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REVIEW

Influence of Policy on the Transformation of Range Management from Traditional Management: A Perspective of History of Range Management in Botswana

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ABSTRACT

The government of Botswana, through an Act of parliament enacted the Tribal Land Act of 1968 which gave Land Boards the power to allocate land which previously was allocated by chiefs. Most farmers only applied for water rights, probably because grazing rights required fencing. The failure by farmers to acquire grazing rights and their apparent willingness to water more than just their own livestock resulted in considerable overstocking and overgrazing around water sources. Incentives to manage the range were lacking as farmers still thought the land was free for all and finite despite the fact that they now had water rights. Exclusive land rights such as in freehold areas had not resulted in better methods of range management. Unfortunately, it is difficult to run a ranch effectively using semi-skilled workers. There are no policy records on range management prior to the country's 1966 independence from Britain. Government introduced the Tribal Grazing Land Policy (TGLP) in 1975 as its first attempt to transform the grazing management from traditional management. The National Policy on Agricultural Development in 1991 is a follow-up on the TGLP. There had been reluctance on the part of the Government to enforce the law which allows the prosecution of individuals who mismanage the land. If progress in rangeland management is to be made in the communal sector, weekend and absentee farmers should be given the least priority when allocating ranches. Unfortunately, only cattle slaughtered at Botswana Meat Commission (BMC) carry a levy cost yet the whole cattle herd industry is heavily subsidized. This paper focuses on the transformation of range management from tradition as influenced by government policies and the consequences therein.

.**Keywords** Livestock, overgrazing, boreholes, land tenure system, grazing land policy, communal grazing areas

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INTRODUCTION

Botswana has a geographical area of 584,000 km2 of which 65% is grazing land (Field, 1978). The country has semi-arid climate with average rainfall of 650mm year^{-1} in the extreme northwest and less than 250 mm year^{-1} in the southwest (Bhalotra, 1987; Tyson, 1978). The semi-arid environment severely limit arable farming and hence leaving livestock rearing (cattle, sheep and goats) as the most prominent agricultural activity (Vossen 1990). The potential carrying capacity is estimated to decrease from 8ha/LSU in the east to 27 ha/LSU in the southwest (Field, 1978). However, because of incomplete land use plans and limited range monitoring exercises, the carrying capacity in the country is still uncertain.

It is not exactly known when organized range management started in Botswana. However, concern over the communal tenure system and the influence of livestock grazing practices on rangeland condition and productivity appear to date as far back in history as the local people because their history has always been associated with livestock rearing. Traditionally, all rangelands were owned by communities and chiefs had the overall authority on all matters relating to land use. Chiefs worked with headmen and appointed advisors and decided on the location of grazing lands, residential (villages) and arable land. The chief also presided over land disputes and appeals (Machacha, 1985). However, at that time land was abundant because the population was low. Over the years, however, land especially grazing land, became scarcer because farmers were reluctant to venture onto grazing land too far away from their villages due to long distance and uncertainty in water supply. This was before borehole drilling was introduced especially in the western part of

Botswana. The aims of this paper interrogate consequences of the transformation of range management from tradition as influenced by government policies, pre- and post-Botswana independence.

Pre-independence events

Herskvitz (1926) designed a rather primordial theory that cast African pastoral herding as an irrational imperative driven by desire to accumulate livestock for mystical reasons at the expense of environment. Beinart (2000) suggested that this theory became popular in the 1930s as European colonial governments used it as the blueprint for grazing land policies across Southern Africa where cattle hoarding was disparaged for its purportedly deleterious effects on the environment. Molosiwa (2016) indicated that across Southern Africa, colonial governments infused Herskvitz's theory into existing ideas such as progress is exclusively Eurocentric. This idea was used to design land policies that sought to protect natural resources from the perceived disastrous pastoral character of African farming and therefore sought to promote purportedly sustainable capitalist development. The background of Botswana land reform has roots in its colonial and post-colonial past.

With the establishment of the British Protectorate over Bechuanaland, portions of the country were set aside as Crown Lands, notably the Western Crown Lands, comprising what are now the Ghanzi and Kgalagadi Districts and the Northern Crown Lands, covering the northern portion of what was the Ngwato Tribal Territory and Chobe (Schapera, 1943; Parsons, 1973; Tlou and Campbell, 1997). In western Bechuanaland, particularly, Ghantsi area, land was set aside as farming area for European settlement in response to a request by Cecil John Rhodes and the British South Africa Company, partially as a buffer between German South West Africa (Namibia) and the Bechuanaland Protectorate (Botswana National Archives 417/141). Eventually 41 farms were allocated to Afrikaner and English farmers who trekked out of South Africa to Ghanzi in 1898–1899 (Russell and Russell 1979). The Ghanzi Farms were expanded in the 1950s and 1960s, when additional farms were surveyed and allocated. Today, there are a total of 172 Ghanzi freehold farms, the vast majority of which are owned by Batswana, some of which are of English and Afrikaner heritage.

Both the colonial administration and the post-independence government of Botswana recognized the limitations of the communal land tenure system in improving the productivity of the agriculture sector. As far back as 1935, the British Colonial Administration appointed a one-man commission to undertake a detailed description of the traditional laws and customs relating to the ownership of land, with special emphasis on changes that took place after the introduction of improved techniques and other innovations (Schapera, 1943). Despite studying the communal tenure system in the Bechuanaland Protectorate for several years, Schapera (1943) did not recommend any significant changes. This is possibly because the study (Schapera 1943) identified a number of positives on this type of land tenure system including, flexibility for privatization of water points as well as their sale by individuals and the fencing of arable lands, etc. Schapera (1943) had hoped that restrictions would slowly fall off as the communal tenure system evolved. Indeed, the *de facto* transformation of the communal grazing land into private ranches in the Tuli, Tati, Molopo and Ghantsi Blocks as well as several hundred ranches allocated under TGLP throughout the country was part of the system's tendency to adapt to new changes. On the other hand, Schapera (1943) identified some shortfalls of communal land tenure as practiced in Bechuanaland Protectorate, especially those related to conservation and economic production. For example, Schapera (1943) believed the cattle post system, even with the chiefs' institutionalized measures, such as the ''overseer'' arrangement, was poorly designed and bound to lead to range degradation due to overstocking. Economically, the "cattle post", "village" and "cropland" tripate arrangement was expensive and contributed to low productivity in agriculture. This arrangement has not been attended to by successive administrations up to now. However, government of Botswana has recently introduced an integrated farming policy that emphasizes on a holistic management approach looking at the whole farm as cross-linked. Land allocated for integrated farm must be fenced and contain all farming activities (Min Lands and Housing 2011). All activities shall be confined to the fenced land parcel.

Schapera (1943) however, recognized that this practice was well entrenched and would be practiced for many years before it could completely be discarded. Regardless, a concern was raised as early as the first decade of the last century about the shortage of grazing land around the major villages. In the late 1930's concern was more strongly expressed within the government, and the first pasture experiments were established at Morale Pasture Research near Mahalapye and at Lephepe Ranch (now known as Ditlhopo ranch). However, because of the intervention of the World War II, developments in these pastures were suspended for almost ten years (Schapera 1943). The colonial administration investment was earmarked to benefit the expansion of the beef cattle sector and beef export industry. This strategy meant the development of mono-product economy based on beef export and it made the colonial administration dependent on beef for revenues to the point that at the time of independence it represented 85% of total export earnings (Colcough and McCarthy, 1980; Harvey and Lewis, 1990).

The primary obstacle for the strategy to expand cattle sector was access to water in the dryer areas of grazing range. Tribal initiatives to drill boreholes had already started in the late 1920s and from the late 1930s colonial efforts also focused on borehole drilling schemes (Colcough and McCarthy, 1980). Once constructed, both tribal and colonial boreholes were handed over to individuals and syndicates as private or communal property, representing a limited number of relatively influential and wealth members of the Tswana society. The boreholes were drilled to create a series of treck-routes to enable cattle from remote districts to be trekked to the

railway line and sold. Boreholes were also drilled to enable stock to be moved from overgrazed areas around existing water points into new ungrazed areas. The scheme continued after World War II and increased during 1950s and 1960s. Borehole drilling was complemented by construction of veterinary fences and establishment of an abattoir at Lobatse in 1920's, but it was never used because of South Africa's opposition until 1954. (Hillborn, 2010).

During the pre-colonial and early-colonial era, local residents kept cattle primary to pay bride price, access to draught power, pay tax, obtain milk and slaughter for celebrations. In the 1940s, 90% of all households held livestock (Hesselberg, 1985) and the distribution of animals was relatively equal with only the chiefs holding the largest herds. Investments in the cattle sector and opportunities to secure incomes from beef exports introduced monetary incentives that had not been present before. While the elite amassed resources, many medium-sized cattle holders saw their herds decreasing and small-scale holders lost their cattle. Severe spells of droughts and decreases in livestock in the 1930s and 1960s also affected the medium and small-scale cattle holders negatively (Bolt and Hillborn, 2013; Peters, 1994).

It would appear that, the Bechuanaland Protectorate government was more convinced than before that the communal land tenure was one of the major institutions retarding modernization of agriculture in the country. It suggested that changing the system would help solve the problem of overgrazing, reduce other problems such as bush fires and the spread of livestock diseases. Central to this argument was the colonial tradition that viewed private landownership as superior to communal use Herskvitz (1926). By 1949, the Bechuanaland Protectorate Administration granted the Colonial Development Corporation (Today known as Commonwealth Development Corporation) the rights to a set of commercial cattle ranches on Crown Lands. Over the next few years, a network of fattening and breeding ranches were developed on crown land at Odiakwe, Nata, and Pandamatenga in northern Botswana and Molopo in the South, and refurbished the abattoir at Lobatse. The abattoir had been constructed in the 1920's, but was never used because of South Africa's opposition. The objective was to provide new markets for Bechuanaland Protectorate cattle and expand the efficiency of cattle industry in the country as a whole. The northern ranches were an outright failure because of poor planning and bad management. They were progressively abandoned between 1955 and 1962 in part because of low livestock productivity, losses of livestock to poisonous plant (*Dichapatelum cymosum*) and high rates of predation of cattle by lions and hyenas (Hitchcock et al., 2016). The Molopo ranch and the Botswana Meat Commission are still in operation. Following the success of the Molopo ranch, the government started to demarcate ranches on crown land, initially sold as free and lately leased on the Molopo, Ghanzi, and Xanagas. Allocation in the Molopo ceased in the early 1970's, but a few farms at Ghanzi were allocated as late as 1989 (White, 1992). In these allocations the government set stringent conditions for applicants, who had to demonstrate that they had adequate capital and management skills to run the farms. According to White (1992), these farms have been a success and most well developed, adequately managed and profitable.

Post-independence events

The relative political stability which characterized the period up to and after political independence in 1966 has also contributed to three developments (Cooke, 1983): a) increase in human and cattle numbers, b) great increases in economic value of cattle in the modern sense, and c) extension of permanent cattle posts onto the Kgalagadi sandveld. After Botswana attained independence from Britain in 1966 three types of land tenure system were introduced (Table 1).

Table 1. Rate of change of land allocation to the three types of tenure systems operating in Botswana since independence in 1966 to 2009

Year	Tribal Land		State land		Freehold Land	
	(km^2)	%	(km^2)	%	(km^2)	%
1966	278,535	48.8	270,761	47.5	21,356	3.7
1979	403,730	69.4	145,040	24.9	32,960	5.7
1998	411,349	70.9	144,588	24.9	24,572	4.2
2009	411,559	70.9	144,611	24.9	24,339	4.2

Source: R. White 2009

Pressure from local communities appears to have led the government by the mid-1970's to reduce state-owned land in favour of tribal land. The pressure most likely came about because of drought and increased livestock numbers in the communal land. By 1980, transfer of state land on a substantial scale and purchase of freehold land in congested areas had caused the proportion of tribal land to increase to 69%, while the proportion of freehold land had fallen to 5.7% and state land to 25%. Today, tribal land comprises about 71% of the national land area, freehold just over 4% and state land the remainder.

At independence in 1966, the country was experiencing a sequence of sub-normal rainfall years (Bhalotra, 1987; Tyson, 1978). At this time the livestock population was 1.4 million cattle, 0.5 million sheep and goats (Makobo, 1990). Most of the livestock was concentrated in the eastern and western parts of the country, relying on sand river systems of the Limpopo and the surface water of the Okavango, respectively. The reaction to the drought of the 1960's was a rapid extension of the traditional grazing areas westward through the exploitation of ground water sources by drilling boreholes (Odell, 1980). Movement to the western part of the country by farmers who farmed in the eastern part continued even during years of good rainfall of the 1970's resulting in increase in livestock population to estimated 3.0 million cattle and 0.8 million of small stock (Fig. 1).

It must be noted that the expansion into western sandveld was made possible by the borehole technology and by the owners of large herds and not small herd owners. Small herds remained crowded in the eastern part of the country (White, 1992). The expansion of cattle posts into the

previously unoccupied western sandveld raised fears from the government that the sandveld, being more ecologically fragile than the eastern hardveld, would deteriorate much faster if some kind of grazing control was not put in place

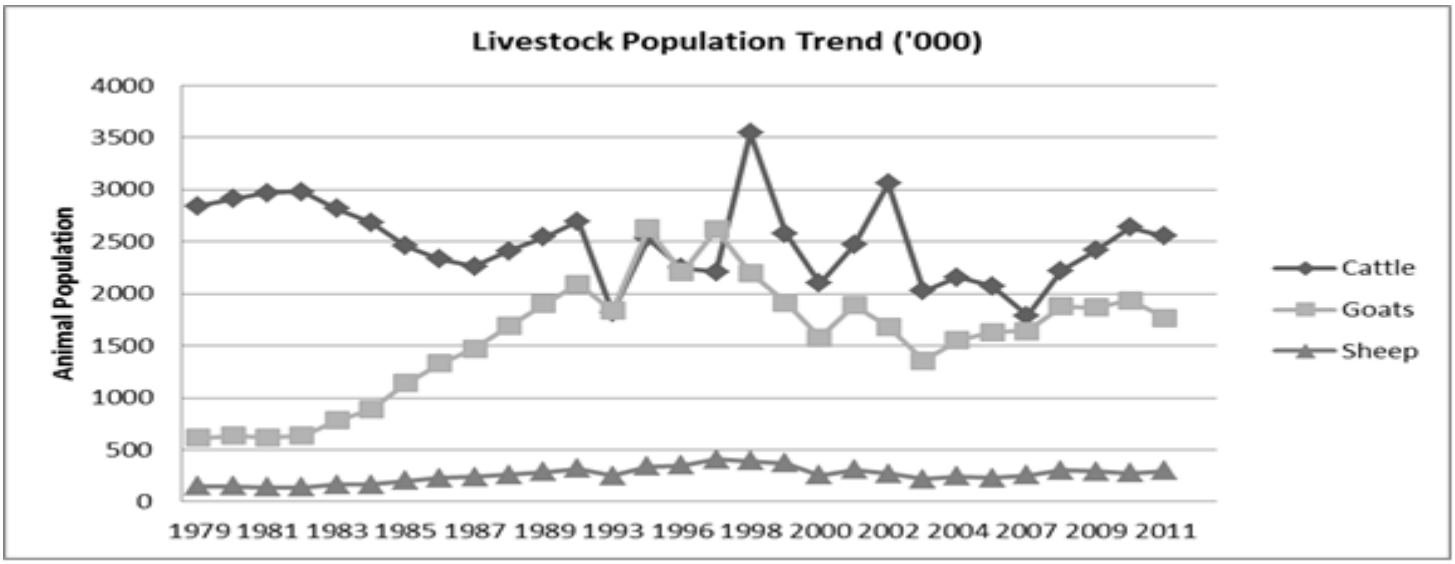

Figure.1. Livestock trends in Botswana from 1979 – 2011. (Source: Statistics Botswana 2013)

Therefore, during the early 1960's the government formed the Livestock Industry Development Team which operated in three of the then most affected districts (i.e. Central, Kweneng and Ngwaketse) (Hitchcock, 1978; Odell, 1980). The objectives of the team were to provide grazing control, develop water, market and establish syndicate societies for the joint management of boreholes and marketing of cattle.

The team laid down certain objectives and their attainment was seen as a high priority in view of the advanced rangeland degradation in many communal areas and cattle posts (Odell, 1980). A ceiling of 600 Livestock units (LSU) was set for the existing borehole at that time. Cattle posts were to be situated 1.5 km from the water source. Excess livestock were moved westward to areas around the newly drilled boreholes whose maximum carrying capacity was kept at 400 LSU. Individuals and syndicates were invited to apply for rights to use new boreholes. There is no evidence suggesting that the opening of new grazing areas relieved pressure on the old grazing area in the long-term. Despite agreement by local authorities, the proposed control on livestock numbers at new and old boreholes was not effected (Odell, 1980).

Simultaneously with the formation of the Livestock Industry Development Team, the government of Botswana, through an Act of parliament enacted the Tribal Land Act (TLA) of 1968. This act vested administration of tribal land to Land Boards. The new Act gave Land Boards power to allocate land which, previously was controlled by chiefs. Although the act did not change the system of land holding and use, it encouraged individualism as farmers moved to more remote areas in the sandveld. The policy required, among other things, establishment of a minimum distance of 8 km between any two boreholes that were to be drilled after its enactment. It was hoped then that such a requirement would save new grazing lands from the inevitable effect of the ''tragedy of the commons'' (Hardin, 1977) which had become evident in the hardveld.

Despite the Land Board empowerment to allocate grazing rights, most farmers only applied for water rights, probably because grazing rights required fencing. For various reasons, farmers were reluctant to fence grazing lands. Once a borehole was drilled, the owner could water as many cattle as they wished or the water yield allowed without even consulting the Land Board (Machacha, 1985). The failure by farmers to acquire grazing rights and their apparent willingness to water more than just their own livestock resulted in considerable overstocking and overgrazing around water sources (APRU 1980). According to APRU (1980), it was not uncommon to find a radius of 1.5 km from the water source in sub-optimal grazing condition (Figure. 2).

It was later recognized that the Tribal Land Act was not adequately equipped to control grazing in communal areas. Incentives to manage the range were lacking as farmers still thought land was free for all and finite despite that they now had water rights. On the other hand, because of government subsidies for animal health and rising beef prices, more cattle were being raised (Makobo, 1990). By the 1970's, cattle numbers had increased to 3 million. This increase took place despite low production parameters (birth, death, and off-take rates). Calving percentages barely exceeded 50% while mortality was as high as 7% and the national average off-take was less than 9% (Makobo, 1990; NDP, 1991). The government recognized a conflicting trend of increased livestock numbers and no incentives to conserve the primary resource of the livestock industry, and commissioned a study to assess the rural development strategy then in place (Chambers and Feldman, 1972). One of the major recommendations of the study was that tenure regarding

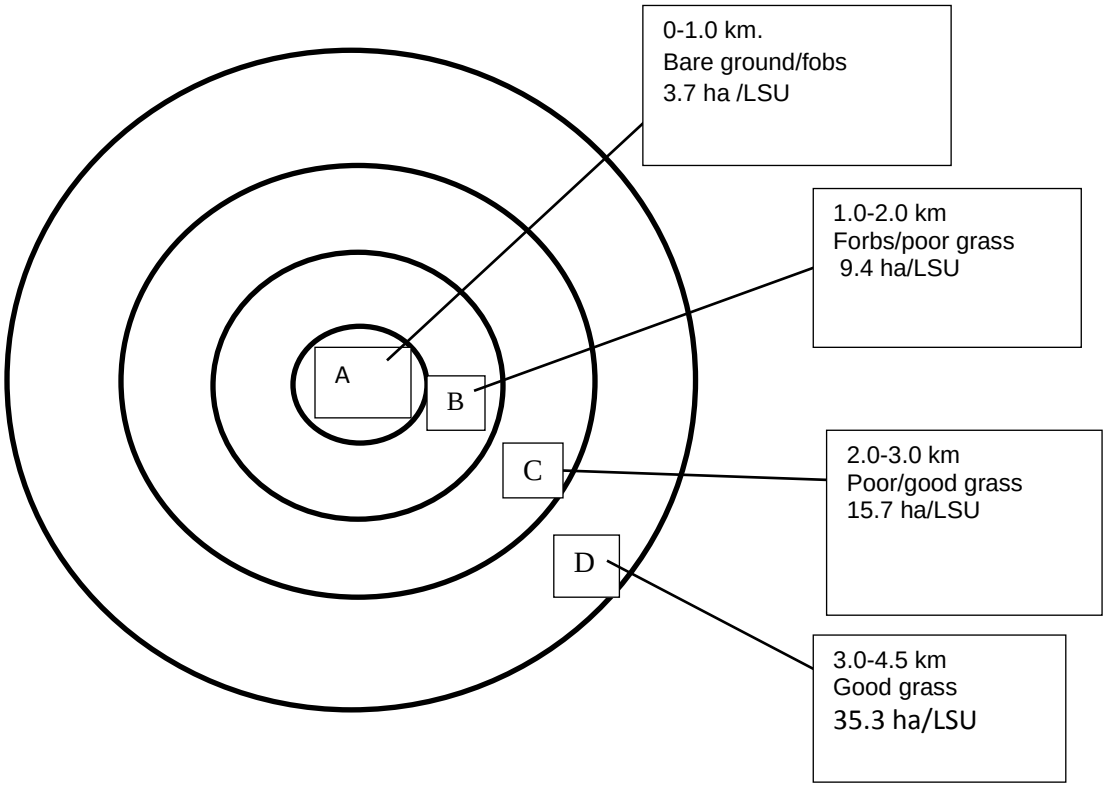

Figure. 2. Model of Vegetation and stocking rate changes around a central borehole

grazing land should be changed so that individuals or groups with large cattle holding should be given exclusive grazing rights. It was envisaged at that time that exclusive rights would give incentives to owners to properly manage their grazing lands and improve their herds (Chambers and Feldman, 1972).

At about the same time as the Tribal Land Act of 1968 was enacted, the first Livestock Industry Development Project (LDP1) was conceived. Its main component was a response to the mounting pressure on the Ministry of Agriculture to grant borehole rights in western Kalahari. The Ministry of Agriculture was concerned that private water development in the area would result in desertification in the vicinity of existing water sources in the area (Bekure and Kgosidintsi, 1979). However, since the area was considered to have reasonably good grazing potential, it was decided to develop a few ranches. It was assumed that the demand for new boreholes could be met, but under conditions conducive to good range management (Hitchcock and Nkwe 1993). However, this assumption proved to be wrong.

Experience gained during the course of the first Livestock Development Project however, indicated that granting of exclusive rights did not resulted in better methods of range management (Odell, 1980; Bekure and Kgosidintsi, 1979; Samboma 1982). The situation was worsened by lack of recognition of problems of overgrazing and degradation by farmers (Edwards, *et al.,* 1989). It was estimated that 40 to 60% of the ranches allocated under this project were overstocked and the range was showing signs of degradation. This overstocking was not the result of local herd growth but rather was the product of transfer of cattle-herds from other cattle-posts (Bekure and Kgosidintsi, 1979). The tribal grazing land policy ranches, too, had experienced range degradation, and in some cases farmers abandoned their ranches (Ministry of Agriculture 1981). Some syndicate ranches had instead of using paddocks to facilitate rotational grazing established individual cattle posts within the different paddocks. This case indicated that overstocking and overgrazing could not be adequately addressed unless the farmers saw it as a problem. For example, reduced forage productivity that followed prolonged overgrazing was often rationalized by the farmers as ‘’a result of low rainfall’’ even though rainfall records did not support the claim (Ministry of Agriculture 1981).

The first Livestock Development Project was established to be the ‘’pilot scheme’’ which would lead to the adaptation of new livestock policies and to the replication and expansion of the project in other parts of the country (Bekure and Kgosidintsi, 1979; Odell, 1980). However, this project failed to curb overgrazing as was anticipated. At the same time, there was a marked reluctance on the part of the Government to enforce the provisions of the Agricultural Resources Conservation Act of 1972, which allows the prosecution of individuals who grossly mismanage the land. Worst still, the government did not seem to have understood the reasons for the failure of the project. Planning for this project was in its final stages when Chambers and Feldman (1972) produced their report on Rural Development. This report provided the conceptual basis for a new policy which

became known as ''Tribal Grazing Land Policy (TGLP). The strategy it proposed for the design of rural economy was to commercialize, diversify and promote equality of income distribution in rural areas. Therefore, the objectives of the TGLP were to:

1) Improve livestock production by using simple ranch management skills like paddocking, rotational grazing, early weaning, daily watering, controlled breeding, etc and

2) Reduce the income gap between the rich and the poor by leaving communal areas for smaller farmers, thereby making expansion easier.

This required further reforms to halt the land rush in the east and to carry out rapid land use planning to ensure adequate land availability in the communal grazing areas. Land use planning was also needed to encourage commercial ranching in the tribal areas through lease-hold tenure. Payments of rents would be redirected in the form of services and subsidies to the under-privileged section of the community (Chambers and Feldman, 1972).

The TGLP recommended that large cattle owners vacate communal areas in favour of commercial ranching operations either on their cattle posts or in new unoccupied areas (Government Paper No. 2 1975). Communal areas would thus be retained only by the smaller farmers. The Tribal Grazing Land Policy also required, except for villages and cities, that tribal land would be divided into three zones, communal, reserve, and commercial. The traditional livestock management was to remain the domain of the communal areas. Improvements were to be brought about by finding ways to teach people better rangeland management and how to solve the problems of overstocking, using commercial zone rents as a development fund, and by setting a ceiling on the size of herd an individual could keep in the communal area (Government Paper No. 2 1975). The policy also made provision for those whose herds exceeded the limit to move to commercial areas as well as to allow local groups to fence land allocated to them in communal grazing areas. Reserved areas were intended for future use by those who owned only a few cattle as well as for arable use, wildlife, mining etc. In commercial areas, 6,400 ha ranches were demarcated and leased to groups or individuals who owned a minimum of 400 LSU. These ranchers were to pay the equivalent of 4t or $US 0.013/ha per year as a token for exclusive use of land that was otherwise communal. By 1985, however, 476 ranches had been demarcated, 310 allocated, and 160 leases signed (White, 1993). To date, statistics from Department of Animal Production (DAP) of the Ministry of Agriculture indicates that since 1991, approximately 892 ranches were demarcated, 639 allocated and 368 developed under the fencing component of the 1991 National Policy on Agricultural Development for livestock production. (DAP, 2013).

In 2008 Government took a decision to lease its underutilized ranches to the private sector as part of its long term strategy of increasing the national herd productivity. Subsequent to this decision, 16 ranches, most of which were used as veterinary quarantines and for livestock and range research purposes, were allocated to applicants for leasing for commercial livestock production (DAP, 2013). An additional 3 Government ranches, along with 9 farms at Banyana (Pty) Ltd (a parastatal of the Ministry of Agriculture) were allocated in 2011 (DAP, 2013). Perhaps the question that one needs to ask is, what advantage would state lease have over tribal lease and/or freehold with regard to increased productivity and environmental consciousness of the ranchers? Some authors (Molutsi, 1993) have suggested that the next policy should do away with the communal and free-hold and replace them with state land, the latter being rented out to individual farmers regardless of whether they own large or small herds.

Despite consultations which appear to have succeeded in informing the public of the government's intentions to help people achieve a more egalitarian and more prosperous society, the Tribal Grazing Land Policy is not considered to have achieved any success. Apparently its introduction created unease among some rural communities who did not like the idea of fencing grazing land (Ministry of Agriculture, 1981; Machacha, 1985). Traditionally, free movement of livestock is seen as a strategy against droughts and other adversities. Farmers' belief that land partitioning aimed at preventing free movement of livestock, led to people rejecting the policy.

Anthropological work in rural communities since the consultation in 1975/1976 suggested that ignorance of the Tribal Land Grazing Policy tended to increase with the remoteness, poverty, and illiteracy of the people concerned (Hitchcock, 1980). If that was true, it would suggests that those who benefited from the policy were the enlightened weekend ranchers employed in civil service and the private sector. In general the policy was flawed by the fact that there are no mechanisms for ensuring that there was compliance with the stated objectives. For example, Machacha (1985) and Molutsi (1993) reported that at the start of the policy there was major technical, administrative, and political problems, which the policy-makers had not anticipated. Technically, the issues of land demarcation, zoning, etc. required more trained and experienced personnel than the Land Boards could offer. There was also the issue of shortage of land in some districts which required major political decisions which were not made.

In addition, when ranch owners did not limit the numbers of stock on a ranch, or did not fence their land, or exercised dual rights (i.e. using TGLP ranches and at the same time grazing some of livestock in the much reduced communal grazing lands), no action was taken by government. The communal areas which were to be free from large herds of cattle ended up being utilized by both the smallholder farmers as well as by the wealthy ranchers just like before. The result was that, overgrazing in the communal areas which was expected to be addressed by the policy still continued (Odell, 1980). Furthermore, it seriously disadvantaged the smallholder farmers who did not have the opportunity to acquire TGLP ranches, but still competed for limited land with wealthy farmers. Unfortunately, objectives of TGLP was not met and this

seriously undermined the goals of the policy to deal with the environmental problem. It is worth noting that enforcement of environmental legislation in Botswana remains problematic even up to date. In the case of the Agricultural Resources Conservation Act of 1972 for example, while it had the provision to guard against rangeland degradation, responsible authorities such as the Land Boards seemed reluctant or unable to enforce the act when required to do so. The same problems could be leveled against the implementation of fencing component of the 1991 National Policy on Agricultural Development (NPAD).

In spite of the negative aspects of the TGLP there are some areas where the policy has achieved some notable successes. In particular in some districts such as Central, Kweneng and Ngwaketse where the development of the ranches has been recorded as highly successful (Frimpong, 1993). Further, improved management practices have been noted too. The results have been beneficial both to the individual farmers as well as to the communities. In terms of financial gains the individuals are said to have been able to supply high quality breeding stock to other farmers. And from the community point of view some measure of conservation has been achieved (Frimpong, 1993). The TGLP has brought some awareness among both the commercial as well as the communal farmers about the need to protect and conserve the environment. Even though the results have been slow to show, concrete results are expected in the long term.

Recently, the Ministry of Agriculture introduced various initiatives to promote agro-ecological zones development in order to promote conservation and sustainable land use practices (NPAD, 2014). This has been done through rehabilitation of land and advisory services for environment and agricultural resources. This on-going rehabilitation process has managed to control land degradation which occurs through soil erosion that have an adverse impact on the agricultural productivity (NPAD, 2014). However, there are challenges in coordination and harmonization of legislations related to land issues in Botswana. While there are provisions to guard against rangeland degradation, improper usage of designated pieces of land, authorities responsible are at times unable to enforce these legislations for unknown reasons.

While it is widely accepted that the question of land tenure is the most stumbling block in rangeland development and conservation, it should be noted that solutions to problems relating to tenure system do not necessary translate to improved productivity of ranching enterprise. Samboma (1982) indicated that in Botswana, there are problems existing in freehold farms that are similar to those in communal areas (eg. overgrazing and low productivity levels in particular, remain common regardless of the tenural system). However, it may be true that commercial ranches have better production levels than their communal counterparts, but in Botswana, they lag far behind commercial farms in neighboring South Africa or Namibia.

As much as the freehold tenural system is compatible with the current development goals of the country, one may be tempted to think that there are some socio-cultural (Molutsi, 1993) and perhaps political factors at play in Botswana's agriculture over and above the issue of land tenure. For example, the TGLP specified that farmers will be discouraged from holding dual grazing rights and farmers persuaded to limit their stock numbers as well as fence the allocated ranches. That was all politically palatable, but the most important scenario was the ''what if'' – what if the ranchers got the land, like they did, promise to abide by the policy, and then fail to do so? Could the government afford to allow a handful of offenders at the expense of the nation? Certainly, long-term environmental concerns are more important national issues than the plight of some ranchers who are only interested in making a profit with the most minimum investment.

CONCLUSIONS

Based on the above argument it is important that the on-going Revision on National Policy on Agricultural Development 2014 should go beyond fencing but devise means of solving problems that the preceding policies could not. Linkage between the Ministry of Lands and Housing (responsible in part for land allocations) and Agriculture (responsible for providing technical services to farmers) are too weak to result effective outcome on farm land. A team comprising Land Board officials and technical advisors from a relevant arm of the Ministry of Agriculture (e.g. ranch extension), Department of Forestry and Range Resources (e.g. range ecology) of Ministry of Environment, Wildlife and Tourism should be established to monitor activities of ranch lease holders. It is difficult to run a ranch effectively using semi-skilled workers as this is the case in most of the TGLP ranches and those developed during the fencing component. If progress in rangeland or stock management is to be made in communal sector, all cattle keeping must carry a realistic cost and accountability. In addition to BMC levy, there should be an incentive to get rid of unproductive cattle, otherwise a penalty be incurred by uncooperative farmers.

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