

# Households in Rural Africa Still Rely on Agriculture

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## Overview

Common wisdom: *Despite overall economic growth and its potential for household income growth, the role of nonagricultural income sources remains limited in rural Africa, with more rural households specializing in own-account agriculture compared with other regions.*

Findings:

- *About 90 percent of rural households in the nine African countries studied are engaged in agriculture. This compares with an average of 85 percent in 13 non-African countries.*
- *Rural African households derive two-thirds of their income from on-farm agriculture. Although this share is higher than the average in the other developing countries (33 percent), it is consistent with the gross domestic product of countries in Africa.*
- *Engagement in agricultural wage labor is limited in the region, typically contributing less than 5 percent of rural income. In the other countries, the corresponding rates are about twice as large.*
- *Income from nonfarm wage employment is 8 percent of total income on average in the African countries, compared with 21 percent elsewhere.*
- *For their level of development, rural households in Africa appear no less engaged in nonagriculture, with greater focus on nonfarm household enterprises than on nonagricultural wage employment.*
- *Higher-income households participate more in nonfarm activities, receive a greater share of income from them, and are more likely to specialize in nonagricultural wage activities.*
- *Proximity to cities and agricultural potential interact to influence decisions to specialize in nonagricultural activities, with patterns that differ across countries, and according to whether distance from large cities or small towns is considered.*

- *In some countries (such as Tanzania and Uganda), the combination of favorable conditions for agriculture and lower distance from secondary urban centers tends to create the conditions for more households to specialize in off-farm activities.*
- *If distance to larger cities is considered, the role of urban proximity in encouraging off-farm specialization is generally stronger, and at times higher in areas that are also more favorable for agriculture.*

Policy messages: *Agriculture remains the mainstay of Africa's rural livelihoods, particularly when agroecological conditions are favorable. Therefore, the following are the main policy conclusions:*

- *Inclusive growth requires improvements in agricultural productivity.*
- *Given differences across regions and countries and over time, one size of policy package does not fit all. An understanding of the interactions between spatial issues (agricultural potential and pull forces from small and large urban centers) and households' endowments and incentives is key to more effective policy design.*

### **The Issue: Is Africa Any Different?**

The body of literature developed over the past 20 years suggests that rural household income diversification is the norm rather than the exception, with some diversification off the farm common at all levels of economic welfare (Barrett, Reardon, and Webb 2001; IFAD 2011; World Bank 2008). Do these patterns also hold in Africa, a latecomer to the process of structural transformation? Conventional wisdom has it that rural households in Sub-Saharan Africa are primarily employed in agriculture, with little agricultural wage labor and even less nonagricultural wage labor due to limited industrialization. This study explores the patterns of income generation among rural households in Sub-Saharan Africa, and looks at how the strategies of households in the region compare with those in other regions, taking into account different levels of development. The study also seeks to establish how geography drives these strategies, focusing on the role of agricultural potential and proximity to urban areas.

### **The Analysis: Measuring Diversification**

#### ***The Data***

The analysis uses comparable income aggregates from 41 national household surveys in 22 developing countries spanning 1991–2012, as compiled in the Food and Agriculture Organization's (FAO's) Rural Income Generating Activities (RIGA) database. The RIGA database is constructed from a pool of several dozen surveys under the World Bank Living Standards Measurement Study (LSMS) and other multipurpose household surveys made available by the World Bank through a joint project with FAO. The most recent additions are six surveys from the Living Standards Measurement Study–Integrated Surveys on Agriculture

(LSMS-ISA) initiative. Each survey is representative of urban and rural areas, but only the rural sample was used for this study. Although it is not representative of all developing countries or all of Sub-Saharan Africa, the sample covers a significant range of countries, regions, and levels of development; it has proven useful in providing insight into the income-generating activities of rural households in the developing world.

The nine African countries included in the study—Ethiopia, Ghana, Kenya, Madagascar, Malawi, Niger, Nigeria, Tanzania, and Uganda—represent 51 percent of Sub-Saharan Africa’s population in 2012. Comparable protocols were followed to construct the occupational classifications and income aggregates (described in detail on the RIGA website). The georeferencing of the households in the LSMS-ISA surveys is exploited to analyze the role of geography in income diversification and specialization for a subset of countries.

### ***Describing Diversification***

Income is allocated to seven basic categories: crop production, livestock production, agricultural wage employment, nonagricultural wage employment, nonagricultural self-employment, transfers, and other. These categories are aggregated into several higher-level groupings, depending on the type of analysis. The first grouping distinguishes between “agricultural” (crop, livestock, and agricultural wage income) and “nonagricultural” (nonagricultural wage, nonagricultural self-employment, transfer, and other income) activities. In the second grouping, crop and livestock incomes are referred to as “on-farm” activities; nonagricultural wage and self-employment income as “nonfarm” activities; and agricultural wage employment, transfers, and other income are left as separate categories. Finally, “off-farm” activities are defined as including all nonagricultural activities plus agricultural wage labor.

Rural households employ a wide range of income-generating activities—although perhaps rural households in African countries are more dependent on agriculture than rural households in other countries are. The question remains whether households specialize in activities—with diversity in activities across households in the rural space—or whether households diversify income-generating activities. Income shares can be analyzed as the mean of income shares or as the share of mean income. In the first instance, income shares are calculated for each household, and then the mean of the household shares is calculated for each income category. In the second case, income shares are calculated as the share of a given source of income over a given group of households. Since the household is the basic unit of analysis, the study uses the mean of shares throughout. It examines the degrees of *specialization* and *diversification* by defining a household as “specialized” if it receives more than 75 percent of its income from a single source, and “diversified” if no single source is greater than that amount.

### ***Understanding Diversification***

To analyze the spatial patterns of income generation, a set of georeferenced variables from external sources is linked to the household-level data via their Global Positioning System attributes. This can only be done for the six LSMS-ISA

data sets (for Ethiopia, Malawi, Niger, Nigeria, Tanzania, and Uganda). The study features two important factors underpinning diversification:

*Agricultural potential.* The study uses an aridity index as a proxy for agricultural potential, which is defined as the ratio between mean annual precipitation and mean annual potential evapotranspiration (thus, a higher value of the index identifies wetter areas).

*Market access.* To proxy market access, the study takes the Euclidean (“as the crow flies”) distance to cities of 20,000, 100,000, and 500,000 inhabitants. This distance is independent of travel infrastructure, but provides a reliable measure of the spatial dispersion of households relative to urban populations.

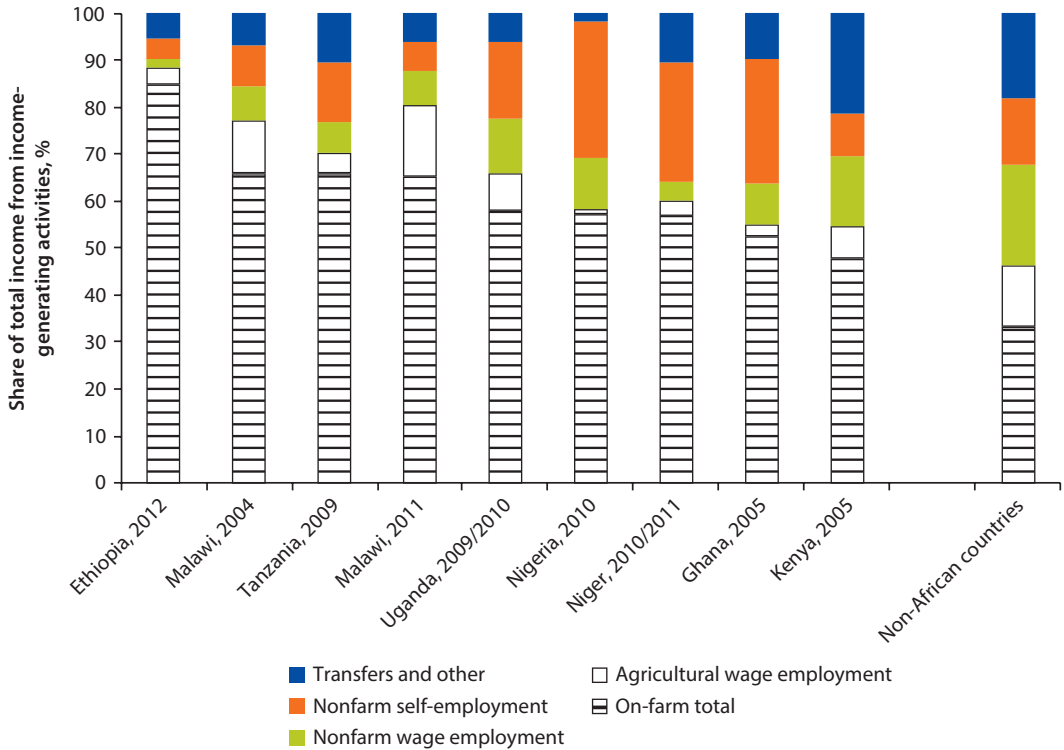
## **The Results: Agriculture Still Dominates in Rural Africa**

### ***Findings of the Study***

The study examines *participation* in various types of activities (given by the proportion of households participating in such activities) and the *share* of income obtained by activity. The study shows the following basic facts:

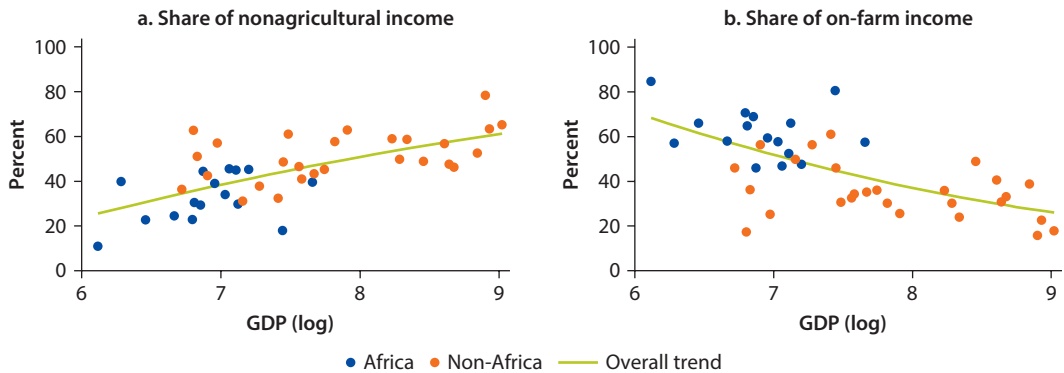
- First and foremost, nearly all the rural households in the sample countries are engaged in own-account agriculture. This is true in Africa (92 percent, on average) and in other regions (85 percent), even at higher levels of gross domestic product (GDP). It is difficult to overemphasize this result and its robustness across countries.
- Rural households also participate in nonfarm activities (nonagricultural wage labor and self-employment). The shares vary widely, ranging from 24 percent (Ethiopia and Nigeria in 2004) to over 90 percent (Bolivia in 2005). The simple mean nonfarm participation share for African countries is 44 percent, which is 10 percentage points less than for non-African countries. Among African countries, the highest share is in Niger (at 65 percent).
- The African countries show a marked tendency toward on-farm sources of income (agricultural income minus agricultural wages). They have higher shares of on-farm income (63 percent) and lower shares of nonfarm wage income (8 percent), compared with countries in other regions (33 and 21 percent, respectively). All the African countries in the sample earn at least 55 percent of their income from agricultural sources, reaching 80 percent in several countries (Ethiopia, Madagascar, Malawi, and Nigeria in 2004). Figure 8.1 provides details.
- Despite the fact that nonagricultural activities are ubiquitous in the African countries (70 percent participation), they still account on average for only about one-third of total earnings. Overall, the share of nonagricultural income among rural households increases with the level of GDP per capita (figure 8.2).

**Figure 8.1 Agriculture Dominates Everywhere in Rural Africa**



Source: Computations based on LSMS-ISA data.

**Figure 8.2 Sector Shares Vary by GDP Level**



Source: Computations based on LSMS-ISA and Rural Income Generating Activities (RIGA) data.

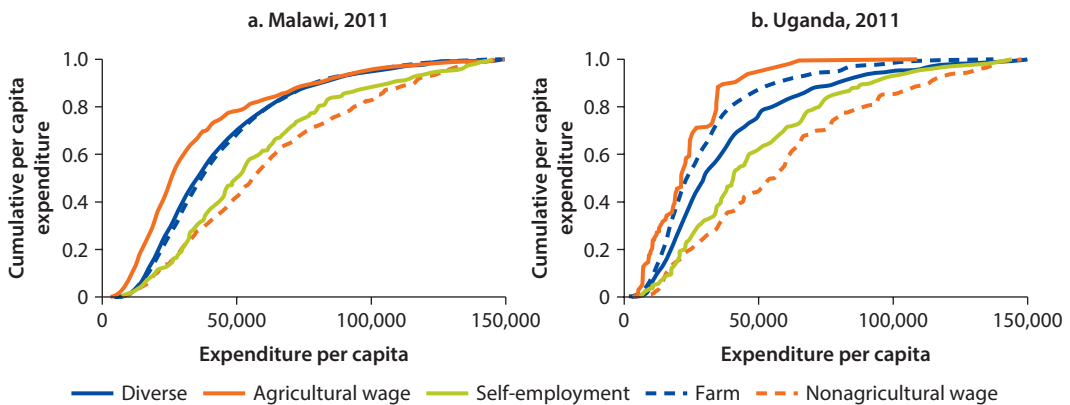
Among the African countries, the largest share of income from nonfarm sources is recorded in Nigeria (40 percent), and the lowest in Ethiopia (6 percent).

- An important difference between the African and non-African countries in the sample is the composition of nonagricultural income. Although the shares of nonfarm self-employment income are comparable across countries in the two groups (14–15 percent), the average share of nonfarm wage employment is generally much smaller in Africa, with a maximum level of 15 percent in Kenya in 2005, compared with an average of 21 percent in the non-African countries.
- Among rural African households, specialization in on-farm activities continues to be the norm—practiced by 52 percent of households on average. This ranges from one-third of households in Kenya to five-sixths in Ethiopia. This result is quite different from the non-African countries, where only about one-fifth of households on average specialize in farming. Most countries outside Africa—generally with higher levels of GDP—have a larger share of households with *diversified* portfolios (45 percent compared with 29 percent in Africa).

### ***Diversification, Specialization, and Household Economic Welfare***

The study examines the complex relationship between the economic well-being of a household and its diversification/specialization circumstances. The study compares the cumulative distributions of household consumption per capita for the different diversification/specialization groups. If the distribution of one diversification category “dominates” another, that group can be considered better off than the other. This analysis is undertaken for Malawi, Niger, Tanzania, and Uganda. Figure 8.3 reports the results for Malawi and Uganda.

**Figure 8.3 Nonagricultural Wage Workers and the Self-Employed Tend to Be Better Off; Agricultural Wage Workers Tend to Be Worse Off**



Source: Computations based on LSMS–ISA data for Malawi and Uganda.

Across all countries, specialization in nonfarm activities (that is, nonagricultural wage income and self-employment) stochastically dominates other household income-generating strategies in per capita expenditure. Nonfarm activities are followed by on-farm specialization and diversified strategies, and then finally agricultural wage labor, which is clearly associated with the lowest levels of welfare. Overall, these observations confirm the common finding in the literature that increased reliance on nonfarm income, particularly in wage employment, is strongly associated with higher levels of overall household welfare and lower likelihood of living in poverty.

### ***Does Geography Matter?***

The study investigates whether the location of a household has any bearing on its decision to diversify or specialize (box 8.1). The results are broadly consistent with the predictions of the theory. There is no sign of African households adopting income generation strategies that differ from those observed elsewhere in their relationship to basic exogenous determinants, such as agricultural potential and distance from urban centers.

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#### **Box 8.1 Does Location Affect Diversification?**

Much of the literature on rural income diversification in developing countries has sought to explain how asset endowments and barriers to entry tend to push or pull households into different activities. Location (or geography) may also be an important factor in determining income diversification decisions, but the literature is much more silent on this. Georeferenced information based on household location is available for the subset of Living Standards Measurement Study–Integrated Surveys on Agriculture countries in the data set (Ethiopia, Malawi, Niger, Nigeria, Tanzania, and Uganda). The study uses two dimensions of location derived from external data, linked to households via georeferencing:

*Aridity index.* Serving as a proxy for agricultural potential, the index is defined as the ratio of mean annual precipitation to mean annual potential evapotranspiration (a higher index indicates a wetter area).

*Distance to cities.* A proxy for market access, this variable gives the Euclidean (“crow-fly”) distance to cities of 20,000, 100,000, and 500,000 or more inhabitants.

The study analyzes the links between these location proxies and the household diversification strategy. Five specialization categories are identified: farm activities, agricultural wage, nonagricultural wage, nonagricultural self-employment, and other income/transfers.

*Results.* Nonfarm specialization is less likely the further the household is located from a town or city (especially a large one). But the interactions are more complex once the analysis takes other (often interacting) factors into account. The study focuses on two important nonfarm specialization strategies: nonagricultural wage specializers and nonagricultural self-employment specializers. For most countries and “sectors” of specialization, the role of distance changes markedly with agricultural potential and city size.

*box continues next page*

**Box 8.1 Does Location Affect Diversification?** *(continued)*

The findings speak to different dynamics when the role of small towns is considered and when large cities come into play. For small towns, high-potential, distant areas see less specialization in off-farm activities; the reverse is true for closer-to-town, low-potential areas. When distance increases and agricultural conditions are more difficult, the picture is mixed, with households more likely to engage more fully in nonfarm activities in Niger, but less likely to do so in Uganda and Tanzania. When distance to large cities is considered, its impact is generally more marked than in the case of small towns. In high- and low-potential areas, the impact of distance generally prevails, and nonfarm specialization is less likely. In both cases, however, there are instances (Tanzania and Ethiopia) that counter this broad pattern for at least some of the income specialization categories considered.

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**The Implications**

Although specialization in on-farm, income-generating strategies is the norm among rural households in the sampled African countries, the evidence seems to point to African patterns of household-level income diversification having the potential to converge toward patterns similar to those observed in other developing regions. Once the analysis controls for the level of GDP, the shares of income and participation in nonagricultural activities are not far from those found elsewhere. Nevertheless, agriculture-based sources of income remain critically important for rural livelihoods in all countries, in the overall share of agriculture in rural incomes and the large share of households that still specialize in agricultural and on-farm sources of income. What are the policy messages emerging from this analysis?

*Agricultural productivity improvements are needed for inclusive growth.* Even if long-run development entails exiting from agriculture, the orthodox conclusion that this transition needs to happen via investment in the sector, and not its neglect, is still valid today. It is unlikely that inclusive growth and poverty reduction can happen in rural Africa, where half the households specialize in agriculture, without productivity growth in the sector.

*Territorial development African style?* The spatial analysis shows how the constraints on off-farm specialization are likely to differ between high- and low-potential and high- and low-integration areas. The analysis also shows that small and large urban centers are likely to exert different influences on the transformation of the rural economy. These findings add complexity to the formulation of policies to promote rural nonfarm growth. However, the findings also testify to a series of trends that are not uncommon in other countries, and suggest that the African specificity in higher incidence of farming activities may be due more to a GDP-level effect than to a different response by households to the incentives and opportunities coming from agricultural and nonagricultural growth opportunities. The findings lead to the question why the “territorial development” discourse, which is part and parcel of the policy dialogue in Latin America and Europe, does not appear to get much traction in Africa. Greater attention to spatial



factors appears to have the potential to offer a richer policy menu than the traditional small/large farms, or agriculture/non-agriculture dichotomies.

## Additional Reading

### *This chapter draws on:*

Davis, Benjamin, Stefania Di Giuseppe, and Alberto Zezza. 2017. "Are African Households (Not) Leaving Agriculture? Patterns of Households' Income Sources in Rural Sub-Saharan Africa." *Food Policy* 67: 153–74. <https://doi.org/10.1016/j.foodpol.2016.09.018>.

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