

Challenges and Opportunities in providing for Animal Agricultural information services in Zimbabwe: The case of poultry farmers in Harare

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Abstract:

Agriculture is the critical pillar of the Zimbabwean economy which contributes enormously to the country's gross domestic product (GDP). In Zimbabwe agriculture is usually classified – communal and commercial agriculture. Due to a number of reasons, urban and peri-agriculture is on the rise where there is increase in the growing of plants and raising of animals within and around cities. Poultry and Pig farming are easy entry for many urban growers in Zimbabwe. According to the Zimbabwe Poultry Association (ZPA) the poultry industry in Zimbabwe recorded a 22 percent growth in the first quarter of 2015 after producing 17 million broiler day old chicks. Therefore, access to quality agricultural information to support poultry farming is critical for the viability of the sector. The purpose of this paper is to review available sources of information for farmers in Zimbabwe and also examine the extent to which other libraries in urban areas are complying with international best practices in the provision of animal agricultural information services. The paper proposes a model of agricultural information provision for poultry farmers exploiting the linkages between public libraries, extension workers, and farmers' organisations in providing information beneficiary to urban and peri-urban poultry farmers.

Keywords: Agricultural information, urban farmers, poultry farming, libraries, animal agricultural information systems; open access

1. Introduction

Zimbabwean economy is agricultural based and it contributes enormously to the country's gross domestic product (GDP). There is variety of agricultural activities of which animal farming is one of the most common activities that has been pursued since the pre-colonial era. The involvement of many economically marginalised communities in the urban areas makes access to animal agricultural information a topical issue on the development agenda. Agriculture in Zimbabwe is made up of two major categories - the large scale commercial farming and the communal farming sector despite the Zimbabwe's land reform programme the sector remains concentrated in these two camps.

Most Zimbabweans in general adore farming activities; it is uncommon for them to cultivate crops or keep animals wherever they live. Farming is the DNA of Zimbabweans. As result in urban areas and peri-urban areas, there is a rise in agricultural activities.

The Food and Agriculture Organization of the United Nations defines Urban and Peri-urban Agriculture (UPA) as the growing of plants and the raising of animals within and around cities (FAO, 2016). Urban farming has been proven to be a special vehicle for enhancing food security and poverty eradication (Herald, 2015). The paper states that even in developed countries such activities have been institutionalised. Pedzisai *et.al.* (2014:79) lists the following benefits of urban agriculture: food security, poverty reduction, survival of women and children, social inclusion, economic development (FAO, 2007:9), efficient and cost effective waste management. With respects to Harare, in 2010, the then Harare Metropolitan Governor, Dr David Karimanzira once noted that in 2009 the hectarage under cultivation in Harare increased from 9000 in 2008 to 12 000 in 2009 with a yield increase from 5,5 tons per hectare to 6,5 tons per hectare (Brazier, 2012).

Besides crop cultivation, urban and peri-urban agriculture includes also rearing of animals such as poultry, rabbits, goats, sheep, cattle, pigs, guinea pigs, fish, quail birds (*zvihuta*) and many others, it also includes non-food products such as aromatic and medicinal herbs. Quail birds have gained gargantuan significance because of socio-economic challenges. Poultry farming is more prevalent and proves an entry point to animal production for most peri-urban farmers in Harare. Poultry farming is helping families to supplement income. Family poultry refers to small-scale poultry keeping by households using family labour and, wherever possible, locally available feed resources. Such an economic endeavour is common in household. Branckaert, as cited in Sonaiya, (1990) define family poultry as "small flocks managed by individual farm families in order to obtain food security, income and gainful employment for women and children". There are many challenges faced by Poultry farmers in Harare and environs, which include the legal issues with backyard fowl runs (See City of Harare (Private) Act, By Laws (1962), risk of transmission of diseases, and lack of adequate information to support agricultural activities. Poultry farmers have to be equipped with the right knowledge and skills to manage bird diseases in order to increase poultry sector meat production.

The paper will explore how poultry farmers in urban areas are accessing information to increase production. It will first provide a very brief overview of the poultry within the peri-urban and urban farming in Zimbabwe. Thereafter the article will look at available sources of poultry information and the different roles of stakeholders in the provision of provision of animal agricultural information services to urban and peri-urban farmers. The paper will also examine how the linkage between academic libraries, extension workers, government and

international organisation can benefit poultry farmers. Partnerships will be viewed in the context of United Nations' *Sustainable Development Goal number, 17* which places emphasis on cooperation. It will also explore how poultry farmers in the high density are using information to penetrate a market dominated by bigger companies. Libraries in Harare have a potential to help users create animal agricultural information as a community of interest (C.I.O).

2. Status of poultry farming in Zimbabwe

The growth of urban spaces has created demand for more food, hence the expansion of animal agriculture to supplement food production. Poultry farmers have emerged as Zimbabwe's new entrepreneurs. This industry is not new to Zimbabwe because it dates back to pre-history when local people domesticated animals and plants. It was and still continues to be a key economic activities contributing towards the country's per capita income. Poultry production was popularised by a government initiative, which vigorously encouraged the creation and maintenance of cooperatives. These ventures proved successful and were quickly to become the source of livelihoods for many people. The poultry industry in Zimbabwe recorded a 22 percent growth in the first quarter of 2015 after producing 17 million broiler day old chicks (Poultry cite 2014). Korombo (2016) argued that Zimbabwean chicken producers would be affected by illegal imports from neighbouring trading partners, since the products are cheaper than the local chicken. The author state that the country is propping up efforts to counter the effects of illegal imports on local production. The country has to grapple with a numerous challenges, namely, high cost of stock –feeds, threats of bird flu apart from illegal GMO imports. These factors make poultry farming a business venture that need information for the farmers to stay afloat.

Zimbabweans have embarked on indigenous poultry farming as an asset adaptation strategy to climate change and the need to supplement income. The disastrous effects of climate change has meant that people employ survival tactics in the face of dwindling harvest and land that is becoming more and more arid. Moser and Satterthwaite, (2008) in Ndiweni (2013:1) views asset adaptation as the means and ways in which people use the assets that they have to anticipate and deal with challenges resulting from the change in climate. This is common in drought stricken rural areas. Ndiweni's (2013) research on poultry farming in rural Zhombe in Zimbabwe showed that it was the most common economic activity, mainly managed by women and serves as source of live-hood and revenue. Kusina (2004) states that poultry production is widespread in Zimbabwe, comprising large-scale and small- scale commercial poultry production units. Large- scale chicken production units are characterised by large capital investments, mechanization, specialization and hybrid stock, while the smallholder chicken sector is traditionally based on extensive production systems where the birds find most or all of their feed through scavenging (McAinsh *et.al*, 2004).

Poultry farming in Zimbabwe faces numerous challenges ranging from completion from cheap imports and rising costs of inputs and cheap imports sold at sub-economic prices (Government of Zimbabwe, 2012). The sector also faces challenges of the heterogeneous legal framework and compliance mechanisms that inhibit the investment in the sector and therefore growth from subsistence to commercial farming. For example, since October 2012, the livestock industry in Zimbabwe has been affected by a number of regulations which has seen an increase the cost of doing business in the poultry sector. These regulations include Agricultural Marketing Authority (Poultry and Poultry Products) Development Regulations of 2012; the proposed The Action and Sale of Livestock Model By-Law 2012 and Statutory

instrument 147 of 2012 Agricultural Marketing Authority (Registration of Companies and Submission of Returns) Regulations of 2012. While additionally for backyard poultry keepers, the City of Harare (Private) Act, Council By-Laws (1962) that states that ‘no poultry house shall be placed nearer than three metres from any boundary or nearer than six metres from premises used for human habitation’ (Chamboko and Erasmus, 2014:15). These factors make it very important for poultry farmers to have access to relevant information to make informed decisions.

According to the Zimbabwe Poultry Association despite economic challenges there has been a good contribution of poultry production from small scale farmers and urban farmers. For example, in 2013 of the estimated 29 million chicks purchased by small scale growers, 19 million were by farmers growing 100 to 200 chickens, 6 million by those producing less than 100 chickens, and 4 million by farmers raising more than 200 chicks at a time (Sukume, 2013). These findings shows that 85% was from small scale and peri-urban farmers. The estimate national production per province were given in the table below – the figures were obtained from day old chick sales.

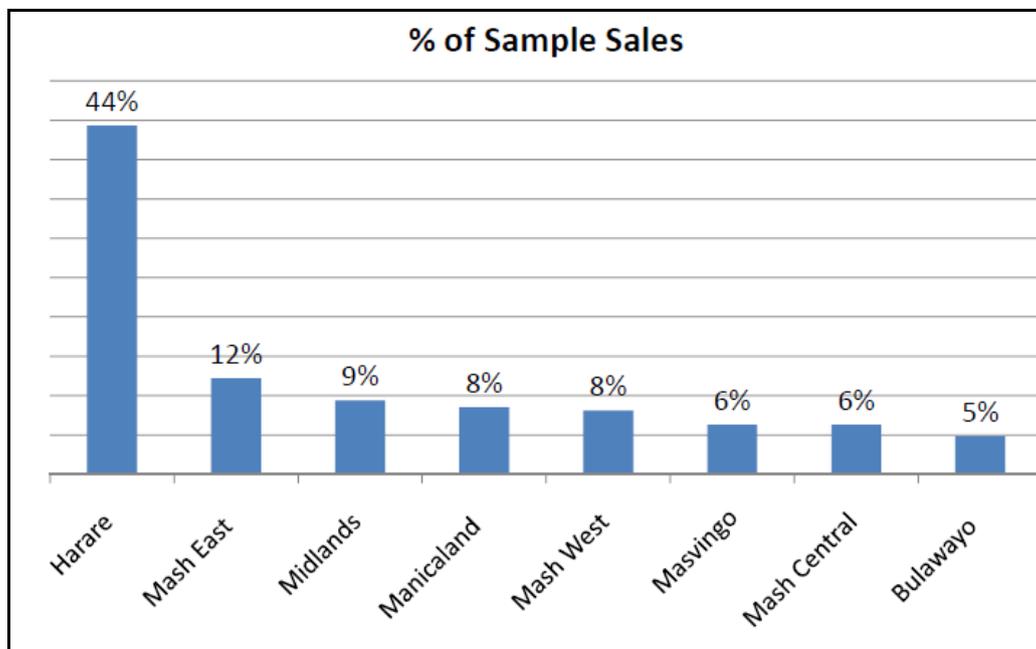


Figure 1: National production measured by chick sales (Sukume, 2013).

In 2015, the sector was reported to be under extreme pressure from a number of sources such as low disposable income, illicit imports of chicken products, erratic electricity supplies and decline of consumer purchasing power (Zimbabwe Poultry Association, 2015). Indigenous and imported stock-feeds are critical to sustain the country poultry industry in urban areas. Small scale poultry farmers rely on indigenous strains while the commercial and extensive poultry farmers rely heavily on imported strains. All these factors decrease productivity to small scale poultry producers.

3. Provision of agricultural information services to farmers

Durrani (2009:20) recommends the overhauling of agricultural information services so that marginalised groups for example, peasants and urban dwellers (proletariats including skilled and non –skilled and unemployed people) are put at the centre of such systems. The author also recommends the inclusion of a compulsory course in agricultural information services for trainee librarians, inclusive language policies to widen access to agricultural information among diverse groups and use of technology to create and control locally generated content

Public libraries in urban Harare need to align themselves with the economic activities of urban dwellers especially supporting poultry farming and gardening. This can be achieved through using ICT's technologies to facilitate access to information. Librarians can also empower farmers with entrepreneurial skills and knowledge to enhance competitiveness. The EIFL-PLP and Tanzanian library Association (TLA's) mobile library service for poultry farmers is a model example, of how library can reinvent them to support the struggling poor people. . Libraries can take advantage of the social media phenomena and create groups through which the can disseminate information directly to the clientele. This is an innovative method of getting information to the required intended beneficiary as well as providing a platform for sharing and cross pollination of ideas. This will aid in the development of this nascent industry in the community. Public Libraries in urban areas should:

- Create linkages or networks with agricultural extension for the benefit of poultry farmers;
- Develop and maintain physical and virtual platforms for knowledge sharing for the benefit of specific groups communities of practice;
- Repackage information (information consolidation and mediation);
- Utilise multimedia technology to store and disseminate information on poultry farming;
- Equip users with knowledge and skills to access , analyse, create and exchange content on poultry farming content and ensure that such content is locatable, findable, discoverable , retrievable and shareable;and
- Incorporate indigenous knowledge to create and develop a balanced collection of information on poultry farming.

Budak and Yurdakul (2004:215) agree that the capability of farmers is a fundamental indicator of the level of the agricultural sector's efficiency, productivity, development, and sustainability. Mugwisi (2015) states that access to information is a key determinant for agricultural development. Mugwisi (2015) highlights the critical role played by print and electronic broadcasting in the dissemination of agricultural information. Egge (*et.al.* 2009). Mare (2011:7) describes radio as "Africa's medium," because of its reach and social entrenchment in the lives of the common people and ability to bridge literacy boundaries through use of local language

Fairbairn and Lipeikaite (2014) posit that there is greater potential for growth among developing countries in Africa through EIFL –PLIP support for innovative public to help socio and economic well-being in communities. The programme places libraries at the centre of supporting access to information to urban farmers. The authors advocate for proactive public library services providing free access to ICTs and survival as well as citizenship information as a way forward in building economic capacity among citizens. These programmes have seen libraries embarking on innovative services, for example,

mobile services, m-libraries, community information literacy services all aimed at strengthening communities' participation in socio-economic well-being. Other services can include information repackaging or information consolidation of agricultural information into languages understood by users.

Poultry farmers require information on poultry breeds, by-laws affecting them, medication, nutrition, diseases and market opportunities for their products, for example, meat and eggs. Modern technologies can be utilised to assist urban poultry farmers with information. Mokotjo and Kalusopa (2010) posit that Africa has exhibited the potential of cell phones in the dissemination of information to farmers. Such technologies are handy tools in transforming the lives of poultry farmers. Partnerships can be developed between public libraries and Internet Service Providers (ISP) to widen access to information through mobile alerts. The Poultry Information Service -Raised awareness among poultry farmers about the ways in which ICT can be used to access information needed to improve.

The emerging information requirement is demand-driven, as opposed to supply-led public information system during the green revolution era. The challenge is to improve the accessibility of farmers to information and its relevance in the agricultural development (Sharma, 2002). Both public and private extension systems are innovating approaches for the transfer of technology and information to farmers so as to empower them to face the challenges of market liberalization and globalization. The recent information revolution by Information and Communication Technology (ICT) has potential to provide a greater quantum of information, covering a wide range of subjects in the shortest possible time. But, to harness this potential for agricultural development, it is essential to understand the existing sources of information and their utility and relevance in terms of outreach, subject matter coverage and utilization by the farmers.

Farmers are increasingly looking for frequent interactions with various information sources not only to carry out their farming and marketing tasks efficiently but also to ensure delivery of safe and quality agricultural products to consumers. Mokotjo, (2009) emphasises the importance of information in enhancing agricultural output through reducing farmer's uncertainty and widening their knowledge circles to enable them, to comprehend the dynamic and complexities of agriculture. The author states that creating linkages between farmers and their key stakeholders, for example, strain producers, customers, veterinary doctors, government among others

4. Towards a model of providing of animal agricultural information services

Currently information for poultry farmers in Harare is available from a number of sources, which include the agricultural extension services, department of livestock and veterinary services, radio programmes, producer companies, libraries, veterinary offices and sales stores, and farmers' organisations (Zimbabwe Farmers Union, etc.) and Zimbabwe Poultry Association. With the challenges and instability in the poultry sector, farmers need access to a range of information that can help them decide when best to buy inputs or sell their chickens and eggs, saving them time and money and distinguish between disease and pests and respond appropriately (Denyes, 2014). Different models are being piloted to bridge the gap between the farmer and the sources of information, Mercy Corps have piloted the Agri-Fin Mobile service (Denyes, 2014). Chisita and Malapela (2014) review the Technical Centre for

Agriculture and Rural Cooperation's (CTA) Question and Answer Service as a solution for providing agricultural information to farmers.

There is a mutual link between public libraries, extension workers and poultry farmers in urban set up. In this case the library is expected to house all kinds of agricultural information materials and also create information awareness campaigns.

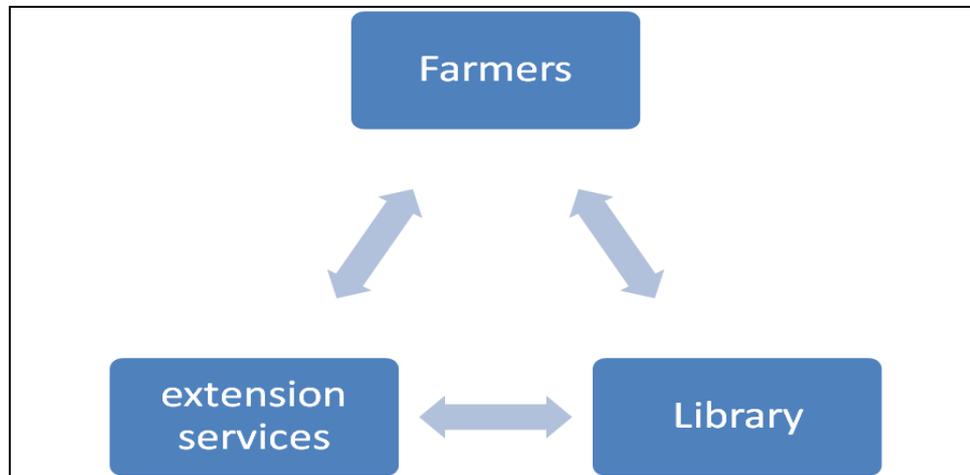


Figure 2: The emerging link between farmers, libraries and extension services

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The researchers do propose an innovative and useable model to enable poultry farmers to make maximum use of libraries. This model will be a collective source of information relevant to poultry farmers – the collection will be available on a specialised website with poultry information. The purpose will be to have extension materials that can be used by poultry farmers. Our proposed model will learn closely to Farmerline¹, in Ghana. Farmerline is a mobile and web-based system that furnishes farmers and investors with relevant agro industry content to improve productivity and increase income. Farmerline bridges the information gap between rural farmers and agro-industry sources in two ways:

- The voice forum: This feature allows farmers to ask questions by calling a toll free helpline (short code). The extension officers are able to answer the questions via a web interface and answers sent to farmers as voice SMS; and

¹ Farmerline. <http://farmerline.co/>

- Automated SMS Alerts: The SMS will include advice on tackling pests or diseases, agricultural techniques, optimum times to plant crops, available subsidies, as well as weather forecasts, local fairs and crop prices.

In the adaptation of this model, the materials from the following sources agricultural extension services, department of livestock and veterinary services, radio programmes, producer companies, libraries, veterinary offices and sales stores, and farmers' organisations (Zimbabwe Farmers Union, etc.) and Zimbabwe Poultry Association about poultry will be collected by a central library, such as Harare City Library. A special online platform will be created that allows all purchasers of day old chicks (DOC) in Harare to register on point of purchase. These along with interested public library clients will form a key community and user base of this service. This community of poultry farmers will subscribe to an SMS based service and would also through a common 'hot line' send their questions to service number. The online platform should have key extension materials with '*How to..*' questions and Frequently Asked Questions (FAQs). There is a potential to integrate bulk SMS service via the website. Once well developed the service will require downloadable mobile applications. The physical collection of books and materials will need to be housed in the public library within the reach of poultry farmers. There is a need for strong collaboration between the public library, the extension services, producer companies and network service companies.

5. Conclusion

In this paper the writers we have shown how central is poultry farming is an easy entry to peri-urban and urban farmers in and around Harare. Poultry farming is improving families' income, contributing to the nutrition and also alleviating poverty. Poultry farming in Zimbabwe faces numerous challenges and farmers in this sector need a variety of agricultural information – which is not available in a single source. Furthermore, Poultry farmers require information on poultry breeds, by-laws affecting them, medication, nutrition, diseases and market opportunities for their products, for example, meat and eggs. Public libraries collect different sources of information including extension materials. The Communication Technology (ICTs) has potential for public libraries to provide additional services. We proposed a new service online platform and onsite based that allows poultry farmers to obtain demand led information. This could be modelled along the Farmerline model with adaptation matching information needs of poultry farmers. Such a service would be managed by the public library. Through such innovative initiatives the public library would be able to reinvent and reinvigorate its services for the betterment of humanity and realisation of sustainable development goals.

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