumption in value terms (Reardon et al., 2019). Despite a general perception about the centrality of imports to SSA food security, data consistently demonstrate the centrality of domestic food supply chains across SSA. The majority of overall consumption in Africa is domestic. Figure 1 shows the food import share of five SSA countries: Nigeria, Tanzania, Uganda, Ethiopia, and Malawi. The import share of total food consumption (in tonnage terms, measured as tons of imports divided by tons of production plus imports less exports) is consistently below 10% for all five countries. Even for all of SSA, the import share varies from 10% to 13% depending on the calculation method (Liverpool-Tasie et al., 2021). This is not to negate that imports are important in particular rubrics. For example, rice and wheat form 26% of all food imports in 2013 (Awokuse et al. 2019). However, this is about 2.5% of all food consumption in Africa given that food imports are 10% of total food consumption.

SMEs are an important source of employment in rural and urban areas

In addition to guaranteeing access to food for SSA's rapidly expanding population, SMEs are a key source of employment for many. Recent work by Dolislager et al. (2020) documents the importance of SMEs in the midstream and downstream of food supply chains for self- and wage- employment across SSA. This includes employment in agrifood processing, wholesale, logistics, retail, and food service. Leveraging on nationally representative data from six countries (Ethiopia, Malawi, Niger, Nigeria, Tanzania, and Uganda), Dolislager et al. (2020) find

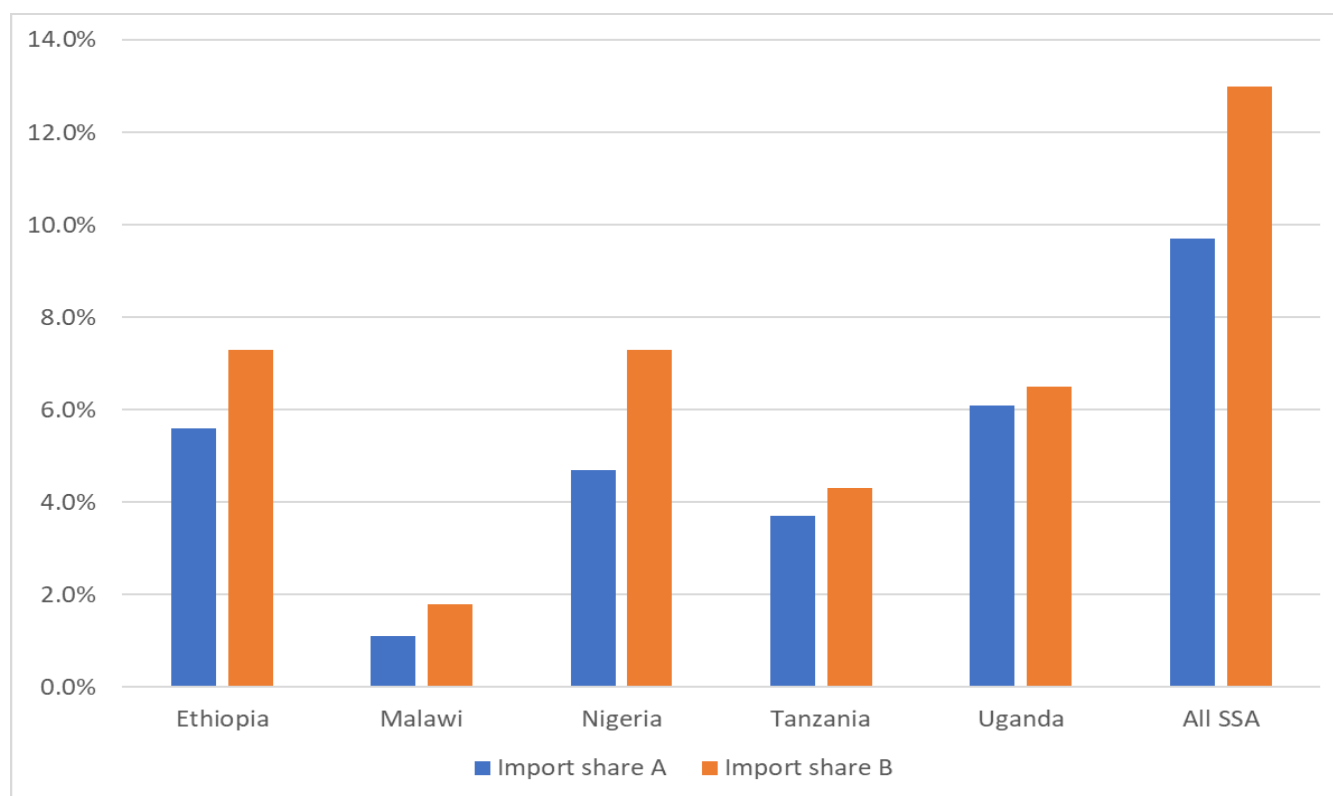


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Figure 1 Import share of total food consumption in Africa



Source: FBS data from FAOSTAT, 2017, authors calculations. Note: Import share A is a simple measure that uses observed amounts for consumption by disappearance (production plus imports, less exports). Import share B uses both observed data and FAO estimates of other components (production plus imports, less exports, less food output retained as seed, wasted, and used for nonfood production).

that compared to the share of employment in farm wage labor (about 3% in SSA), employment in SMEs (as self- or wage-employment) averages 24% Full time equivalents (FTEs) in rural SSA. This share of FTE appears to increase and compares to about 39% of FTEs from own farming. The importance of SMEs for employment cuts across both rural and urban areas; accounting for 31% of FTEs in urban SSA.

In response to changing consumption patterns (more diversified diets including more animal proteins, dairy and fruits and vegetables), many African countries have witnessed the rapid expansion of various subsectors such as poultry and fish (Liverpool-Tasie et al., 2021, Nuhu et al., 2021, Liverpool-Tasie et al., 2017; Gona et al., 2018). These subsectors provide numerous employment opportunities (both self and wage employment) for rural, peri-urban, and urban households. In an analysis of reported labor use across nodes of the poultry and maize value chain in Nigeria, we found that it engages over 1 million people directly (Sauer et al.2020).

Besides direct employment (self and wage), the growth of SMEs along food supply chains creates multipliers in other SME segments, further spurring employment. For example, we found that urban maize traders in Nigeria make extensive use of third-party logistics services (3PLS) SMEs to move some 80% of maize across the country (Liverpool-Tasie et al. 2017). In addition, SMEs are typically more labor intensive (in terms of labor/output ratios) than large enterprises creating more opportunities for employment (Reardon et al., 2021; Snyder et al., 2017).

SMEs are an important mechanism to improve farmers' incomes

Recent evidence demonstrates that SMEs in the midstream of output value chains help small farmers' incomes directly and indirectly. For example, the ability to sell soya beans to wholesalers and processors SMEs in Zambia's rapidly expanding livestock subsector has been associated with higher crop and household incomes for smallholders, particularly medium-scale smallholders, operating 5 ha - 20 ha (Nuhu et al., 2021). Similarly, Liverpool-Tasie et al. (2020a) found a positive association between small-scale producers' selling output to, as well as receiving training or purchasing inputs from medium-scale farms (who often serve as SMEs engaged in crop aggregation for food and feed companies) and their welfare (higher income and lower experience with poverty). These effects appear to be driven by higher marketing opportunities that the SMEs provide. SMEs along food supply chains also appear to indirectly support famers via their provision of complementary services to farmers. These services include logistics, physical inputs, as well as credit and training.

This finding is consistent with a scoping review by Liverpool-Tasie et al. (2020b) that found that non-contract interactions, de facto mostly with SMEs, benefit small-scale producers via similar mechanisms that the literature has previously credited to large enterprises. SMEs were addressing idiosyncratic market failures and asset shortfalls of small-scale producers by providing them, through informal arrangements, with complementary services such as input provision, credit, information, and logistics. Providing these services supports

improved farmer welfare through technology adoption and greater productivity.

Via the employment mechanism, SMEs create numerous opportunities for rural non-farm income generation for households (with farmland and landless). Such income is a major source of cash that can support farm investments and technology adoption, even more than credit (Reardon et al. 1995; Adjognon et al. 2018).

SMEs are important determinants of food quality and safety

SMEs in the midstream and downstream of AVCs significantly affect not only the prices received by producers (upstream) but also the price and quality of the final product received by consumers downstream (Emana and Nigussie, 2011; Liverpool-Tasie et al., 2017a).

First, SMEs play an important role in responding to consumer demand for nutritious and safe foods. For example, dairy SMEs engaged in processing, logistics, and wholesale are the mainstay of modern milk supply in Uganda (van Campenhout et al. 2020); the great majority of fish and chicken supply to urban areas of Nigeria (where the great majority of these products are consumed) are mainly operated by SMEs (Liverpool-Tasie et al. 2017; Gona et al. 2018). SMEs are also the mainstay of the supply chain functions of transport, packing, and wholesale of vegetables to Ethiopia's capital city Addis Ababa (Minten et al. 2020).

In addition, SMEs' handling of food determines the safety of foods available to consumers. This is determined in part by the existence of standards and their enforcement but also by the existence of effective demand for safe products. For example, Sanou et al. (2021) demonstrate how maize traders respond to consumer preferences via higher willingness to pay for maize safety attributes their clients exhibit preferences for. However, all across SSA, there are missing or poorly implemented food safety and hygiene regulations that make SMEs with unsafe practices a danger to consumers. Thus, there is an important role for education of SMEs in food safety standards to complement regulation and a role for education of consumers to further increase the effective demand for safe and nutritious foods.

Conclusion & implications for policy and donor support

In many developing regions, food supply chains are dominated by small and medium scale enterprises (SMEs). For Africa, around 85% on average of the total marketed food supply is handled by SMEs and 65% of overall consumption (Reardon et al., 2019). These midstream and downstream SMEs play a central role in food security on the continent. They affect food availability (level, affordability, and stability over time) by their effects as agents that determine how food output moves from farmers to other segments (also in the midstream or downstream) of food supply chains as well as the role that they play as agents in farm input AVCs that then fuel farm productivity. SMEs support more inclusive food access directly by employing more than a fifth of rural and urban full time equivalent (FTEs) of employment and generating the mainstay of cash to buy food. They indirectly support inclusive food access by providing the inputs for own-farming. Third, the investments and behavior of midstream and downstream SMEs (influenced by the environment they operate

in) determine the availability and cost of safe and nutritious foods for consumers.

Inadequate support for SME operations has potentially dire effects on African AVCs. Inefficient and poorly regulated SMEs can significantly affect the extent to which Africa's ongoing food systems transformation can provide improved food and nutrition security on the continent. While SMEs can support higher productivity (and increased incomes) among farmers and determine the price and quality of food available to consumers, many of these enterprises face significant challenges that impede their operations, growth, and productivity. These challenges include micro (firm specific) factors such as limited technical capacity of SME owners/managers and limited access to finance (Liverpool-Tasie et al., 2020). They also include challenges associated with the markets or clusters within which many operate such as poor infrastructure, organization and management, congestion and security (Reardon et al. 2021). A third set of challenges farmers face are more macro in nature. Macro challenges include poor road and rail infrastructure or limited supply of electricity that significantly increase the costs of operation as well as policies (e.g., multiple taxation, bureaucratic and unclear processes) that make it difficult for SMEs to be established or formalized. They also include the weak regulatory framework that oversees and monitors the operations of a majority of Africa's food systems (Liverpool-Tasie et al., 2020; Liverpool-Tasie et al., 2021). Together, these micro, meso, and macro factors create a challenging environment for SMEs to navigate which can significantly affect their incentives and abilities to provide affordable, safe, and nutritious foods to consumers.

Our recent findings suggest that donors, policy makers and development practitioners do not need to establish or create SMEs in the midstream and downstream of food supply chains. The SMEs are already there and functioning, albeit not as efficiently as they could. Thus, multilateral agencies, donors, governments, and NGOs should focus on programs, investments and interventions that will make SMEs along food supply chains in Africa more efficient and productive. This includes investments in hard and soft infrastructure to support the mix of services provided by SMEs to small-scale producers and to incentivize them to supply safe and nutritious food. More specifically:

- Investments in hard infrastructure such as road, rail and electricity can reduce SMEs' costs of operation.
- Investments in soft infrastructure (improved regulations, ease of business registration, less duplication of taxes and lower fees etc.) can reduce the transaction costs for SMEs' start-up and operations.
- Efforts to educate SMEs in food safety standards can complement food safety regulation while educating consumers can increase consumer effective demand for safe and nutritious foods.

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