

**POLICY OPPORTUNITIES TO ENHANCE THE ROLE OF SMALLHOLDER LIVESTOCK SYSTEMS IN LIMPOPO PROVINCE OF SOUTH AFRICA**

Rootman, G. T.<sup>20</sup>, Stevens, J. B.<sup>21</sup> & Mollel, N. M.<sup>22</sup>,

**Correspondence Author:** J B Stevens. Email: [joe.stevens@up.ac.za](mailto:joe.stevens@up.ac.za)

**ABSTRACT**

*Post-apartheid administrations in South Africa were faced with redressing the legacy of multifaceted poverty and social inequalities created by apartheid politics. The entrance of smallholder farmers into the mainstream economy became a government priority and policy aim. Institutional efforts in Limpopo Province provided infrastructure to establish poultry and vegetable producing enterprises. Very few livestock projects were funded. The success rate of institutional interventions was low. We argue that smallholder livestock systems offer policy opportunities to realise post-apartheid reform goals in the smallholder livestock sector. The premises are; there are more livestock in communal smallholder sector than in the commercial sector. This indicates there is a substantial level of natural, human and social capital existing within smallholder livestock systems. Secondly, commercial livestock systems are increasingly converted to game and wildlife enterprises necessitating imports of large numbers of livestock from Namibia to account for the shortfall in red-meat in South Africa. It is possible that the low off-take characterising smallholder livestock and the Cattle Complex Philosophy probably deterred past efforts to recognise the potential of smallholder livestock systems for rural and agricultural development. The Cattle Complex Philosophy claims that African smallholders have an attitudinal resistance to sell livestock. Data from a survey amongst 193 households in ten villages of Sekhukhune District of Limpopo Province illustrates that low livestock sales relates to the dysfunctional composition, sub-optimal reproductive potential and high calf mortality of smallholder herds. Conclusions and policy recommendations are offered.*

**Key words:** Smallholder, Livestock, Limpopo Province.

**1. INTRODUCTION**

In South Africa, the areas under systems of communal land tenure stem from the existence of the former homelands, politically constructed during the colonial (Cavendish, 1995) and apartheid periods (McNab, 2004:16; Romuld, Sandham & Vedeld, 1996:3). Two distinctly different systems of land tenure were created to regulate the access to agricultural land. At the basis of this political wisdom was a strong racial divide between black and white farmers. In practice there is a freehold land tenure system characterised by white ownership and a progressive commercial agricultural sector and the communal tenure system found in the former homeland areas characterised by subsistence oriented smallholder farming systems practised by black people (Kirsten, Vink & van Zyl, 1998:1).

---

<sup>20</sup> Limpopo Department of Agriculture, Tsoelike Research Station, Private bag X 1615, Bela Bela. Email: [gt.rootman@gmail.com](mailto:gt.rootman@gmail.com).

<sup>21</sup> Department of Agricultural Economics, Extension and Rural Development, University of Pretoria, Private Bag X 20 Hatfield, Pretoria, 0028

<sup>22</sup> University of Limpopo, Turfloop Campus, Private Bag X 1160, Sovenga, 0727

In post-apartheid South Africa, the communal areas by and large still follow the boundaries of the former homelands. Generally these areas are characterised by multifaceted social disruption and deprivation with the inhabitants depending largely on subsistence smallholder farming to sustain their livelihoods. After the first democratic election in South Africa political administrations were faced with a range of post-apartheid transformation challenges. One of these was the redress of wrongs and the legacy of multifaceted poverty and social inequality created during the reign of apartheid.

## **2. THE PROBLEM FRAMEWORK**

The Reconstruction and Development Programme (RDP) became the guiding policy framework to pursue post-apartheid reform in South Africa (Cousins, 1995:2). The National Land Reform Programme, within the broader RDP, was conceived to redress past injustice (Hall, 2004:25) and to restore the historical racial imbalance in landholding (Lahiff, Maluleke, Manenzhe & Wegerif, 2008:1). The aim was to redistribute land back to black South Africans (Hall, 2004:23). Poor rural black people were the primary target group of the Land Reform Program (Mohamed, 2006:1). Importantly, the democratic government and the African National Congress (ANC) unambiguously stated that the Land Reform Program was to be the central driving force behind rural development (ANC, 1994:19-20; Cousins, 1995:2). Land reform was to raise rural incomes (ANC, 1994:19-20) and reduce multifaceted poverty amongst black people (Roberts, 2005). Promoting smallholder agriculture was therefore highlighted as a policy aim (Verschoor, Ngcobo, Ceballos, Hawkins, Chitsike & Chaminuka, 2009). The entrance of smallholder, resource deprived farmers into the mainstream economy became a government priority (Aliber, Kirsten, Maharajh, Nhlapo-Hlope, & Nkoane, 2006).

Agricultural programmes implemented by government since 1994 to improve the livelihoods of the former underprivileged had a low success rate (Department of Agriculture, Forestry and Fisheries, 2011:1). Two decades into democracy, there is near-consensus that the National Land Reform Programme was unsuccessful (Aliber & Cousins, 2013:140). It has fallen short of both public expectation and the official targets that were set (Hall, 2004:23). The envisaged programme of rural development failed to materialise (Hall and Cliffe, 2009:2). Most importantly rural developmental efforts failed to make any significant inroads into rural poverty. Institutional efforts have also not provided a strategy to reduce agrarian dualism in South Africa (Hall, 2004:23; Hall and Cliffe, 2009:1; Aliber & Cousins, 2013:142).

## **3. DISCUSSION**

Twenty years into democracy; new attempts and alternative development approaches need to be considered to address the challenges in Limpopo Province. The exploration of future policy options necessitates careful reflection on the demographics of the communal landscape in Limpopo Province and a clear understanding of the weaknesses of the transformation programs so far implemented.

### **3.1 The communal landscape in Limpopo Province**

Communal landscapes constitute around 12 to 13 % of the land surface area of South Africa (Everson & Hatch, 1999:381; Hanekom, 1996:3; Isaacs & Mohamed, 2000:5; Palmer, 1999:45; Scogings, De Bruyn & Vetter, 1999:403; Turner, 2000:3; Vetter, 2003:1 and Vink

& van Zyl 1998:65). These areas are characterised by high populations of humans and grazing livestock (Scogings, et al., 1999:404). A quarter of the human population and half of the South African livestock population are found here (Everson & Hatch, 1999:381; Hanekom, 1996:3; Isaacs & Mohamed, 2000:5; Palmer, 1999:45; Scogings et al., 1999:403; Vetter, 2003:1).

Three of the former homeland areas namely Gazankulu, Lebowa and Venda are incorporated in the contemporary Limpopo Province of South Africa. 89% of the Limpopo Province population live in rural areas (Limpopo EDET, 2006; Limpopo DFED, 2004) where about 2 453 rural settlements with approximately 1 180 000 households are found. The human well-being index in the province is considered to be poor. The rural poor make up around 80 % of the provincial population. 77 % of households were living below the poverty line in 2001. The basic needs of more than 50 % of the households can presently not be met. A large proportion of the population in Limpopo Province rely directly on nature for survival (Limpopo DFED, 2004).

### **3.2 Smallholder farming and the significance of grazing livestock in Limpopo Province**

In the communal areas in South Africa, 80-86 % of land is grazing land and can only be used for livestock production (Bembridge (1980:67), while only 14% is suitable for arable production (Bembridge, 1987). These areas collectively house 50% of the livestock population of the country (Everson & Hatch, 1999:381; Hanekom, 1996:3; Isaacs & Mohamed, 2000:5; Palmer, 1999:45; Scogings et al., 1999:403; Vetter, 2003:1) with Swanepoel, Stroebel & Nthakheni (2000:237) claiming that as much as 70% of the livestock population is kept in communal smallholders systems.

The situation in Limpopo Province is similar. By the year 2000, there were approximately 303 000 smallholder farmers in Limpopo Province (Limpopo Department of Agriculture, 2005:6), with some estimates claiming there are more than 500 000 (Ngomane, 2000). Communal smallholder farming activities occupy 30 % of provincial land surface area. This figure includes over fifty state-owned nature reserves (Limpopo Department of Agriculture, 2005:6) rendering the area available for smallholder farming substantially smaller. 84% of Limpopo Province is suited only for livestock grazing (Department of Agriculture, as cited by Acheampong-Boateng et al. (2003). Despite this landownership skew that is significantly favouring the commercial sector there are more cattle and goats found in the communal areas than in the commercial sector of the province (Nthakheni, 2006:1). In 2004 of the 1.18 million cattle, 544 503 goats and 204 439 sheep in Limpopo Province, a remarkable 61.3 % of the cattle, 91 % of the goats and 31.4 % of the sheep were found in communal landscapes (Limpopo Department of Agriculture, 2004).

### **3.3 Agricultural and rural development in Limpopo Province**

Despite this skew towards smallholder livestock numbers in communal landscapes and the potential it encapsulates towards realising agricultural and rural development goals in Limpopo Province; institutional development agendas have adopted a significantly different focus. An analysis of the interventions funded through the Food Security and the Comprehensive Agricultural Support (CASP) programmes implemented since 2000 across all municipalities in Limpopo Province show that the most prominent agricultural activities that were funded are poultry and vegetables. The infrastructure was created in rural villages to

establish poultry and vegetable production enterprises in rural settings. Chicken houses for broiler production and irrigation systems, boreholes and fences for vegetable production were amongst the infrastructure most frequently provided (LDA Data Base). A project approach was followed to mobilise beneficiaries into groups in selected villages of the former homeland areas.

Relatively few grazing livestock development interventions were initiated. Of the 270 projects listed on the database, only 14 are recorded as livestock projects, while two projects are listed as dairy projects. Boreholes, fencing and animal handling facilities were some of the infrastructure most often provided in the case of these livestock projects (LDA Data Base). This illustrates that the preferred institutional approach was to implement externally developed interventions through the imposition of new and foreign technologies. The overall impression is that consultation processes with villagers managed to mobilise them into groups of beneficiaries but villagers did not have a complete understanding about the shape, form and extent of the intended projects. The project status of a disconcerting number of projects is indicated on the data base as: discontinued, inactive or unsustainable.

Critique levelled at following this *conventional style* of organising and applying of development models where technologies implemented are often found to be inappropriate to the social, physical and economic setting in which smallholder farmers have to operate (Aliber, Baipheti, De Statge, Dinison, Hart, Jacobs, & Van Averbek, 2009:22). The fundamental problem with this approach stems from the institutional commitment to the large scale commercial farming (LSCF) model of agriculture (Aliber & Cousins, 2013:14 and Ramaru, Hagmann, Mamabolo & Netshivhodza, 2009:45). Upon reflection, despite the institutional rhetorical embrace of smallholder agriculture in policy documents, the commitment to the LSCF model is subtly but powerfully evident in the ways in which development interventions were designed and implemented. The main criticism levelled against operationalising the LSCF model is that such interventions fail to recognise the social realities of livelihood systems and the objectives and aspirations of the rural people that become beneficiaries. As a result these projects are intrinsically unworkable and prone to collapse.

The latter part of the discussion links strongly with the discourse presented in the problem statement. It also brings to the fore the question; which alternative developmental options are available to get agricultural and rural development back on track in Limpopo Province?

### **3.4 Policy opportunities for agricultural and rural development in Limpopo Province**

The paradoxical situation alluded to earlier indicates that multifaceted poverty in communal landscapes coexists with huge smallholder livestock potential, which offers a profound platform for institutional investment and the funding of appropriate interventions to trigger agricultural development in Limpopo Province. Two critical factors are motivating this thinking. Firstly, many traditional livestock production systems in the commercial sector are increasingly converted into game and wildlife enterprises to benefit from the lucrative financial dynamics thereof (Knott, Knott, Kruger and van der Waal, 2002; Limpopo Business, 2010). Hence South Africa imports large numbers of livestock from neighbouring Namibia to account for the resulting internal shortfall in red-meat production. The Meat Board of Namibia projected South Africa imported 200 000 cattle weaners from Namibia in 2011; which shows an increase of 36 % on the previous year (Meat Board of Namibia 2011).

One way of viewing this dynamic is that South Africa is in fact becoming increasingly food-insecure.

Secondly, from a problem-solving or development perspective, it's clear that subsistence smallholder livestock systems already encapsulate a substantial investment in natural, human and social capital. Hence, there is little reason to believe that an institutional commitment towards initiating appropriate policy changes and providing the financial resources to fund farmer centred change strategies, will not realise functional income generating smallholder livestock enterprises, improved livelihoods and on a much broader scale a significant contribution to agricultural and rural development in Limpopo Province. Ultimately such an outcome should stimulate the provincial and national economies and should contribute positively towards a food-secure red-meat economy.

### **3.5 Enhancing the role of smallholder livestock systems in post-apartheid social reform efforts in Limpopo Province**

To realise this goal there are some real challenges to be taken into account. The one challenge is a physical problem-situation which is within institutional capability to be overturned. The second challenge is an attitudinal mind-set based on a philosophy, which has been very influential in development thinking for many decades. Hopefully this situation can also be overturned once new insights and convincing competing claims are provided.

#### *The off-take from smallholder livestock systems in communal landscapes*

The first challenge concerns the low level of production and off-take from smallholder livestock systems in the communal areas. It is widely held that livestock in smallholder systems are not kept for economic reasons. Bembridge (1980:67) estimated that the homelands by then accounted for 27% of the total livestock units in South Africa, but meat production, including internal consumption and slaughtering did not exceed 8% of the South African total. De Brouwer (2002) showed that the average off-take rate in communal systems is around five per cent compared to 30% in commercial enterprises. According to Mönnig (1967:167-170), grazing livestock is of little economic significance to the Pedi people and has limited value as a form of food supply. Mönnig (1967:163) further noted that in satisfying their needs, their livestock is of relatively little significance to the Pedi people.

Several authors reported that market off-take from communal livestock systems are low (Nthakheni, 2006). The following annual off-take for the former homelands (communal systems): Lebowa 1.6%, Bophuthatswana 3.9%, Ciskei 3.3% and Transkei 0.2% (Colvin as cited by Tapson, 1990:15). The monetary output per head in the smallholder systems of KwaZulu was R11.20, while commercial systems averaged around R133.37 per head at the time of the survey (Crotty as cited by Tapson, 1990:15). From the literature the overall notion is that smallholder livestock do not contribute much in financial terms to subsistence livelihoods in the communal landscape (Baber, 1998) and little to the market economy of South Africa (Bembridge, 1980 and Bembridge, 1987).

#### *The Cattle Complex Philosophy*

The second concern alluded to is the persistence of the Cattle Complex Philosophy thinking within institutional mind-sets and agricultural and rural development agendas. The wisdom and teaching of the Cattle Complex Philosophy holds that the low levels of off-take in

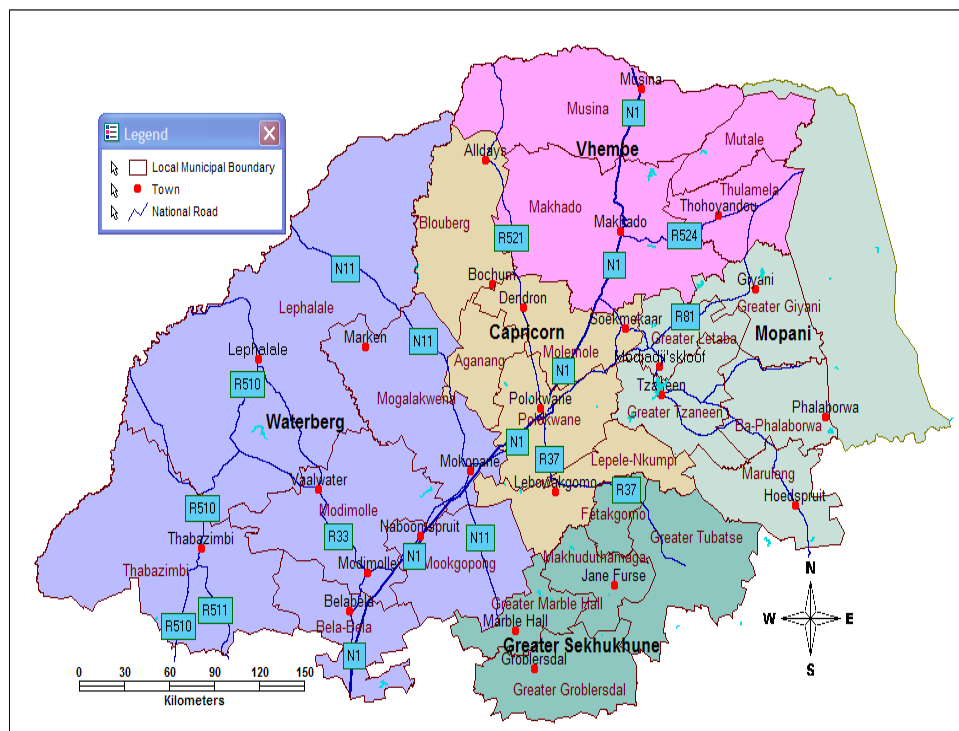
smallholder livestock systems are generally attributed to the resistance of African livestock owners to sell their livestock (Tapson, 1990:20).

Herskovits (1926:633) founded his Cattle Complex Philosophy upon the thinking that the cultures of the people of Africa may be grouped together. The most outstanding trait in all their cultures was the so-called Cattle Complex holding that livestock are mainly kept for socio-cultural reasons and not for economic reasons. It has produced a syndrome, which could be described as the African cattle problem – a direct consequence of the Cattle Complex. (Tapson, 1990:20). To put this into a rural development perspective, Tapson (1990:20) further argued that the perception that there is a code of behaviour towards cattle, which is peculiarly African, was already well established in the colonial era, probably long before it was codified by Herskovits as a “Cattle Complex” in 1926. Importantly, this thinking found its way into institutional agendas. Over time it became the shorthand for authors to argue that the cattle in African smallholder systems should essentially be valued within the cultural belief system exclusive to African livestock owners.

The informed assumption is therefore that the Cattle Complex Philosophy has been well established within development thinking and it has subtly influenced the development of smallholder livestock service delivery policy frameworks and the implementation thereof; to align with it. Importantly, from the literature it is clear that the Cattle Complex thinking is still central to the contemporary assessment of the function of livestock in communal smallholder systems. Swanepoel, Stroebel & Nesamvuni (2002:238) emphasise the important social role of cattle in smallholder livestock systems. They found in two villages in Sekhukhune District that cattle are kept for prestige and social status as well as capital wealth, meaning that the Cattle Complex Philosophy held true during the time of their survey. In an earlier study and in a different village in Sekhukhune District, Swanepoel, Stroebel & Nthakheni (2000) found that 42% of the respondents did not want to sell cattle, as they believed in maximising their cattle numbers.

### **3.6 Assessing the validity of the Cattle Complex thinking in Sekhukhune District**

Limpopo Province has been rated as one of the most degraded regions in South Africa and Sekhukhune District is perceived to be one of the worst affected areas within the province (Hoffman & Ashwell, 2001). Sekhukhune District has been identified as a nodal point for rural development and social transformation. A study conducted amongst smallholder livestock owners in Sekhukhune District of Limpopo Province (Rootman, 2010) provided alternative insights with respect to opportunities for future policy changes and agricultural and alternative rural development interventions in the smallholder livestock sector of communal landscapes.



**Figure 1:** Limpopo Province showing the demarcation of provincial districts and the location of Sekhukhune District

For administrative purposes Limpopo province was divided into five districts: Capricorn District; Mopani District; Sekhukhune District; Vhembe District; Waterberg District. The province is subdivided in 26 local municipalities (Wikipedia Encyclopaedia, 2002). For the purpose of the study, five District Municipalities of Sekhukhune District were regarded as sub-frames for the selection of two study villages per each of the District Municipalities. Random sampling was applied, but to ensure that villages with representative numbers of livestock were included in the study, stratification for the presence of livestock was conducted. The municipalities and villages were as follows: Elias Motsoaledi Municipality (Matlalalehwelere and Motshiphiri) Fetakgomo Municipality (Moscow and Thabanasesehu villages) Greater Marble Hall Municipality (Mmakgatle and Rathoke villages) Greater Tubatse Municipality (Makopung and Shakung villages) Makhuduthamaga Municipality (Manganeng and Mphane villages). A total of 193 households were interviewed using a semi-structured questionnaire.

### *Livestock ownership in Sekhukhune District*

Cattle were the grazing livestock type which was owned by the largest number of households represented in the research sample across the ten villages. 80% of the households, a total of 155, possessed cattle. In nine out of the ten study villages, 67% or more of the households owned cattle, while in Matlalalehwelere and Makopung all the households owned cattle. The notable exception is Mphane, where only 30% of the households owned cattle. One hundred households (52%) owned goats, 34 (18%) households' sheep and 12 (6 %) households' owned donkeys.

The herd and flock sizes varied considerably across the ten villages, but the variation is consistent with what should be expected within smallholder livestock systems. The standard deviations calculated are of a higher order and it cautions against generalisation over diversity.

As far as cattle herd size is concerned, some households owned only one head of cattle while one household owned 119 animals. The mean herd size per household varied between villages from 7.1 (Standard deviation = 3.8) head of cattle (Motshiphiri) and 28.9 (Thabanasesehu; Standard deviation = 33.9) with the calculated mean cattle herd size across the ten villages at 15.58 per household (Standard deviation = 16.7). Only one village (Motshiphiri) had mean herd size of less than ten head of cattle per household.

The flock size for goats varied between two goats and 164 goats per household. In two villages the mean herd size was 53.9 and 54.1 goats per household, while in five villages the mean flock size was less than ten goats per household. The flock size for sheep varied between two sheep and 142 per household. The more important trend after the considerable variation in herd and flock size is that smallholder livestock herds and flocks are relatively small.

#### *Herd and flock composition in Sekhukhune District*

The herd and flock sizes were not explicitly investigated within the study, but extrapolation from some data-sets was possible to obtain a functional understanding of it. The number of mature male animals per household ranged from nought to 26 (Mean = 3.7; Standard deviation = 3.6). The number of mature female animals varied from one to 76 (Mean = 9.2; Standard deviation = 11.0) per household. The number of calves per household herd varied from nought to 19 (Mean = 2.93; Standard deviation = 2.7) for male calves and one to 17 (Mean = 3.8; Standard deviation = 3.3) for female calves. Nine households of the research sample owned only male and no female cattle.

Considering that some households only have male animals and some households own only one female animal together with the relatively small herds and flocks indicates that the composition of smallholder livestock herds and flocks are often dysfunctional meaning that the production rate that can be expected from such herds are sub-optimal.

### **3.7 Challenging the conventions of the Cattle Complex Philosophy**

Several datasets in this study displayed trends showing that the perceptions and attitudes of smallholder livestock owners in the study area are decisively different to the thinking of the Cattle Complex Philosophy. The majority of the respondents perceived grazing livestock to have an economic function within their subsistence livelihood systems.

#### *The function of grazing livestock in Sekhukhune District*

The results showed that 96% of the households indicated grazing livestock is very important or important within their subsistence livelihood systems, while only 4% indicated it is not important. 50% of the respondents indicated that grazing livestock is important for selling purposes, while a further 26% indicated that it is important for own consumption. A different



data-set revealed that 96% of the respondents indicated their household generates income from their livestock. Significantly, 96% of the respondents also indicated that they would like to increase or extend their grazing livestock enterprises with the specific intension to improve their livelihoods. Further, 87% of the respondents did not consider reducing or stopping their grazing livestock enterprises.

It was found that respondents prefer to sell non-reproducing animals (94%), old animals (85%), those that will fetch a high price (79 %), and animals with physical problems (71%). 71% of the respondents indicated that they would rather not to sell young animals. With regards to ridding the herd or flock of animals with an undesirable colour, only 40% indicated that it is an important consideration when selecting animals for selling.

It is evident that livestock has an economic function in Sekhukhune District. Further, the overall message emerging from this data is that smallholder livestock owners in the study area follow a progressive and informed process to increase the reproductive capacity and production off-take from their grazing livestock herds and flocks. The trends with respect to which animals livestock owners target to sell, and which animals they prefer not to sell is also consistent with those of livestock owners operating in a normalised market driven economy.

#### *The number of households selling grazing livestock in Sekhukhune District*

To recap, 96% of the responding households indicated that they generate income from grazing livestock on an annual basis. To make this real, the study showed that 105 households sold cattle. Likewise, 65 households sold goats; 27 households sold sheep and six households sold donkeys during the three years prior to the survey. When correlating these figures with the actual number of households owning the specific livestock type it shows that 68% of cattle owning households in fact sold cattle during the previous three years. Likewise 65% sold goats, 79 % sheep and 50 % of the households sold donkeys.

In further exploration, the number of households who sold grazing livestock increased consistently for each of the three years prior to the study. Notably, this trend holds true for cattle, sheep and goats. For cattle the number of households increased from 56 (in 2004) to 61 (in 2005) and to 73 (in 2007) in the year prior to the survey. For goats and sheep the following increase was recorded on the same basis 36, 43, 58 and 19, 20 and 24. For donkeys the number of households selling donkeys remained static at four per annum for the previous two years after increasing from one household in 2004 to four households during 2005 and 2006.

The reason why the findings of the study were not consistent with the literature and the Cattle Complex Philosophy was not solicited from livestock owners and could not be deducted from the data. However the changing perceptions and aspirations of communal livestock owners were understood to be shaped by the democracy dynamics and possible farmer optimism the post-apartheid South Africa will offer more realistic opportunities.

#### *Some competing views about the low off-take from smallholder livestock systems*

It was established from the literature that the off-take rate from communal systems is very low compared to that from commercial enterprises. Meat production from smallholder systems including internal consumption and slaughtering are generally also low. In accordance with the teaching of the Cattle Complex Philosophy it is widely accepted that the

low off-take rate is related to an attitudinal resistance of smallholder livestock owners to sell. Alternatively smallholder livestock owners have an unrealistic desire to accumulate livestock for cultural reasons and social status but not for selling. The study shown that the majority of households perceive livestock to be important for selling purposes and sell livestock on an annual basis, while the number of selling-households consistently increased year on year for three years. However, the number of livestock sold is low with some households only selling one animal per year.

The key question emerging from this analysis is; is the limited number of animals sold related to the Cattle Complex Philosophy? To explore this question, some re-capping from the earlier discussion is necessary. The main trend observed was that livestock flocks and herds vary considerably in size, but is generally small with some households owning only one head of cattle and some owning just two goats or sheep. With regards to herd and flock composition it was found that nine households only owned male cattle, in some cases as many as 26. Some households owned only one cow while other households owned only one female calf. Even in the absence of explicit empirical data about herd composition and herd dynamics, it can be argued that smallholder herd composition is dysfunctional with sub-optimal reproductive potential. According to Vetter (2003:112 in citing Tapson (1990:20) the minimum cattle herd size, for subsistence production, in KwaZulu Natal in South Africa is estimated to be around 20 head of cattle. The premises are that an average subsistence household needs four draught oxen, two milking cows and some producing animals to enable regular sales and or slaughtering. In terms of herd composition this could be 7 (39 %) cows  $\geq$  3 years, 4(22.2%) oxen  $\geq$  3 years, 1 (5.5%) bull  $\geq$  1 year, 4 (22.22%) juveniles  $<$  3 years and 2(11.1%) calves  $<$  1 year. Notably, Vetter (2003:112) in sighting Steyn suggests that ideal commercial livestock systems have around 50% mature cows.

The small herd, dysfunctional herd composition and the resulting sub-optimal reproductive potential problem in smallholder systems is further compounded by high livestock mortality. Pre-weaning mortalities for cattle in smallholder livestock systems are often as high as 25% (Richardson, Hann & Smith, 1994:103). In the Peddie District of the Eastern Cape in South Africa, Steyn & Bembridge (1990:4) found that over a three year period and in two study villages, the average calving percentage in communal livestock systems was 46%, calf mortalities were 41%, the weaning rate was 59% and the overall herd mortality was 34%. Steyn & Bembridge (1990:4) concluded from their work that only a very small percentage of cattle owners have sufficient livestock units to be in a position to sell any animals for cash.

On the basis of this analysis it seems fair to argue the limited number of animals sold from smallholder systems correlates with the limited number of offspring born and that survive in smallholder systems. From a different perspective it can be argued that; livestock owning households do not sell livestock because they try to balance the low off-take realities of their livestock enterprises with the multi-level risk avoiding strategies driving their subsistence livelihood systems in a compromised landscape.

We argue that this analysis and competing view better explains the low level of off-take and livestock sales from smallholder systems, than that of an attitudinal resistance of African livestock owners to sell livestock, as claimed by the proponents of the Cattle Complex Philosophy.

#### **4. CONCLUSIONS**

A number of conclusions are derived from the foregoing analysis. First livestock in Sekhukhune District of Limpopo has an economic function. Generally households view livestock as being important for selling and the majority of households sell livestock. The perceptions and attitudes are decisively dissimilar to the thinking of the Cattle Complex Philosophy. Ultimately, livestock owning households are well positioned to participate in the market economy. The indicators associated with the low off-take from smallholder livestock systems namely; sub-optimal herd composition and low calving percentage and high calf mortality can be improved through material institutional investment and facilitation.

### ***Policy recommendations***

Smallholder livestock systems in Limpopo Province represent a sound foundation from where to explore strategic pathways for sustainable post-apartheid agricultural and rural development in the communal livestock sector. Policy changes should aim at re-orientating institutional mind-sets to be the enabling environment for change. It should be recognised that managing change in the smallholder livestock sector will be a slow and difficult process and policy goals should reflect that. There is a serious lack of farmer-centred baseline information to guide the development of policies and appropriate change strategies to go to scale with development in the communal livestock sector, hence establishing such a knowledge base should be a policy aim.

The insights obtained from this study are important to redirect public, donor and multilateral development approaches from predominantly input-driven livestock interventions to increased emphasis on institutional support. It is important that services like extension should be actively involved in the development of strategies to improve marketing of cattle by smallholder livestock farmers. Group activities in marketing have a greater chance of success when attention is not only paid to capacity building in areas related to marketing, like researching of the market environment, but also to overall organisational management skills, such as problem solving and conflict resolution skills, that could help that groups operate independently. Furthermore require farmers, or their leaders, business training, such as the ability to budget and keep records in order to ensure financial sustainability.

### **REFERENCES**

- ACHEAMPONG-BOATENG, O., MENNE, P. F., RAPHULU, T. & TSHOVHOTE, J. N. 2003. Livestock Production. In: Nsamvuni A. E., Oni, S. A., Odhiambo, J. J. O. and N.D. Nthakheni (eds). 2003. AGRICULTURE AS THE CORNERSTONE OF THE ECONOMY OF THE LIMPOPO PROVINCE. A study commissioned by the Economic Cluster of the Provincial Government under the leadership of the Department of Agriculture Polokwane; South Africa.
- ALIBER, M. & COUSINS, B. 2013. Livelihoods after land reform in South Africa. *Journal of Agrarian Change*, Vol. 13 No 1, January 2013:140-165.
- ALIBER, M., BAIPHETI, M., De STATGE, R., DINISON, J., HART, T., JACOBS, P. & VAN AVERBEKE, W. 2009. Strategies to support South African smallholders as a contribution to government's second economy strategy. Institute for Poverty, Land and Agrarian Studies. University of the Western Cape.
- ALIBER, M., KIRSTEN, M., MAHARAJH, R., NHLAPO-HLOPE, J. & NKOANE, P. 2006. Overcoming underdevelopment in South Africa's second economy. Development ANC, 1994. Reconstruction and Development Programme: A policy framework. Johannesburg: Umanyano Publishers.

- S.Afr. Tydskr. Landbouvoorl./S. Afr. J. Agric. Ext.,  
Vol. 43, No. 2, 2015: 91 – 104  
DOI: <http://dx.doi.org/10.17159/2413-3221/2015/v43n2a360>
- Rootman, Stevens  
& Mollel  
(Copyright)
- BABER, R. A. A. 1998. The structure of livelihoods in South Africa's Bantustans: Evidence from two settlements in the Northern Province. Ph.D. thesis, Magdalen College University of Oxford: Oxford, UK.
- BEMBRIDGE, T. J. 1980. Rural development - major political priority. *Africa Insight* 10(2):66- 72. Article no 33:258. In: Bembridge, T. J. 1991. Contribution to the science of agricultural extension. Unpublished D.Sc. (Agric.) thesis University of Stellenbosch: Stellenbosch, South Africa.
- BEMBRIDGE, T. J. 1987. Aspects of cattle production in Transkei. *South African Journal for Animal Science* 17(2):74-78. Article no 51:442. In: Bembridge, T. J. 1991. Contribution to the science of agricultural extension. Unpublished D.Sc. (Agric.) thesis University of Stellenbosch: Stellenbosch, South Africa.
- CAVENDISH, W. 1995. Economics and ecosystems: the case of Zimbabwean peasant households. In: Bhaskar, V., and A. Glyn (eds). 1995. THE NORTH THE SOUTH AND THE ENVIRONMENT. United Nations University Press: Shibuya-ku, Tokyo. Japan.
- COUSINS, B. 1995. Agrarian reform and the two economies: Transforming South Africa's country side. In: Hall, R. and L. Netsebeza (eds). 2005. THE LAND QUESTION IN SOUTH AFRICA: THE CHALLENGE OF TRANSFORMATION AND REDISTRIBUTION. *Programme for Land and Agrarian Studies (PLAAS), School of Government, University of the Western Cape: South Africa.*
- DE BROUWER, C. H. M. 2002. Communal rangeland: An animal production perspective. *Proceedings of the Grasslands Society of South Africa. Annual Congress Christiana South Africa 13-16 May 2002:13-18.*
- DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES. 2011. National framework for Extension Recovery Plan. Department of Agriculture, Forestry and Fisheries. Directorate: Communication Services. Private Bag X 144, Pretoria 0001
- EVERSON, T. M. & HATCH, G. P. 1999. Managing Veld (Rangeland) in the Communal Areas of Southern Africa in Veld. In: Tainton, N.M. (ed). 1999. Management University of Natal Press: Pietermaritzburg.
- HALL, R. 2004. A political economy of land reform in South Africa. *Review of Africa Political Economy No. 100:23-27. ROAPE Publications Ltd., 2004. ISSN 0305-6244.*
- HALL, R. & CLIFFE, L. 2009. Introduction. In Hall, R. (ed.) Another Countryside? Policy options for land and agrarian reform in South Africa. Institute for Poverty Land and Agrarian Studies. University of the Western Cape.
- HANEKOM, D. 1996. Land reform and rangeland management. Opening address 2<sup>nd</sup> Valley Bushveld Symposium. *Grassland Society of South Africa special publication. December 1996:3-4.*
- HERSKOVITS, M. J. 1926. The cattle complex in East Africa. *American Anthropologist*. New series 28, No 4. (Oct. – Dec. 1926):633 – 664.
- HOFFMAN, T. & ASHWELL, D. N. 2001. Nature divided. Land degradation in South Africa. University of Cape Town Press: Cape Town.
- ISAACS, M. & MOHAMED, N. 2000. Co-managing the commons in the new South Africa: room for manoeuvre? Constituting the commons in the new South Africa. (Commons southern Africa occasional article; no.5.) (CSA05). Harare/Cape Town: Centre for Applied Social Studies, University of Zimbabwe/Programme for Land and Agrarian Studies, University of the Western Cape: Cape Town, South Africa.
- KIRSTEN, J. F., VINK, N. & VAN ZYL, J. 1998. Introduction. In: Kirsten J., van Zyl, J., and N. Vink (eds). 1998. THE AGRICULTURAL DEMOCRATISATION OF SOUTH AFRICA. Francolin Publishers (Pty): Cape Town, South Africa.
- KNOTT, P., KNOTT, H, KRUGER, J. & VAN DER WAAL, C. 2002. Private Game reserves and state reserves. A first synthesis of the environmental, biological & cultural

- S.Afr. Tydskr. Landbouvoorl./S. Afr. J. Agric. Ext.,  
Vol. 43, No. 2, 2015: 91 – 104  
DOI: <http://dx.doi.org/10.17159/2413-3221/2015/v43n2a360>  
assets of the Soutpansberg. The Soutpansberg.  
<http://www.soutpansberg.com/workshop/synthesis/gamereserves.htm>.
- LAHIFF, E., MALULEKE, T., MANENZHE, T. & WEGERIF, M. 2008. Land redistribution and poverty reduction in South Africa: The livelihood impacts of smallholder agriculture under land reform. Research Report 36. Programme for Land and Agrarian Studies, University of the Western Cape.
- LDA DATA BASE, Undated. Unpublished data base of Limpopo Department of Agriculture.
- LETSOALO, E. M. 2003. Secondary school students, attitudes towards agriculture in the central region of Limpopo Province. Unpublished M. Agric. (Extension) dissertation, University of Limpopo: South Africa.
- LIMPOPO BUSINESS. 2010. Overview of Limpopo Province. The guide to business and investment in Limpopo Province.  
<http://www.limpopobusiness.co.za/pics/2010/bannerlimpopo2010.jpg>.
- LIMPOPO DEPARTMENT OF AGRICULTURE. 2004. Veterinary services annual report: Polokwane, Limpopo Province.
- LIMPOPO DEPARTMENT OF AGRICULTURE. 2005. Department of Agriculture Strategic Plan 2005 – 2010. Limpopo Provincial Government: Polokwane, Limpopo Province
- LIMPOPO DFED. 2004. Limpopo State of the Environment Report (Phase 1). Unpublished report of the Limpopo Department of Finance and Economic Development.
- LIMPOPO EDET. 2006. State of the environment report. (Phase 2). Unpublished report. Limpopo Department of Economic Development, Environment and Tourism (LEDET).  
mhtml:file://D:\Limpopo%20SoER%20%20-20Phase%20II.mht#\_Toc141083610.  
Downloaded October 2007.
- McNAB, D. 2004. Livelihood enhancement in the new South Africa: Public expectations, environmental dynamics and ‘muddling through’. Unpublished Ph.D. thesis, University of Sheffield: UK.
- MEAT BOARD OF NAMIBIA. 2011. Cattle Review: Production and marketing Trends. Published report by the Meat Board of Namibia.
- MOHAMED, S. S. 2006. Livelihoods of plot holder homesteads at the Dzindi smallholder canal irrigation scheme. Unpublished Doctor Technologiae: Agriculture Dissertation. Department of Crop Sciences. Faculty of Science. Tshwane University of Technology.
- MÖNNIG, H. O. 1967. THE PEDI. J. L. Van Schaick Limited: Pretoria, South Africa.
- NGOMANE, T, 2000. Transformation and restructuring needs for smallholder irrigation projects in the Northern Province of South Africa: Makuleke farmers’ perspective. Unpublished M. Agric. Thesis. University of the North: Polokwane, South Africa
- NTHAKHENI, N. D. 2006. A livestock production systems study amongst resource-poor livestock owners in the Vhembe District of Limpopo Province. Unpublished Ph.D. thesis, University of the Free State: Bloemfontein, South Africa.
- PALMER, A. R. 1999. Towards a national rangeland policy. Presidential address, *Grassland Society of South Africa. African Journal of Range and Forage Science* 16 (1):44-46.
- RAMARU, J., HAGMANN, J., MAMABOLO, Z. & NETSHIVHODZA, M. 2009. Innovation through action – An action research journey with smallholder farmers in Limpopo Province, South Africa: Experiences of soil fertility management, in C Almekinders, L. Beukema and C Tromp (eds.) *Research in action – Theories and practices for innovation and social change*. Wageningen University: The Netherlands.
- RICHARDSON, F. D., HANN, B. D. & SMITH, W. A. 1994. Calf growth and survival in multipurpose herds on communal rangeland: models as an aid to understanding. In: Donkin, E. (ed).1994. *Proceedings South African Society of animal science developing areas branch 1994*: 103-114.

- STEYN, G. J. & BEMBRIDGE, T. J. 1990. Farming systems as a tool for research and extension in developing areas. *South African Journal for Agricultural Extension* 1990:1-6. Article number 72:658. In: Bembridge, T. J. 1991. Contribution to the science of agriculture extension. Unpublished D.Sc. (Agric.) thesis University of Stellenbosch: Stellenbosch, South Africa.
- ROBERTS, B. 2005. Empty stomachs, empty pockets: Poverty and inequality in post-apartheid South Africa. Downloaded from [www.hsrcpress.ac.za](http://www.hsrcpress.ac.za) (13 November 2013).
- ROMULD, A. R., SANDHAM, T. & VEDEL, P. 1996. Management of communal property and sustainable land use among rural dwellers in Ciskei, South Africa. Discussion Article #D-22/1996. Agricultural University of Norway, AUN, Dept. of Economics and Social Sciences: Norway.
- ROOTMAN, G. T. 2010. A farmer-first assessment of the function of grazing livestock and the role of livelihood strategies towards understanding the dynamics of rangeland utilisation of communal rangeland in Sekhukhune District of Limpopo province. Unpublished M. Agric. Extension dissertation. University of Limpopo: Polokwane, South Africa.
- SWANEPOEL, F. J. C., STROEBEL, A. & NESAMVUNI, E. 2002. Key Functions of livestock in Smallholder Farming Systems: A South African Case Study. *Animal Production Australia* 24: 237-240.
- SWANEPOEL, F. J. C., STROEBEL, A. & NTHAKHENI, D. 2000. Productivity measures in smallholder livestock production systems and social development in South Africa. *Asian-Australian Journal of Animal Production*. 24:321-324.
- SCOGINGS, P. F., DE BRUYN, T. D. & VETTER, S. 1999. Grazing into the future: Policy making for South African communal rangelands. *Development Southern Africa* 16(3):403-414.
- TAPSON, D. S. 1990. A Socio-economic Analysis of Small-holder Cattle Producers in Kwazulu. Unpublished Ph.D. thesis Vista University: Pretoria.
- TURNER, S. 2000. Introduction. In: Isaacs, M., Mohamed, N., Ntshona, Z. and S Turner (eds). 2000. Constituting the commons in the New South Africa. Community-based natural resource management (CBNRM) in Southern Africa. An Occasional Article Series Centre for Applied Social Sciences and Programme for Land and Agrarian Studies. Programme for Land and Agrarian Studies. School of Government. University of the Western Cape: Bellville, Cape Town, South Africa. [www.cassplaas.org](http://www.cassplaas.org) (Downloaded October 2007).
- VERSCHOOR, A., NGCOBO, T., CEBALLOS, J., HAWKINS, R., CHITSIKE, C. & CHAMINUKA, P. 2009. Shaping Agricultural research for development to Africa's needs: Building South African capacity to innovate. In: Sanginga, P. C., Water-Bayer, A., Kaaria, S., Njuki, J. and C. Wettasinha. (eds.) 2009. INNOVATION AFRICA: ENRICHING FARMERS' LIVELIHOODS. Earthscan: London, UK.
- VETTER, S. 2003. What are the costs of land degradation to communal livestock farmers in South Africa? The Case of the Herschel District, Eastern Cape. Unpublished Ph.D. thesis, University of Cape Town: Cape Town, South Africa.
- VINK, N. & VAN ZYL, J. 1998. Black disempowerment in South African agriculture: A historical perspective. In: Kirsten J., van Zyl, J. and N. Vink (eds). 1998. THE AGRICULTURAL DEMOCRATISATION OF SOUTH AFRICA. Francolin Publishers (Pty): Cape Town. South Africa.
- WIKIPEDIA FREE ENCYCLOPAEDIA. 2002. Limpopo Province. <http://en.wikipedia.org/wiki/Limpopo>.