



Rural-Urban Connectivity a Panacea to Innovative Food System Transformation, Economic Growth and Employment in West Africa: A Review

Agbonika Dora Aladi, Otitoju Moradeyo Adebajo, Alabuja Funsho Omolayo, *Opalla Wilson Afamefuna, Oloye Folayemi Abiodun and Ayoo Ikyura Jonathan

Department of Agricultural Economics, Faculty of Agriculture, University of Abuja, FCT Abuja, Nigeria.

*Corresponding authors' email: donwilson2k4@gmail.com

ABSTRACT

West Africa is experiencing rapid urbanisation, with urban populations projected to rise significantly in the coming decades. As food systems evolve, demand is growing for a wider range of products and processing techniques, placing pressure on rural farmers' capacity to supply this expanding demand. This review synthesises evidence from academic literature and policy documents to examine whether rural-urban connectivity is a genuine panacea for food system innovation, economic growth, and employment in West Africa. It explores the linkages between rural and urban communities including materials flow, ICT, market, labour and commodities. Drawing on case studies from some West African countries, the review finds compelling evidence that improved connectivity catalyses agricultural value chain upgrading, reduces post-harvest losses, lowers costs, and unlocks entrepreneurship among smallholder farmers. This review forms part of a broader study on strengthening food systems and developing economies within West Africa with a focus on the value chain for cereals, vegetables, livestock and root crops. Lessons from the literature highlight the need for innovative approaches and effective resource management to build robust systems capable of driving high-impact interventions. Such systems could generate new economic opportunities by raising income levels and creating jobs. Achieving this requires investments in secondary cities particularly through partnerships to establish telecommunication and digital infrastructures, alongside strengthened rural and urban value chains built on sustainable relationships. A multi-dimensional policy framework is essential for West African governments and development partners to harness connectivity as a lever for inclusive food system transformation.

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INTRODUCTION

The growth rate of urban population in West Africa is very high, and the effect on food preferences has been a marked increase in the consumption of ready-to-eat foods. Residents in urban areas consume a lot of rice, pasta, meat, fish, and processed food. In contrast, people in rural areas prefer yam, cassava, maize, and millet. The increase in food consumption is linked to urbanisation and the different dietary habits of these groups (Olawuyi, 2020). West Africa faces serious challenges, including food security, agricultural issues, and unemployment. The move to urban areas causes a shortage of labour for farming in rural regions (Olawuyi, 2020). Problems like poverty and food insecurity stem from a lack of markets and climate changes. Young unemployed people avoid agriculture and seek jobs in cities (Asante, 2023). Rural women face more challenges than rural men when trying to obtain farm supplies (Woodhill, Dijkman & Borman, 2022). Lastly, food imports from neighbouring countries have hindered rural development in West Africa (Amusan, 2019; Asante, 2023).

Rural-Urban connectivity emerges as a potential panacea, which concept encompasses physical infrastructure such as roads and transport networks, digital and mobile technologies that facilitate information and financial flows, market linkages that connect producers to consumers, and broader exchanges of knowledge, people, and services (Soma, Dijkshoorn-Dekker & Polman, 2021; UN-Habitat, 2025). When strengthened, these connections can shorten supply

chains, reduce losses, enable agro-processing in secondary cities, and support more responsive food systems, creating opportunities for remittances, skills transfer, and diversified rural livelihoods (the Alliance for a Green Revolution in Africa [AGRA], 2020; Woodhill et al., 2022).

Despite growing policy interest, the empirical literature on rural-urban connectivity in West Africa remains fragmented. The rural-urban connectivity as an instrument for food system transformation, economic development, and job creation is to be analysed based on the case of West Africa in the course of this review. Specifically, problems associated with rural-urban connectivity in West Africa, opportunities for the use of rural-urban connectivity to create new food systems, promote economic growth and development, and create jobs were considered in detail. Studies have tended to focus narrowly on specific modalities like road infrastructure, mobile telephony, or market information systems, without integrating these into a coherent conceptual framework. Special attention was given to the role of secondary towns and rural areas, as well as to selected value chains, namely cereals, horticulture, livestock, and roots/tubers.

In this paper, the theoretical background was analysed, and recommendations on actions were suggested. Moreover, it elaborated on connectivity problems and their connection to the processes of food system transformation, economic development, and job creation.

MATERIALS AND METHODS

Conceptual Review

Rural-urban connectivity refers to the multiple flows that link rural and urban spaces, including physical infrastructure such as roads and transport, digital and mobile technologies that enable information and financial exchanges, market linkages that connect producers to consumers, and broader movements of people, knowledge, and services (Soma et al., 2021; UN-Habitat, 2025). Rural-urban linkages build on these flows, encompassing migration patterns, remittances, multi-sited households, and the exchange of goods, labour, and ideas between rural production areas and urban consumption centres (Olawuyi, 2020; Asante, 2023).

However, several scholars criticize the tendency to portray rural-urban connectivity as a universal solution or “panacea” for food system transformation. Critics argue that connectivity alone cannot solve deep structural problems such as inequality, environmental degradation, weak governance, and nutritional insecurity within West African food systems (Fastner, Asare & Buerkert, 2025).

Nevertheless, several theoretical ideas help explain these dynamics; territorial development highlights how spatial networks and infrastructure can restructure rural and urban economies, fostering integrated growth rather than separation (Mercandalli et al., 2019). Value chain upgrading focuses on moving smallholders from subsistence production toward commercial activities by improving market access, processing, and quality standards, thereby raising incomes and creating opportunities along the value chain (African Development Bank [AfDB], 2016). There are urban women and urban men who have developed a relationship between the foods they consume and where they obtain that food; that is, the food they buy from outside the city decreases in direct correlation to the amount they produce inside the city. Secondary cities could assist in decreasing the time between purchasing foods and receiving food and/or decreasing the amount of food waste by improving access to consumers.

To transform our food system into an inclusive food system includes creating equal access to all members of our community (children, women, those living in poverty or otherwise vulnerable) so that everyone can participate to the greatest extent possible in the agricultural economy.

How do we accomplish this? This is a simple process with a general-purpose roadmap for achieving the goal of creating an inclusive food system in West Africa. There is a multitude of rural and urban connections to make, including improved roads, mobile phone networks and communication systems, market access, and information flow. The relationship that exists between rural and urban communities can be seen from producing at low levels of post-harvest loss, having limited value added to produce before being sold, establishing agricultural processing facilities in second tier cities, and using the application of appropriate technology to have parity between supply and demand (Sugri, Abudulai, & Mochiah, 2021).

Economic growth can be described as arising from profitability of the producer, higher disposable income for consumers, and international trade between Countries (Asante, 2023; Woodhill et al., 2022). Economic growth means that new jobs will be created in all sections of the agriculture industry — increased output from farms and beyond, as well as creating new economic opportunities for young people and women (AGRA, 2020; Olawuyi, 2020; Asante, 2023). West Africa-specific factors shape these pathways; high dependence on rain-fed agriculture, pronounced north-south differences in market access and infrastructure, rapid urbanisation alongside persistent rural

poverty, and significant youth migration all influence outcomes (Asante, 2023; the International Fund for Agricultural Development [IFAD], 2024; Olawuyi, 2020). Although remittances by migrant workers can enable investments in the rural areas, there is likely to be a decline in agricultural production owing to labor migration. This underscores the necessity for connectivity that does not harm the rural areas but benefits them. In this regard, it is important to understand that rural-urban connectivity is not an all-inclusive solution but is more effective when supplemented by other strategies suited to the context of West Africa.

Current State of Urban-Rural Connectivity in West Africa

The urbanisation process in West Africa is proceeding at an accelerated pace. The urban population is growing as people move from rural areas to cities. Right now, urban diets consist of cereals, bread, meat, and fish. Cities produce these foods and also serve as secondary centres for the population. The emergence of secondary cities reduces the distance between farming and food production, addressing the needs of urban areas. However, some secondary cities may not produce enough food. West Africa has weak infrastructure, leading to several problems.

In Nigeria—the region's largest economy—only 35 percent of federal roads are in good condition, and interstate roads serving food-producing states such as Benue, Kogi, and Kebbi are chronically deteriorated (NBS, 2021). In Ghana, while the Accra–Kumasi highway has been progressively rehabilitated, rural feeder roads in the Northern and Upper West Regions remain largely unpaved, increasing farmer-market travel times and reducing the commercial viability of perishable production. These gaps limit market access for smallholder farmers and fragment value chains, particularly in northern regions where poverty rates are higher, and food insecurity is more pronounced (Asante, 2023; Ghana Statistical Service [GSS], 2019). Rail freight, which offers cost advantages for bulk agricultural commodities, is virtually non-existent as an operational system in the region, due to weak management and corruption, with most colonial-era infrastructure having fallen into disrepair (AfDB, 2020). In contrast, some improvements in transport corridors have enabled limited cross-border trade and the movement of goods from rural production areas to urban centres, although inefficiencies persist (Mercandalli, Losch & Magrin, 2019). Digital and mobile connectivity offers a brighter picture but is uneven. Mobile phone penetration has risen significantly, supporting information flows, financial services, and basic market linkages (UN-Habitat, 2025; Losch & Magrin, 2016). Platforms that provide price information and facilitate buyer-seller matching have begun to emerge, helping some farmers reduce information asymmetry (Soma et al., 2021). However, rural areas still lag in internet access and digital literacy, creating a digital divide that restricts the full potential of these tools for smallholders (UN-Habitat, 2025). Electricity access also varies widely, with rural-urban gaps affecting cold chains and processing activities (United States Agency for International Development [USAID], 2016).

Market linkages have demonstrated mixed results. Still, while many rural households utilise short-term links to the market for food, recently there have also been significant developments in the transitional and modern linking mechanisms that supply urban areas with specific goods from rural-based suppliers. As an element of market connectedness, the informal sector is a critical part of linking products from rural suppliers to urban purchasers and has a major impact on the overall share of food sold between rural

suppliers and urban purchasers (Asante, 2023; Reardon et al., 2019). In secondary cities, there are multiple collection points for agricultural commodities and value-added products. However, there are significant challenges related to deteriorated storage infrastructures, ineffective logistical operations, and perishable commodities resulting from price fluctuations (UN-Habitat, 2025; Sugri et al., 2021). Additionally, rural-to-urban migration patterns impact these linkages; family members of rural families who migrate to work in urban centres regularly transfer money home in order to attract investments back into the area, which may affect the availability of labour for agricultural production (IFAD, 2024; Olawuyi, 2020; Mercandalli et al., 2019). In an area like

West Africa, there has been a transformational shift from a model based on traditional food systems with peasant farmers producing for their own subsistence into a new food system that is designed to serve urban centers (Woodhill & Asante, 2022). An example of the urban-rural connection is through market linkages, mobile penetration, internet access, migration, remittances, and transportation of goods; however, rural-urban connections do not address the disparities between the regions (GSS, 2019; Asante, 2023). There has been some progress, but there is still inadequate physical and digital infrastructure in both areas. Therefore, there is an urgent need to explore how enhancing urban-rural linkages can drive transformation in these regions.

Table 1: Selected Rural–Urban Connectivity Indicators for Key West African Countries (2025–2026)

Country	Market Linkage/Urban Food Integration (%)	Mobile Penetration (%)	Internet Access (%)	Remittances as Percentage of GDP (%)	Road Density/Rural Road Access	References
Nigeria	65% - 70%	80%	50% (2025)	Approximately 3.8% of GDP	Approximately 35% of rural access to urban roads	World Bank (2025), NCC (2025), KNOMAD (2025).
Ghana	70%	130%	70%	5.7% of GDP	52%	GSMA (2025), World Bank (2025)
Senegal	68%	115%	46%	10% - 11% of GDP	48%	World Bank & Migration Brief (2025).
Benin	55% - 60%	110%	36%	4.5% of GDP	40%	KNOMAD (2025), ECOWAS Report (2025).
Togo	Growing market	95%	35%	8% of GDP	42%	World Bank (2025), ECOWAS Digital Observatory (2025).
Burkina Faso	Moderate cross border market	Above 100%	28%	5.1% of GDP	32%	World Bank (2025), OECD (2025).
Mali	Weak market integration in remote regions	120%	33%	6.7% of GDP	30%	KNOMAD (2025), ITU (2025).

Rural-Urban Connectivity and Innovative Food System Transformation

The relationship between rural - urban areas in West Africa is subtly reshaping the ways in which food is delivered from farm to consumer. Improving the infrastructure of rural and urban areas leads to improved communication and market access as well as enhanced logistics. Improvements of these types will continue to have dramatic impacts on our food systems, reducing the barriers between rural farmers and urban consumers. As well, the formerly fragmented supply chain will now become more flexible, creative, etc. (UN-Habitat, 2025; Asante, 2023).

In addition, improvements in the infrastructure of rural and urban areas will result in greater connectivity through improving infrastructure leading to the reduction of post-harvest losses that occur due to poorly maintained rural roads. Farmers who cannot get their products to the urban market in a timely manner will either sell them at a low price to urban consumers or suffer significant losses. Farmers will also face significant losses as they experience not only time delays but also financial losses due to the perishable nature of certain products (e.g. fruit, vegetables, fish) due to poor rural road infrastructure connections. With the improvements in infrastructure leading to rural/urban road connectivity, farmers will be able to incur a lower cost and have a shorter timeframe to distribute their products to consumers in urban centres. As a result, urban centres (including large satellite cities) experiencing increasing levels of food demand will see the number of products distributed to their cities grow. Consequently, there is a new problem emerging from this process.

Using mobile phones with limited internet access is essential in providing farmers with timely information about market prices, weather forecasts, and how to connect with their

customers. The use of technology enables farmers to have knowledge of where to sell their crops and when (UN-Habitat, 2025). Using technology, farmers can sell their cereals and vegetables without relying on middlemen. Small scale sales are also possible through the use of technology (Soma et al., 2021). Additionally, rural connectivity provides opportunities for fishers living along the lakes and rivers to sell directly to cities (AGRA, 2020; Soma et al., 2021). It is therefore logical for producers in rural areas to be able to sell their products to consumers in urban areas of secondary cities because of enhanced connectivity which has led to the development of small scale agro-businesses in the vicinity of these secondary cities. Agro-businesses process raw agricultural inputs such as cassava and yam into finished products like yam chips and cassava chips (Asante, 2023; AGRA, 2020). Logistics services, including refrigerated transport and storage hubs, further reduce losses and support consistent supply, which is critical for building trust in modern value chains (World Bank, 2021).

Evidence for the shifts in practices can be seen in recent value chain analysis in West Africa. Some of the positive impacts of these developments include the enhanced infrastructure and the shortened value chains of horticulture and root and tuber crops (Woodhill et al., 2022; Sugri et al., 2021). Livestock and cereal prices have been stable throughout the season changes due to cross-border connectivity (Mercandalli et al., 2019).

One example of how technology-driven efficiency and investment in infrastructure, such as landing bays, will alter the value chain is in the fishery industry. The trade in fish will increase in urban, and not rural, areas (Soma et al., 2021). The growth of urban markets will be important for sustainability by cutting carbon emissions. Gathering information about the weather and market trends will help improve sustainable

agriculture (UN-Habitats, 2025). Agricultural processes will grow alongside new methods in urban markets. Waste from farms will turn into a source of energy for creating products and supporting animals within the economic cycle (Asante, 2023). Rural farmers may face challenges due to tough environmental and economic conditions. This could drive them to find new ways to develop and sell their products (World Bank, 2021; Woodhill et al., 2022). In conclusion, urban and rural markets will connect through logistics and innovation in the Western Africa Region.

Contributions to Economic Growth

The improvement of transportation and communication services of both rural and urban areas of West Africa will benefit the development of the West African economy through an increased linkage between the rural and urban areas. It would help them access urban markets. This would raise their product costs because transaction costs would decrease (Asante, 2023; Sugri et al., 2021). Gaining access to urban markets will lower transportation costs since transportation will be more efficient. Small-scale farmers can now reach urban markets even from different regions due to the growing demand for agricultural products. Poor transport infrastructure in northern Ghana has made it hard for them to sell their goods (Asante, 2023). In contrast, small-scale farmers in southern Ghana can sell their products easily because urban markets are nearby (Asante, 2023).

By developing connections between urban centres and various regions, we can break down physical barriers. It will become easier for interaction to take place between farmers, producers, and consumers (IFAD, 2024; Olawuyi, 2020). The rural population earns much more than the urban people due to agricultural activities. Consequently, they purchase more products from the agricultural and non-agricultural sectors (IFAD, 2024; Losch & Magrin, 2016; Woodhill et al., 2022). In turn, trade connectivity may increase through improved transport facilities and technology used in the trade of agricultural goods, reducing the need to import products (Asante, 2023; Losch & Magrin, 2016; Mercandalli et al., 2019).

The expansion of intermediary cities contributes to economic growth. Intermediate cities can be viewed as economic growth hubs and as centres for aggregating and processing merchandise, ensuring that merchandise is distributed properly (IFAD, 2024; Soma et al., 2021; UN-Habitat, 2025). The increases in household incomes and consumption levels in rural areas will directly impact the service and transportation sectors and will lead to the growth of small- to medium-sized enterprises (SMEs) in rural communities, translating into increased economic production (Woodhill et al., 2022). This impact depends largely on how connected the region is, which is important for the benefits mentioned above to be realised fully. This is because, without adequate road connections and digital connections, these benefits cannot be attained in places such as Northern Ghana (Sugri et al., 2021). For secondary cities to act as growth poles, infrastructure is needed. The following are some of the ways through which rural-urban linkages spur economic development in West Africa.

Contributions to Employment Creation

The increasing rural-urban connectivity in the agricultural value chain of West Africa influences the nature of employment generated. Perhaps the most prominent area of influence is in on-farm production processes. Better market access encourages farmers to invest in higher-yielding practices and commercial crops, thereby increasing labour

demand during planting and harvesting seasons (Asante, 2023; the Food and Agriculture Organisation [FAO], 2021). Nonetheless, more jobs are created in non-farm sectors. With better connectivity, supply chains get shortened, and processing plants are built closer to the source of production. Small agro-processing centers come up in secondary towns and rural communities. Many jobs exist as a result of connections assisting with the sorting, drying, milling, packaging, and first processing of agricultural goods, such as cassava, yams, tomatoes, and cereals (Woodhill et al., 2022; Asante, 2023).

The transportation sector is another major contributor to job creation. The improvements to the road network and increased urban demand for goods has resulted in more transport vehicles on the road. These transport vehicles are used to transport agricultural goods from rural to secondary towns, with significant numbers of trucks, motorbikes, and small transport businesses. Thus, given that the demand for additional drivers, packers, and mechanics in the transport industry appears to be growing, the majority of workers currently involved within the transport sector are young male workers who are seeking alternative sources of labour income away from agriculture (UN-Habitat, 2025; Sugri et al., 2021). Many young male users have begun using their mobile phones to create opportunities for providing cargo transport services using ridesharing arrangements (UN-Habitat, 2025). Due to improved connectivity, more value chain agricultural related service providers, including sales representatives, extension workers and mobile banking operators have access to additional financing resources to help open retail shops in rural areas (Olawuyi, 2020; Asante, 2023; FAO, 2021). The new networks provide a greater potential for earning a profit than previously available sources of earning income, as many of the new, small businesses created by availability of improved connectivity are able to be operated by women who are able to perform multiple tasks or duties at one time while caring for children and fulfilling other household obligations. Certain types of purchases (food and clothing) and spending on education and health will provide ongoing financial support for small businesses and employment related to the construction professions. Employment prospects are created by second-tier cities through their employment generation of supporting job foundations for new homes and distributing food products (Amusan, 2019; Woodhill et al., 2022). Additionally, there will be youth in their own countries who can find employment through paid jobs instead of migrating to city jobs. The youth will have the opportunity to sell their agricultural products and potentially value-add their products using online platforms and services (Olawuyi, 2020). Young people will be involved in creating value for their agricultural products, establishing micro-businesses and developing ornamental plant products.

The availability of good transportation systems and mobile banking facilitates enabling youth to sustain their livelihoods by granting them access to needed supports (Asante, 2023; Sugri et al., 2021). The potential of obtaining employment is uncertain in this case. Although there are numerous opportunities in logistics; value-added products, and services, most employment in these respective sectors is temporary, seasonal, and poorly compensated (Woodhill et al. 2022). Furthermore, the youth do not see any connection between the number of job openings and the types of skills they possess. Women also struggle when trying to gain access to credit facilities, own land, as well as participate in value chains (Olawuyi, 2020). However, simply having connectivity does not create productive jobs; there must be ability through capacity development and labour. The development of job

opportunities via value chains is positively affected by rural-urban connectivity. Employment opportunities arise from the agricultural, transport, and service sectors. It would appear that connectivity has the strongest impact on job creation within non-farming employment opportunities.

Barriers, Challenges, and Enabling Conditions

However, besides all the strengths, connectivity between cities and rural regions in West Africa has several disadvantages. To begin with, the problem of inadequate infrastructure should be mentioned. The presence of paved roads in rural communities leads to additional expenses and losses when harvesting agricultural crops (Sugri et al., 2021). Furthermore, the availability of electricity in rural areas is limited; thus, it is challenging to introduce innovations and implement cold chain solutions (Asante, 2023).

Secondly, an increase in connectivity in countries of West Africa is associated with the problem of the digital divide. Despite the widespread use of smartphones, weak Internet connections and a shortage of knowledge prevent individuals from using new communication techniques (Soma et al., 2021). Finally, the issue of inadequate governance needs to be considered. The lack of coordination between sectoral policies and cooperation among multiple nations hinders the successful implementation of projects (Woodhill et al., 2022). Also, it is necessary to discuss further aspects of gender problems. In northern Nigeria and parts of Mali and Niger, social and cultural practices severely limit women's ability to exploit new market opportunities created by infrastructure development like roads, even when those women are the primary producers of surplus commodity outputs. The absence of access to mobile equipment, transport opportunities, and information about the market is the aspect that female farmers face (Olawuyi, 2020). It is necessary to pay attention to the role of climate change as well. Negative consequences from the influence of climate change on the infrastructure and transport system are associated with unstable precipitation (Asante, 2023; Sugri et al., 2021). The Sahel region is experiencing increased desertification, and seasonal flooding in river basins such as the Niger, Senegal, and Volta regularly disrupts road access links between production zones and consumption centres.

Different approaches can be applied to deal with this problem. Policy coordination is one of them. Policies of transport facilities, technological development, agricultural development, and urban development should be coordinated to achieve connectivity (UN-Habitat, 2025). Public-private partnerships should also be considered as an important approach because they unite government funding and business experience regarding infrastructure and technologies (UN-Habitat, 2025). There is a need for investments in secondary cities because they play a key role in connecting rural and urban areas in developing countries (Soma et al., 2021; Asante, 2023). We can achieve equal opportunity by tackling issues of digital literacy and gender inequality. This requires investments in education, support for women's use of technology, and community resources that help improve women's cycle times (Olawuyi, 2020). We will build resilient infrastructures and use technology to create early warning systems that lower risk levels (Sugri et al., 2021). There are many ways to enhance connectivity between urban and rural areas in West Africa. To succeed in this project, we need to consider various elements related to infrastructure, digital technology, governance, gender, and climate change.

Discussion

The evidence reviewed suggests that rural-urban connectivity holds considerable promise as a mechanism for transforming food systems, driving economic growth, and creating jobs in West Africa. By developing roads, using technology at a greater scale, improving market linkages and making logistics more efficient, we will see a reduction in the amount of food lost after harvest, reducing the length of supply chains, making it easier for small-scale farmers to bring their products to market, and creating jobs related to manufacturing, logistics and services (UN-Habitat, 2025). The secondary city serves as an economic hub, connecting the agricultural products from rural communities to urban areas. This city is marked by high incomes and trade between regions (Asante, 2023; Soma et al., 2021). Some benefits of this theory include its clarity. Connectivity helps address many challenges.

First, connectivity can help solve these issues. Farmers in rural areas with Internet access will work more efficiently than before. As a result, the prices of their agricultural products will go up. This connectivity can also generate jobs for young people and women. Residents in rural areas might grow their economies without relying solely on agriculture, using technology (Woodhill et al., 2022). Technology can tackle several challenges. It may improve market access for farmers in rural communities, enhance the value chain, and create job opportunities for women and youth (Olawuyi, 2020; Asante, 2023). The use of technology could lead to economic growth in rural areas, especially where the economy is focused on non-agricultural products (Woodhill et al., 2022).

The notion that technology would fix everything at once is inaccurate. There are many issues related to technology, such as infrastructure, unequal access to technology, governance issues, and gender inequalities. This paper highlights the impact of connectivity on applying inclusive rural development theories and improving the food value chain in West Africa. Relevant topics that should be considered are the influence of secondary cities on digital and physical migration flows. It is important to consider how transportation, ICT and agriculture policies will create a holistic picture of territorial development. This is why decision making should be based on geographies that support decision making. The current research has many limitations when it comes to examining long-term effects of connectivity projects on employment and food security.

CONCLUSION

The link between the rural and urban regions is one of the best ways through which the transformation of food systems, economic growth, and job creation in West Africa will be achieved. Through enhanced logistics, infrastructure, information, and markets, the link minimizes post-harvest losses, chain length, and enables small-scale production and processing of produce near the secondary towns. It is in such places that job opportunities can be created. The secondary towns are important where economic growth is concerned. They provide a linkage between agricultural products and urban centers as well as funnel money into the rural areas. Improved connectivity will lead to enhanced market access, higher productivity, and job creation for youth and women seeking off-farm employment. The review shows that without deliberate action, existing gaps in infrastructure, digital access, governance, and gender equity will continue to limit potential gains.

Practical recommendations can help translate this potential into reality.

- i. Governments should prioritise integrated territorial planning that coordinates transport, digital, and agricultural investments, with a clear focus on secondary cities and rural hinterlands.
- ii. The Economic Community of West African States (ECOWAS) can support cross-border connectivity initiatives, harmonise standards for digital market platforms, and facilitate regional trade corridors.
- iii. Donors and development partners should channel funding toward public-private partnerships that combine infrastructure development with digital literacy and skills programmes, particularly those targeting women and youth.

To help bridge the gap between rural and urban sections in West Africa, agribusinesses, tech companies, and other private-sector employers can play a major role by investing in delivery solutions; investing in cold chain storage; and providing end-user technology that is easy to use.

REFERENCES

- AfDB. (2016). *Agricultural growth in West Africa: Market and policy drivers*. African Development Bank. [https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Agricultural Growth in West Africa - Market and policy drivers - OSAN.pdf](https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Agricultural_Growth_in_West_Africa_-_Market_and_policy_drivers_-_OSAN.pdf)
- AGRA. (2020). *Africa agriculture status report 2020: Feeding African cities*. Alliance for a Green Revolution in Africa. <https://agra.org/wp-content/uploads/2020/09/AASR-2020-Feeding-African-Cities.pdf>
- Amusan, L. (2019). Rural development as a panacea for rural–urban migration in Nigeria. *African Journal of Hospitality, Tourism and Leisure*. <https://medcraveonline.com/AHOAJ/rural-development-as-a-panacea-for-ruralndashurban-migration-in-nigeria.html>
- Asante, B. O. (2023). The impact of urbanisation on food systems in West and East Africa: Opportunities for rural livelihoods. *Food Security*. <https://doi.org/10.1007/s12571-021-01217-0>
- ECOWAS Digital Observatory. (2025). *ICT indicators*. <https://ecodob.ecowas.int>
- ECOWAS Reports. (2025). *Regional trade & agricultural market data*. <https://ecowas.int>
- Fastner, K., Asare, K. Y., & Buerkert, A. (2025). Rural–urban land and food system changes in West Africa. *iScience*, 28(12), 114007. <https://www.sciencedirect.com/science/article/pii/S2589004225022680>
- Food and Agriculture Organization of the United Nations. (2021). *The state of food and agriculture 2021: Making agri-food systems more resilient to shocks and stresses*. <https://openknowledge.fao.org/server/api/core/bitstreams/dabb6337-e539-40fd-9ac5-d9fdd37009bf/content>
- Ghana Statistical Service. (2019). *Ghana living standards survey round 7*.
- GSMA. (2025). *The mobile economy Africa 2025*. <https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-economy/africa/>
- Hanna, K., Imogen, B. H., & Navin, R. (2025). How cities source their food: Spatial interactions in West African urban food supply. *Food Security*. <https://doi.org/10.1007/s12571-025-01518-8>
- International Fund for Agricultural Development. (2024). *Rural development report: Rural–urban migration and food systems in West Africa*. <https://www.ifad.org/documents/48415603/49745305/RS73-formatted-web-v3.pdf>
- International Telecommunication Union. (2025). *ICT statistics*. <https://www.itu.int/ITU-D/Statistics>
- KNOMAD. (2025). *Remittances data*. <https://www.knomad.org/data/remittances>
- Losch, B., & Magrin, G. (2016). *Rural–urban linkages and food systems in West Africa*. OECD/SWAC. https://www.oecd.org/en/publications/2018/04/disentangling-urban-and-rural-food-security-in-west-africa_2af39a62.html
- Malabo Montpellier Panel. (2021). *Food systems report*. https://www.mamopanel.org/media/uploads/files/MaMo_Panel_food_systems_report_July_2021.pdf
- Mercandalli, S., Losch, B., & Magrin, G. (2019). Rural–urban linkages and food systems in West Africa. In *Rural–urban linkages and food systems in West Africa*. OECD/SWAC.
- Nigerian Communications Commission. (2025). *Subscriber/penetration statistics*. <https://www.ncc.gov.ng>
- Organisation for Economic Co-operation and Development. (2025). *Infrastructure in Africa*. <https://www.oecd.org>
- Olawuyi, S. O. (2020). Assessment of rural–urban migration decision effect on agrarian transformation and food sovereignty: Sub-Saharan Africa experience. *Academy of Agriculture Journal*. <https://www.abacademies.org/articles/assessment-of-ruralurban-migration-decision-effect-on-agrarian-transformation-and-food-sovereignty-subsaharan-africa-experience-9648.html>
- Reardon, T., Tschirley, D., Liverpool-Tasie, L., Awokuse, T., Fanzo, J., & Boughton, D. (2021). The processed food revolution in urban Africa and the role of urban–rural connectivity. *Food Policy*.
- Soma, K., Dijkshoorn-Dekker, M., & Polman, N. (2021). The role of urban–rural connections in building food system resilience. *Ecology and Society*, 26(3), Article 28. <https://doi.org/10.5751/ES-12345-260328>
- Sugri, I., Abudulai, M., & Mochiah, M. B. (2021). Post-harvest losses in West Africa: Causes and solutions. *International Journal of Post-harvest Technology*.
- TS2 Tech. (2025). *Internet access in Niger: Broadband, mobile and satellite overview*. <https://ts2.tech>
- United Nations Human Settlements Programme. (2025). *Digital technology and innovative solutions for sustainable urban-rural development*.

https://unhabitat.org/sites/default/files/2025/08/digital_technology_and_innovative_solutions_f.pdf

Woodhill, J., Dijkman, J., & Borman, G. (2022). *West African food system resilience: A review*. Wageningen University & Research/KIT. https://www.kit.nl/wp-content/uploads/2021/04/west_african_food_system_resilience-wageningen_university_and_research_543127.pdf

World Bank. (2021). *A blueprint for strengthening food system resilience in West Africa: Regional priority intervention areas*.

<https://documents1.worldbank.org/curated/en/159271620852988135/pdf/A-Blueprint-for-Strengthening-Food-System-Resilience-in-West-Africa-Regional-Priority-Intervention-Areas.pdf>

World Bank. (2025). *Migration and development brief*. <https://www.worldbank.org>



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