

Department of Animal Science

Rural Poultry Farming in Zambia: Challenges Blended with Opportunities

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There has been tremendous growth in the size of the world's population in the last half century. Global population was around 3 billion in 1960, increasing to 5 billion by 1987 and 7.6 billion by 2018. By 2050, global population is expected to reach nearly 10 billion (World Bank, 2019). Population growth varies greatly across regions of the world. Since 1960, the largest relative growth has taken place in Sub-Saharan Africa (SSA). The population of SSA is projected to grow 10-fold between 1960 and 2050 (World Bank, 2019). In SSA, incomes are rising, and there is a growing middle-income class, along with increasing and rapid urbanization. These trends are expected to induce further changes in the structure and functioning of food systems, with increased demand for processed agricultural products and agricultural raw materials from rural areas (Reardon et al., 2013). Increasing evidence continues to indicate that food consumption patterns are changing, with an increasing preference for cheaper and processed white meat and a declining share of cereal grains in the total food budget in line with Bennet's law, which states that as household income rises, people tend to shift from consuming grains and increase their intake of animal-sourced protein (Tschirley et al., 2013; Chisanga and Zulu-Mbata, 2018). This, in part, has made poultry the fastest growing segment of livestock production globally (Mbuza et al., 2017). Although, despite the noted global growth within the poultry sector, its growth rate in African countries is low compared to the other parts of the world (Nkukwana, 2018).

Poultry Sector Growth

In SSA where food production is a challenge, rural poultry offers an affordable way of farming for many smallholder individuals. When birds are kept on a small scale (usually in numbers less than 100 birds), and primarily meant for domestic consumption, or when birds are meant for sale but reared with minimal resources, it is often referred to as rural poultry production (Sonaiya, 2007; Akinola and Essien, 2011). The rural poultry sector includes indigenous poultry (chickens, ducks, guinea fowl, pigeons, etc.) that mostly scavenge for feed with limited provision of housing, management, nutrition and disease/parasite control. Indigenous poultry production is common in rural communities across Zambia (Songolo and Katongo, 2000; Copland and Alders, 2009; Bwalya and Kalinda, 2014). This popularity is due largely to the low initial investment

required and the purported resistance of indigenous poultry to some poultry diseases (Copland and Alders, 2009). Additionally, indigenous poultry enterprises are more popular among socially disadvantaged groups like widows and orphaned children whose numbers are high in the region because of the Acquired Immune Deficiency Syndrome (AIDS) pandemic (Mutenje et al., 2008; Simainga et al., 2011).

The poultry industry has exhibited rapid growth in many SSA countries in recent years (Samboko et al., 2018). In Zambia, for example, the poultry industry comprises two complimentary and essential players: the commercial poultry industry and the indigenous chicken (IC) sector (Kanyama et al., 2024). The former is run primarily by private business establishments that have invested heavily in Zambia's commercial chicken industry over the past three decades. For example, Zambeef and its partners invested over 95 million US dollars, which contributed to the over 100 percent increase in annual production of day-old chicks (DOCs) to 65 million from 27 million in 2005 (Bagopi et al., 2014). The rapid changes in the poultry industry increased investments by integrated and standalone poultry breeders, resulting in the rapid expansion of the commercial poultry sector in Zambia. According to the Poultry Association of Zambia (PAZ), breeding companies introduced new chicken breeds and modern breeding technologies, creating employment opportunities and efficiency in the sector, which now has the capacity to produce over 88 million DOCs annually (PAZ, 2023).

As a result, consumption demand has also increased and now stands at 9.2 kg per capita (Samboko et al., 2018). Growth has triggered expansion by local and multinational firms in both animal feed and poultry production. The nature of the expansion is such that some of the primary producers of poultry breeding stock and DOCs have also invested in animal feed production. Given that poultry firms are primarily responsible for large investments in animal feed, it's not surprising that 65 to 70 percent of produced animal feed in Zambia is for poultry (Samboko et al., 2018). Investments in the poultry industry have increased competition among industry players, and this has benefited consumers as the quality of produce has increased—especially among firms that initially produced lower quality feed (Samboko et al., 2018). During the expansion period, some small-scale farmers (SSFs) attempted to participate in producing commercial chickens at sizes proportional to their resources (Kanyama et al., 2024). This change redefined some SSFs from their traditional ways of rearing ICs (FAO, 2014). Extension services have an opportunity to assist in expanding rural poultry production in Zambia and across SSA and should pursue every occasion to do so.

Lack of Extension Services

Unfortunately, Extension service's investment into enhancing production in the rural poultry sector of developing countries like Zambia is low (Mubamba et al., 2018). This is partly because governments may believe funding other enterprises such as beef and dairy production provides greater financial gain than poultry (Mwacalimba, 2012). In addition, the male-dominated African society traditionally believes funds spent on large livestock (which traditionally belong to men) is a better investment (Mwacalimba and Green, 2014) than poultry (often owned by women and children). Therefore, little work has been undertaken by Extension services in countries like Zambia to evaluate the Extension needs of the rural poultry sector, which could help enhance and facilitate dialogue between service providers and farmers (Mubamba et al., 2018). Taking advantage of the fact that over 70 percent of rural households in the region keep poultry, enhancing Extension providers and services in the rural poultry sector would tap into the

potential it has in increasing household and food security among resource constrained households.

Farmers who are considering rural poultry production often require assistance with financial analyses to decide what kind of production system would best suit their needs. Financial analyses like gross margin and break-even analysis would inform farmers of the potential return on investment as well as how much product they need to produce for them to see a profit in the production system they choose (Malcolm et al. 2005; McCown, 2005). Farmers would then be able to choose whether to enter IC, broiler or layer production depending on the availability of labor, materials and financial resources. However, without this knowledge, most rural poultry farmers in countries like Zambia maintain their birds without realizing whether they are making a profit or not. Complicating the situation is the problem of losses in poultry production that may be masked by income obtained from other sources like crop production and gardening that may run concurrently within farming households thus creating a false impression of profits from the rural poultry enterprise (Mubamba et al., 2018). This knowledge gap among rural poultry farmers is one of the main challenges that should be addressed by Extension personnel using participatory approaches that stimulate interest and ensure full implementation by farmers. The Extension participatory approaches should focus on the expressed needs of farmers' groups and aimed at improving the quality of rural life, and whose implementation is decentralized and flexible (Fig. 1.) (Bawuro et al., 2023).



Fig. 1. Participatory Extension Approaches. Adapted from: <https://www.slideshare.net/slideshow/participatory-approaches-manjuprakash/170092269>. No Date.

Indigenous poultry sector

With regards to ICs, the informal sector and backyard poultry producers are essential aspects of food systems in Zambia, as they account for over 75 percent of the poultry market in Zambia (Hichaambwa, 2012; Harrison et al., 2024).

According to ZAMSTAT (2023), Zambia is expected to produce 105 million broilers in 2026, a 7.4 percent increase in broiler production from 97 million broilers in 2025. Over 86 percent of broilers in Zambia are produced under small-scale production, primarily in backyard settings (ZAMSTAT, 2022), mainly within the living compounds (Liswaniso et al., 2025). The major commercial strains of broilers in Zambia are Cobb 500, Ross 308, and Indian River.

Backyard poultry production is becoming very popular mainly due to its ability to contribute to society's nutritional and socio-economic well-being by providing alternative affordable protein sources, employment and incomes (Elkhoraibi et al., 2014; Correia-Gomes and Sparks, 2020; Kumar et al., 2021).

However, despite its value and potential as a significant contributor to food security, rural broiler production (Fig. 2) faces numerous challenges, such as disease outbreaks and poor market linkages (Singh et al., 2022). In addition, most backyard broiler producers lack basic knowledge of management practices, biosecurity and health management, posing a more significant risk for zoonoses that could compromise food safety and pose a health risk for humans (Liswaniso et al., 2025).



Fig. 2. Rural poultry production – challenges with opportunities. Source: Tom Tabler.

The IC sector has always been suitable and appropriate for SSFs due to the negligible resources required to start (Dolberg, 2007; FAO, 2023). Producing ICs with sustainable low-input and low-output components have significantly contributed to rural livelihoods in Zambia (Kanyama et al., 2024). Over 80 percent of SSF in the IC sector have thrived by keeping ICs that require low or negligible inputs, especially under free-range or semi-intensive systems (Gue, 1998; 2000; Alders and Pym, 2009; Bett et al., 2013). This is consistent with the prevailing roles of ICs in most parts of SSA (Grace et al., 2024; Gue, 1998; 2000). A 2022 livestock census by the Ministry of Fisheries and Livestock reported over 21 million indigenous chickens owned by over 1.6 million households (ZAMSTAT, 2022). The ease of producing ICs will likely attract more participants to the IC sector in Zambia (Kanyama et al., 2024). Increased farmer participation will result in the increased contribution of IC farming to household incomes. In addition, the higher prices obtained for ICs and products will further open more opportunities for SSFs in the country (PAZ, 2023).

Smallholder Poultry Role

Smallholder poultry production plays an important role across Africa, especially SSA, providing numerous critical benefits. It serves as a source of income and livelihood for small-scale farmers, particularly women and youth, contributing to poverty reduction and economic empowerment (Grace et al., 2024). It contributes to food and nutrition security, as poultry products are a valuable source of animal protein and essential micronutrients. In addition, smallholder poultry

farming is often more environmentally sustainable compared to larger commercial operations as it utilizes local resources, requires less infrastructure, has a lower carbon footprint, and indigenous poultry breeds are more resilient to extreme weather events (Wong et al., 2017). Poultry population density is highest in coastal West Africa, Ethiopia, the Great Lakes region and Southern Africa (Fig. 3). Smallholder poultry comprises up to 80 percent of poultry stocks in SSA but only around 50 percent of meat consumption (De Bruyn et al., 2015). Many poor households in Africa rarely eat poultry products. In rural Tanzania, most households consumed chicken only on special occasions, while eggs were eaten only occasionally or never (De Bruyn et al., 2018). In Ethiopia, typical low-income urban households ate chicken about once every three months (Amenu et al., 2021). In Kigali, the capital of Rwanda, only about 0.8 percent of households prepared chicken dishes on a weekly basis (Niyonzima et al., 2016). Poultry meat is recognized as a healthy source of protein, and the older, firmer, and more flavorful meat of indigenous birds commonly kept by smallholders is often preferred by African consumers and commands a price premium (Grace et al., 2024). Eggs are important sources of choline, vitamins and high-biological-value protein. A 50-gram edible portion of egg provides nearly half the recommended daily allowances of protein for children 1-3 years of age, including all essential amino acids (Yalcin, 2013).

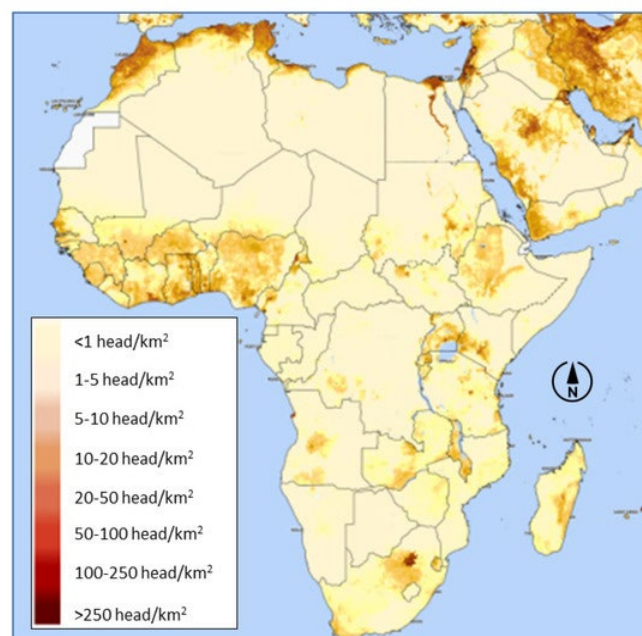


Fig. 3. Chicken density in Africa. Source: Grace et al., 2024.

Unfortunately, smallholder poultry production and the current and potential future benefits of poultry products to food and nutrition security face significant challenges in SSA due to various poultry health problems (Pym and Alders, 2016). Diseases, particularly Newcastle disease and infectious bursal disease (Gumboro), are consistently identified as the primary constraints within the sector (Sambo et al., 2015). This contrasts with high-input commercial-type systems, where feed costs are the dominant factor. Diseases contribute to reduced productivity, manifested as decreased output per unit of input, and can result in morbidity and mortality, leading to a complete loss of production and production assets. Disease remains an enormous source of loss in smallholder poultry systems across Africa jeopardizing commercial production throughout Africa. Potential solutions exist and there have been successes in some areas; however, many African countries lack sustainable and scalable solutions needed to support and develop the smallholder poultry systems which dominate the continent's poultry sector (Grace et al., 2024).

Summary

The rural poultry sector continues to expand and contributes to the food security and livelihoods of rural communities across Zambia. Indigenous chickens play a critical and essential role in the food supply chain. The indigenous and commercial chicken sectors complement each other in

providing food and nutritional security across Zambia. In particular, IC have been challenged by poor management, housing and disease control. Additionally, increased costs of live inputs, feed and feed ingredients hinder or restrict involvement of some small-scale producers that may have an interest in the poultry sector, especially the commercial poultry sector. Fluctuations in the production and availability of grains such as maize (corn), soybeans, and sunflower are responsible for increased feed and feed ingredient costs. However, increasing consumer demand for indigenous chicken meat and eggs has the potential to turn the production of ICs into a lucrative business for rural farmers. Although, to fully take advantage of the IC sector's potential, rural farmers need technical assistance through Extension services and access to financial support by making loans more accessible. Extension services should utilize opportunities and knowledge gaps to set targets during planning, implementation and monitoring of their rural poultry Extension programs to focus on long-term rural poultry expansion and enhance program delivery to the rural poultry sector.

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