

Unlocking the Value Of Indigenous Chickens Through Establishing Challenges Limiting Productivity And Viability Of The Enterprise: A Case Of Lukosi Area In Hwange District Matabeleland North Region

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Abstract: *The study to establish impediments hindering productivity and viability of indigenous chickens in Zimbabwe was premised on the quest to find ways of unlocking value in the enterprise to advance sustainable livelihoods among the resource poor rural farmers. Ultimate to the study was establishing challenges limiting productivity and viability of the enterprise: with particular reference to Lukosi area in Hwange district where surplus produce from irrigation projects is rendered little significance in the value chain as it is not channelled towards sustaining other subsidiary enterprises such as small livestock and indigenous chicken production. To generate the essential data a sample of 75 farmers were drawn from a population of 251 small scale farmers in the ward (ZIMSTAT, 2014). A questionnaire was administered on this particular sample which constituted 30% of the ward's population. Based on its merit of giving every individual in the population an equal chance of being selected as a subject of the study, probability sampling was used. For purposes of generating secondary data, facts gathered during the Crop and Livestock Assessment Surveys by the department of Agricultural Research and Extension services AGRITEX, 2015 in the district were used to authenticate reasons for the declining trends in indigenous chicken productivity. Descriptive statistics adopted to analyse generated data through variances, means and ranges indicated that it is liberalisation of the country's marketing systems which has seen imported chickens and chicken products occupying the biggest market share in the local market posing the biggest stumbling block, as the existing market forces tended to be suppressive on the locally produced chickens due to the prevailing economic challenges, consequently forcing consumers to unwillingly opt for cheaper products, hence compelling the local industry to shrink and impacting negatively on the livelihood of the resource poor communities.*

Key Words: *Indigenous chickens, unlocking value, impediments hindering, productivity and viability and sustainable livelihoods*

I. Background

Indigenous chicken production is practiced by the majority of crop farmers in Zimbabwe's rural communities and is an important food and socio-economic pillar for rural families as it integrates well with crop farming and other livelihood activities of rural households (Blackie, 2014; Mapiye et al, 2008; Nyoni and Masika, 2012). Most of Africa has traversed a journey from being entirely rural to semi-urban/urban- a significant development one needs to take note of. Chicken production has been contributing in improving nutrition, gender participation and advancing rural economies over the years as indigenous chickens adapt to harsh environmental conditions prevalent in most rural areas. However, surveys by Zimbabwe vulnerability assessment committee ZIMVAC show that there has been a sharp decline in number of indigenous chickens over the years as preference for white meat shifted towards the cheaper genetically modified chicken products from the neighbouring South Africa and far afield Asian countries. The massive decline in indigenous chicken production, meat and egg productivity impacted the consumption patterns by the local market negatively as has been noted in other African countries in the Sub-Saharan region (Kingori et al, 2010).

The current statistics by the department of Veterinary Services in Zimbabwe, (2016) points to high morbidity and mortality rates as the most striking challenges leading to low productivity of the indigenous chickens among smallholder producers, with Newcastle disease being the most devastating infection in the free-range systems as it accounts for more than seventy per-cent (70%) of the mortality recorded yearly in the country (FAO, 2006). Blackie, (2014) however argues that other factors such as; genetic make-up of the bird, nutrition and the ambient environment as fuelled by the climate variability interact in a multiple of ways to influence productivity levels in the rural Africa. Mwalusanya *et al*, (2002) opine that the interactive vicious cycle leading to low productivity constitutes poor management practices as compounded by lack of entrepreneurial skills among producers as well as poor integration of research and extension systems to augment

the farmers' indigenous technologies on the enterprise. However according to (Mapiye *et al*, 2008) there is no accurate measurement to ascertain the exact contribution of each of these factors to mortality and sharp decline of the 'road-runner' chickens in the countryside.

Introduction of modern flock breeds with high profit margins and quick turnover have slowly replaced the indigenous chicken breeds in most rural communities as farmers' preference has shifted to broiler production as a potential substitute. Due to thin profit margins and fierce competition with commercial breeds, less importance is being attached to indigenous chicken breeds, culminating not only to their decline in numbers but also the fear of total extinction fuelled by the current genetic erosion. It should however be borne in mind that through their ability to scavenge, escape predators, adapt to the harsh tropical conditions and tolerance to poor management practices characterised with feed shortages and un-specified feeding regimes indigenous chickens should remain a preserve for the resource constrained farmers as the birds have shown great potential to survive where improved breeds have failed making them a viably better option for the resource poor rural communities (Getu and Birhan, 2014).

Apart from numerous socio-economic constraints befalling the venture stakeholders believe that with adequate institutional support the undertaking can be resuscitated and reclaim its vital status of being the sole source of protein in form of lean white meat and eggs for the poor communal farmer. It has always been disturbing that despite numerous recommendations on better farming methods aimed at improving productivity of these particular birds, progress still remains hampered in the study area and the entire province at large as copious challenges persist to subdue any meaningful development in the business. The study to establish impediments hindering productivity and viability of the enterprise was therefore premised on the quest to find ways of unlocking the value in indigenous chicken to advance sustainable livelihoods among the rural populace. Ultimate to the study was establishing challenges limiting productivity and viability of the enterprise: with particular reference to Lukosi area in Hwange district where surplus produce from irrigation projects is rendered little significance in the value chains as it is not channelled towards sustaining other subsidiary enterprises such as small livestock and indigenous chicken production.

1.1 Problem statement

The declining trends in indigenous chickens popularly known as, "chicken makaya's" production curve has become a cause of concern among the rural communities in Zimbabwe. Traditionally the resource poor farmers have relied on indigenous chickens for food in the form of meat and eggs (a cheaper source of protein), cash and manure for fertilising nutrition gardens and field crops. Such a value chain has been disrupted by the declining numbers of chickens raised by the smallholder sector owing to a complex of challenges limiting productivity and viability of the enterprise. Data generated during the crop and livestock assessment survey by department of agricultural research and extension services AGRITEX, 2015 in the district authenticates that the declining patterns continue to escalate and agitating the trend is the trade liberalisation which has seen imported chickens and chicken products occupying the biggest market share in the local market. As market forces tended to be suppressive on the locally produced chickens due to the prevailing economic challenges, consumers unwillingly opted for cheaper products hence forcing the local industry to shrink, impacting negatively on the livelihood of the resource poor communities. It is therefore imperative that the study to reveal challenges affecting the productivity and viability of indigenous chicken in Zimbabwe's rural communities was carried out in Hwange district; focusing on Lukosi the only area with potential and a comparative advantage in diversified agriculture as it is the only oasis endowed with a vibrant irrigation scheme in this arid district.

1.2 Objectives

- To establish challenges affecting the productivity and viability of indigenous chickens in Zimbabwe's rural communities
- To identify opportunities that can be availed to advance indigenous chicken popularly known as "chicken makaya's" viability to boost livelihood systems in rural communities

II. Related literature

2.1 How indigenous chickens are perceived and generally managed in Zimbabwe's rural communities:

Indigenous chickens are perceived as locally adapted distinct species or native breeds of chickens evolved over years kept mainly on small scale traditional farms for relish and income (Kingori *et al*, 2010 and Thiyagasundaram, 2005). The choice of production system adopted for the birds is principally based on the desired objectives of the individual farmer, number of chickens to be raised and the availability of resources to sustain the management system (Mapiye *et al*, 2013). Predominantly most rural farmers prefer the free range system where management of the chickens is mainly based on available indigenous technical knowledge where birds are left to scavenge for feed during the day and confined at night for protection against predators and

extreme weather conditions. Occasionally the birds are supplemented with household refuse or kitchen left-over which may vary based on season and availability, while the provision of water is irregular and veterinary care is largely based on traditional medicinal herbs and cultural systems. Apart from being low cost the practice interacts in multiple ways to influence mediocrity in the productivity of the chickens hence realisation of meaningful gross margins remains a nightmare for the smallholder farmers.

2.2 Marketing of indigenous chickens and their products

For many farmers, indigenous chickens are considered; a living bank account and the sale of chickens or eggs can cushion the possible catastrophic impacts of financial challenges faced by rural households. Bartering of chickens has facilitated the acquisition of other small livestock particularly sheep and goats by farmers in some communities (FAO, 2006 and Ahlerst *et al*, 2009). Economic studies have shown that although an increased supply of village chickens may slightly lower the price of the chickens at local markets farmers can be incentivised by selling in numbers thus capitalising on diseconomies of scale. Urban consumers in many regions have shown an improved taste and preference for village chickens over intensively managed broilers and it is estimated that a boost in indigenous chicken productivity would be needed to match the escalating demand. Instead of selling chickens only at culling, periodical removal of birds is always advisable for farmers to maintain manageable flock sizes throughout the year. Furthermore feed availability is a crucial determinant it is therefore critical that when feed becomes scarce the best option is that farmers sell eggs instead of taking the risk of raising chicks. It is therefore fundamental that, chickens should be raised for sale when feed for scavenging is in abundance, to capitalise on the cost-free resources.

Unavailability of organised marketing structures for indigenous chickens in Zimbabwe's rural communities; leads to exploitation of farmers by unscrupulous buyers or middlemen who mainly purchase at meagre prices as they intend to transport and resell the birds in lucrative markets in urban centres. Empirical evidence shows that marketing of chickens and eggs under this sector is predominantly informal and tends to be within the local communities, between farming households and only becomes profitable when local government institutions such as clinics and schools are involved.

2.3 Opportunities for indigenous chicken production

Rangoma, (2011) posits that consumption of poultry products has shot up in urban areas hence creating an increase in the production of poultry. Indigenous chickens have the potential to satisfy at least part of this demand through increased productivity and reduced wastage and losses, yet still present essentially low input production system. He further asserts that for indigenous chickens to remain a viable enterprise emphasis must be on selection and better management of stock health and local feed resources. Appropriate new technologies based on economic considerations need to be introduced for improved efficiency in chicken productivity to meet the escalating demand in urban centres.

According to Issa *et al*, (2013) improved farming practices reduce losses and increase indigenous chicken production thus improving productivity. Improved farming practices can be attained through training and capacity development which facilitates sustainable use and appropriate management of the diminishing numbers of chickens. Furthermore, a systems approach to capacity development which addresses upfront institutional and organizational shortcomings is vital. Capacity building would help farmers adopt agricultural research findings hence enable them appreciate emerging opportunities in indigenous chicken production. It is therefore critical that programmes aimed at improving indigenous chicken production should provide framework for training and capacity building in aspects of the best chicken management practices, gender awareness, entrepreneurship, marketing and value addition. Furthermore, research to assess and compile database on biological significance of indigenous chicken species is key in averting a decline in both biodiversity and productivity of indigenous chickens.

III. Methodologies

The study to establish challenges limiting productivity and viability of indigenous chickens so as to unlock the value of the enterprise for the benefit of smallholder farmers in Zimbabwe's rural communities was carried out in Hwange district. The major economic activity in this semiarid area is wildlife/ safari hunting, based on (Quotas given to interested parties by Department of National Parks). Semi-subsistence/ peasantry agriculture is practised at a minimal scale by few farmers who major on small grains such as sorghum and pearl millet which constitute their main staple diet. Rain fed agriculture is generally affected by rainfall variability particularly the predominant midseason droughts in almost all seasons. Gardening or nutritional gardens are basically meant for those households attached to the irrigation scheme with a reliable water source. The only viable enterprise which guarantees stable cash inflows throughout the year is predominantly poultry production mainly indigenous chickens which are at times supplemented by small livestock mostly goats and sheep. It is

therefore imperative that the study focused on Lukosi the only area in the district with the potential and comparative advantage in diversified agriculture as it is the only oasis endowed with a vibrant irrigation scheme in this arid district. To generate the essential data a sample of 75 farmers were drawn from a population of 251 farming households in the ward ZIMSTAT, (2014). A questionnaire was administered on this particular sample which constituted 30% of the ward's population. Based on its merit of giving every individual in the population an equal chance of being selected as a subject of the study, probability sampling was used. For purposes of generating secondary data, facts gathered during the Crop and Livestock Assessment Survey by department of Agricultural Research and Extension services AGRITEX, 2015 in the district were also used. Descriptive statistics was adopted for purposes of analysing the gathered data through variances, means and ranges.

IV. Results and discussions

4.1 Management systems practised in Zimbabwe's rural communities

Management practice	Housing system	Response rate	Response %
Extensive	Free range (no proper structure)	7	9.3%
Extensive	Free range (improved structures)	60	80%
Semi-intensive	Deep litter system	8	10.7
Intensive	Battery cage system	**	**
Summation of Response & Response rates	****	75	100

The majority of respondents (80%) were acquainted with knowledge on the existence of different housing systems; they however opted for free range with improved structures as this is a low cost practice where birds are left to scavenge for feed during the day and confined at night to safeguard them from predators and severe weather conditions. Birds are also supplemented with household refuse which is readily available to the resource poor famers. 9.3% cited that though practising free range system they had limited access to materials and resources to improve the structures for the birds hence were using mud huts as make shifts. 10.7% opined that deep litter owing to its merits of regulating the ambient environment in terms of temperature and soggy floors in the chicken-run as well as accumulation of organic matter which can be recycled back into gardens remains the best option for the resource poor farmers. None of the respondents opted for battery cage as the cost associated was so prohibitive hence the reason why many farmers shun it.

The observation that all interviewed households provided some form of housing to their birds at night concurs well with Mapiye *et al*, (2008) who opined that farmers housed chickens particularly at night as it is common knowledge that the birds need to perch under a roof where they are protected from predation. Although provision of such shelter is meant to confine the chickens at night and allow them to scavenge during the day (Ahlers *et al*, 2009), cited that the system exposes young chicks to bad weather and predators during the day resulting in high morbidity and mortality rates.

4.2 Current marketing systems and opportunities to unlock viability of the enterprise

Marketing system	Medium of exchange	Response rate	Response %
Other farmers & family consumption	Bartering	24	32
Field days & social gathering venues	Bartering & cash	12	16
Local food outlets/restaurants	Cash	13	17.3
Designated local markets	Bartering & cash	18	24
Nearby Urban markets	cash	8	10.7
Processed /value added	cash	**	**
Export markets	Foreign currencies	**	**
Sum of response %		75	100

Thirty two percent of the respondents indicated that they preferred exchanging their chickens for other consumables and clothing materials as they considered their batches too small, not big enough to warrant organised formal markets. Sixteen percent of the participants favoured field days and social gathering venues as people convene in numbers and marketing heterogeneity tended to flex the buyers' choices on payment modes as both bartering and cash were acceptable mediums of exchange. 17.3% had a strong preference on local food outlets and restaurants as marketing is predominantly cash hence easing the cash crisis facing most Zimbabwean rural communities. Twenty four percent were opting for areas designated by local authorities as marketing zones where buyers and sellers from different localities would converge periodically to market their products. The participants cited that selling through auctioning under this market gave them the opportunity to realise better rewards as bidders would offer better prices. 10.7% had access to nearby urban markets where selling was strictly on cash basis. It was however observed that proximity to urban centres was a challenge owing to poor roads and transport network in the area thus depriving farmers of the lucrative markets. An investigation to ascertain whether farmers were undertaking initiatives in processing and value addition of their chickens it was established that farmers lacked the entrepreneurship hence could not explore export markets where prices were generally lucrative and based on foreign currency. This therefore presented an opportunity in the venture for most rural communities once explored and undertaken as a new viable initiative by farmers. And as cited by Kusina, (1999) and Rangoma, (2011) capacity building and training to develop and boost farmers' proficiency on chicken productivity and value addition through processing, packaging and branding was a prerequisite facet if the enterprise was to make a significant impact on the rural indigenous chicken farmers' livelihood.

V. Conclusions

The study revealed that most farmers in the study area were poultry producers and derived their livelihood from the enterprise, and through indigenous technologies had vast knowledge on traditional ways of raising the indigenous chickens. It emerged that chickens are extensively managed and free range system is predominantly used where birds are confined at night and left to scavenge for feed during the day thus making birds fall prey to predators and severe weather conditions. It has been noted that such traditional systems expose young chicks to high mortality hence impacting negatively on batch sizes and chicken numbers among farmers thus affecting viability and sustainability of the enterprise. Lack of expertise on modern poultry production practices and access to organized formal local and export markets was cited as the biggest drawback for indigenous chicken producers in the area.

Farmers opined that realization and utilization of opportunities in indigenous chickens was only to be attained if the Zimbabwean government had to establish formalized local and export markets for chickens and chicken products after value addition / processing of the chickens as consumers' taste and demand for locally produced chicken 'makaya' is escalating not only in Zimbabwe but the entire Sub-Region.

Elsewhere according to Mapiye *et al*, (2008) organized poultry markets have registered great success in improving rural farmers' livelihoods as they have managed to attract buyers from far afield to converge at a central point thereby allowing producers to bargain for competitive prices consequently enabling farmers to realize wider profit margins hard to come by under localized village markets. The emergence of such marketing structures has been hailed by most farmers in the study area who perceived it as a way of easing the liquidity crisis which has become a menace for the rural populace in the country.

VI. Recommendations

- As the study revealed that most farmers in Zimbabwe's rural communities are resource constrained indigenous poultry producers and derive their livelihood from the enterprise, it is imperative that the government and other key enablers aid farmers financially and materially by availing cheaper subsidized inputs to cut on the production cost of the indigenous chickens.
- Research to aid and augment the farmers' knowledge on traditional systems of raising indigenous chickens based on indigenous technologies needs to be promoted to boost the farmers' knowledge base on modern management systems to enhance viability and productivity of the native birds.
- A significant number of respondents proposed that localizing formal markets in their respective areas, affiliated to Zimbabwe's Agricultural Marketing Authority AMA as the controlling body was mandatory to advance farmers' interests and help them to access better viable markets. It is therefore imperative that government creates an enabling environment by commissioning formalized rural markets in communities to unlock value of the chickens for the farmer. Elsewhere according to Mapiye *et al*, (2008) it has been noted that organized poultry markets have registered great success in improving rural farmers' livelihoods as they have managed to attract buyers from far afield to converge at a central point thereby allowing producers to bargain for competitive prices hence enabling farmers to realize wider profit margins.

- Farmers opined that realization and utilization of opportunities in indigenous chickens was only to be achieved if the Zimbabwean government through its ZIMASET program was to advocate and initiate funding for value addition as it was apparent that the future and success of indigenous chickens just like any other agricultural produce was fuelled by value addition through processing to maximize beneficiation for the individual farmer.
- Fundamentally all stakeholders should bear in mind that the effective and efficient utilization of the comparative advantages of indigenous chicken productivity in Zimbabwe's rural communities should place local communities and the entire nation on a pedestal for robust economic growth and development.

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