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COMMUNAL LIVESTOCK PRODUCTION IN SIMBE, GOKWE SOUTH DISTRICT OF ZIMBABWE

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ABSTRACT: *Communal livestock production systems are dynamic being responsive to changes in the socio-political and economic environments. A survey was conducted in Simbe communal area of Gokwe South District in Zimbabwe, to assess current livestock production systems. Five villages and 3 wards were randomly selected and a semi-structured questionnaire administered by 5 trained enumerators to collect data on; house-hold demographics, livestock species kept and their numbers, uses of livestock and waste, feeding and watering as well as livestock health management. Data were analysed using the Statistical Package for the Social Sciences (SPSS) version 16. It was observed that farmers in the study area kept a wide range of livestock species including; poultry (notably; chickens, ducks, turkeys and guinea fowls), goats, cattle, donkeys and pigs. Cattle and goats were the major sources of draught power and income, respectively. Farmers indicated that they faced challenges in feeding and watering their animals during the dry season. Diseases were the major cause of offspring mortality in most animal species while predation was the major cause in chickens. It was recommended that farmers acquire education on production and improve on health and general management.*

Key words: *Livestock, Draught Power, Dry Season, Cattle, Manure, Natural Veld*

ORIGINAL ARTICLE

INTRODUCTION

Livestock production is the most important agricultural activity in most of the countries in Southern Africa (Mamabolo and Webb, 2005). Around 70% of the human population of Sub-Saharan Africa (SSA) are primarily or partly dependent on livestock (Lenné and Thomas, 2006). Livestock account for 53% of the agricultural capital stock in Sub-Saharan Africa (SSA) and contribute by 30% to agricultural gross domestic product (GDP) (NEPAD, 2005). According to FAO (2001), agriculture is the mainstay of the national economy accounting for about 15 to 20 percent of the GDP in Zimbabwe, providing income and employment for a substantial percentage of the population. Paradoxically, the majority (74%) of communal farmland is on inherently infertile sandy soils in marginal areas characterised by low and erratic rainfall (Gambiza and Nyama, 2000).

Communal livestock productivity is therefore very poor, owing to the above, among other factors. In addition to poor soils, most crop-livestock production relies directly on rainfall, and adverse changes in quantity and temporal patterns of rainfall are a major risk to production (Masikati, 2010). Feed shortages especially during the dry season therefore constitute a serious challenge to communal livestock production (Masikati, 2010). Communal livestock production largely relies on the natural veld for feed. Due to the seasonality of rainfall in Zimbabwe, there are wide variations in the quantity and quality of these natural pastures following the seasonal rainfall distribution (Sibanda, 1986).

Agricultural production systems in the semi-arid tropics have been assessed over a long period of time. Although a wealth of knowledge on this subject exists, production systems are dynamic. The climatic and socioeconomic changes occurring in many parts of the region are rapidly transforming traditional, extensive crop and livestock management practices (Masikati, 2010). Changes and shifts in production systems occur in response to the changing environment, socio-economic and political systems among other factors. As such, agricultural production systems as currently practiced by farmers in the semi-arid tropics of sub-Saharan Africa are different from those used in the past (Masikati, 2010). In order to ensure meaningful research interventions, it is therefore essential to undertake an appropriate assessment of the current crop-livestock farming systems (Masikati, 2010). The main aim of this study was therefore, to assess current livestock production systems in Simbe communal area of Gokwe South district in Zimbabwe.

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MATERIALS AND METHODS

Study site

Gokwe is the largest district in Zimbabwe in terms of area and lies to the north-west part of the country. It is in the Midlands province in the country's agro-ecological region III. Mean annual rainfall in the region ranges between 600 to 650 mm. Most of the rainfall is experienced during the period from November to February. December and July are the wettest and driest months, respectively. The weather station is at about 18.22°S 28.90°E and at an altitude of about 1 282 m. The area is characterized by predominantly sandy soils and the most common land tenure system is communal with a few resettlement schemes in places (Gwimbi and Mundonga, 2010).

Selection of sampling units

Sampling units in the target population were hierarchal in nature, where in the highest level were wards, followed by villages and then households. The multistage sampling procedure was used to come up with the participants in the survey. Three wards (wards 1, 2 and 3) were randomly selected followed by a random selection of 5 villages per ward. Four households were randomly selected from each village to participate in the study. Sampling frames for the wards, villages and households were obtained from the chief, headmen and village heads, respectively.

Data collection and analyses

Semi-structured questionnaire and interviews: A survey was conducted in Simbe communal area of Gokwe South District. Semi-structured questionnaires and interviews with farmers were used to collect data. The questionnaire was designed to capture the following;

Demographics: Demographic details were captured. These included; name of the village, sex of the respondent, age and level of training attained by the respondent, his/her farming experience, house-hold size, sex of head of household and the house-hold age distribution.

Livestock production

Farmers were interviewed on production practices. Data collected on this aspect included; species kept, relative importance to livelihood, use of livestock, identification of constraints on production and their possible solutions, drought coping and mitigation strategies, management practices (feeding, watering and health provision) as well as draught power status and needs.

Focus group discussions and literature review

Focus group discussions were also used to collect semi-structured data. A set of purposively selected farmers would gather together with the researcher to discuss issues and concerns based on a list of key aspects influencing livestock management practices in the area. A review of literature was also employed to complement the questionnaire as the main mode of data collection. Data were analysed using the Statistical Package for Social Sciences (SPSS) version 16.

RESULTS AND DISCUSSION

Livestock species and flock/herd size

Farmers in Simbe communal area kept various livestock species including; chickens, cattle, goats, sheep and turkeys (Figure 1) to name a few. Indigenous chickens were the most numerous and common species kept. Flock sizes ranged from 3 to 80 birds per house-hold and the mean flock size was 16. The mean observed in the study is similar to observations in earlier studies (17.5) in Rushinga (Muchadeyi et al., 2004). This is slightly contrary to findings by other researchers who recorded means of 22.7 and 20.7 for Gutu and Zhombe communal areas, respectively (Masimba et al., 2011; Mlambo et al., 2011). However, the range observed in this study is generally similar to 2 – 75 observed in Zhombe (Mlambo et al., 2011). Cattle were the second most numerous livestock species kept in Simbe communal area. The mean herd size observed was 8.1 with a range of 3 to 30 cattle per house-hold. The mean is close to 9.1 recorded for Chikombedzi (Scoones and Wolmer, 2000).

Uses of livestock

According to Figure 2, cattle played a vital role as a source of draught power for 96% of the house-holds interviewed. Christensen and Zindi (1991), stated that ownership of less than 4 cattle is considered as inadequate access to draught power. Most of the house-holds in Simbe communal area, however, had sufficient access to draught power as shown by the mean herd size of 8.1 (Figure 1). This is higher than the mean recorded for Masvingo and Sanyati (3.6) (Ndlovu et al., 2004). However, herd sizes ranged between 3 – 30 cattle per house-hold, suggesting that some of the farmers interviewed had insufficient access to draught power (Christensen and Zindi, 1991). Donkeys seemed to be an alternative source of draught power as reported by 25% of house-holds having a very low average herd size (0.37) per house-hold. This is in sharp contrast with observations by Ndlovu and co-workers (2004) who stated that five to seven donkeys is the most common holding. Ndlovu and co-workers (2004),

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however noted that cattle are the major source of draught power in the communal areas of Zimbabwe whereas donkeys are an important source of supplementary draught power. Despite the extremely low average herd size for donkeys in this study, their contribution as a source of draught power was quite significant as reported by 25% of house-holds in Simbe communal area. It is likely that the 4% that did not use cattle draught power used donkeys to pull implements requiring traction force.

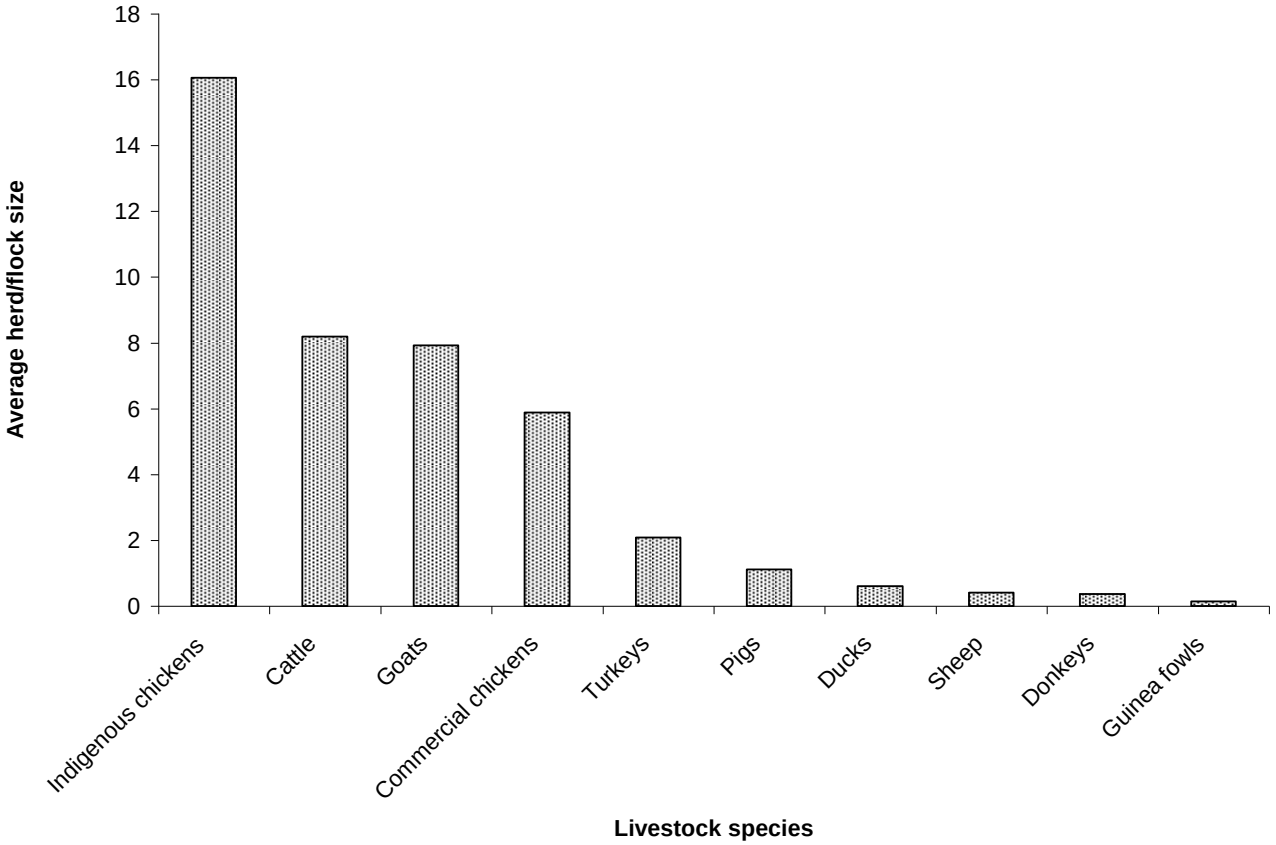

Figure 1 - Livestock species and mean numbers per house-hold in Simbe

Indigenous chickens showed numerical dominance over cattle, however the latter played a wider range of critical roles in the livelihoods of Simbe communal farmers being a very important source of draught power (96%), manure (94%), milk (90.2%), meat (60.8%) and their use in various cultural activities (29.4%) including payment of bride price. This agrees with observations by Mavedzenge et al. (2006) and Peeling and Holden (2004) who stated that cattle in the communal areas have multiple uses – for draught power, transport, milk, manure, savings, bride-wealth payments, and that meat and hides were terminal products obtained at the end of their productive life. Dovie and co-workers (2006) reported that using animals for ploughing was the most valued benefit.

Elsewhere, it was noted that cattle production is the most important livestock subsector in South Africa (Musemwa et al., 2008). Goat flock sizes in this study averaged 7.9 per house-hold. This is contrary to observations by Mahanjana and Cronjé (2000) who recorded a mean goat flock size of 16 in the Eastern Cape region of South Africa. This study also revealed that goats are an important source of meat (78.4%) and milk (23.5%). This is in agreement with observations by Mamabolo and Webb (2005) who stated that goats primarily produce meat but also produce milk. There was evidence that goats were also used for cultural activities such as *Masungiro* (a common practice in the Shona culture in Zimbabwe).

Uses of livestock waste

Farmers in this study indicated that they obtained significant quantities of waste from cattle, sheep, goats and chickens, among other species of livestock (Figure 3). The respondents used dung from cattle as; manure (94%), a source of income (13.7%) among other uses (25.5%) including use as floor polish. The use of cattle dung as manure is quite common as observed by other researchers including; Musemwa et al. (2008), Ndlovu et al. (2004) as well as Gambiza and Nyama (2000). Musemwa et al (2008) reported that farmers in communal areas of South Africa even combined cattle waste and sold it to companies that manufacture organic fertilizers. About 80% of the farmers in Simbe used chicken waste as manure while 76.5% indicated that they used goat waste as manure. Pig waste was not very popular (7.8%) among farmers as a source of manure. This is probably because of the low mean flock sizes for pigs thus generating very low quantities of waste. Other respondents indicated that they just left waste in the kraal.

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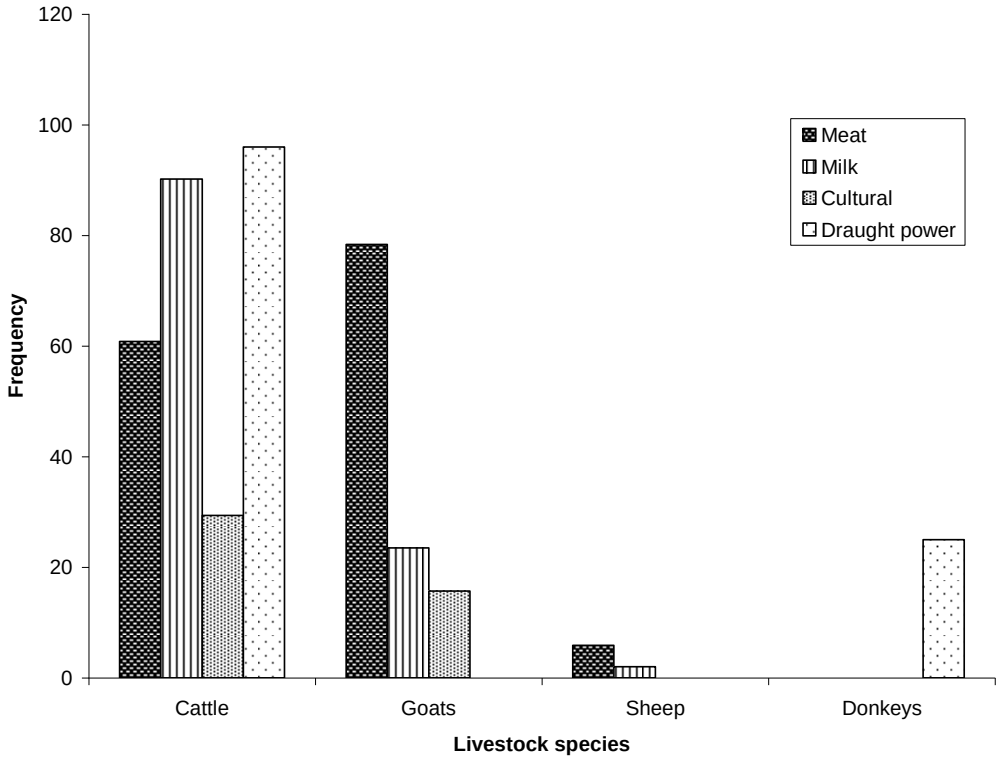

Figure 2 - Uses of some livestock species kept in Simbe

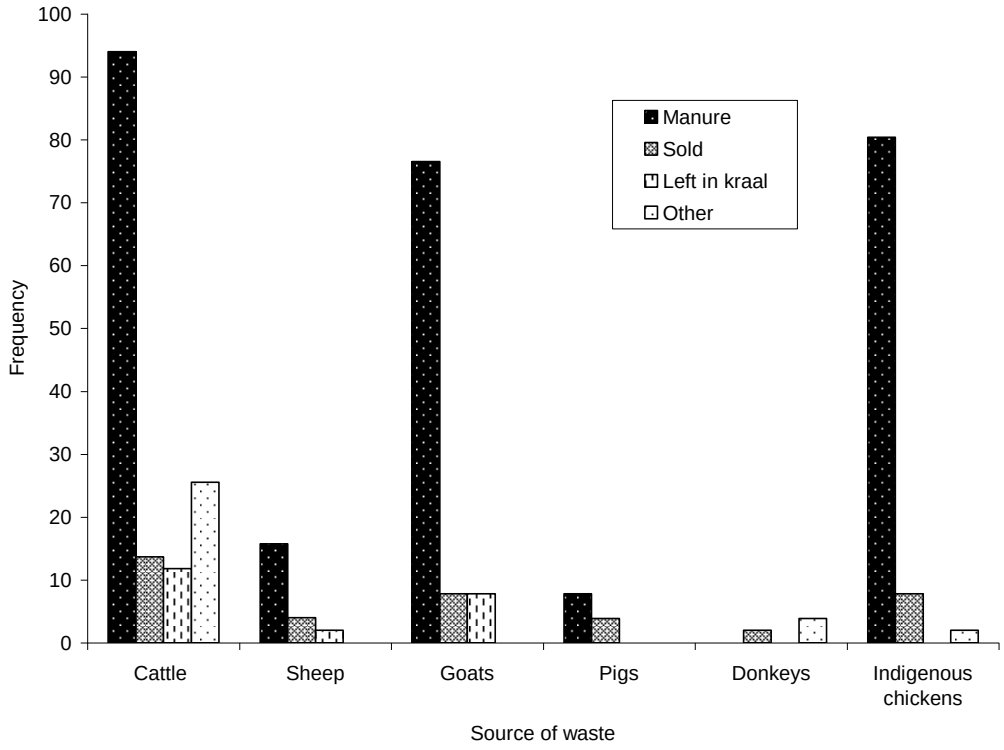

Figure 3 - Uses of livestock waste

Livestock rankings as sources of income

Crops were ranked higher than livestock as sources of income in Simbe communal areas. This is in agreement with findings by Masikati (2010) in Nkayi where crop production was ranked high in terms of importance. Masikati argued that crop production was necessary for both subsistence and cash income (Masikati, 2010). However, the contribution of livestock towards generating income for house-holds in Simbe was quite evident. Goats were assigned the highest (29.4%) rank as a source of income among livestock species kept in Simbe (Figure 4). This confirms observations by Masikati (2010) who stated that farmers keep cattle mainly for

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draught power and milk, while goats are for cash income. This is attributed to their fast turn-over and salability compared to cattle (Shumba, 1994). According to Shumba (1994), advantages of goat production include: high profitability and fast turnover due to earlier maturity and shorter generation interval; suitable meat quantities for rural families and easy salability among other factors. Mahanjana and Cronje (2000) noted that the main reasons given for keeping goats in a study in South Africa were for slaughter during traditional ceremonies (35%) and for cash sales (23%). Goats were also more important than sheep as a source of income in this study. Their dominace over sheep confirms observattions by Mamabolo and Webb (2005), who reported that goats are generally more prolific and easier to manage than sheep for people with little animal management experience such as in most communal areas. The second most important source of income among livestock was chicken production, followed by cattle. This is only logical given that chickens are very important as a source of meat for house-hold consumption hence less popular as a source of income. However, they are also more easily disposable compared to cattle whose ownership patterns can be very complicated, compounded by the various roles played by the latter, including draught power provision.

Feeding and watering

The natural veld was the most common source of feed for livestock as reported by most respondents in Simbe. About 88% of the respondents stated that they relied mostly on the natural veld for feeding their cattle herds. This observation is in tandem with observations by Sibanda (1986) and Ndlovu and Sibanda (1991). Use of crop residues was also reported by farmers in the Simbe communal area. It has been documented that this practice is quite common in many crop-livestock systems. For example, the practice was noted in Ethiopia, Mali and Zimbabwe (Scoones and Wolmer, 2000). The crop residue most readily available and utilized was maize stover, an observation also supported by other researchers (Lukuyu et al., 2009; Sibanda, 1986; Masikati, 2010). This was mainly fed to cattle especially in the dry season. This indicates the existence of integration between crops and livestock production in the rural areas as evidenced by the use of cattle and donkeys as sources of draught power while residues are fed to animals. Masikati (2010) also noted that integrated crop-livestock farming is the predominant system of production and subsistence in communal farming systems of Zimbabwe. According to Masikati (2010), a few farmers used crop residues to mitigate feed shortages and residues used were fed untreated, thus they were of low nutritional value to animals.

Most farmers in the study area used perennial rivers (51%) followed by dams/ponds (25.5%), boreholes (9.8%) and seasonal rivers (5.8%) as sources of water for their livestock herds (Figure 5). Other sources, though less common, included open and protected wells as well as springs.

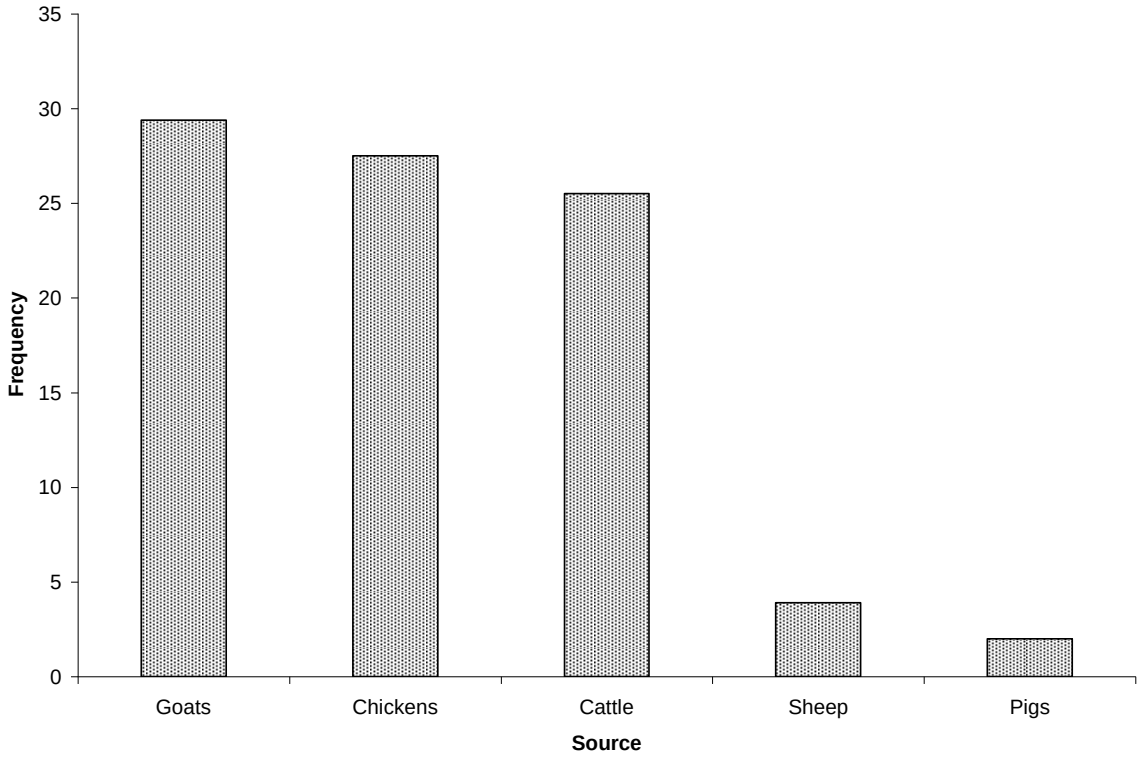

Figure 4 - Rankings for livestock species as sources of income

Feeding and watering

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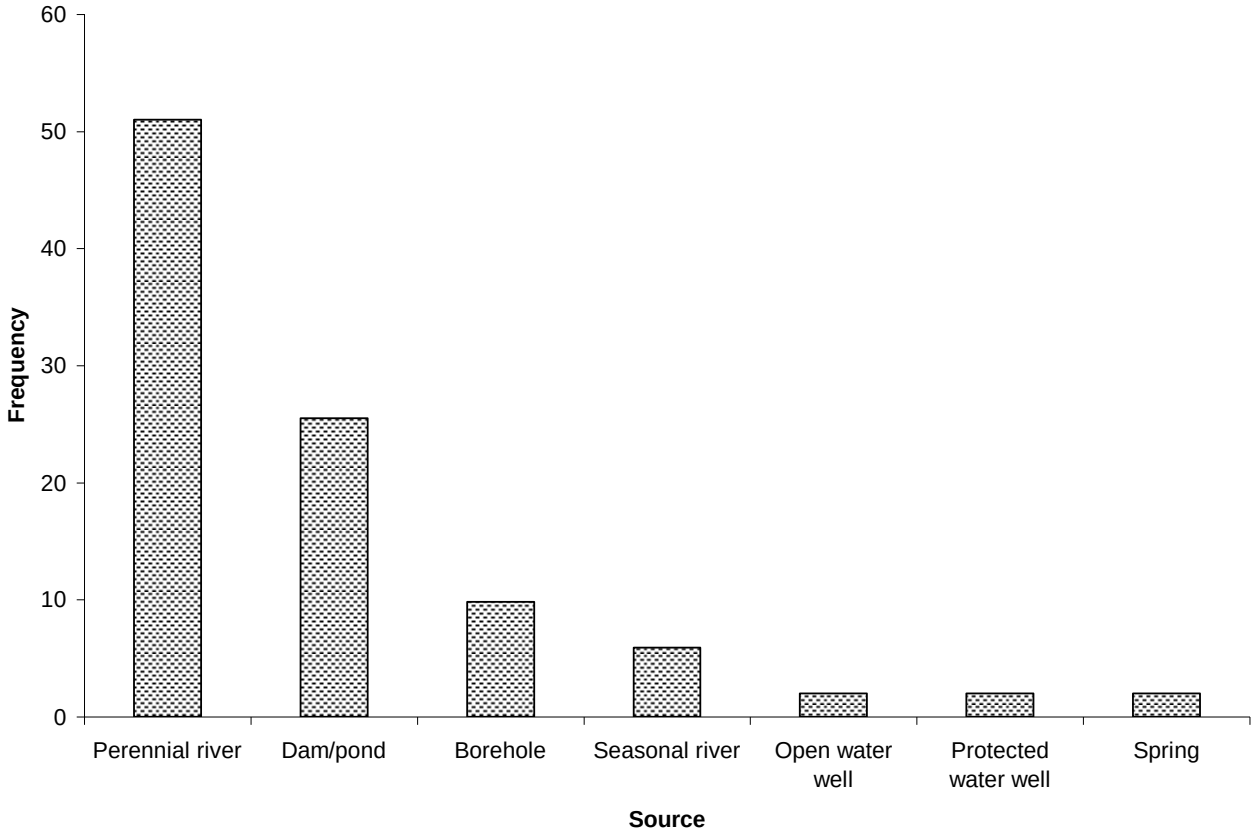

Figure 5 - Common sources of water for livestock in Simbe communal area

Distance to watering point

Most of the farmers in Simbe agreed that the provision of water for livestock was indeed essential. There was seasonal variation both in availability as well as distance to water source. Only about 4% of the respondents indicated that they had water right at their house-holds during the dry season compared to 21.6% during the wet season (Figure 6). About 51% showed that water sources were within 1 km from their homestead during the wet season against 25.5% during the dry season. Most respondents (64.7%) in Simbe indicated that they had to cover up to 5 km to water their livestock during the dry season. However, only about 4% had to cover between 6 and 10 km to water their animals (Figure 6). It is also shown in this study that such distances in search of water are only covered during the dry season. While Masikati (2010) also noted the same trend in water shortages especially in the dry season, the anomaly in comparison to this study regards maximum distance to water sources during the dry season. Masikati (2010) reported distances of up to 14 km whereas the maximum reported in Simbe was 10 km. Livestock depend on water, but when poorly managed, they contribute to the degradation and contamination of water resources. Drinking water is essential for animal survival, but the amount needed is small compared with other uses of agricultural water (Peden, 2007). Figure 7 shows that the majority of farmers watered their livestock twice a day in both the dry season (58%) and the wet season (48%). Up to 15% of the respondents watered their livestock once every 3 days during the dry season. This is probably due to the long distances that farmers and their herds would have to walk (up to 10 km, Figure 6). Masikati (2010) observed in Nkayi communal areas that farmers let their cattle drink once every 2 days.

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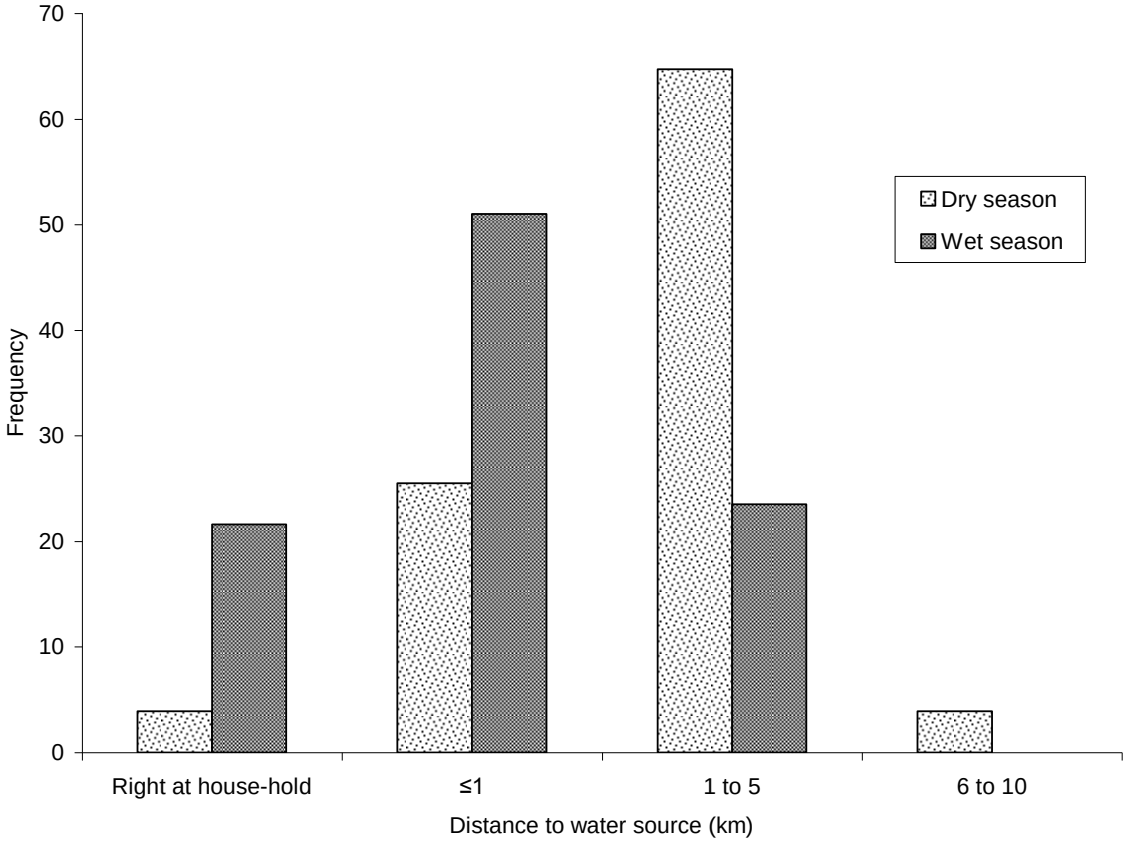

Figure 6 - Variation in distance to watering points between seasons

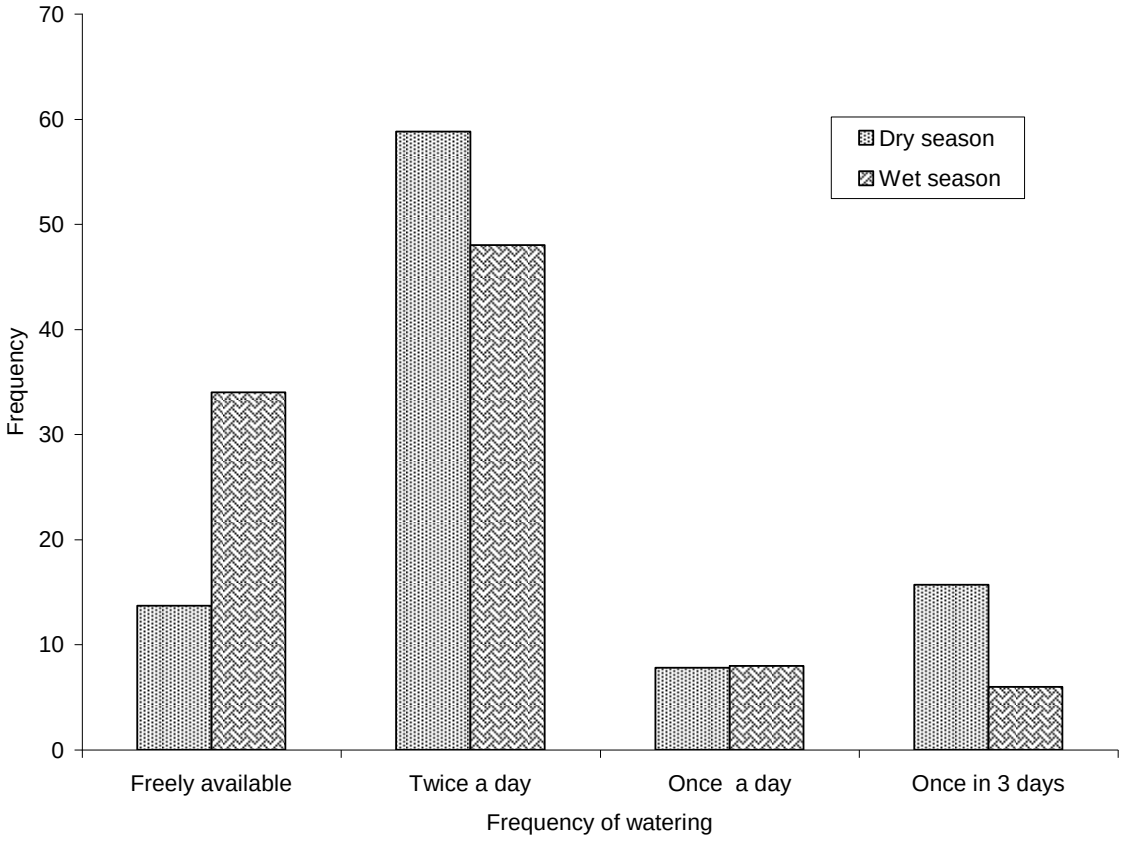

Figure 7 - Frequency of watering

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Livestock health management

About 33% of the respondents indicated that diseases were the major cause of calf mortality (Figure 7) in cattle while up to 6% of the causes of mortality in calves were unclear to the farmers. It emerged from this study that livestock species that were most prone to disease attack were cattle, goats and chickens. Other researchers agree that diseases are a major constraint to the improvement of the livestock industry in the tropics (Devendra et al., 2000) as they decrease production and increase morbidity and mortality (Mwacharo and Drucker, 2005). Turkeys and ducks were the least affected by diseases. These species are generally hardy. Despite the importance of diseases as causes of mortality, respondents were not able to positively identify disease conditions affecting their livestock. This is a common observation among communal farmers as observed in earlier research work including a study by Masimba and co-workers (2011). However, in a study that was conducted in Zhombe communal area of Zimbabwe, farmers showed a good understanding of poultry flock health and managed to positively identify diseases affecting their flocks (Mlambo et al., 2011).

Predation was the chief cause of chick mortality (33.3%) in chickens while diseases contributed (19.6%) to chick losses. Pedersen (2003) noted that, in Sanyati, 18% of the mortality in chickens was a result of diseases. It is interesting however, to note that chickens were the only species where predation occurred. This is probably due to the size of the species and production system which is predominantly extensive, exposing chicks to predators especially wild birds and small carnivores.

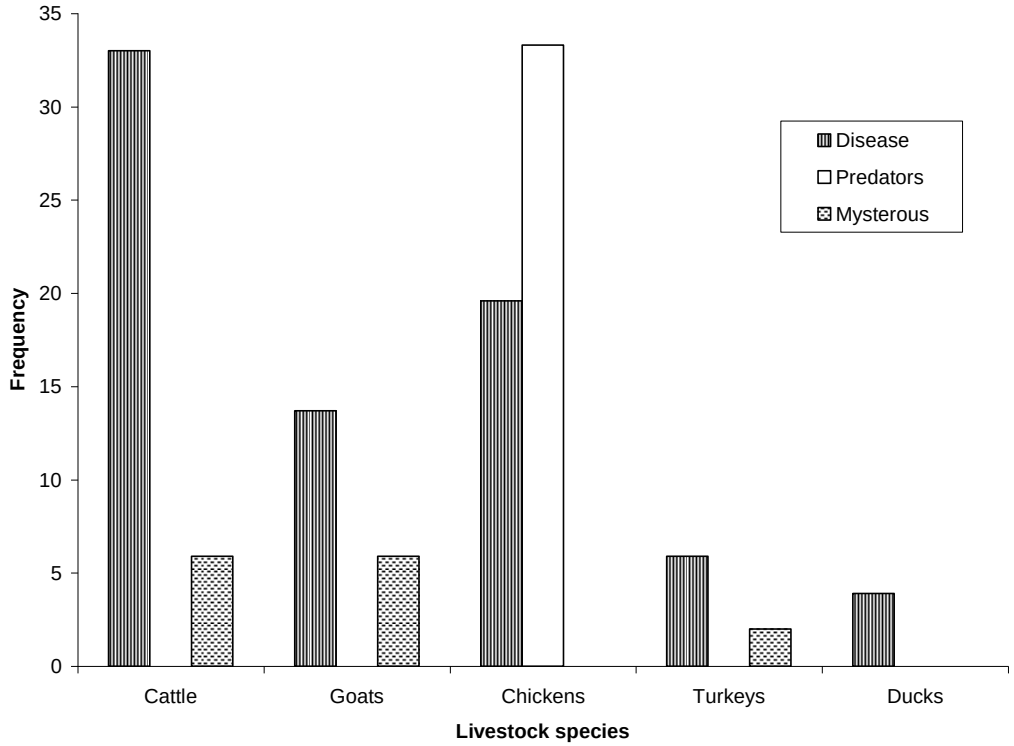

Figure 8 - common causes of offspring mortality in Simbe communal area

CONCLUSION AND RECOMMENDATIONS

Communal farmers in Simbe communal area of Gokwe South district keep a wide range of livestock species including; chickens, cattle, goats, sheep and pigs. Cattle were an important source of draught power and, with other livestock species provided; manure, milk and meat in addition to playing a variety of cultural roles. Crop production was more important as a source of house-hold income compared to livestock production. Among livestock species, goat sales were the most important source of income. Farmers relied on the natural veld for feeding their livestock. There was use of livestock waste as a source of manure for crop production, hence integration between crop and livestock production. The most common source of water for livestock was perennial rivers. Most farmers faced challenges in watering their livestock especially during the dry season and had to travel long distances in search of water.

Diseases were the major cause of offspring mortality for most species excluding chickens where predation dominated. It was recommended that communal livestock producers practice recommended disease prevention and control measures such as vaccinations and the use of antibiotics/relevant ethno-veterinary practices, respectively. Training could also go a long way in improving management practices.

REFERENCES

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Scienceline/Journal homepages: http://www.science-line.com/index/; http://www.ojafr.ir

Christensen G and Zindi C (1991). Patterns of livestock ownership and distribution in Zimbabwe's Communal Areas. Working Paper AEE 4/91. Department of Agricultural Economics and Extension, University of Zimbabwe, Harare, Zimbabwe.

Devendra C, Thomas D, Jabbar M and Zerbini E (2000). Improvement of Livestock Production in Crop-Animal Systems in Agro-Ecological Zones of South Asia., ILRI, Nairobi, Kenya.

Dovie DBK, Shackleton CM and Witkowski ETF (2006). Valuation of communal area livestock benefits, rural livelihoods and related policy issues.

Franke AC, Berkhout ED, Iwuafor ENO, Nziguheba G, Dercon G, Vandeplas I and Diels J (2012). Maize Production Intensification in Integrated Crop-Livestock Systems in West Africa. Plant Nutrition Research Highlights.

Gambiza J and Nyama C (2000). Country Pasture/Forage Resource Profile, Zimbabwe. Available at: http://www.fao.org/ag/AGP/AGPC/doc/Counprof/zimbabwe/zimbab.htm. Accessed on 15 February 2012

Gwimbi P and Mundonga T (2010). Impact of climate change on cotton production under rainfed conditions: Case of Gokwe, Journal of Sustainable Development in Africa, Vol. 12, No.8,2010

Lenné JM and Thomas D (2006). Integrating crop–livestock research and development in Sub-Saharan Africa - Option, imperative or impossible? Outlook on Agriculture Vol. 35 (3) Pp 167–175

Lukuyu BA, Kitalyi A, Franzel S, Duncan A and Baltenweck I (2009). Constraints and options to enhancing production of high quality feeds in dairy production in Kenya, Uganda and Rwanda ICRAF Working Paper no. 95. Nairobi, Kenya: World Agroforestry Centre

Mahanjana AM and Cronjé PB (2000). Factors affecting goat production in a communal farming system in the Eastern Cape region of South Africa. South African Journal of Animal Science 2000, 30(2)

Mamabolo MJ and Webb EC (2005). Goat production survey - fundamental aspects to model goat production systems in Southern Africa: Case Study - Agricultural Commission.

Masikati P (2010). Improving the water productivity of integrated crop-livestock systems in the semi-arid tropics of Zimbabwe: an ex-ante analysis using simulation modeling. Available at: http://www.zef.de/fileadmin/webfiles/downloads/zefc_ecology_development/eds_78_masikati_text.pdf. Accessed on 17 January 2012

Masimba ES, Mbiriri DT, Kashangura MT and Mutibvu T (2011). Indigenous practices for the control and treatment of ailments in Zimbabwe's village poultry. Livestock Research for Rural Development. Vol. 23, Article #257. Available at: http://www.lrrd.org/lrrd23/12/masi23257.htm. Accessed on 20 March 2012Mavedzenge BZ, Mahenehene J, Murimbarimba F, Scoones I and Wolmer W (2006). Changes in the Livestock Sector in Zimbabwe Following Land Reform: The Case of Masvingo Province. A Report of a Discussion Workshop. IDS: Brighton. Available at: http://www.ids.ac.uk/files/Masvingo_workshop_report.pdf. Accessed on 14 May 2012

Mlambo T, Mbiriri DT, Mutibvu T and Kashangura MT (2011). Village chicken production systems in Zhombe communal area of Zimbabwe. Livestock Research for Rural Development 23 (154). Available at: http://www.lrrd.org/lrrd23/7/mlam23154.htm. Accessed on 18 March 2012

Muchadeyi FC, Sibanda S, Kusina NT, Kusina J and Makuza SM (2004). The village chicken production system in Rushinga District of Zimbabwe. Livestock Research for Rural Development Vol. 16. Available at: http://www.cipav.org.co/lrrd/lrrd16/6/much16040.htm. Accessed on 26 March 2012

Musemwa L, Mushunje A, Chimonyo M, Fraser G, Mapiye C and Muchenje V (2008). Nguni cattle marketing constraints and opportunities in the communal areas of South Africa: Review. African Journal of Agricultural Research Vol. 3 (4), pp. 239-245

Mwacharo JM and Drucker AG (2005). Production objectives and management strategies of livestock-keepers in Southeast Kenya: implications for a breeding programme. Tropical Animal Health and production. Trop Anim Health Prod. 37(8): 635-52. Available at: http://www.ncbi.nlm.nih.gov/pubmed/16619880. Accessed on 17 March 2012.

Ndlovu LR and Sibanda S (1991). Some constraints to adoption of agro-by-products research results by the communal farmers of Zimbabwe. International Livestock Research Institute. Available at: http://www.fao.org/wairdocs/ILRI/x5536E/x5536e1e.htm. Accessed on 12 February 2012

Ndlovu RL, Bwakura T and Topps JH (2004). In: Starkey P and Fielding D (eds), *Donkeys, people and development.* A resource book of the Animal Traction Network for Eastern and Southern Africa (ATNESA). ACP-EU Technical Centre for Agricultural and Rural Cooperation (CTA), Wageningen, the Netherlands. 244p.

NEPAD (2005). 'Integrating livestock, forestry and fisheries subsector into the CAADP', companion document to the Comprehensive Africa Agriculture Development Programme, NEPAD, Nairobi.

Peden D, Tadesse G, Misra AK, Awad Amed F, Astatke A, Ayalneh W, Herrero M, Kiwuwa G, Kumsa T, Mati B, Mpairwe D, Wassenaar T, Yimegnuhal A (2007). Livestock and water for human development. IN: Molden, D. et al., Comprehensive assessment of water management in agriculture. p. 485-514. Oxford (UK): Oxford University Press.

Pedersen DL (2003). Production of Semi-Scavenging Chickens in Zimbabwe. Ph.D Thesis. Royal Veterinary and Agricultural University, Copenhagen, Denmark.

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Scienceline/Journal homepages: http://www.science-line.com/index/; http://www.ojafr.ir

Peeling D and Holden S (2004). The effectiveness of community-based animal health workers, for the poor, for communities and for public safety. *Rev. sci. tech. Off. int. Epiz.,* 2004, 23 (1), 253-276

Scoones I and Wolmer W (2000). Pathways of Change: Crops, Livestock and Livelihoods in Africa, lessons from Ethiopia, Mali and Zimbabwe. Institute of Developmental Studies, University of Sussex. Available at: http://www.dfid.gov.uk/r4d/PDF/Outputs/Livestock/R6781a.pdf Accessed on 29 March 2012

Shackleton CM, Netshiluvhi TR, Shackleton SE, Geach BS, Balance A and Fairbanks DFK (2002). Direct use values of woodland resources from three rural villages, *Economic Botany* **56** (2), pp. 130–146.

Shumba C (1994). Goat development in Masvingo province, Zimbabwe: the farmers' perspective. Available at: http://www.fao.org/wairdocs/ilri/x5472b/x5472b09.htm. Accessed on 29 March 2012

Sibanda S (1986). The use of crop residues in livestock production systems in the communal areas of Zimbabwe, pp. 140-144. In: Preston, T. R. and Nuwanyakp, M. Y. (editors). Towards optimal feeding of agricultural by-products to livestock in Africa. Proceedings of a workshop held at the University of Alexandria, Egypt. ILCA, Addis Ababa, Ethiopia

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Scienceline/Journal homepages: http://www.science-line.com/index/; http://www.ojafr.ir