Challenges and Opportunities to Rabbit (Oryctolagus cuniculus) Production and Marketing
(A Case of Mazowe District, Zimbabwe)

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Abstract: The study was carried out to determine the challenges affecting the production and marketing of rabbits (Oryctolagus cuniculus) in Chivheshe communal area of Mazowe District, Zimbabwe. Fifty small scale rabbit farmers were selected using systematic random sampling. Data was collected using a structured questionnaire which was administered through face to face interviews. A purposive sampling was used to select participants for focus group discussions and to assess the farmers’ perceptions on the challenges and opportunities of rabbit production and marketing. Results from this study showed that the major challenges in rabbit production are: poor funding (26%), poor nutrition (26%), personal perspectives and beliefs (22%) and poor markets (8%). Ninety two per cent of the respondents sold their rabbits at the local market and 8% to new farmers for breeding stock. There was no significance difference between gender and ownership of rabbits (p > 0.05). Farm visits by extension officers were rarely made (40%), regularly (30%) and about 18% when consulted by the rabbit farmers. The study recommends that the government and Non-Governmental Organizations (NGOs) should finance rabbit rearing projects for commercial purposes and poverty alleviation. Various key players such as livestock department, local leaders, business community and researchers need to support rabbit production by identifying viable marketing opportunities for the rabbit farmers.

Keyword: Rabbit farmers, marketing lines, small livestock, focus group discussions.
1. Introduction

Livestock resource is an important heritage and component of our biodiversity through which a majority of our national population derive livelihoods (Zimbabwe Vulnerability Assessment Committee, 2017). Rabbits are an important contributor to food and nutrition security and aid in the provision of high quality protein. As a component of our agricultural system, livestock production is more resilient than crop production, given the shocks and hazards which the nation confront cyclically in the form of increasingly frequent droughts, floods and unpredictability of seasons (Gono et al. 2013). Rabbits utilise unusable vegetation material, residue from crop production, organic wastes from the food industry and domestic waste, converting these into rich high protein nutrition for human consumption (Lukefahr, 2007). Rabbits require small amounts of feed, and use inexpensive and easily constructed housing. In addition, rabbits do not compete with humans for grains as chickens do and its waste is a natural source of soil nutrition.

Livestock whether large or small are part of social and cultural entitlement for millions of small scale communal farmers (Ministry of Agriculture, 2016). Rabbits are medium size hopping animals with long legs, long ears and a short tail. They are noiseless and easy to manage; they require small compartments due to their body conformation unlike cattle and other small ruminants which requires a large area of land (Lukefahr, 2007). Rabbits are largely kept by limited-resourced farmers who maintain small scale operations with the aim of producing meat and income. The vast majority of meat rabbits are produced under small scale and backyard systems. It is in such systems that the rabbit can make a valuable contribution towards supplying meat for rural African communities and improving rural livelihoods.

Rabbit has an immense potential of high growth rate, high efficiency in converting forage to meat, a short gestation period, high prolific and relatively low cost of production. The meat has a high dressing out percentage and the presence of caecal microbes enables the rabbit to digest large amounts of fibrous feeds which most non ruminants cannot (FAO, 1997). The rabbit is small enough such that a family of 4 to 6 can consume all the meat in one or two meals, eliminating the necessity for refrigeration or other meat preservation methods. Rabbit meat is almost cholesterol free and is therefore most favourable for heart patients (Lukefahr, 2008). According to DalleZote (2002), the sodium, calcium and phosphorous contents of rabbit meat are comparatively less than other meats. The ratio of meat to bone ratio is high meaning there is more edible meat on the carcass than even a chicken. Rabbits contain selenium that works as an anti-oxidant to remove free radicals before they can do harm to the human body. Some types of cancer, as well as ravages of aging people can be battled with selenium which is contained in rabbits (FAO, 2008).

Starting a rabbit project requires minimal initial capital outlay. A rabbit can be easily sold when a small amount of money is needed to meet immediate family needs. However, there are no organized markets for rabbits, although there are huge market opportunities for the meat and its by-products (Rabbit Breeders and Producers Association of Zimbabwe, 2015). A few butcheries and supermarkets sell rabbit meat and even fewer restaurants have rabbit meat on their menu. Supply to these outlets is erratic and some is supplied by individual unregistered meat producers. The informal market is vibrant but it needs to be strengthened through the involvement of various government departments and the business community.

2. Materials and Methods

2.1 Study Site

The study was carried out in Chiweshe communal area in Mazowe district of Zimbabwe (31°21′E; 17°20′S, altitude). The district falls in Agro-ecological region IIa and receives an annual rainfall ranging from 800 mm to 1200 mm (Matondi, 2005). The area is characterized by sandy loam soils with some parts of the district having deep red soils. The soils are ideal for maize production, groundnuts, cotton and livestock ranching. The study was limited to ward 13 of Chiweshe communal area which is approximately 70 km north-west of Harare and has an estimated population of 2320 households.
2.2 Research Design

The study triangulated both quantitative and qualitative research techniques. A survey questionnaire was used to collect quantitative data whilst two focus group discussions (FGDs) were carried out to collect qualitative data. A quantitative technique was used to collect numerical data which helped the survey to be measurable. On qualitative technique, the study sought to obtain a rich descriptive data about the perceptions of the community on the challenges of rearing and marketing of rabbits.

2.3 Sampling Procedure

Based on this study, the study population was the total number of rabbit farmers in ward 13 Chiweshe communal area. A systematic random sampling procedure was used to select 50 rabbit farmers from the Livestock Department list of 102 rabbit farmers. Purposive sampling was also used to select the participants for the focus group discussions. Key actors (local leaders, church leaders, health workers, local farmers and agriculture and veterinary extension workers) in the value chain of rabbits were also included.

2.4 Data Collection

A structured questionnaire was administered through face to face interview to 50 rabbit farmers to collect data on: demographic pattern, challenges in rabbit production, rabbit marketing and selling, and extension services. Two Focus Group Discussions were used to collect qualitative data on rabbit production and marketing from value chain actors within the ward.

2.5 Data Analysis and presentation

The data was analyzed using Statistical Package for Social Science (SPSS) computer software and results in form of percentages were presented using graphs, pie-charts and tables. Verbal quotes were also used to capture farmers' perceptions on rabbit production and marketing.

3. Results and Discussion

3.1 Challenges faced by rabbit farmers by gender

About 75% of males cited low genetic potential of the local breed of rabbits as the major challenge in the production of rabbits (Figure 1). Only female respondents indicated high mortality of rabbit as a major challenge in its production. Poor markets and poor nutrition were indicated as main challenges by the majority (75%) of the females. Sixty two per cent of the males cited poor funding as a challenge in rabbit production. The study sample was mainly dominated by females, which has a negative impact on the production of rabbits since rural women are subdued by their spouses in achieving their potential activities and are also financially constrained (FAO, 2008). The critical role of rural women has been to eradicate poverty through small scale subsistence farming (Nkazimulo, 2018). The study revealed more participation of women than men in rabbit production in Chiweshe communal area. This is in contrary to Ossen et al. (2008), who noted a limited participation of rural women in livestock value chain in Nigeria.
3.2 Challenges affecting rabbit production in Chiweshe communal area

The majority (52%) of the respondents indicated that the main challenges were poor funding and poor nutrition (Figure 2). Personal perspectives and beliefs accounted for 22% of the respondents. Poor markets, poor nutrition and low genetic potential were regarded as challenges by 24% of the respondents. Only 2% of the respondents mentioned the challenge of high mortality of rabbits as a pitfall in its production. In this study poor funding, nutrition, poor markets and religious beliefs are the major challenges in the production and marketing of rabbits in Chiweshe communal area. This is also in agreement with Tembachako et al. (2017), who indicated that poor extension services, inadequate feeds, market availability and religious beliefs are the major causes of low rabbit production in Mt Darwin district, Zimbabwe. This also concurs with Rabbit Breeders and Producers Association of Zimbabwe (2015), which stated that there are no organized markets for rabbits in the country although there are huge opportunities to market the meat, animals and its by-products. A study by Nworgu (2006) also indicated that non-readily available markets and inadequate knowledge and information about the benefits of keeping rabbits are among the problems of rabbit production in Nigeria. This is also supported by Odinwa et al. (2016), that poor marketing channels, lack of capital, lack of proper awareness and production techniques are among the major challenges in the production of rabbits by small scale farmers.

Figure 1: Challenges affecting rabbit production in communal areas by gender

Figure 2: Challenges affecting rabbit production in Chiweshe communal area
3.3 Extension Services offered to rabbit farmers

The study indicated that 40% of the respondents received extension staff visits on rare occasions (Table 1). Thirty per cent of the respondents showed that some visits were made when the extension staff has been consulted and 18% received regular visits. Only 12% of the respondents indicated other reasons for extension farm visits including passing through the area or having been come to visit their relatives. In a study by Mutisya (2014), technical knowledge, poor markets, social beliefs, training and extension services are among the major challenges in the adoption of commercial rabbit production in Kenya. Mashapa et al. (2013), also indicated that agricultural extension service delivery is the driving force in agribusiness and is very important in rural poverty reduction. The rare occasions when the extension officers visit the farmers were during training sessions of other agricultural crops such as maize or sorghum, and could partly offer the service when it is requested for. Training and extension services provide educational assistance which is best suited to the rabbit farmers and other stakeholders (Ministry of Agriculture, 2011).

Table 1: Percentage Distribution of the Respondents’ on Farm Visits by Extension Staff (n = 50)

<table>
<thead>
<tr>
<th>Frequency of farm visits</th>
<th>Males</th>
<th>Females</th>
<th>Whole sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regularly</td>
<td>29</td>
<td>31</td>
<td>30</td>
</tr>
<tr>
<td>On rare occasions</td>
<td>38</td>
<td>41</td>
<td>40</td>
</tr>
<tr>
<td>When consulted</td>
<td>19</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>Others (specify)</td>
<td>14</td>
<td>10</td>
<td>12</td>
</tr>
</tbody>
</table>

3.4 Target Markets

The majority of the interviewed farmers rely on local markets in the community (92%), whilst the remaining (8%) sell their rabbits to new farmers as breeding stock (Figure 3). None of the respondents indicated national or international markets.

![Figure 3: Percentage distribution of the respondents’ target market for rabbits](image)

3.5 Reasons for selling rabbits

The study showed that 60% of the farmers sell their rabbits for business purposes, whilst 28% of the respondents acknowledged that they sell their rabbits to meet emergency needs and 12% to regulate the size of their herds (Figure 4). Based on this study most farmers sell their rabbits to local farmers to earn a living thereby improving their livelihoods. Similarly, a study by Ministry of Agriculture (2011), in Kenya, made the same observation that the main consumers for the rabbits are the local households or restaurants. Rabbits are mostly used for meat, increasing capital earning as well as specimens in laboratories (Shimer, 2013).
3.6 Perspectives of value chain actors in the production and marketing of rabbits

During the focus group discussions which were conducted most of the participants were from the community. These are the Agriculture extension officers, Veterinary Officers, Village heads, Environmental Health Technicians, Church Leaders and local farmers. Extension officers viewed the rabbit production as a very lucrative business which can improve rural livelihoods, although they encounter some challenges in disseminating information to the farmers. They highlighted the lack of training materials and lack of funding from the government to carry out training workshops as major challenges in rabbit production and marketing. One of the Agriculture extension officers had this to say, “We are very eager and prepared to conduct trainings and workshops but we don’t have training materials and funding”.

Church leaders perceived rabbit keeping as unholy; this comes about their religion and moral beliefs which prohibits rearing of rabbits for any cause. Some of the participants belonged to the apostolic sect group. A 28 year old woman from Ngwo Tsvuku apostolic sect supported her religious ethos by saying, “We will never keep or eat rabbits because our leader (Mutumwa) preached that eating or keeping of rabbits is a sin and those who have done it should come before God and repent. So we will live by his words”.

Village heads lamented on the increasing reports of theft in the community, which is a threat to the ongoing viable project. The farmers also seconded the village heads on the issue of theft, citing the lack of adequate funds to construct lockable cages and pens which are more secure. A white beard old man from the second discussion group warned the dwellers over the increasing incidents of stock theft, and had this to say, “Whoever is involved in the act of stealing peoples' livestock must stop it because once the law catches up with you, you will live to regret”.

Health workers summarized the advantages of eating white meat to the participants, though church leaders mostly from the apostolic sect were unmoved. “Rabbits produce white meat which has been proved by medical practitioners to be good to our health. We urge farmers to keep rabbits and include it in their diet so as to have a healthy living condition. Cleanliness and hygiene is the most important factor to avoid disease contaminations”. Said one of Environmental Health Technicians

Lack of marketing strategies was also raised by the rabbit farmers as another major constraint in the marketing of rabbits. A local rabbit farmer said, “Politicians and various government departments must help us in finding better and strategic markets in towns and cities. Our local market is characterized by very low demand resulting in low producer price. We are even prepared to meet international market demands, but the government is not helping us in commercializing this industry”.

Value chain actors viewed the discussion of rabbits almost the same as respondents of the questionnaires in which the same challenges were cited. Most developing countries have problems in lack of funding and equipment to cater for training and demonstrations in rabbit production (Rabbit Breeders and Producers Association of Zimbabwe, 2015). Apostolic church leaders regard rabbit keeping as unholy even after the health workers and extension staff summarized the advantages of
keeping rabbits to them. This concurs with Mutisya (2014), who indicated that convincing apostolic sect members to venture into rabbit production is an unimaginable task.

4. Conclusion
The study concludes that farmers in Chiweshe communal area are facing quite a number of challenges in the production and marketing of rabbits. Farm visits by extension workers were considered to be inadequate since extension workers rarely visit farmers for rabbit keeping programs. Findings from this study show that lack of funding, perspectives and personal beliefs and poor markets are the major challenges in rabbit production. In this study rabbit farming was female dominated. Apostolic sect church members were not willing to venture into what they call unholy practices of rabbit keeping.

5. Recommendations
The study recommends that much attention be given in order to tackle several challenges faced by rabbit farmers. The Government through the department of livestock should mobilize enough resources for training and workshops for rabbit farmers so as to increase its production. Various marketing lines should be promoted by the government livestock department. The Government should engage the Non-Governmental Organizations and the business community in sponsoring rabbit cooperative projects or individual farmer initiatives, and also help farmers to identify markets in towns and cities. The government should devote more attention to small livestock production so as improve rural livelihoods, and offer incentives to farmers with big herd/stock. Apostolic church members should be equipped with knowledge so that they can keep small livestock including rabbits for commercial purposes and not for consumption.

6. References
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