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17

POLICY OPTIONS FOR LIVESTOCK DEVELOPMENT IN SOUTHERN AFRICA: A PERSPECTIVE ON COMMON PROPERTY

N Vink and J van Zyl

INTRODUCTION

The focus in this paper is on that part of the livestock subsector where cattle are held under communal grazing rights in the black rural areas of South Africa. Past policy in these areas has largely been based on the common property characteristic of grazing rights, to the detriment of other and often more important considerations.

THE LIVESTOCK SUBSECTOR

An overriding characteristic of the South African economy is the skewed distribution of income and wealth. This pattern is particularly noticeable in the black rural areas, which have the added characteristic of widespread poverty (Wilson & Ramphele, 1989; Fényes et al., 1988). It has been argued (Fényes et al., 1988) that the principal cause of this inequality in agriculture is the skewed distribution of access to resources, markets and power. This differential access is determined by instruments such as the 1913 and 1936 Land Acts, which establish the racial division of farm land and a host of other measures. The net effect of this discrimination is that black farmers are at present confined to farming in the homelands, which constitute 13 percent of the total available land. In contrast to white farmers, they are also not served by a comprehensive agri-support system, including physical infrastructure, extension, cooperatives, marketing support and political lobbying power.

The livestock subsector in the homelands is also characterized by great inequality where the wealthy have greater access to political power. In one homeland in the northern part of South Africa (Lebowa), Vink (1986) showed that four percent of rural households own two-thirds of all cattle. The rural elite has been strengthened by past development policies which have largely been based on the internalization of externalities assumed to be inherent to communal grazing systems. Conventional livestock policies are derived from the standard neoclassical model of welfare economics. The operationalization of such policies emphasizes the problems of using standard measures of welfare such as the Pareto maxim.

A REFORMULATION OF THE LIVESTOCK PROBLEM

Inequality and access

Livestock development projects in Sub-Saharan Africa have largely been based on a welfare-theory view of the problem of the commons (cf. Sanford, 1983 for a review of such projects). This same view has formed the basis of livestock projects in South Africa and other parts of Southern Africa (Vink, 1986). There is however a practical problem in using such policy instruments, namely the skewed distribution of cattle ownership, income, wealth and power.

Decision-makers are hardly likely to follow supposedly sound advice for redistribution when they already own the most cattle, and monetary compensation for potential losers is problematic. Compensation to those who have *de jure* grazing rights would imply payment

to the majority of rural households, while it is difficult to establish exactly who has *de facto* rights. It is also not clear whether monetary compensation is equitable in a situation where lack of access to productive opportunities is the major cause of poverty, and there is at best a rudimentary market for productive resources.

Too great an emphasis on the common property characteristic will therefore lead to unsound policy advice, based on the view that grazing on the commons is a zero sum game. There also exists sufficient research to show that this last proposition is in any case not true in communal grazing regimes in Southern Africa (Runge, 1981; Vink, 1986).

If, on the other hand, poverty and inequality are largely the result of inequitable access to resources, then it is evident that development policy should aim to establish more equitable access. This is true for access to the wider South African political economy, for access to productive opportunities in the rural areas and for access to communal grazing rights.

In analyzing livestock farming in Southern Africa, the following assumptions hold:

- When the private and social costs of using a resource diverge, a tragedy of the commons occurs.
- Common property institutions can create a convergence between private and social costs, i.e. private property rights are not the only institutional alternative available to policy-makers. This is especially true given the transaction costs involved in their imposition.
- Communal grazing systems of Southern Africa are common property institutions and are therefore part of the solution to development of the livestock subsector, and not part of the problem, as is often believed.

Based on these assumptions, some commentators (e.g. Ault & Rutman, 1988) subscribe to two further observations: (1) any movement towards the privatization of property rights is sufficient to avoid a tragedy of the commons; and (2) common property institutions in Africa do actually evolve in this direction under pressure of changing economic conditions, principally land scarcity. Externally imposed changes in property rights are therefore unnecessary, given that such evolutionary change is allowed to take place.

However, there is little reason to believe that a *laissez-faire* approach to institutional change is sufficient for effective development policy for the livestock subsector. The reason is twofold. First, Runge (1981:603) has shown that enforcement from within or outside the group is necessary unless the strategies of group members are perfectly coordinated. This is unlikely to be the rule among livestock owners in Southern Africa. Second, although a *laissez-faire* approach does allow for internal enforcement (or self-enforcement), this is unlikely given the skewed distribution of wealth and income among livestock owners in the livestock subsector.

Livestock development policies

How then should livestock development policies be formulated and transferred to decision-makers in such a manner as to recognize the positive sum potential of such policies? What the examples of evolutionary change given by Ault & Rutman (1988) really demonstrate, however, is that institutions in Africa can and do change when favourable conditions exist. Examples of such changes to land tenure systems are also found in the South African homelands (e.g. Nieuwoudt & Vink, 1988).

Under what conditions then will such institutions or rules of the game change? Following the induced innovation model (Hayami & Ruttan, 1985), it is necessary to know the demand and supply determinants of institutional change before this question can be

answered[1].

The determinants of the demand from a community for institutional change in communal grazing rights include changes in the economic environment. Other factors include alternative investment opportunities, the vested interests of those who are at present afforded protection by the current system and the current level of resource use (Vink, 1986). Such technical change can lead to induced institutional innovations. The efficiency and equity characteristics of communal grazing institutions will be improved if such change leads to a convergence between the private and social costs of livestock ownership.

On the supply side, the relevant determinants of institutional change include factors which reduce the cost of collective action. This includes the power of vested interest groups, advances in social science knowledge and the general level of investment in human capital in a community.

Knowledge of the specific demand and supply determinants can then be used to devise strategies for the development of the livestock subsector. In the following, an indication of how this can be accomplished in the case of individual communal grazing regimes is given.

There are in principle at least two things that the policy-maker needs to know regarding local circumstances. The first, which is easily measured, is the current state of the grazing resource (although, see Scones & Wilson, 1988). This will determine the need for urgency in implementing development policies and can also serve as an indirect indicator of the degree of social coherence in rural society. The second is knowledge of the current rules which define the common property institutions. Although it can be expected that there are rules common to all social groupings, local variations must also be expected. Knowledge of such rules can be gained indirectly, or directly by asking. In the former case indicators such as the existence of intracommunity strife, the distribution of assets and income within the community, the presence or absence of tribal leaders and the reaction of individuals and groups to induced technical and institutional change can indicate the nature of current rules.

Given the knowledge regarding these two factors, it is postulated here that a development strategy for the livestock subsector can be built around the interrelationship between the level of over-grazing and the degree of adherence to current common property rules by different groups within each specific community. In this regard, a matrix which describes the various permutations in local conditions can therefore be proposed as shown in Figure 1 below.

As both these factors exist in a continuum rather that in discrete units, such a matrix will consist of an infinite number of 'cells'. These can however be reduced to four 'cells' if only the more typical cases are taken as representative of all communities. Once the circumstances in a community have been identified and the specific combination of the two factors ascertained, the strategy can be made operational by means of relevant policy measures. Such measures can be derived in terms of inducing institutional innovation, or they can take the form of more direct institutional interventions. Examples of policy measures for the different types of local circumstances are given below.

[1] For a critique of the induced innovation model see Schmid (1986, 1987); and Kuran (1988).

Increased adherence to social rules

LOW	**HIGH**
EXTREME TRAGEDY OF THE CHIEFS 1. Provision of alternative grazing rights. 2. Provision of alternative monetary an non-monetary benefits. 3. Removal of monopoly power by encouragement or coercion.	**THE IDEAL SITUATION** 1. Ascertain whether this situation will last. If affirmative, no policy measures required.
TRAGEDY OF THE COMMONS 1. Privatize tenure. 2. Marketable grazing rights. 3. A tax on cattle. 4. Enforcement of cattle numbers.	**THE MOST PREVALENT SITUATION** 1. Induced institutional innovation. 2. Intervene directly by means of institution-building.

Figure 1: A policy matrix for institutional change

It is hard to believe that there are many cases of conflict among members of a community and under-utilization of the grazing resource. In such cases the area would be characterized by a monopoly of ownership of livestock by the leadership echelon, which is an extreme case of a 'tragedy of the chiefs'. In these circumstances the rights of the non-leadership group cannot be protected, and the policy-maker has few options to exercise. Available options would include the provision of alternative grazing rights, or alternative sources of monetary and non-monetary income for those without grazing rights. In extreme cases consideration might have to be given to removal of the monopoly rights of the leadership group.

A situation in which there is harmony among community members and under-utilization of the commons, or less severe overgrazing, presents an interesting conundrum for the policy-maker. The temptation might be either to intervene where this is not necessary, or not to intervene when conditions point to future increased overgrazing. These situations call for caution, and where conditions lead to the conclusion that the stocking levels are set to increase, appropriate policy measures should be implemented.

The tragedy of the commons situation is not expected to occur frequently, but when it does there will be little adherence to whichever social rules exist, and extreme overgrazing of the commons may occur. The policy options in this case are familiar, and should be exercised with caution.

It can be inferred that in most cases there is a varying level of adherence to common property rules, and varying levels of severity of overgrazing. Differing degrees of social cohesiveness and of free riding can therefore be expected among communities. Again, policy

alternatives should be selected and adapted to fit local circumstances. In these circumstances induced innovation has the greatest chance of success.

Policy alternatives may address the physical, technical or institutional aspects of the livestock subsector in a specific area. The interrelatedness of these factors would of course mean that a change in one should be designed to induce changes in the others, e.g. changes to the current stocking level.

A perceived level of stocking which is in excess of the carrying capacity of the land is usually seen in terms of too many animals per unit of land. This usually leads to proposals to decrease the number of animals. There are however two other ways of alleviating the situation, namely by increasing the land or by improving the quality of the land. Again, the argument usually is that the level of stocking should be decreased before proper veld management practices can be introduced. This is not always the case, however, and where overstocking is not pathological, current levels can be maintained on improving grazing.

The reaction of livestock owners to improvement in the condition of the veld cannot of course be easily predicted, and would depend on specific conditions. They could either increase their own herds, allow more people access, change the herd composition, do nothing, etc. Such policy intervention could also in turn lead to more conflict or more cohesiveness in the community, again depending on local circumstances.

The policy alternatives illustrated so far have been concerned with the livestock owner as a decision-maker and as a member of a community. Policy measures should also address the livestock owner within the context of the household. In this regard measures could be introduced, for example, to change the price ratios of the inputs in the household production function. Given the high value of benefit provided by milk for own consumption, measures which lower the cost of producing milk or which reduce the risk involved in producing milk for own use could, for example, induce households to keep fewer animals. It is also possible to envisage circumstances in which an ensured supply of milk would lead to a reduction in the number of people keeping cattle.

A further set of policy measures are those which have an impact on the economic environment. In this regard, those organizations and systems which support agriculture in general and the livestock subsector in particular should also receive attention. Here again it is possible to induce change by deliberate changes in one particular factor. There have long been attempts to provide stockholders with the services of approved bulls, for example. These programmes have usually been combined with forced stock reduction schemes, and they have also usually been provided by the state at subsidized cost. This service could be privatized to enable individuals to provide bulls on contract.

Speculators have also long played a role in brokering cattle sales for individual stockowners. These people could be given financial assistance to enable the creation of a more efficient market. The marketing of animals for meat is in any case problematic because of the controlled marketing system in South Africa, and policy measures should be aimed at either circumventing or exploiting this system.

Further examples of change to the agri-support system which could induce technical, physical and institutional change in the livestock subsector may also be found. The improvement of roads could lead to more taxi services and a decreased demand for donkeys, and it is known that in some areas better provision of ploughing services leads to a reduction in stock numbers. Given the high opportunity cost of time, there is a demand for these services, and people will sell livestock to pay for a service.

These examples of policy measures are all concerned with direct or indirect changes to the communal grazing system. It is not clear whether such measures would lead to commercialization of the livestock subsector, nor is this necessarily desirable in the short term. Individuals wishing to undertake livestock farming on a commercial basis, however, should be accommodated within a development strategy.

These are a few examples of the type of policy measures which could be introduced as part of a development strategy for the livestock subsector. A singular feature of the institutional approach to this subsector is that the range of possible policy alternatives is increased. This approach makes the conceptualization and design of more innovative policy measures feasible. The two caveats are that policy measures must take account of the natural and social circumstances which prevail at local level, and that policy should aim to promote institutions which create a convergence between the private and social costs of livestock ownership.

CONCLUSION

The expansion of policy options is not always desirable if it does not generate more relevant policies. This article has attempted to show, however, that past policies are infeasible. First, other research has shown that the common property characteristic is part of the solution to the problems of the livestock subsector, rather than the problem itself. Second, even if value information is given to decision-makers, there is no guarantee that these decisions will be taken. The decision-makers are unlikely to act against their own interests. The reduction of cattle numbers on the commons has rarely been accepted by communities in Southern Africa.

A redefinition of the problem of cattle on the commons shows that the lack of access to productive opportunities at the macro and micro-levels is the major cause of inequality and poverty. Policy should therefore aim to establish equitable access to such opportunities for rural households. When focusing on the livestock subsector, it is evident that induced innovation could change the pay-off to the different participants. This enables the policy advisor to provide information which has a better chance of leading to informed decisions.

The reaction of cattle owners to policy proposals made in the past has always been predictable. Either the proposals were rejected, or the decision-makers attempted to use a development project to further their own control over cattle numbers or the rangeland. In one case in South Africa the proposal for a project emanating from the 'community' was to alienate some three quarters of the commons for the settlement of commercial farmers. Further study showed that what was actually proposed was that the cattle of the chief and two of his counsellors would be kept on this land, which would be fenced and improved by way of camps and water points. The whole community would be responsible for the repayment of the loans to provide this infrastructure. An example of a similar reaction to these kinds of policy proposals in Botswana is given by Lawry (1983).

Policy proposals aimed at inducing innovation will, however, decrease the predictability of future actions. This could be part of the reason why such decisions have a better chance of being taken. The predictability of the future could be increased if the feedback from actual choices to the beliefs and preferences of individuals is more closely specified by the policy advisor (Kuran, 1988).

This approach is consistent with the view that the quest for determinate solutions historically too often resulted in the manipulation and contrivance of assumptions, which was

often aggravated by a desire for ideologically agreeable results. This paper therefore affirms the necessity and desirability of analyses that explore and focus on process and on the working out of solutions, while checking roles for determinate results and predictive capacity.

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