

Livestock systems and competing claims for land at the wildlife-based tourism/livestock interface

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Abstract

This paper discusses competition for land between communal grazing livestock systems and emerging preferences for wildlife-based tourism land uses in the Greater Limpopo Transfrontier Park. Renewed efforts to improve livestock production as a tool for rural development in Southern Africa come at a time that new transfrontier parks present new opportunities for rural communities to generate incomes from tourism. These multiple opportunities for rural livelihoods intensify competing claims on grazing land, which will likely influence the nature and future of livestock production at the wildlife-based tourism/livestock interface. Data on livestock numbers, land use preferences and uses of grazing land were collected through examination of dip records, focus group discussions and structured interviews with 540 households. The data were analysed through weighted rankings, Pearson chi-square tests and general descriptive statistics. Results show increasing pressure and diversified stakeholder interests on communal grazing land and a shift in preference towards more diversified use of communal grazing land. These results highlight emerging challenges for communal grazing systems at the wildlife-based tourism/livestock interface.

Keywords: Land use preferences, communal grazing, wildlife tourism/livestock interface

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Introduction

Increased demand for meat products and concerns on the contribution of livestock to environmental degradation (Steinfeld *et al.* 2006) coupled with renewed interests towards shifting to wildlife-based livelihoods in areas of marginal agricultural potential presents new challenges for livestock farming. Although traditionally livestock and wildlife have coexisted, concerns about land use competition, disease transmission, and predation, have often fuelled conflicts between people with opposing views and interests (Kock 2003). The Greater Limpopo Transfrontier Conservation Area (GLTFCA) straddles major national parks in Mozambique, South Africa and Zimbabwe and surrounding rural communities and its establishment is expected to result in more intense interaction between livestock and wildlife and possible shifts in land use (Cumming *et al.* 2007). This is more so in areas with limited potential for agriculture and where wildlife-based tourism is considered a viable land use alternative.

Consequently, communal grazing areas have become the subject of increased interest, as they could potentially be transformed towards wildlife-based tourism land uses such as game lodges, hotels and trophy hunting areas (Cumming 2005). As these opportunities for tourism based livelihoods emerge around the GLTFCA, conflict between different stakeholders over the use of communal owned grazing areas will influence the future of livestock systems and related livelihoods in these areas. Furthermore, there is lack of clearly defined land tenure rights in former homelands of South Africa, where communal land, including grazing areas belong to the state and at local levels it is not clear who authorizes private developments on such land (Adams *et al.* 1999). This situation will likely remain until the Communal Land Rights Act 11 of 2004 (Government Gazette, 2004) is implemented. This paper highlights the main competing claims for grazing land at the wildlife-based tourism/livestock interface and discusses the implications thereof on the future of livestock based livelihoods.

Materials and Methods

The study area was the Mhinga Traditional Authority (TA) in the Vhembe district of South Africa which has eight villages under its jurisdiction. The total surface area is about 20 000ha and comprises of communal grazing, some cropland and small villages with an estimated 6 880 households and 43 450 people, according to records at the TA offices in July 2008. Communal livestock farming, mainly cattle with a few

goats, is the main agricultural activity, with maize-lands and small-scale backyard fruit and vegetable production for home consumption. Two of the villages share a boarder with the north-western fence of the Kruger National Park, and the rest are within a 15km radius of the fence. A key feature of cattle production systems in this area is the redline zone. This is a veterinary demarcation which runs 15-20km along the western border of the KNP. The district veterinary services restrict movement of cloven hoofed animals and their products inside the redline, to minimise the risk of infection with wildlife transmitted diseases such as Foot and Mouth Disease (FMD) (DoA, 2000).

A survey was conducted using a structured questionnaire administered to 540 households (270 with cattle and 270 without) which were selected using stratified random sampling techniques. Information on household livelihood sources, production data and farmers' land use preferences were collected. Sample size estimation was based on the method proposed by (Cochran 1977). Dip records were inspected and key informant interviews were held with animal health technicians, headmen and the leaders of the farmer groups to solicit data on cattle numbers over the years and management of grazing areas. Data were processed in Statistical Package for Social Scientists (SPSS) and analyses included Pearson's Chi-Square tests to test independence between a range of categorical variables observed in response to questions relating to land use preferences by different villages.

Results and Discussion

Livelihood activities included crop farming at subsistence levels, livestock farming, small local businesses (self employment) and formal employment. The child support grants and old age grants also constituted a significant livelihood means for most (80%) of the households. Unemployment levels were high at 37%. Only 11% of the households owned cattle, 23% had goats, and 1% had sheep. The average number of cattle/household was 9.5 (± 8.7). Farmer ranking of livestock's contribution to total household income ranged from less than a quarter to almost 100%. Eight percent of the farmers indicated that livestock contributed less than a quarter of their total income, 44% estimated this to be between a quarter to half of their total household income, and 30% indicated that livestock income accounted for greater than three quarters of household income. Reasons given for keeping cattle included for cultural purposes, as an investment, commercial sales of cattle, and for dung and draught power.

Total cattle numbers fluctuated over the years, but showed a general increase over a twenty year period. The numbers declined in years following a drought year (1993, 1998, 2006). The general increase in cattle numbers was mainly due to herd expansion and an increasing number of farmers. Available grazing in the area was about 11 000ha. The veld type is tropical bush and savannah type and the grazing capacity is about 11-13ha/livestock unit (AGIS, 2007), although the actual stocking rate in July 2008 was about 5ha/livestock unit. Figure 1 shows that whilst cattle numbers increased from 1987 to 2008, average stocking rates have declined over the years, partly due to increasing livestock numbers and also reduced availability of actual grazing area as the human population densities increased.

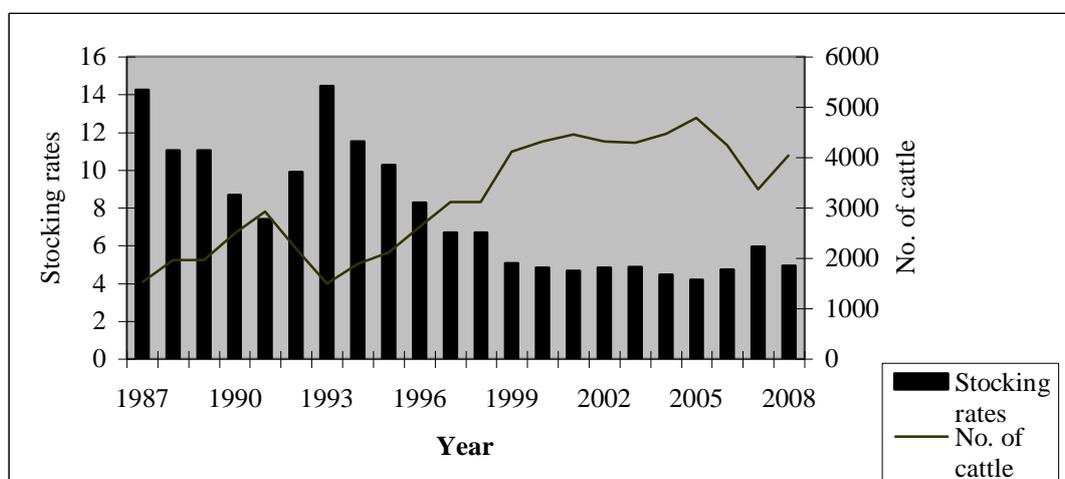


Figure 1 20 year cattle figures for all Mhinga villages and estimated average stocking rates in ha/LU

Table 1 shows an overview of key stakeholders, their interests on the grazing land as well as analysis of their attitudes towards livestock farming and their ability to influence land use decisions in the area.

Table 1 Key stakeholder in Mhinga and their interests on grazing land

Stakeholder	Interest	Attitude towards livestock farming	Ability to influence decisions on land use
Livestock farmers	Need land for cattle grazing, have problems with wildlife, feel threatened by tourism development	positive	high, organized group
Crop farmers	Need more land for subsistence cultivation	mixed	low, not organised
Chief	Needs land for tourism investment, seeking livelihoods diversification	negative	high
Private tourism operators	Need land for building private lodges	mixed	low
Ordinary villagers	Collect firewood and grass from grazing land, Need jobs from tourism development	mixed	low because of different opinions

There is a standing dispute in Mhinga between cattle farmers and other community members interested in ecotourism over the use of the grazing land. Community members interested in ecotourism proposed that some of the land currently used for grazing should be used for ecotourism related projects, which include a game lodge, a shopping mall, and an irrigation project. Speaking at the World Parks Conference in 2003, the traditional leader in charge of the area, Chief Mhinga said ‘*The concept is to incorporate into Kruger National Park a 2000 hectare area of community land that has already been designated for tourism development.*’ (Mhinga, undated). On the other hand, the livestock farmers argued that there is no need for land that is earmarked for grazing to be taken for what they viewed as less profitable and less employment creating land use ventures.

The farmers from four villages formed an association in 1998 with a membership of 196 cattle farmers. The association was formed mainly in response to problems that came about when 192 hectares of grazing land were alienated for a game lodge and a cultural village. The lodge and cultural village were registered as a community project under a community trust. Despite the objections of the farmers, a lodge was built on about 23ha of this land. This project which was initially a success, collapsed when the lodge was closed down in 2003 due to management problems. In their arguments, the farmers highlighted that the project failed to be sustainable, unlike livestock production in the area, and hence they were opposed to any further developments that would see land being alienated from livestock production.

About 83% of the farmers without cattle indicated that they also used the grazing land. These non-cattle owning households were asked to indicate their preference for the use of grazing area, based on land use possibilities identified through key informant interviews. Table 2 shows the preferences for land use by the non-cattle owning households. Because of the sensitivity of this issue in the area we could not ask the same question to cattle farming households.

Table 2 Ranking and weighted scores for preferred use of grazing land by non-cattle owners

Land use alternative	Rank 1 n=263 (Weight - 1)	Rank 2 n= 208 (Weight - 0.5)	Rank 3 n=200 (Weight - 0.33)	Rank 4 n=184 (Weight - 0.25)	Total times ranked	Weighted ranking
Crop farming	70	36	43	27	176	108.94
Shopping Centre	50	52	36	30	168	95.38
Cattle	70	30	17	13	130	93.86
Housing	31	27	50	51	159	73.75
Hotels and Lodges	28	38	31	44	141	68.23
Game farms	11	24	21	19	75	34.68

Weighted rankings of farmer choices showed that crop farming was the most preferred land use option despite the dry conditions in the area, and the shopping centre also took precedence over cattle farming in terms of weighting. Although some of the community members were willing to consider game parks and lodges as the most preferred land use, the proportion of households was less than those who believed that the land should remain under agriculture, either for cattle production or crop production. Focused group discussions and key informant interviews revealed that there were division amongst the villagers regarding the shift in grazing land use. Some, particularly the young and elite members of the community were more embracing of the need to convert grazing land into tourism based uses, as they did not consider livestock farming as the best way to use the communal grazing land.

Conclusions

The fact that cattle numbers have steadily been increasing in this area, whilst the pressure on land from non-livestock specific land uses has also been increasing suggests the need to explore options for intensification of livestock production in Mhinga. Diversification of livelihoods into both livestock and tourism related land uses would benefit the community in the long run. The specific contribution of livestock production to the economy of this area also needs to be examined to aid any further land use decisions. This is especially important given that livestock production area at the interface with wildlife suffers additional threats of wildlife disease transmission as well as predation by carnivores.

The shift in preference from livestock production towards wildlife-based tourism activities has been observed elsewhere, e.g. in Kenya (Boyd *et al.* 1999). The solution to such competing claims for resources lies in negotiated solutions that allow the representation of multi-stakeholder processes and considers the multi-scale nature of the local claims for resources. Such approaches consider the understanding that local responses to resource use are a factor of pressures from higher levels that include local and global changes (Giller *et al.*, 2008). Similarly livestock production at local levels will have to be intensified to respond to the changing socio-cultural and economic environment. Land tenure arrangements should be revisited to allow for the changing preferences towards tourism based land uses at community level.

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References

- Adams, M., Sibanda, S., & Turner, S. (1999). Land tenure reform and rural livelihoods in Southern Africa. ODI Natural Resource Perspectives Number 39, February 1999.
- AGIS (2007). Agricultural Geo-Referenced Information System, accessed from www.agis.agric.za on 23 January 2009

- Boyd, C., Blench R., Bourn D., Drake L. and Stevenson P. (1999). Reconciling Interests Among Wildlife, Livestock and People in Eastern Africa. A Sustainable Livelihoods Approach. Overseas Development Institute.
- Cochran, W.G. (1977). Sampling techniques. New York, John Wiley & Sons.
- Cumming, D., Biggs H., Kock, M., Shongwe N., and Ososfsky S. (2007). "The AHEAD (Animal Health for Environment and Development)- Greater Limpopo Transfrontier Conservation Area (GLTFCA) Programme: Key questions and conceptual framework revisited."
- Department of Agriculture (2000). Foot-and-mouth disease: A highly contagious disease Compiled by Directorate Communication, Private Bag X144, Pretoria 0001, South Africa
- Giller, K.E., Leeuwis, C., Andersson, J.A., Andriessse, W., Brouwer, A., Frost, P., Hebinck, P., Heitkönig, I., van Ittersum, M.K., Koning, N., Ruben, R., Slingerland, M., Udo, H., Veldkamp, T., van de Vijver, C., van Wijk, M.T. & Windmeijer. P. 2008. Competing claims on natural resources: what role for science? *Ecology and Society* 13 (2): 34.
- Government Gazette No. 26590 (2004) Communal Land Rights Act 11 of 2004. Cape Town South Africa. http://www.saflii.org/za/legis/num_act/clra2004207.pdf
- Kock, R.A. (2003). What is the Infamous 'wildlife/Disease interface?' A review of current knowledge for the African continent South and east African experts panel on designing successful conservation and development interventions at the Wildlife/Livestock Interface: Implications for Wildlife, Livestock and Human Health AHEAD Forum. IUCN 5th World Parks Conference, Durban South Africa, IUCN.
- Mhinga, S., Undated. Opportunities and constraints in the establishment of the Greater Limpopo Transfrontier Park. www.earthlore.ca/clients/WPC/English/grfx/sessions/PDFs/session_2/Mhinga.pdf accessed on 21 January 2009
- Steinfeld, H., Gerber, P., Wassenaar, T., Castel, V., Rosales, M. & de Haan, C. (2006). Livestock's Long Shadow. Environmental Issues and Options. Food and Agriculture Organisation: 390.