

Poultry Extension Personnel Needed across East Africa



Most farmers across East Africa consider indigenous scavenging chickens an insignificant secondary occupation as compared to other agricultural activities because of low productivity (meat and eggs) from these birds. However, contributions of traditional indigenous poultry to national egg and meat production in many African countries are significant, as they supply most of the meat and all of the eggs in outlying villages/rural areas and 20 percent of demand in urban and peri-urban areas (Melewas, 1989; Minga et al., 1996).

Rural people in developing countries rely on poultry for their livelihoods (Alders and Pym, 2009). Poor households with little or no poultry training often keep indigenous chickens that require minimal inputs in terms of feed, housing, and disease management (Lindahl et al., 2019). However, **the need is great for trained poultry Extension personnel** across East Africa to address gender, disease, and commercialization issues that plague the region and hinder agricultural productivity and development.

Gender

Gender is an important issue across East Africa. Among the numerous reasons for the underperformance of women in agricultural production is their limited access to resources, including Extension programming. This is exacerbated by discrimination resulting from customary laws and institutions in the areas of inheritance and property rights (Meinzen-Dick et al., 2014).

Devoting Extension programming to women smallholder farmers and introducing policies to close the gender gap in African agriculture could produce substantial benefits for women and their families. Reducing the gender gap **could alleviate poverty and increase food security** for the growing population across Africa (Agholor, 2019); an area that is projected to account for more than half of global population growth between now and 2050 (U.N., 2020).

The Food and Agriculture Organization (FAO, 2009) reported that a large percentage of poultry farmers are women, because **men have the perception that poultry farming is of little significance** and not befitting men's efforts. Therefore, women smallholder farmers play a significant role in poultry production and, as a result, poultry contribute directly to household food security and the well-being of children. Almost 43 percent of the labor force in sub-Saharan Africa's agricultural sector is made up of women (FAO, 2011), and women invest more in the family than their male counterparts (World Bank, 2012).

Poultry Commercialization

Meat consumption globally has increased by an annual average of almost 2 percent over the past decade (BFAP, 2018). As the most affordable animal protein source, poultry has overtaken pork as the most consumed meat globally (BFAP, 2018) (**Figure 1**). Poultry production globally is highly concentrated, with the U.S., Europe, China, and Brazil accounting for 62 percent of global production volumes. By contrast, the entire **sub-Saharan Africa region accounts for less than 3 percent of world poultry production**.

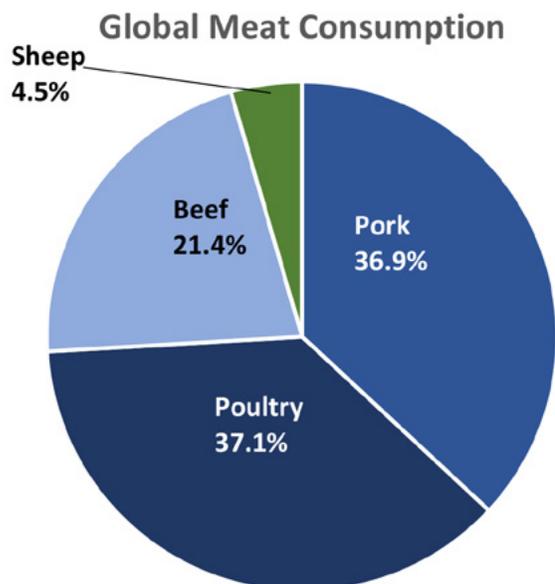


Figure 1. Contribution of specific meat types to global consumption. Adapted from BFAP (2018).

As an example, the African Chicken Genetic Gains baseline survey indicated the mean chicken flock size per household in Tanzania to be 27 chickens, with 94 percent of households having experience of providing supplementary feeding to their chickens at some time during the year (Alemayehu et al., 2018). However, chickens are often left to find their own sustenance, and thus have regular contact with common disease paths, including other chickens, contaminated water, rodents, wild animals, free-flying birds, insects, and contaminated feed (FAO, 2015).

There is an urgent need for qualified Extension personnel to **assist a fledgling commercial poultry industry** in several African countries. Programming areas that must be addressed include disease control and recognition, vaccination, poultry husbandry, nutrition,

biosecurity, and best management practices. In East African countries such as Kenya, Uganda, and Tanzania, commercialization of the poultry sector is lagging for a variety of reasons:

- unorganized markets for poultry and poultry products;
- disease outbreaks and lack of an adequate cold chain to protect vaccines;
- lack of a consistent and affordable feed supply;
- unreliable supply of day-old chicks;
- inadequate number of trained Extension workers;
- inadequate veterinary services;
- lack of processing facilities;
- unorganized marketing and distribution system; and
- lack of adequate cold chain to move poultry and poultry products from farm to table.

In addition, **marketing indigenous chickens is quite complex**, and there is not a clear supply chain because **indigenous chicken farmers are fragmented** and quite unorganized (Ringo and Mwenda, 2018). There is also a preference for purchasing live birds instead of processed poultry. Again, there are no standards for local chicken meat, so supermarkets hesitate to stock dressed local chickens because of the high variation in quality.

A lack of private investment in the establishment of grandparent, parent, and day-old chick production hatcheries hinders expansion of commercial poultry production (Da Silva et al., 2017). As a result, about 70 percent of chicken breeds in Tanzania are low yielding, in terms of both egg and meat production. An indigenous hen produces fewer than 50 eggs per year and wastes much time brooding chicks throughout the year (Ringo and Mwenda, 2018). In addition, indigenous chickens grow slowly and attain a much lower mature weight compared to commercial breeds.

Also lacking is public investment in research and Extension personnel and outreach projects to improve productivity of indigenous chickens. These challenges make it difficult to tap the huge potential that poultry industry commercialization offers for East African countries such as Kenya, Rwanda, Tanzania, and Uganda.

The FAO (2015) reports that, in Tanzania, in order to increase the quantity and improve the quality of poultry products, satisfy demand, increase exports, and promote sustainable poultry production, the official policy is to—

- support and strengthen technical support services and use of emerging technologies in poultry production;
- promote evaluation and selection of indigenous poultry breeds;
- promote investment in poultry production, processing, and marketing;
- encourage establishment of quality breeding farms and hatchery facilities;
- promote improvement of the genetic potential of the indigenous flock in order to increase productivity; and
- create awareness and promote establishment of producers' and traders' associations.

However, without research and Extension outreach efforts specifically geared toward these goals, progress is painstakingly slow. Through outreach programs,

agricultural Extension services are designed to disseminate research findings to women smallholder farmers and others, thereby enhancing agricultural development to meet the needs of a growing population.

Unfortunately, this rarely happens because of a **severe shortage of Extension workers** that results in poultry Extension messages, particularly in rural areas, not reaching most women smallholder farmers that manage poultry flocks (Hassan et al., 2012). In addition, in some countries, the ability of female Extension workers to contact male farmers is restricted (FAO, 1984).

Disease Challenge

Poor-household **poultry flocks are especially at risk for disease outbreaks**, particularly from Newcastle disease (ND). There is no treatment for ND, and vaccination is the only means of protection available. **Biosecurity is the best method available for keeping flocks safe**. However, **most poor smallholder farmers across East Africa do not understand biosecurity** and disease prevention. Trained Extension personnel are needed in rural areas to help poor households with proper vaccination procedures, disease recognition, and maintaining basic biosecurity practices.

Vaccination support projects have been shown to **effectively reduce bird mortality** (Msoffe et al., 2010). As a result, mothers' and children's food security and egg consumption have increased (Knueppel et al., 2010). However, multiple issues exist in association with vaccines and vaccination programs that **make knowledgeable Extension workers vital** to assist smallholder farmers and poor households. For example, there are different ND vaccines available. Trained Extension workers could provide guidance on vaccine selection, protection, and distribution.

In addition, Extension personnel understand that most vaccines require a cold chain from the time the vaccine is manufactured until it is used. Most indigenous smallholder farmers do not know this; even if they vaccinate, unless the vaccine was properly handled, it may be useless, giving no protection and discouraging future vaccination. Today, there are a few thermotolerant vaccines available. However, smallholder farmers in rural areas are often unaware of this and could benefit from Extension workers to guide them through the maze of challenges.

Extension services have been shown to be an important factor for predicting the adoption of interventions by poultry farmers (Ochieng et al., 2012). The presence or absence of support was a main factor in adoption of interventions such as vaccination in both Kenya and Tanzania, even though the mode varied between regions (Lindahl et al., 2019). Understanding how a vaccine worked was associated with village support in both countries. In Kenya, it was associated with knowledge of ND clinical signs, and in Tanzania, with the number of chickens lost to ND. Both could be indicators of how important ND has been to the household and indicate that households that have been exposed to ND are more knowledgeable about vaccines or more likely to seek out Extension information or programming (Lindahl et al., 2019).

Knowledge that a vaccine only protects against a specific disease is important for attitudes and continued vaccine use. Otherwise, expectations that one vaccine will protect against all diseases are likely to make farmers disappointed and more negative toward vaccines (Alders, 2003). Here again, trained **Extension workers who can explain, in simple terms, the proper procedures are critical** for success. This is true not only for the vaccination process itself, but also for conferring information related to the how, why, and what-to-expect that goes along with vaccination and other programs.

An interesting finding in the Lindahl et al. (2019) study is that vaccination decisions were mainly made by men. Previous research has found that poultry are particularly important for women (Bagnol, 2009) and that gender is an important factor for adoption of Extension recommendations, including vaccination (Ochieng et al. 2012). Therefore, **Extension efforts regarding vaccination across East Africa should target both men and women** to have the desired effect. Regardless of the targeted population, interventions where households are given support for vaccinating their birds, even for a limited time, can significantly change knowledge of and attitudes toward vaccination (Lindahl et al., 2019).

The study also demonstrates that knowledge concerning vaccination is critical for its adoption—both general knowledge of the purpose of the vaccine program and specific knowledge of how and why vaccination is important. Bringing vaccination into rural areas and making it sustainable will be challenging at best, but without outreach programs and additional trained Extension workers to guide the process, it may be impossible.

Shortages of Extension Staff and Services

The shortage of Extension workers and programming across East Africa cannot be overstated. Only 20 percent of small-scale poultry producers in Tanzania are reported to have access to Extension services (FAO, 2019). Extension workers are trained at one of six Livestock Training Institutes (LITIs) located across Tanzania. However, the LITIs have a limited number of teaching staff and insufficient student accommodations. At most institutes, the teaching facilities are old and obsolete, the infrastructure and equipment are in disrepair, and the farm units need rehabilitation and retooling for practical student training (FAO, 2015).

The poultry sector is in its infancy across much of East Africa. Its growth will depend on outreach programs and Extension personnel who can train smallholder farmers on current best management practices. While some improvements have been noted (FAO, 2019), much work remains to be done, particularly in the area of numbers of trained Extension workers. There is **clearly a need for the massive training of additional field livestock Extension workers** using LITIs and retraining of existing ones to equip them with new technologies and motivate them to get out into the field and assist clients (FAO, 2015).

This will not be easy as there are multiple obstacles that must be faced, including gender issues, lack of

infrastructure, inability to reach individuals in remote areas, people skills and competency levels of Extension workers, and lack of collaboration between various sectors. Outreach programs and Extension services should support transfer of knowledge and skills to smallholder farmers and enable the sharing of information and experiences between various stakeholders. Key challenges facing Extension outreach include increasing the number of qualified Extension personnel; increasing knowledge and skills among poultry stakeholders; linking research, Extension, and rural farmers; improving collaboration between service providers; and encouraging private sector participation (FAO, 2015).

Summary

Increasing poultry production across East Africa in both the indigenous and commercial sectors faces numerous challenges, not the least of which is a critical shortage of trained Extension personnel. It will be difficult to make substantial progress without well-organized outreach programs and an adequate number of trained Extension workers capable of delivering programming to smallholder farmers in rural areas. Efforts should focus on the **immediate training of additional Extension workers, particularly women Extension workers**, to assist women smallholder farmers and disseminate information focused on best management practices, disease control and prevention, proper vaccination procedures, and biosecurity principles. This focus will **allow women smallholder farmers to improve poultry productivity** and increase animal protein availability for their families. Extension-led programming could help both the indigenous and commercial poultry sectors to obtain greater production efficiencies and reduce food insecurity.

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