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FROM CATTLE RANCHING TO WILDLIFE CONSERVANCIES: FIXING AN AGRO-ECOLOGICAL MISMATCH IN THE SOUTH-EAST LOWVELD OF ZIMBABWE

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Abstract:
Following an increase in incidences of severe droughts in the south-east lowveld and other arid regions of the country since the mid-1980s, many large-scale commercial farmers have shifted from cattle ranching to wildlife production. This study assesses the ecological success of the change in landuse from cattle ranging to wildlife production in the south-east lowveld of Zimbabwe with a special focus on Malilangwe Wildlife Reserve. The study also examines the threats to the establishment of wildlife production and management activities in the study area and other similarly arid areas in the country. The study mainly relied on document analysis, interviews and observation for the collection of relevant data. The study revealed a successful ecological establishment of Malilangwe Wildlife Reserve evidenced by an increase in both faunal and floral wildlife since its establishment in 1994. The adoption of the Fast Track Land Reform Programme by government since 2000 has been identified as the major threat to the further growth and expansion of the wildlife sector in Zimbabwe, since many game farms and conservancies have also been earmarked for resettlement. Most of the households that have been resettled in the wildlife producing areas are practicing crop and livestock production, which apparently do not match with the agro-ecological conditions of these areas. There is need for a reassessment of the land reform programme in the wildlife producing regions of the country towards the exclusive establishment of game farms and conservancies, as these are the most suitable landuse activities in these arid areas.

Keywords: wildlife ranching, cattle ranching, conservancies, south-east lowveld, aridity, agro-ecological suitability, fast-track land reform programme

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1. Introduction

Unlike many other African countries which have, until recently, mainly focused their efforts on state protected areas, a major component of Zimbabwe's policy on sustainable wildlife utilisation is the conservation of wildlife on land outside national parks (Child, 2009; Duffy, 2000; Lindsey et al, 2009). While the government remains responsible for wildlife within the Parks and Wildlife Estate, wildlife conservation has increasingly been transferred to the private sector since the 1970s through policies that encourage the devolution of authority and responsibility for wildlife to the private landholder (Duffy, 2000).

Although the enactment of the Parks and Wildlife Act in 1975 marked the turning point towards wildlife ranching on private lands, it was only after independence in 1980 that the private wildlife sector experienced phenomenal growth (Bond and Cumming, 2006). Among other reasons for the change in land use from cattle ranching to wildlife ranching were the increasing incidences of severe droughts (Child, 2009; Wolmer et al, 2004). A shift to wildlife ranching would make a lot of sense ecologically, since wildlife species more effectively adapt to drier environments, and thus are more resilient in times of drought compared to cattle (Wolmer et al, 2004).

By 1994, wildlife ranching was one of the fastest growing new uses of commercial farmland in Zimbabwe (Wolmer et al, 2004). By 1997, a robust and diversified wildlife sector emerged in Zimbabwe under three broad subsectors (Bond and Cumming, 2006; Child, 2009; Feresu, 2010), namely:

- extensive multi-species production systems where properties were converted from extensive cattle ranching systems to large conservancies where safari hunting is the main source of income;
- intensive to semi-extensive multi-species production systems where game farming occurs in enclosed areas and the animals produced may be part of an ecotourism venture that complements farming activity;
- intensive single species production systems, for example where crocodile (*crocodylus niloticus*) and ostrich (*struthio camelus*) are produced in captivity for their leather with meat as a by-product;
- non-commercial, where land owners tolerate a limited range of wild animals on their property with limited off-take for home consumption.

By the year 2000, there were 669 game farms and conservancies registered with the Wildlife Producers Association of Zimbabwe with a combined area of 2.5 million hectares and constituting at least 20% of the country's commercial farmland (Feresu, 2010).

The changes in landuse from cattle ranching to wildlife production were more marked in the south-east lowveld of Zimbabwe (Wolmer et al, 2004). The unfavourable agro-ecological conditions in this region, coupled with more frequent droughts, were a strong (dis)incentive that forced many cattle producers to shift towards wildlife production. This explains why this region is one of the largest wildlife production areas

in the country. Among the major wildlife conservancies and game farms in the south-east lowveld include Save Valley Conservancy, Bubiana Conservancy, Bubye Conservancy, Chiredzi River Conservancy, Hippo Valley Game Reserve, and Malilangwe Wildlife Reserve (MWR).

The study assesses the ecological success of the change in landuse from cattle ranching to wildlife conservancies in the south-east lowveld of Zimbabwe, with a special focus on MWR. The study also identifies the major threats to the development of the wildlife sector in the south-east lowveld and the nation at large. In addressing the above objectives, the study was guided by the following research questions:

- How successful has been the ecological establishment of wildlife ranching in the study area?
- What are the major threats to the development of the wildlife sector in the study area, the south-east lowveld and the nation at large?
- What can be done to address the identified threats to the growth and establishment of the wildlife sector in the south-east lowveld and in Zimbabwe in general?

No previous studies have specifically investigated the ecological success, and threats, to the shift from cattle ranging to wildlife production in the south-east lowveld or similar agro-ecological regions in the country. The study therefore attempts to fill an important research gap.

2. Methodology

2.1 Study site

MWR was formed in 1994 when the Malilangwe Trust purchased Lone Star Ranch from the Sparrow family, and a neighbouring property, thereby forming one of the largest private game reserves in the country. Before the purchase, both farms were involved in cattle ranching. As noted earlier, some cattle losses due to persistent droughts from the mid-1980s turned the south-east lowveld of Zimbabwe away from cattle ranching towards game ranching. MWR is located in Chiredzi District of Masvingo Province, and occupies 39 378 ha (400 km^2) of land (Clegg and O'Connor, 2012). MWR is bordered by Chizvirizvi resettlement area to the east, the Mahenye communal area to the south-east, and Gonarezhou National Park to the south-west. Figure 1 shows the location of MWR in relation to its surroundings.

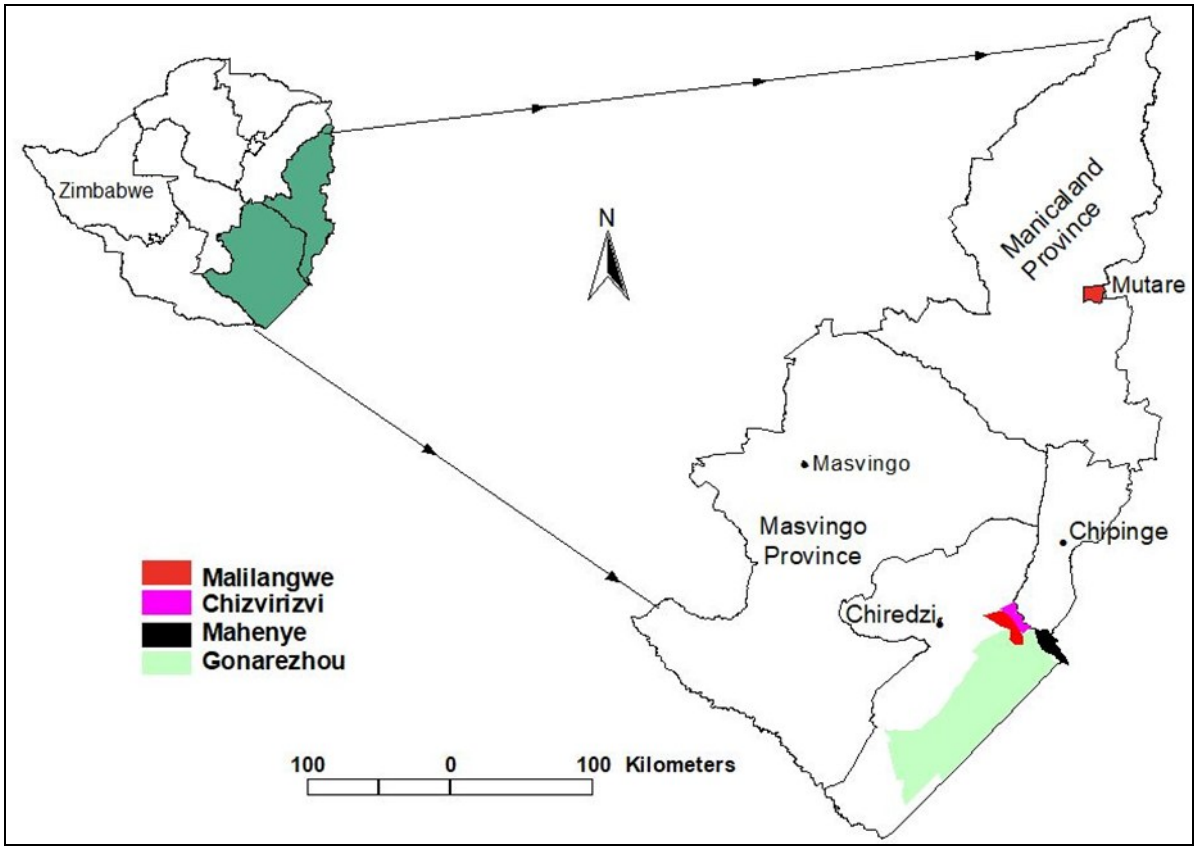

Figure 1: Location of Malilangwe Wildlife Reserve

MWR's current economic activities include ecotourism, sport hunting and the occasional sale of live game to other wildlife producers to control animal populations. The whole perimeter of MWR is secured by an electric fence, though this does not completely stop occasional breaks by elephants (Clegg, 2010a).

2.2 Data collection

The study mainly relied on unpublished secondary data sources to establish the ecological status of biodiversity in the wildlife reserve. These included game counts data and also data on the floral biodiversity of MWR. To augment the secondary data, an interview was conducted with the ecologist for MWR. This enabled the collection of in-depth data on the ecological condition of the wildlife reserve. The secondary data were corroborated with the data gathered through the interview. Observation was also very important in assessing the ecological status of MWR.

3. Results and Discussion

As indicated earlier, MWR was formed in 1994 through the purchasing and amalgamation of two neighbouring cattle ranges. The wildlife reserve was formed at a time when farmers in the south-east lowveld were moving away from cattle ranching towards game ranching due to persistent droughts which had made cattle ranching less profitable (Bond and Cumming, 2006; Child, 2009; Wolmer et al, 2004).

The ecologist for MWR indicated that, after the establishment of Malilangwe, there were reintroductions of some animals which had gone extinct in the area such as the roan antelope. Fifty one roan antelope were reintroduced from Malawi. The quantities of other wild animals that were in small numbers in the newly established protected area were also boosted. For example, 28 black rhinoceros and 15 white rhinoceros were brought in from South Africa, 30 wildebeest were brought from Zambia, nyala were brought in from South Africa and Malawi, while sable were also brought in from various parts of Zimbabwe. The total biomass of large mammals in MWR increased steadily from 36kg/ha in 1999, reaching 54 kg/ha in 2012 (Clegg, 2013). There was a temporary decline in total biomass in 2004 to 30kg/ha due to heavy predation by lions and a major outbreak of anthrax. A steady increase in total biomass after 2004 was largely as a result of the growth in the buffalo, elephant, hippo and white and black rhino populations, with increases in zebra, kudu, impala, waterbuck, and wildebeest numbers also contributing significantly. In 2013 there was a decline in large mammal total biomass to 52kg/ha as a result of the live removal of some animals as a population control measure (Clegg, 2013).

Some of the animals that have registered some remarkable population increases since the establishment of MWR are highlighted below. The buffalo population increased rapidly after 2004, reaching a count of 2 472 in 2010 (Clegg, 2013). A total of 500 live buffalo sales between 2010 and 2011 reduced numbers to 2393 in 2011. A growth rate of 5.3% per annum increased the buffalo population to 2520 in 2012. A dry spell in the 2012/13 rainy season resulted in a further removal of 700 live animals so as to prevent severe forage shortages, leaving a total of 1845 buffalo (Clegg, 2013). The number of buffalo in MWR is currently estimated to be 2100.

The elephant population increased steadily at an average rate of 7.7 % per annum from 111 in 1999 to a peak of 197 in 2008 (Clegg, 2013). In a move to control numbers, fifty three elephants were relocated to Bubye Valley Conservancy, lowering the 2009 count to 152. The number of elephants increased again rapidly, reaching a total of 240 in 2012. In 2013 there were a total of 272 elephants in MWR (Clegg, 2013). Predictions were that the MWR elephant population would reach 2686 in 50 years if no interventions were adopted to control its growth (Clegg, 2008). Such a phenomenal growth, if allowed, would result in the ecological degradation of the protected area. MWR has proposed a control strategy that will ultimately stabilise the elephant population to between 150 and 160 elephants (Clegg, 2008).

The estimated number of impala decreased from 5717 in 2000 to 4012 in 2004. The decline in the impala population was largely due to increased culling to reduce numbers. Reduced culling after 2004 resulted in a steady increase in the impala population. In 2013 an estimated 6730 impala were counted indicating rapid population growth, notwithstanding the population control measures (Clegg, 2013).

The ecologist for MWR noted that, *inter alia*, there were currently about 57 large mammal species, 400 bird species and 21 species of fish. According to Clegg and O'Connor (2012), estimated densities (number/km^2) for the dominant large herbivore

species were: elephant 0.4, white rhino 0.2, black rhino 0.2, giraffe 0.5, buffalo 4.9, eland 0.4, zebra 1.7, wildebeest 0.6, kudu 1.1 and impala 11.2 and these densities continue to increase. The ecologist, however, noted heavy predation, especially by lion and leopard and disease outbreaks as constant, but not detrimental, threats to the biodiversity of MWR. He further noted that poaching was not an issue at MWR due to the high security as a result of the erection of an electric fence and constant patrol by armed guards.

The establishment of the MWR has also promoted the growth and establishment of floral biodiversity in the conservation area. In fact, the above-noted increases in faunal biodiversity in MWR have only been made possible by a well-established vegetation cover. Clegg and O'Connor (2012) recorded 468 plant species in MWR. Varied geologic, adaphic and topographic conditions in MWR account for the establishment of the various plant species. Destruction by elephants was identified as the main threat to plant biodiversity in MWR. However, a study by Clegg (2010b) on the status of the 4 plant species most favoured by elephants as food, namely, *Commiphora glandulosa, Sclerocarya birrea, Lannea schweinfurthii*, and *Xerroderis stuhlmannii* showed these species to be very healthy, indicating no serious threat to the vegetation of MWR from elephants. Observation by the researcher also confirmed the health of the vegetation of MWR. Measures that had been adopted by MWR to promote the development of floral biodiversity included fire management and, as mentioned earlier, the control of animal populations, particularly those of elephants.

The apparent success in the ecological establishment of MWR highlighted above, and other private game ranches in the south-east lowveld and similar regions in Zimbabwe, was however suddenly disrupted by the adoption of the Fast Track Land Reform Programme (FTLRP) by government in 2000. The hurried and ill-planned FTLRP did not spare the country's game farms and conservancies, and has emerged to be the major threat to the establishment of the wildlife sector in the country. While some of the acquired game ranches and conservancies continued with wildlife activities, many others were partially or wholly converted into agricultural land (Bond and Cumming, 2006). Examples in the south-east lowveld include Bubiana Conservancy which ceded more than 17 000 ha for the AI farming model, Bubye River Conservancy which ceded 5 600 ha also for AI resettlement, and the Save Valley Conservancy which also lost some of its area to resettlement (Bond and Cumming, 2006; Feresu, 2010). MWR has survived the resettlement exercise at the present moment. Unfortunately, most of the communal households that have been resettled in game farming areas are practising crop and livestock production, which are not suitable for such arid areas. The resettling of households in wildlife producing areas has thus resulted in a reversal of the success that had been attained in efforts to economically match up the agro-ecologically harsh conditions of the south-east lowveld and other arid regions of the country through a shift from cattle ranching to game ranching.

4. Conclusion and implications

The study has highlighted a marked increase in both faunal and floral wildlife in the MWR since its establishment in 1994. The results of the study attest to the ecological success of the shift from cattle ranching to wildlife conservation in the study area.

The south-east lowveld, and similar areas in the country, could meaningfully contribute towards sustainable development in Zimbabwe through the adoption of game farming, as wild animals are more tolerant to the harsh agro-ecological conditions in these areas compared to livestock rearing or crop production. The FTLRP, however, has threatened (and continues to threaten) the success of the establishment of the wildlife sector in the arid regions of the country through the allocation of land for crop and livestock farming in these arid areas to newly resettled households.

There is need for a reassessment of the land reform programme in the wildlife producing regions of the country. Land reform in these areas should be geared towards the establishment of wildlife farms and conservancies as these are the most suitable landuse activity in such areas. This is particularly important in light of the growing climate change menace, whose impacts are likely to be felt the most in the already arid to semi-arid regions of the country.

Experiences in MWR have also highlighted the importance of keeping wildlife populations within the carrying capacities of the protected areas in these arid regions, especially for elephants and other large mammal species. This is because the high ecological fragility of such areas can easily be exacerbated by allowing wildlife numbers to overshoot carrying capacities. Equally important is the control of predator populations so as to avoid the overkilling of those wildlife most vulnerable to predation.

About the Author
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