



# Improving the Lives of Farmers Living in Rural Areas in the Sub-Saharan Region

Carelle Isaariche Gallouo

Department of Economics and Management, Yangtze University, Jingzhou, China

Email: Carelleisaariche@gmail.com

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## Abstract

Most food in sub-Saharan Africa is produced on small farms. Using large datasets from household surveys conducted across many countries, we find that the majority of farms are less than 1 ha, much smaller than previous estimates. Farms are larger in farming systems in drier climates. Through a detailed analysis of food self-sufficiency, food and nutrition security, and income among households from divergent farming systems in Ethiopia, Ghana, Mali, Malawi, Tanzania and Uganda, we reveal marked contrasts in food security and household incomes. In the south of Mali, where cotton is an important cash crop, almost all households are food secure, and almost half earn a living income. The purpose of the study is to examine improving the lives of farmers living in rural areas in the Sub-Saharan Africa. This paper contributes to the understanding of the long-run and short-run drivers of income inequality in sub-Saharan Africa (SSA) and its sub-regions based on the evidence from bootstrap co-integration and autoregressive distributed lag (ARDL) model. The findings reveal a long-run relationship exists for almost the entire SSA and its sub-regions for the dependent variable, independent variables and the overall models. The exception was West Africa where the dependent variable was not statistically significant but the independent variables and overall model were co-integrated. The results further show that for SSA, in the long run, economic growth decreases the uneven distribution of income whereas in the short run economic growth increases inequality. A reduction in corruption in the short run and long run makes inequality fall. Population growth in the long run and short run aggravates the distribution of income. A rise in the rate of unemployment in the short run and long run has a positive relationship with income inequality. Trade globalization in the long run heightens inequality but is not significant in the short run.

## Subject Areas

Agricultural Science

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## Keywords

Sub-Saharan Africa, Rural Areas, Farmers

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### 1. Introduction

The Sub-Saharan Africa (SSA) region accounts for more than 950 million people, approximately 13% of the global population. By 2050, this share is projected to increase to almost 22% or 2.1 billion. Undernourishment has been a long-standing challenge, with uneven progress across the region. Despite being reduced from 33% in 1990-92 to 23% in 2014-16, the percentage of undernourishment remains the highest among developing regions (FAO, IFAD and WFP, 2023) [1]. Owing to rapid population growth of 2.7% p.a. over the same period, the absolute number of undernourished people has increased by 44 million to reach 218 million. Slow progress towards food security has been attributed to low productivity of agricultural resources, high population growth rates, political instability and civil strife. However, vast regional differences remain and the success achieved in countries with stable political conditions, economic growth and expanding agricultural sectors suggests that appropriate governance systems, institutional capacities, and macroeconomic, structural and sectoral policies can work together to improve food security on a long-lasting and sustainable basis.

The farming activities of rural households provide the bedrock of the food system in sub-Saharan Africa (FAO *et al.*, 2020) [2], and are key to achieving the Sustainable Development Goals 1-Zero Poverty and 2-Zero Hunger (United Nations, 2021) [3]. Yet a large proportion of these households are themselves food insecure (Frelat *et al.*, 2022) [4] and fall below the poverty line (Harris, 2022) [5]. Agricultural productivity has increased far more slowly in sub-Saharan Africa than in other regions of the world (Giller *et al.*, 2021) [6], and crops yield only some 20% of what could be achieved (Sanchez, 2022) [7]. A primary reason for the large yield gaps is the poor soil fertility status which results from continuous cropping without replenishment of the nutrients removed in harvested produce (Sanchez, 2022) [7]. Against this backdrop, the population is growing rapidly (United Nations, 2021) [3] and the impacts of climate change are already being felt (Godfrey & Tunhuma, 2020) [8]. The large yield gaps and the rapid growth in demand for nutritious food present opportunities to increase agricultural output for these expanding internal markets. Yet agricultural productivity remains stagnant. Smallholders are reluctant to invest in their small farms due to the meagre returns in food and farm income they can generate (Ritzema *et al.*, 2021) [9], turning their focus instead to off farm opportunities to provide for their families. This situation, coined as the “food security conundrum”, frustrates initiatives to support the sustainable intensification urgently needed to provide for both local and national food and income security.

The important role of the agricultural sector in contributing to food security is

reflected in its prioritisation in the development agenda. The Comprehensive African Agricultural Development Programme (CAADP) is an integral part of the New Partnership for Africa's Development (NEPAD) and the sector's prominence in the region is evident in its contribution to total GDP, which is generally high in the global context. The high contribution of the agricultural sector to GDP also underlines the limited diversification of most African economies. On average, agriculture contributes 15% of total GDP; however, it ranges from below 3% in Botswana and South Africa to more than 50% in Chad, implying a diverse range of economic structures. Agriculture employs more than half of the total labour force (IMF, 2022) [10] and within the rural population, provides a livelihood for multitudes of small-scale producers. Smallholder farms constitute approximately 80% of all farms in SSA and employ about 175 million people directly (Alliance for a Green Revolution in Africa, 2021) [11]. In many of the countries, women comprise at least half of the labour force. In this paper, the researcher seeks to examine improving the lives of farmers in rural areas in the Sub-Saharan Africa.

## **2. The Agricultural Environment in Sub-Saharan Africa**

After decades of stagnation, much of Africa is now experiencing rapid economic transformation. In the post-structural adjustment period, the business environment has become more stable and albeit from a small base, the region has experienced rapid economic growth since the mid-1990s. These domestic factors in combination with the global "commodity boom" enabled commodity exporting countries in particular to achieve growth rates above or near 6%. However, the recent decrease in agricultural commodity prices, lower demand arising from China and currency depreciation have tempered growth rates in African economies. Foreign investment and external financial flows into Africa have quadrupled since 2000. These flows are expected to increase further in the coming years (AfDB, OECD & UNDP, 2021) [12], while internally generated funds in the form of tax revenues continue to rise across the continent.

## **3. Drivers of Agricultural Growth**

Evident from its high share in GDP, the prospects of the agricultural sector heavily influence economic development in most countries in Sub-Saharan Africa. From 1990 to 2013, the total value of agricultural production, measured in constant US dollars, increased by 130%. The crop sector dominates total agricultural production value, accounting on average for almost 85% of total production value over the 24-year period. This share differs across the region, ranging from 53% in Southern Africa, to more than 90% in Western Africa.

Regional differences in the relative contribution of the crop and livestock sub-sectors reflect agro-ecological and cultural diversity. Significant growth was evident across SSA over the past 24 years, but Western Africa continues to account for more than 60% of the total value of agricultural output in SSA, while

Southern Africa contributes 22%. Western Africa has also been the greatest driver of volatility in total production value since 2007, mainly due to volatile yam production in Nigeria. Despite the diversity in crop mix across the region, the crop sector's share of total production value is significantly higher in all sub-regions except Southern Africa, where the shares of livestock and crop production value are similar.

Within each of the four sub-regions, the five biggest crops contribute more than 45% of total crop production value, with maize being the single most important staple crop. Rice is an important staple in Eastern and Western Africa, and other important staples include potatoes (Eastern and Central Africa), sweet potatoes (Eastern Africa), cassava (Western and Eastern Africa) and plantains (Eastern and Central Africa). In Southern Africa, the strong share of fruits and vegetables in total value of production is due to South Africa's export oriented horticultural production.

The livestock production mix exhibits similar diversity, not only in its contribution to the total value of agricultural output, but also to the relative importance of the different livestock subsectors. Poultry contributes a substantial share of livestock production value across the region, ranging from 12% in Eastern Africa to 45% in Central Africa and Southern Africa. Interestingly in Central Africa, where livestock production value is smaller than any of the other three regions, game meat accounts for 35% of livestock value.

Livestock production systems remain largely extensive, with pasture based ruminant production often the only system able to add value in semi-arid areas. Often the movement of livestock in line with seasonal changes and fodder availability remains the only way of securing feed for large herds (NEPAD, 2021) [13]. At the same time, vertically integrated, intensive poultry operations that link commercial feed grain producers to feed mills, abattoirs and wholesalers have been evident for many years in some countries (such as South Africa) and have recently started expanding in others (such as Zambia and Tanzania). Such operations target urban consumption centres characterised by rapid growth in food demand.

Fisheries and aquaculture also make a multifaceted contribution to national economies in SSA. The region has vast fish resources, in marine and inland waters, and is characterised by diverse fishing communities. Small and industrial-scale fishing targets a diverse array of species for local and international consumption. Benefits generated by the sector include nutrition and food security, livelihoods, employment, and foreign revenue.

Similarly, to other agricultural sub-sectors, fisheries and aquaculture are considered to be underutilised, despite inherent potential. Total fishery production in the region represents only about 4% of world production and growth prospects are limited in the next decade.

Fisheries and aquaculture in SSA faces enormous challenges and deficiencies which are limiting the capability of most governments to ensure its sustainability

and profitability. Challenges include inadequate management of fish stocks; lack of knowledge and evidence to foster reforms; untapped potential of small-scale fisheries; weak and uncoordinated institutions; limited or ineffective institutional and legal frameworks; weak scientific research; inadequate human and financial resources; lack of reliable, relevant and timely information; lack of adequate infrastructure and services; and climate change, which is expected to change future fisheries production patterns, as species move to new habitats.

#### **4. Key Factors Underlying the Agricultural Outlook for the Rural Areas in Sub-Saharan Africa**

The prospects for production, domestic demand and trade of agricultural commodities in the region are influenced by a host of agro-ecological, economic, demographic and political factors. The level of income available in the domestic food market is driven by general economic development in the countries. The prospects of several countries that are highly dependent on commodity exports have declined and per capita GDP growth is projected to stagnate over the coming decade, resulting in a significant slowdown in the Central, Southern and Western African regions. Accelerated output growth in the Eastern African region offsets some of the decline however and GDP per capita for the entire SSA region expands only marginally more slowly in the coming decade (2.3% p.a.) relative to the past (2.4% p.a.). The following below are the under the key factors underlying the agricultural outlook for rural areas in Sub-Saharan Africa. They include income distribution, demographic structure and emergence medium-scale producers.

#### **5. Income Distribution: Rise of an African Middle Class**

SSA as a region reflects some of the highest inequality rates in the world and while there is evidence of rising incomes, the increasingly skewed distribution of wealth in many countries slows the rise of middle class consumers and thereby constrains the increase in domestic food expenditures. The African Development Bank (AfDB) defined middle class as per capita daily consumption of USD 2-20 in 2005 purchasing power parity terms and indicates that its share of the population has expanded from 27% in 1990 to 34% in 2020.

However, roughly 60% of the middle class in 2010 were in the USD 2 - 4 per capita consumption group barely out of the poor category and in constant threat of falling back into it (AfDB, 2021) [14].

#### **6. Demographic Structure**

Population growth within SSA has significantly outpaced any other region in the world. Since 1990, the SSA population expanded by 96%, more than double the world average of 38% (45% in Oceania, 37% in Asia, 27% in North America and less than 3% in Europe). Over the next decade, a further expansion of 28% is projected, compared to a global average of only 11%. The rapid expansion has

resulted in a unique demographic structure and more than 60% of the population is below the age of 25, as opposed to 41% in Asia and only 27% in Europe. The economic potential of demographic dividend, the time period during which the share of the working-age population is larger than the nonworking-age share, should be acknowledged.

The share of the population residing in urban areas has increased to 38% in 2015, from 27% in 1990, a rate similar to South America and Southern Asia. By 2025, it is projected to increase to 42%, impacting on income levels and dietary patterns. Despite urbanisation, the rural population has continued to increase in absolute numbers and surveys indicate that even in urban areas agriculture still represents the primary livelihood for up to 25% of the population. Enhanced productivity in agriculture therefore appears to have the greatest potential to directly improve rural livelihoods, while stimulating effective demand and job opportunities in the nonfarm sector through multiplier effects generated from productivity gains.

## 7. Emerging Medium-Scale Producers

The surge in global food prices post 2007, combined with agricultural subsidies and land policies in many countries accelerated the demand for agricultural land in SSA. Land acquisitions by foreign and African investors have increased dramatically leading to the rapid rise of medium- and large-scale “emergent” commercial farms (Jayne *et al.*, 2021) [15].

Development Health Survey data indicates that urban households now control 10% - 30% of total agricultural land. Evidence also suggests that existing land policies are leading to increased inequality of landholdings and in some cases may be making it more difficult for area expansion in densely populated smallholder farming areas.

The relative productivity of these medium-scale farmers is less clear. Farm businesses may benefit from increased commercialisation and economies of scale, but speculative land acquisitions by richer, politically influential urban households may not impact on productivity. Increased commercialisation is projected to raise productivity growth, yet a substantial yield gap remains. Accelerated changes to farm structure, accompanied by mechanisation and improved farming practices have the potential to induce a much higher rate of productivity growth.

## 8. Emerging Rural Development Priorities for the New Millennium

The debate about the role of agriculture in Africa remains unresolved in many countries and donor agencies as well as within the academic community. As such, we now have two camps pulling in different directions. However, the pro-agriculture lobby seems to be making some progress, and the level of funding for agriculture has at least bottomed out and may actually be increasing

again<sup>3</sup>. But even as the momentum for agriculture is increasing, there is another debate about the relevant strategy for agricultural development. A new donor paradigm seems to have emerged (seemingly as much a European as a new Washington Consensus) that embeds agricultural development within a broader approach to rural development, with enhanced links to the urban sector. This new paradigm focuses on market and private sector-led agricultural growth; rural income diversification out of agriculture, especially for small farmers and the rural poor; increased investments in human capital and safety nets to provide relief during crises like droughts and to help manage the transition towards more urban societies; and improved governance arrangements including a smaller role for the public sector and new public-private partnerships. I review this new paradigm below and compare it to the agricultural development priorities of the past.

## 9. High Value Agriculture or Food Staples

With historically low world prices for food staples and rapid expansion in international agricultural trade, the new paradigm sees the best opportunities for African farmers in high-value commodities such as fruits, flowers, vegetables, and livestock. In many successfully growing Asian and Latin American countries, domestic demand for these products is growing rapidly, providing ready market outlets for increased domestic production<sup>4</sup>. In contrast, growth in domestic demand is much weaker in Africa, primarily because of low and stagnant per capita incomes. The best high-value market opportunities are seen in export markets to richer countries. Many African countries are being encouraged to aggressively expand into high-value, nontraditional exports, as well as to improve the quality of their traditional tree crop exports.

The high value sector is particularly attractive to some donor agencies because it fits with their market led philosophy in which the private sector provides the leadership and much of the required investment, and the public sector is asked mostly to keep out of the way. While not wishing to diminish some of the real opportunities that exist in high value markets, it does seem that some donors are demonstrating the kinds of “irrational exuberance” that once prevailed for tree crop exports in the 1970s. A quick look at the price data for tree crops over recent decades should provide ample warning of the dangers that may lie ahead.

Alternative market opportunities for African agriculture are also more nuanced (Diao & Hazell, 2020) [16] than portrayed by the advocates of high value exports. While opportunities exist for improving traditional exports through better-quality and niche markets and while nontraditional exports are growing quite fast, albeit from a small base, the greatest market potential for most African farmers still lies in domestic and regional markets for food staples (cereals, roots and tubers, and traditional livestock products). For Africa as a whole, the consumption of these foods accounts for about 70 percent of agricultural output and is projected to double by 2020. This will add another US \$50 billion per year to



demand in 1996-2000 prices, a growth of approximately 4 per cent growth per year. Moreover, with increasing commercialization and urbanization, much of this additional demand will translate into market transactions and not just additional on-farm consumption. There are no other markets that offer this kind of growth potential, and unlike many higher value products, food staples also have relatively low credence attributes making them much easier products for small farmers to sell in today's markets. If African farmers could capture a decent share of this growing market, there would be plenty of scope for them to increase their food staples production by 3 - 4 per cent per year. The trick is not to grow faster than 4 per cent unless one can sell to neighboring countries, and there is scope for that if some of the intra-regional trading barriers were removed (Diao *et al.*, 2022) [17].

## 10. Exit Strategies or More Investment in Small Farms

Africa has experienced rapid urbanization in recent years, a trend that seems likely to continue if not increase. This is accepted as desirable in the new paradigm, leading to greater emphasis on helping rural families diversify their livelihoods away from agriculture rather than on creating new agricultural opportunities. Supporting this approach, Maxwell *et al.* (2021) [18] and Ellis and Harris (2022) [19] argue that agriculture has already become a relatively small productive sector in many rural regions and most rural households already have diverse and geographically dispersed portfolios of income sources. They question whether agriculture can any longer serve as a relevant engine of rural growth and suggest instead that poverty reduction can better be achieved by taking a more holistic household livelihood approach. Ellis and Harris (2022) [19] go further and suggest that public investment should be geared towards improving the ease with which migrants can access viable livelihoods in urban areas where growth is assumed to be taking place.

Rural income diversification has been a reality in Africa for decades. In fact, the first large-scale rural household survey in Africa conducted in 1974-75 in Kenya found that smallholders derived at least half of their incomes from sources other than from the farming of their own lands (Kenya, 2021). A similar situation is also reported by Reardon *et al.* (2022) [20] from a series of studies in eight West African countries, and a review of 35 African case studies by Barrett and Reardon (2020) [21] revealed that rural households derived a median of 43 percent of their incomes from the non-farm economy. Even in many Asian countries, farmers were highly diversified before the Green Revolution. If most African farmers have been unable to find pathways out of poverty despite income diversification strategies over many decades, then it is unclear why such a strategy should work better today, particularly in countries where the nonagricultural sectors are not thriving either.

Diversification into non-farm activities is not an unequivocally positive phenomenon. On the one hand, diversification may reflect a successful structural



transformation in which rural workers are gradually absorbed into more lucrative nonfarm jobs, such as teaching, milling, or welding. Entry into these formal jobs often requires some capital, qualifications, and/or possibly social contacts (Start, 2021) [22].

On the other hand, in Africa, diversification into the non-farm economy is often driven by growing land scarcity, declining wages, and poor agricultural growth (Haggblade *et al.*, 2022) [23]. Migration driven by a stagnant agricultural and rural environment or due to growth in low productivity urban sector activity, such as public service employment, is often a dead end, which Lipton characterizes as “the migration of despair”. In this case, migration “depresses wage rates, denudes rural areas of innovators, and hence, while it may briefly relieve extreme need, seldom cuts chronic poverty.” (Lipton, 2022) [24].

## 11. Rethinking the Role of Smallholder Agriculture in Rural Livelihoods

The six examples of farming systems analyzed here demonstrate (a small fraction of) the enormous diversity of farming systems across sub-Saharan Africa. Perhaps the most-stark result is the large proportion of households that fail to achieve food security as indicated by the food availability indicator even when all income streams are converted into calories. To raise the majority of households above the threshold for food availability would require a massive increase in productivity to narrow yield gaps; yet it seems that the incentives to invest in productivity improvement are very limited, especially for the households in Rural World 3. There is a huge diversity in food security and income levels among households within each locality, confirming earlier results that examined patterns of food availability across Uganda (Waha *et al.*, 2022) [25]. Yet, poverty and food insecurity are widespread in most locations. Further, our analysis highlights that a (very) small proportion of rural households can earn a living income from farming alone.

It is clear from the analysis above that rural livelihoods are multi-faceted, with virtually all households relying on a wide-range of activities and income streams. Agricultural production of crops and livestock is important for food and nutrition security and for income, but needs to be seen alongside other off-farm activities. The reliance of rural households on diverse activities is well recognised in the literature (Ellis, 2023) [26] but often overlooked in discussions on potential development interventions, particularly those based on agriculture. Rural households are often referred to as “subsistence” farmers implying that their focus is purely on farming for survival. Our analysis and a growing body of literature from other scholars questions this perspective drawing attention to the constraints of small farm sizes (Franke *et al.*, 2023) [27] and the aspirations of rural people to focus on employment outside the farm (Dilley *et al.*, 2021) [28]. So what role does the farm play in the livelihood of rural households?

Where cash cropping is lucrative, agricultural production can provide a living

income for households with sufficient land and labour resources, as we see with the example of cotton production in Mali. In terms of general trends, Frelat *et al.* (2022) [4] found that across countries and locations the households that produced the most food also produced more cash crops and livestock, as well as relying more on off-farm income. This raises the chicken and egg question, as to whether agriculture is the driving factor in raising incomes, or whether non-farm income is needed to raise the agricultural productivity. Smallholder farming systems are dominated by staple crop production for a number of reasons. First, cash is scarce and farms are small, and often incapable of generating enough food for the family. Second, there is always a market for staple crops even if they are not particularly profitable. Which types of products make “commercial sense” for smallholders depends on the agro-ecological conditions perennial commodities such as coffee and tea are ideal for the highlands. Cocoa and oil palm provide opportunities in lowland humid regions. Vegetables generate a good source of income for smallholders with access to land in valleys or where irrigation is possible. Livestock offer other opportunities. Dairy farming provides a regular income from sale of milk but requires good infrastructure to be scaled up to meet urban demands. The growing demand for poultry and eggs in urban centres also offers market opportunities for small-scale production. The fact that off-farm opportunities are often prioritised above crop and livestock production highlights the poor remuneration from farming, yet this does not mean that agricultural research and development cannot assist in reducing hunger and drudgery. Empirical studies in SSA showed that for the poorest people, agricultural growth reduced poverty 11 times more than non-agricultural growth (Christiaensen *et al.*, 2021) [29]. As long as there are no better options outside farming, research and development can help small-scale and poor farmers to achieve better food security and relatively small, but nevertheless important, increases in income.

Indeed, even for the youth in Kenya, farming remains one of the livelihood options they would like to pursue, though not in isolation (LaRue *et al.*, 2020) [30].

Opportunities to earn income off-farm also present opportunity costs relating to production on-farm. Employment to earn food or income for work in rural areas is highly seasonal. The busiest times of the year in rural areas are generally at the start or early in the cropping season when soils need to be tilled, seed sown and weeds removed. The greatest food shortages the hunger season often coincide with peak labour demand for weeding and when many members of poorer households work for food (Bouwman *et al.*, 2020) [31]. When the income earned off-farm is too small to compensate absence by hiring in labour, this causes delay in attention to own crops resulting in yield penalties due to late planting and weeding (Kamanga *et al.*, 2020) [32].

Seasonality is of critical importance for food and nutrition security in other ways. Long dry seasons are associated with a strongly-reduced diversity of

foodstuffs available on farm or in the market. Storage of staple cereal crops may allow to sustain the calorie requirements of households during the long dry season, highlighting the need for secure storage to prevent post-harvest loss (Milgroom & Giller, 2023) [33]. But all households face a critical shortage of fresh foods and in particular of micronutrients and vitamins in the dry season. It is hard to produce a year-round, balanced diet unless water is available to irrigate plots and grow vegetables in the dry season. Even considering all of the foods available in the local markets it was impossible to create a complete diet all year round that met all standards for human nutrition in northern Ghana (de Jager, 2022) [34].

So, although it may be desirable to re-design farming systems around local production of a diverse array of foods to provide a nutritious food basket, this is challenged by the seasonal nature of crop production.

Farming is also a risky business, with frequent crop failure in drier regions and the looming impacts of climate change. Changing weather patterns and the increased variability and unpredictability of the weather are expected to lead to changes in the suitability of crop and livestock systems, as shown by Wichern *et al.* for Uganda. With large sensitivity (Rurinda *et al.*, 2021) [35] and small adaptive capacity, smallholders are particularly vulnerable to climate change (Descheemaeker *et al.*, 2020) [36]. Perhaps not surprisingly, small holders in southern Mali perceived climate variability as the greatest risk they faced, after their own and their animals' health (Huet *et al.*, 2020) [37]. In such variable climates, smallholder systems are usually managed to minimize downside risk.

Although increasing inputs would increase average yields, it also leads to larger year-to-year variability, which acts as a barrier against investments needed to narrow yield gaps (Descheemaeker *et al.*, 2020) [36].

Some authors have suggested that there may be a threshold under which farms become too small to be economically viable (Tittonell & Giller, 2023) [38]. Stephens *et al.* (2022) [39] suggested a threshold farm size of 0.7 ha in Western Kenya. Hazell *et al.* (2021) [40], on the other hand, defined farms as being "large enough" to be optimistic about the prospects of smallholder development when they have "as little as 1 ha of irrigated land, and as much as 3 ha for rain fed cropland". However, a threshold for an economically viable land size greatly depends on the biophysical potential of the land and climatic and socio-economic conditions, including opportunities for irrigated farming, amount and distribution of rainfall and access to markets. The threshold therefore is likely to vary considerably between farms within regions and even more between regions. Moreover, land alone is no guarantee for successful commercialisation of agricultural production.

Farmers also need the incentives and capacity to adopt new technologies and invest in their land. Several studies have shown that resource endowments other than land, such as access to capital or knowledge, are critical to invest in and adopt new technologies (Marennya & Barrett, 2021) [41]. In densely-populated

areas it seems inevitable that some degree of aggregation of farms is needed to allow adoption of the basic technologies needed to benefit from sustainable intensification (Aune *et al.*, 2021) [42].

Against the backdrop of increasing population pressure and fragmentation of farms, there is evidence of a countervailing trend. A new cadre of medium-scale “investor farmers” with land areas of 5 - 100 ha is expanding rapidly (Jayne *et al.*, 2021) [15]. These investor farmers are urban professionals or rural elite households (Sitko & Jayne, 2022) [43] who already control 20% - 50% of the total farmland in Kenya, Ghana, Tanzania and Zambia. Jayne *et al.* (2021) [15] highlight that the share of arable land under the control of urban based households is rising, leading to rapid increases in land prices within 100 km of urban centres. Often only a small proportion of the land acquired is initially used (Jayne *et al.*, 2021) [15]. Such farms can help to stimulate local input and output markets, but the implications for local farmers are unclear. Given the continuing population growth in rural areas it seems inevitable that the consolidation of land in the hands of investor farmers will contribute to further marginalisation of poorer households (Jayne *et al.*, 2021) [15]. If such farms are successful in improving their production they could be important for addressing national food security.

## 12. Conclusions

Agriculture’s role in the economic development of a country changes as the transformation proceeds. In the early stages, agricultural growth, particularly led by food staples and small farms, is a major engine of national economic growth and can play a very significant role in reducing poverty. As a country develops, the agricultural sector begins to take a secondary role as an engine of growth, and the composition of its output and farm size structure changes. Labor migrates from agriculture, farms get larger, and higher-value foods become more important in the national diet and in production. Globalization and trade liberalization have weakened these traditional patterns of development to some extent, but there is little theory or evidence to suggest that today’s low-income countries, especially in Africa, can bypass the need for an agricultural revolution to successfully launch their economic transformations.

Within this context, small farm development offers an efficient and pro-poor option for agricultural development during the early stages of the economic transformation. However, small farms are seriously challenged today in ways that make their future precarious. Marketing chains are changing and are becoming more integrated and more demanding of quality and food safety. This is creating new opportunities for higher-value production for farmers who can compete and link to such markets, but for many other small farms, the risk is that they will simply be left behind.

Small farmers also face unfair competition from rich-country farmers in many of their export and domestic markets, and they no longer have adequate support in terms of basic services and farm inputs. And the spread of HIV/AIDS is fur-

ther eroding the number of productive farm-family workers and leaving many children as orphans with limited knowledge about how to farm. Left to themselves, these forces will curtail opportunities for small farms, overly favor large farms, and lead to a premature and rapid exit of many small farms.

If most small farmers are to have a viable future, there is need for a concerted effort by governments, nongovernmental organizations, and the private sector to create a more equitable and enabling economic environment for their development. This must include assistance in forming effective marketing organizations, targeted agricultural research and extension, revamping financial systems to meet small farm credit needs, improved risk management policies, tenure security and efficient land markets, and where all else fails, targeted safety net programs. In addition, the public sector needs to invest in the provision of basic infrastructure, health, education, and other human capital to improve market access and to increase the range of nonfarm opportunities available to small farm households, including permanent migration to urban areas. These interventions are possible and could unleash significant benefits in the form of pro-poor agricultural growth. The associated public investments could also more than pay for themselves in terms of their economic and social return.

### Conflicts of Interest

The author declares no conflicts of interest.

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