

Animal Production Level – A Measure of Social Development in Southern Africa

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ABSTRACT

With the exception of privately owned commercial animal production enterprises the greater numbers of ruminant livestock in the ten Southern African states considered in this treatise are owned by smallholder farmers based on communal land use rights. Except for the tsetse fly (*Glossina spp*) infested areas, the climatic and vegetational conditions of Southern Africa appear inherently ideal for ruminant livestock production. However, measured against this tremendous potential only a relatively insignificant amount of meat and meat products, originating almost exclusively from the privately owned properties, trickle out of Southern Africa. This paper explores probable social developmental issues related to poor smallholder farmer livestock productivity and discusses possible remedial actions.

Introduction

The greater proportion (about 2/3) of ruminant livestock species (cattle, sheep and goats) in Southern African countries (Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe) is kept under smallholder farming conditions based on communal grazing systems. Monogastric species (pigs, poultry and rabbits) play a commercially insignificant role in smallholder communal agricultural systems of Southern Africa and will therefore be deliberately excluded in this discourse.

Arrival of people of European extraction at the Cape of Good in South Africa (1652) and subsequently in the other Southern African states has had a profound effect on the agricultural systems of the region. The new arrivals acquired, often forcefully, large tracts of fertile land and developed these into privately owned, large-scale commercial farming units with different levels of production specialisations and intensities of resource utilisation. The objective of these commercial farming ventures has been and still is profit maximisation. A concentration of these commercial farms are in South Africa, Namibia, Botswana and Zimbabwe. Indigenous people of the sub-continent found themselves in most cases

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concentrated in less potential agro-ecological zones. Through enactments of various land tenure acts and bills in their respective countries, the majority of all the African black farmers have been and still are farming on communal/tribal lands; (Lawry, Riddell & Bennet 1984; Garbett, 1963; Lewin & Neocosmos, 1988). This group of farmers, the largest in Southern Africa and often called peasant or traditional farmers (Bundy, 1972; Dahl & Hjort, 1976 and Ellis, 1992), will be called smallholder farmers in this paper. Objective of the smallholder farmer in his/her situation was and in some cases still is, to exist. Little more than natural inputs are put in such farming units. In line with the smallholders' foremost objective "existence or survival", this system of agriculture has been of necessity mixed, thus maximising the spread of risk. It is the apparently low productivity of ruminant livestock in smallholder farming systems in Southern Africa and the social developmental issues related to this, that prompted researching for this paper with the intent of exploring the relationship between the two.

Social Development

Today, it would appear that there is no satisfactory definition of 'development' that does not imply 'capitalism', even on the most technological definition. Phillips (1977) argues that the orthodox development theory took underdevelopment as an original state and addresses itself to the problem of how to wrest a country out of this state into one more closely resembling that of advanced capitalist countries. The orthodox development theory identifies development with capitalistic social relations and subscribes to the notion that 'backwardness' is a product of isolation from the world economy that can be eliminated through greater integration, but is reluctant to consider the historical relationship between 'developed' and 'developing' countries as relevant explanation of underdevelopment. This orthodox approach to development has been attacked by development analysts for its uncritical acceptance of the term 'development' as synonymous with the 'development of capitalist social relations'.

Normal development has been defined in Phillips (1994) as to involve the elimination of pre-capitalist modes of production such as peasant-based agriculture. Whilst there appears to be a relationship between capitalism and development the question to be asked is: "...can capitalism promote development or does it necessarily produce underdevelopment?". Departing from this ideological discourse, my own simplistic way of defining social development is "...change that improves the socioeconomic circumstances and the quality of life of people". Even in this simplistic attempt, there are complex interrelations like nutrition, shelter, health, security, education, income, *inter alia* that have been collapsed into the expression "quality of life". These variables will also serve as the best indicators to measure the quality of life and therefore development.

Land Tenure and the Role of Domestic Animals

Smallholder farmers in Southern Africa are communal land based. Communal lands are under the respective communal/tribal authority who allocates the land to his/her subjects at no cost. According to Wolpe (1972) communal tenure throughout the then colonial states of Southern Africa was strongly defended by the chiefs who had their own political interest to look after, but also by the commoners. The powers of the chieftancy symbolised this form of land holding, and commoners felt that they were able to exert some control over the land when it was under the jurisdiction of the chiefs and headmen. On the other hand the colonial states had their own political and administrative reasons for supporting the retention of the communal tenure system. This system was the backbone to the native reserve systems which also was used as a tool to prevent influx of blacks into the urban areas except to take up employment. The user of the land could not sell it, should he/she relocate from the community. It is apparent that this sort of land ownership is respected by community members and functions well almost on a quasi private ownership basis in the case of arable and garden lands. However, the picture is not so rosy with communal grazing land where the total community is responsible (Abel & Blaikie, 1988). Grazing land is exclusively communal in the true sense of the word. The rights and claims of farmer X with 1 cow and 2 goats on the communal grazing area are the same as those of farmer Y with 55 herd of cattle, 92 goats and 80 sheep. Since there is no mechanism to, at least proportionately, tax farmers X and Y for the utilisation of communal grazing, farmer X waits enviously and patiently for the good winds to blow his direction and to boost his/her herd to counter Y's large stock numbers. Whilst this postulation may sound trivial, such reasoning is well-rooted in most smallholder communal farmers, who tend to see their livestock in terms of their numbers and not their quality. Regardless of this apparent helpless state of affairs, the multiple functions and importance of ruminant livestock and their role in the dynamics for social stratification of the livelihood strategies of the rural people of the subcontinent can not be overemphasised.

Cousins (1994) writes that the Khoi (oldest inhabitant of Southern Africa) social organisation reflected the significant role of domestic animals as inheritable assets, that could be accumulated, giving rise to "...ever-increasing social and wealth disparities" and a patronage system. Even in those precapitalistic societies of the region, Guy (1980) writes that cattle represented the only form in which surplus wealth could be accumulated and therefore served as a basis for social divisions. A wealthy man in those societies was one who owned enough cattle to make him independent of the demands of family and kin. Beinart (1979) sums the importance of cattle then in his words:

"...cattle were preferred since they were a major source of food, they were the key to marriage, the acquisition of a family and therefore to social reproduction, and they were increasingly important in cultivation as ox-drawn implements became more widespread. Cattle were also the best investment in rural society at the time; they reproduced themselves rapidly, were exchangeable for other goods and could be sold for cash".

Behnke & Scoones (1993) attribute this state of affairs in communal livestock production to the notable lack of success of livestock development projects in Africa as a whole and the lack of good research in this dimension of rural production. The lack of good livestock research and livestock development projects is even more critical if one views the whole from the ecological advantages of ruminant livestock production in the natural Southern African environment, which is not very well suited for arable agriculture. For instance around 85% of the total area of South Africa is suitable and used for grazing livestock (Cowling, 1991).

The simplistic attitude of the communal land peasant/subsistence farmer conforms with the objective of spreading the risk in order to survive. After all, the grazing is natural, communal, who cares? Veld and grazing land degradation is the last thing these farmers can think of. It is a common good and as Hardin (1968) puts it, it is *"...the tragedy of the commons"*. In the hope to counter the "who cares" attitude and curb overgrazing and subsequent land degradation, governments have in some cases introduced animal head taxes, but with no measurable success. Such measures are often viewed by the farmers with suspicion and contempt and associated with repressive colonial administrations. This unpopular connotation, it can be presumed, forces governments to back out from the otherwise well-intended interventions. The land tenure issue remains 'a hot potato' to all governments in Southern Africa and yet its proper pragmatic review is central if future, environmentally sustainable utilisation of natural pastures, the basis of all ruminant livestock production in Southern Africa, is to be achieved. The implications for the present state of affairs is that for sustainable social development in Southern Africa to be possible, it is important that whilst the basic land requirements for all the communal pastoralists should be met and therefore extend to all, the opportunity to satisfy the rural folks' aspirations for a better life, the promotion of values, responsibility and accountability that encourage the sustainable utilisation/exploitation of the pasture natural resource within the boundaries of the region's ecological possibilities should remain central in that endeavour. The concept of sustainability in development put forward here is based on the need for carefully managed change to improve environmental and economic conditions as well as the quality of life for all people (Moffat, 1994).

Grazing Schemes

Donor agencies, non-governmental organisations and governments alike have tried with varying levels of success to introduce grazing schemes. The objective of introducing these schemes has been to encourage communal management of the natural pasture, to improve the grazing situation whilst judiciously utilising the veld, reduce and or curb veld deterioration, soil erosion and eventual environmental degradation and resultantly boost livestock productivity in smallholder communal set ups. (Sweet, 1987; Theisen, 1978; Cousin, 1987). From the reports of some three grazing schemes that were visited in Zimbabwe (Muchawaya Veld Management Scheme, Dombochena Veld Management Scheme and Range Grazing Management Scheme) it is eminent to note that all three schemes have a common objective, that is:

"...to re-organise and rationalise the land-use patterns in the (respective communities) so that adequate land is available for various agricultural activities of the community. The plans have promotional packages designed to improve livestock production through improved veld management, fodder plots and veld reinforcement and improved livestock management".

This clearly shows that the grazing scheme philosophy is and has been seen as an intervention aimed at improving not only the livestock production aspects of rural communities but their total agricultural productivity, with the aim of improving the land-use use forms, improve agricultural productivity and therefore the nutritional status, income and wealth in rural communities and so contribute to overall improvement of quality of life and social development. This is supported by an analysis of the proposed land-use and management of the three schemes which all covered aspects of land consolidation, crop production and management, livestock management, veld management and conservation, fodder production, land conservation, agroforestry and water development. The interpretation here is that the grazing schemes, although they primarily are meant to improve ruminant livestock productivity, they were conceived to impact on all aspects of rural life and therefore be a vehicle for rural social development.

Details of the shortcomings of this strategy go beyond the scope of this paper, but suffice to say that since the inception for the Grazing Scheme strategy in Southern Africa a lot of noise has been made but no measurable, socially suitable and communally easily accepted and adoptable models of grazing schemes have been found. The earliest literature on grazing schemes in Southern Africa is that of Robinson (1951) where a grazing scheme in the then Southern Rhodesia in Zimuto

reserve was described. This early grazing scheme was embarked upon after a forced destocking in the Zimuto Reserve. Subsequent to this first scheme, was the enactment of the Native Land Husbandry Act of 1951 (Garbett, 1963) whose objective it was, through compulsory restructuring of the communal tenure, to increase crop and livestock production from the 'native reserves'. Good husbandry methods were to be observed by the rural communities. However, this approach did not bear fruit, and as Passmore (1972) put it:

"...it was recognised that compulsion to adopt 'scientific farming methods' was not practical under those circumstances leading to the suspension of the allocations of land in terms of the 1951 Land Act".

Thus the Land Husbandry Act had failed to achieve the goal of reorganising the rural economy in terms of what were deemed scientific principles of land-use. After the failure of the early schemes, according to Froude (1974) earnest efforts to improve veld management in communal areas began in 1968 with the introduction of the "Short Duration Grazing Schemes". The state's accent this time around was on persuasion rather than coercion and greater importance was attached to target community involvement in all aspects of the schemes, from planning through to implementation and management. Whilst this approach was beginning to succeed, Froude (1974) attributes the relapse of grazing schemes and veld management practices from 1970 onwards to the war that lasted until 1980 in Zimbabwe. Post-war, several Grazing Schemes have been established in Zimbabwe especially in the Masvingo District with assistance from the European Economic Community (EEC) but notably also with finance from the German Agency for Technical Development (GTZ). Most of the schemes are doing relatively well (personal communications). However now and again there are problems of boundaries of the schemes; opposition to grazing schemes by community members who are not participants; some homesteads are in areas earmarked for the schemes and therefore require their relocation; community members who own no livestock see no benefit of such scheme; where there are no donor agents there is lack of funding to purchase farming material and often the grazing areas are just too small to be viable.

From a community building and social development point of view, a grazing scheme, by bringing all interested people in a community together to manage this common good can be a good vehicle to bring cohesiveness and rural development. In the schemes in Zimbabwe mentioned above, every scheme has its own management committee either appointed by the chief but in most instances elected locally and such a committee typically consists of a chairperson, a secretary, a treasurer, a ranger and other members. Since the grazing scheme has a strong

natural resource conservation and strategic utilisation aspect, grazing schemes if properly implemented may be good vehicles for environmental management and social development in rural communities. The learning process, therefore, is still going on. Probably the communal grazing scheme questions, to which the land tenure issues are inseparably coupled, need to be addressed by some regional neutral pragmatic body with long-term agricultural strategic planning vision. The formation of such a body is very possible and could fall under the auspices of the Southern Africa Development Community (SADC) agricultural unit. Already the directors of livestock departments from the SADC countries have met in Lesotho (personal communication) in February 1995 and are working towards formulating a livestock development policy for the Southern African Community as a whole. Without being judgmental, I perceive this as a timeous development indeed, because with the increasing compartmentalisation of the world's development regions, for example the North American Trade Agreement (NAFTA) the European Union (EU), the Australian East Asian (ASEAN) *inter alia*, it is important that the Southern African Community gets together and work out strategies for future developments. This is all the more important on issues of social development, agriculture, livestock development only to mention a few, where development in one country will have ripple effects in the other countries. Whilst the dangers of single country interests can be expected to slow down developments at regional level, it will only be to the advantage of the total SADC countries to embark on developmental pathways that will project the region as a whole. It is obvious that too big a difference in the quality of life of people in the different SADC countries does and will not auger well for peace, stability and regional social, political and economic development, because as quoted from Phillips (1977) "dependence" and "development" are antagonistic. Governments, it can be supposed, would not want to risk loss of votes by trying to address this 'hot potato', land issue, although such an attitude is politically short-sighted.

Multiplicity of Livestock Functions in Smallholder Systems

The multiplicity of objectives (bank, insurance, *lobola*, prestige, meat milk, hair, cash, cultural, manure, draught power, etc) in keeping livestock by the smallholder farmers of Southern Africa is well documented (Barnes, 1978; Behnke, 1986; Doran, Low & Kemp 1979; Steyn, 1988; Ndlovu, 1990). This, however, except in specific specialised livestock enterprises, for example milk production from dairy cattle, is erroneously viewed by many researchers as a negative factor in itself, responsible for low livestock productivity in communal systems. The multiplicity of purposes in keeping stock can, on the other hand, mean the farmer is getting

maximum utilisation/production from his stock, which is positive. This viewpoint is valid as long as a direct comparison in 'productivity' is not made between the smallholder livestock farmer and the commercial enterprise specialising in either beef, milk, mutton, wool, mohair, pelt production, *inter alia*.

It may be worthwhile to review and qualify the word 'production' when conjointly addressing smallholder and commercial farmers' problems. Obvious, of course, is the need to encourage the communal farmer to increase offtake from his/her herd and let the appreciation of quality instead of animal numbers take root. The way not to do it in attempts to increase communal livestock offtake is what Agricultural Ministries in the region have been doing, that is coercing farmers directly or indirectly to dispose of their livestock. The rejection of such coercion policies become fore-programmed at the planning stage, where in most cases the "top down" approach of planning was the norm. The rural communities were not involved when ministry bureaucrats discussed what they perceived as problems of livestock production of the rural communities, and yet the extension personnel were expected to market such governmental policy interventions. It has now become accepted that the involvement of communities that are to be affected by a policy at the planning and at every subsequent stage will lead to the successful adoption for such policy. This 'new' approach in extension/dealing with rural communities is colloquially termed the "bottom up" approach meaning involvement of the affected people/society at grassroots level. So it appears that education of the farmers in various aspects included in the philosophy of grazing schemes and livestock production in particular will yield results.

Education and Farming Progressiveness

Education and its relationship to farming progressiveness has been studied by several researchers, most of whom support the evidence of a positive correlation between education and the adoption of improved practices and hence farming efficiency (Rogers & Shoemaker, 1971) which underscores that the level of animal production can be a measure of social development. Bembridge & Burger (1977) working with Zimbabwean cattle farmers showed that education had significant correlation with socioeconomic status ($r=0.73$), knowledge ($r=0.61$), aspirations ($r=0.51$), managerial aptitude ($r=0.36$) and practically all communication variables. Further, Van Zyl (1965) argues that the success of a farming community is measured not only in terms of efficiency and financial results but also by the living standards of the individuals. The finding by Bembridge (1975) that a high living standard of farmers was correlated with farming efficiency ($r=0.31$) and understandably also with the various economic variables and that the standard of living

was correlated with socioeconomic status ($r=0.74$) and with education ($r=0.46$), farming knowledge ($r=0.46$), aspiration ($r=0.51$), conservation concern ($r=0.41$), formal organisation participation ($r=0.27$) and most communication variables cannot over-emphasise the importance of education in social differentiation and development of rural communities.

The livestock development bureaucrats, the rural and social development agencies and the communities involved should put their heads together to develop acceptable strategies for intervention and sustainable social development. Whilst at regional level the objective will be to improve the quality of life, how this would be implemented at community level is bound to be different from place to place, since each community is faced with its own peculiar circumstances.

Livestock Breeding, Extension, Training, Nutrition and Management

People of European origin brought along with them to Southern Africa various livestock breeds from the temperate regions. Their noble intentions to boost indigenous livestock productivity cannot be doubted. It is, however, apparent that their concept of livestock productivity was geared towards achieving output (conception rates, birth rates, birth weights, growth rates, weaning weights, milk secretion rates, etc) comparable to what was achieved in Europe. This in itself has often been a source of frustration and/or failure, because cognisance of the environmental factors affecting livestock productivity on the Southern African location were not taken heed of.

The importation of 'improved breeds' or high potential sires and dams of the *Bos taurus* genetic base to crossbreed with the locally adapted hardy indigenous *Bos indicus*, Zebu type and Sanga cattle was aimed at improving local livestock productivity. No credible stockman doubts the merits of exploiting the heterosis effect or 'hybrid vigour' when combining animals of varied genetic material, provided, of course, the crossbred product finds itself in the right nutritional, management, disease and parasite free environment necessary for the full expression of the heterotic genetic advantage. Crossbred animals do well on commercial, intensively managed holdings. However, under smallholder, communal grazing conditions of Southern Africa, where the first limiting factor in ruminant livestock production is lack of qualitative and quantitative adequate nutrition (Elliot, 1964; Milford & Minson, 1966; Smith, 1959; Steyn, 1988 and Kadzere, 1992), the larger framed progeny of the well intended crossbreeding programmes would be more prone to the nutritional inadequacies already prevalent.

Livestock managerial capabilities of the present generation of smallholder farmers in Southern Africa are low and appear to be positively correlated to their low literacy level (Kadzere, 1992). This finding is liable to questioning, because obviously great positive strides have been made in increasing crop production by several groups of smallholder farmers in Southern Africa, particularly in Zimbabwe, in normal rainfall years. The well-earned success story of smallholders in crop production appears to be attributed to the fact that agricultural extension personnel make general recommendations on important crops husbandry practices (eg. dates of land preparation, planting, amount and dates of basic and top dressing fertiliser applications, seeding rates, etc) which relieves the farmer of independent decision-making in the crop production cycle. On the other hand, however, efficient livestock production requires long-term planning, record-keeping and frequent, on-the-spot correct decision-making, without having to wait for the extension personnel who, at best appear once monthly. This leaves the smallholder livestock farmer to make the difficult day-to-day decisions on his enterprise, which often becomes increasingly difficult the less literate the farmer is. The same explanation may go a long way towards explaining why in most developing countries, as is the case in Southern Africa, the green revolution (ability and success in grain crop production) precedes successful livestock production.

Socioeconomic Status, Livestock Production and Social Development

The finding by Bembridge & Burger (1977) that the socioeconomic status can be regarded as being a very use full predictor of successful and progressive cattle farming is important in this analysis. Whilst Wilkening, Presaer & Tully (1962) define social status as the ranking given to individuals based upon consensus of members of a community or society as to what they regard as 'high' or 'low' characteristics, Bembridge & Burger (1977) write that in the Zimbabwean cattle farming context, education, income, size of enterprise, social participation in district affairs, standard of living and "cosmopolitaness" were thought to be important in determining the socioeconomic status. This analysis and the fact that successful cattle farmers had a high socioeconomic status in their communities underpins the relationship of a rural livestock farmer's standard of livestock production to his/her or level of social development.

Such an analogy is reasonable and understandable, because the production and subsequent lavish consumption of animal products is not in the first instance

necessary for survival but adds quality to life. The normal sequence of events in developing nations from an agrarian point of view is the production of enough carbohydrate foodstuffs (cereals, potatoes, etc) which, if surplus of the arable crops are being produced, such surplus is then 'value added' by being fed to livestock for the production of livestock foodstuffs (milk, meat). Therefore only when a country and/or region produces grain (staple) in excess of its requirements, should it logically embark on a programme to intensify livestock production. It is not incidental that the developed countries of the north consume the greatest amounts of animal products, and that the heaviest milking cows, with a tremendous ability of upgrading grain into more valuable and nutritious milk nutrients, are bred in these countries. Bringing such cows and the intensive American feedlotting systems to smallholders in Southern Africa may be very well intended, but is bound to fail, because animals under such intensive system are formidable competitors with human beings for grain, excess of which is often not there. Improvements in animal production has often represented one of the best avenues of raising the smallholder producer from the level of subsistence to that of a small commercial entrepreneur.

A further element to the low livestock productivity in smallholder livestock enterprises in Southern Africa is the traditional bias of agricultural extension towards crop production. To this state of affairs, the team spirit between animal productionists and veterinarians has historically been wanting consolidation if the livestock production industry is to be benefit.

Infrastructure, Disease and Parasite Control

Basic infrastructure essential for livestock production (roads, dipping and animal handling facilities, marketing grounds and avenues) as well as veterinary and production extension advisory services are normally provided for, *a gratis*, by central governments. Because of the free nature of the services, farmers often take for granted the well-intended and necessary government services, and therefore take little heed of them. It goes without say that anything taken for granted is often mistakenly viewed as being of little value. On the same chain of thought, it may after all be worthwhile to introduce some form of nominal cost recovery methods for extension infrastructural and veterinary services given to the smallholder farmer. If 'earning' the service will assist farmer to value and productively utilise these services, then why not?

Conclusions

- Land tenure in communal grazing areas needs to be adjusted in such a manner that this common heritage is effectively, efficiently and accountably utilised. Because environmental damage in one country will with time have consequences in sister countries, the region as a whole needs to strategically plan and draw out long term livestock production policies.
- The word "production" is relative, especially so when comparing two systems which from the onset have different objectives, as is obviously the case between smallholder communal and commercial livestock farmers in Southern Africa.
- Because of low level of management and the almost non-existent livestock supplementary feeding in smallholder animal production systems of Southern Africa, utilisation of indigenous hardy genetic material appears more sustainable in the long run. This can from time to time be reviewed, as the learning curve of the farmer is bound to increase.
- Current bias in agricultural extension and training towards crop production should change if smallholder livestock productivity is to be increased. Improvement will be achieved if the farmer can quantify what the animal is taking in. This goes hand-in-hand with improved managerial skills which is tied to improved training on the part of the farmer and therefore would mean improved social development.
- Improved animal production is normally preceded by self-sufficient and surplus production of grain crops (energy-rich), that is associated with a better social status of the farmer and often represents the transition from smallholder subsistence agriculture to a smallholder commercial entrepreneur.
- The introduction of a nominal fee for the conventionally free extension and veterinary services may be worthwhile, only if this will lead to the farmer attaching greater value to the advice.
- Veterinarians, animal productionists and extensionists need to complement each other's efforts in a cohesive team atmosphere for mutual benefit and, most importantly, to develop a competitive animal production industry.
- Understanding the biology alone is no answer for providing effective advice to smallholder livestock producers. To be effective, animal scientists working under such circumstances should come out of the cocoon of natural science principles and address real world problems. A great deal of resilience on the part of the livestock specialist is required on this.

Conclusively, the discourse in this paper centres on trying to extrapolate relationship between the level of social development and society's standard of livestock production, and therefore can be neatly summed up in Gandhi's remark, that "...the greatness of nation and its moral progress can be judged by the way its animals are treated" (Gandhi, 1959). Today we experience the various forms of 'animal rights groups' originating from the rich countries of the north who can afford the luxury of wanting to eat animal and other products only if they have been produced under a given set of conditions. For the starving people whose social status is in most instances low, their primary need is to get the basic food. Quality only becomes an issue after a certain level of satisfaction has been reached.

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