Evaluation of Pilot Cattle Grazing Schemes
(Microprojects Programmes 5.102.38.57.002/014/029)

Carried out on behalf of the Department of Agricultural Technical and Extension Services (Agritex)
and
The Commission of the European Communities

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ARCHIV 122734

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Acknowledgements

The help and assistance of Agritex staff at both head office and in the field is gratefully acknowledged. Particular mention must be made of those Extension Workers, Extension Supervisors and Provincial Animal Production Specialists who assisted with the interviewing of farmers.

Mr Vardakis of the EEC provided guidance and support whenever I requested it — thanks to him too.

Most of all, however, I would like to thank Frank Chinembiri, Assistant Chief of Animal Production in Agritex, for his invaluable contributions and stimulating company, and Johnson Chinyanga, my survey assistant, without whose help I would not have been able to interview so many farmers.
Note on organisation of this report

A large quantity of data were collected in the course of this study, and reporting it all would require a much more voluminous report; only the most significant aspects have been summarised in the body of the report. A highly condensed 'profile' of each grazing scheme, containing some of the detail not discussed elsewhere, is presented in Annexe A, and the reader is referred to these at various points in the text. Accompanying the profile is a plan of each grazing scheme.

It should also be noted that the Pasture Legume Seed Project, included in this evaluation, has been dealt with in a separate chapter, Chapter Six.

For the most part the standard format for evaluation of EEC projects has been used, as stated in the Terms of Reference.
EXECUTIVE SUMMARY

1. Since 1982 community managed veld management schemes in Zimbabwe's communal areas have been financed from the Microprojects Programme established by the EEC Delegation in Zimbabwe. Grazing schemes aim to improve livestock production and to conserve vegetation cover and thus reduce risks of environmental degradation. Funding under this programme is on a tripartite basis (a maximum of 50 percent of costs from the donor, plus community and government contributions) and is required mainly for the erection of fencing materials. Between 1982 and 1986 ten funding requests involving twenty separate grazing schemes were approved by the EEC Delegation and the Zimbabwe government. In 1983 and 1984 a sub-tropical pasture legume project, which aimed to establish a number of communal area farmers as pasture legume seed producers, was also funded. An evaluation study was commissioned in September 1987 because of apparent problems in existing grazing schemes.

2. Since independence in 1980 the development of the Communal Lands has been one of government's highest priorities. Government policy on livestock in this sector has been based on the view that overstocking is leading to environmental degradation, the recognition that it is in farmers' interests to increase their herds, the view that communal land tenure is a constraint, and an emphasis on grazing schemes. There are significant ambiguities in their approach (e.g. it is not clear how cooperative management will in itself lead to stock reductions) and the practice of the main implementing agency (Agritex) has reflected these.

3. The objectives of the proposed schemes were defined mainly in terms of technical aspects of veld improvement; some formed part of wider 'land use reform' programmes; and one complemented a milk collection scheme. Institutional developments (e.g. elected committees enforcing by-laws) were seen as unproblematic means to the goal of technical viability and implicitly accorded a secondary status. Yet some proposals included references to voluntary stock limitation, and there was insufficient recognition of the radical nature of the innovation and the implications for institutional development.

Output targets for the schemes were mostly indicated in qualitative terms, which was more appropriate than quantitative statements given the major uncertainties surrounding communal area livestock production.

Many of the communities which adopted grazing schemes were self-selected, and extension practice followed a fully consultative or 'bottom up' approach in the majority of cases. In two schemes selection was by outside agencies, and in another a 'top down' approach was followed; in these three cases achieving full community participation has proved problematic.
4. The target group in grazing scheme projects is the whole community which has rights of access to a given area of grazing land. Although 'community' is difficult to precisely define, it is an important component of household identity and rural society. The delineation of community boundaries in terms of resource 'ownership' is also problematic and boundary disputes are common. The local institution through which the project has been implemented is in most cases an elected grazing scheme committee, an appropriate choice in terms of familiarity of organisational form, precedent and official policy thrusts. The subsequent formation of VIDOIs (Village Development Committees) and WADOIs (Ward Development Committees) has not caused any problems as yet.

The project has envisaged 'the community' and its elected committee as the central decision-maker, advised by extension agents. Most of the conditions necessary for this conception to be effective (e.g. adoption of the scheme reflecting majority opinion, a strong and legitimate committee, understanding and agreement with the idea of rotational grazing) are achievable by communities and by extension agents. The major problem has been with regard to by-laws and the question of stocking rates.

5. In some cases communities have been asked to sign sets of by-laws which state that maximum stocking rates as determined by Agritex will not be exceeded, and sometimes this has been a precondition for obtaining donor assistance. Stock limitation is a sensitive issue for farmers, given the fact that the majority have herds which are too small to sustainably reproduce a team of draught animals and that a sizeable minority own no cattle at all. Local extension staff have been reluctant to undermine their relationship with communities by making this a central issue, and in large measure the formal sets of by-laws, usually drawn up by Agritex, are moribund. By-laws which are operative are those which were discussed and agreed at community meetings, deal mostly with management and policy issues, and are not usually found in written form. The issue of stocking rates has essentially been avoided by both community members and local extension staff.

6. Implementing agencies in the project have included the Agricultural and Rural Development Authority (ARDA), in the case of two schemes, and the District Administrator's Office in Mwenezi District, where four schemes are located. In both agencies management problems have arisen. The main implementing agency has been the Department of Agricultural Technical and Extension Services (Agritex). In most respects Agritex staff have proved to be technically competent, but lack of expertise in institutional development has been a weakness. Some shortcomings with regard to management skills have also been evident.
7. This analysis has revealed major difficulties in overall project design, but some of these arise from ambiguities and inconsistencies in government policy which have not been resolved at the level of the national policy framework, and others are due to the fact that certain technical issues have not yet been clearly resolved (e.g. those of carrying capacity and stocking rates in communal areas). Some failings have only emerged in the course of implementation, and can provide useful lessons for future grazing scheme projects.

8. Physical inputs in the project have consisted in the main of the supply of materials for fencing; others have been cattle handling facilities, materials for a water supply system, grids, diptanks, and seed and fertilizer for pasture legume plots. In many schemes the original plan has been significantly modified in the course of implementation, and this has sometimes led to shortages of materials being experienced. More positively, flexible and adaptive implementation, often in response to expressed community needs, has facilitated greater commitment to the schemes.

9. Management procedures for planning, implementing and monitoring the grazing schemes have been broadly uniform throughout the project. They have been deliberately modified at various times in order to streamline the process and reduce the lengthy delays which characterised planning and implementation in some of the early schemes. The initial set of procedures involved many levels of government staff, a long chain of events, and were relatively complex. The modified procedures have addressed these problems and speeded up the whole process; this has been a 'learning experience' for all the agencies involved.

10. An analysis of implementation timetables reveals that the first phase (period between first discussions and first submission of a project proposal) took about 12 months where communities had experience of pre-independence schemes, and up to 24 months where this experience was lacking and where ambitious 'land reform' programmes were being proposed. The second phase (period between first submission of project proposal and final approval by EEC Delegation) took between 10 and 16 months in five cases, and between 4 and 5 months in two cases. Reasons for the delays varied, and included misunderstandings, the need to adjust cost apportionments, revisions of cost estimates, and the submission of signed sets of by-laws. In the third phase of implementation (period between project approval and deliveries of fencing materials), the largest delay of 10 months was unusual, most deliveries taking place within 3 to 4 months. In the final phase (period between first delivery of materials and completion of fencing), the expectation amongst extension staff that fencing would be completed within one year has mostly proved unrealistic. Only two schemes met this target. In some cases transport problems have been severe, in others the slow pace of fencing has resulted from the time allocated to the task by the community.
11. Community contributions to project costs have usually consisted of labour and locally cut timber for fencing posts. Their value has ranged from 32 percent to 46 percent of total costs. Government's contribution has been in the form of staff salaries and transport costs, and have ranged in value from 3 percent to 30 percent of total costs. Some communities also raised significant amounts of cash from their members. EEC contributions were mainly for fencing materials. Overall, fencing costs have varied greatly, between $12 per hectare and $81 per hectare. Inflationary price rises, and variations in design and size of scheme may account for some of this variation but do not fully account for it.

12. The Lutheran World Federation (LWF) has made significant contributions to two schemes, aiming to complement the grazing scheme with supporting grants and services such as cropping credit and tractor hire. In both of these schemes symptoms of a 'donor dependency' syndrome were noted. In other LWF projects, however, a different approach is followed, and contributions match those made by the local community. This study has found that where local cash contributions are significant a generally higher level of community commitment is found, and this suggests that an alternative approach to the funding of grazing schemes, based on the principle of matching contributions, needs to be explored.

13. The performance of Agritex staff in respect to planning of grazing schemes has generally been adequate, but weaknesses in livestock data collection, cost estimation, calculation of Livestock Units, and in planning for small stock were noted. The vexed issue of carrying capacity and stocking rates is difficult for extension staff, and research on this question is needed. Inadequate consideration was given to institutional issues.

Performance with respect to supervision of fencing work has been generally good, but monitoring and reporting of scheme progress have been irregular, (although an improvement was noted after 1986). A basic weakness has been that of over-positive reporting, which has meant that an opportunity to learn from the problems and difficulties encountered has often been missed. Major modifications to original plans have also often gone unreported and unrecorded on maps, which makes it difficult for extension officials to offer appropriate advice on grazing management. Often changes have been made in response to community wishes, which has the positive effect of encouraging community commitment to a scheme, but can also result in ad hoc planning. Adaptive planning should be fully recorded and reported.

14. Many of the critical resources in Zimbabwe's communal areas are 'common property', and their sustainable exploitation needs to be managed by local level institutions which regulate access and use by an identifiable community. Grazing land is just such a resource, and this study has attempted to evaluate their success as a common property management regime.
In general, the idea of community was found to be still powerfully present in social life and an important component of household identity. Part of what defines a community is shared use of natural resources such as grazing, water supplies and woodland. Traditional leaders (and in particular kraalheads) continue to play an important role in community decision-making, particularly with regard to natural resources. Communities adopting grazing schemes demonstrate a keen sense of proprietorship over their common property resources, and this may be partly as a result of having decided to adopt a grazing scheme. Improved production of grazing land is the major perceived benefit, and community proprietorship is probably rooted in perceptions of increased individual benefits. Differential ownership of cattle does not appear to undermine community cohesion.

15. Members of grazing schemes reject the idea of maximum stocking rates in the short term, but acknowledge the existence of upper limits which cannot be exceeded without damage to the resource. No-one interviewed in the course of the study was willing or able to put a figure on this upper limit, but some indicated this knowledge would develop as they gained more experience. In the short term, most people felt improved veld management would allow cattle numbers to increase and non-owners would be able to benefit by putting newly-acquired cattle onto the scheme.

Grazing scheme by-laws consist of two types: those that have been drawn up by Agritex, and sometimes signed as a precondition for obtaining donor funding, and those that have emerged from discussions within communities. The former usually include a by-law stating that stock numbers will be controlled, but the latter do not. They do, however, focus on agreed rules for the joint use of shared resources and demonstrate an awareness of the need to conserve and manage these resources.

The two sets of by-laws exist side by side. Local extension staff appear to share the view of grazing scheme members that regulation of stock numbers will occur at some point in the future when communities perceive themselves to have come up against the upper limits of sustainability and then evolve their own rules for limiting numbers. One scheme in Mwenezi, Tagarika, shows that a potential does exist for new rules of this nature to emerge from within communities.

Grazing scheme committees are local institutions which enjoy community support, but their performance as regards management of schemes is still deficient in respect of record keeping, writing down of agreed by-laws, enforcement of fines and planning for maintenance and repair of fencing. Extension staff need to make training in these aspects an urgent priority.

16. In general the project has had a positive impact on those communities which have adopted grazing schemes, and the beginnings of an effective common property management regime have emerged. Most
communities are engaged in a learning process whereby positive feedback is increasing community cohesion and expanding their capacity for common resource management. This may lead to the development of new rules which, for example, regulate stock numbers.

Some communities, however, may be locked into a situation of negative feedback. Poor community organisation may be resulting in a situation of increased conflict, leading to less community cohesion and a reduced resource management capacity.

A critical factor in the evolution of positive or negative learning processes is the level of community participation in planning and implementing a grazing scheme. Community participation was assessed using ten criteria, and five schemes were rated as having high levels of participation, eight as having fair levels, and three as having low levels.

Analysis of the data suggests that predisposing factors for high levels of community participation are a degree of coincidence of community and resource boundaries; a small number of relocations of arable land or homesteads; a strong and legitimate leadership; a low level of recent in-migration; a relatively small group size; a history of cooperation between villages; having adopted a grazing scheme before independence; adequate time for community discussion and mobilisation; consultation with the community on grazing scheme design; and an understanding of the principles of grazing management.

17. Evaluation of the ecological impact of grazing schemes was difficult because veld condition assessments were carried out at an inappropriate time of the year, and because only a few schemes have become operational and those for only one or two years at most. The conclusions drawn are therefore put forward very tentatively.

In respect of veld condition, in six schemes basal cover is generally good while in seven it is poor on the toplands but good in the vlei areas. In three it is generally poor. Sheet erosion is either absent or slight in five schemes, is evident in some paddocks in eight, and is widespread in two. In most of the schemes the veld is in a condition typical of communal area grazing land: heavily utilised, dominated by grass species of poor forage value, but with isolated patches of more desirable species. Of the seven operational schemes, three are showing signs of regeneration, three are in fair condition and appear to be stable, and in one no signs of improvement are evident.

Cattle condition was also assessed: in seven schemes condition was either 'good' or 'fair to good', in another seven it was 'fair' or 'poor to fair', and in three schemes cattle were in poor condition. There was a poor correlation between veld and cattle condition, and between stocking rates and cattle condition. These inconsistencies
and the methodological difficulties encountered make it difficult to provide an unequivocal assessment of ecological impact.

18. A further difficulty is the lack of agreement among ecologists and pasture scientists on the question of carrying capacity and stocking rates. The data collected in the course of this study suggest there is no simple correlation between the recommended stocking rates which function as the 'conventional wisdom' within Agritex and the actual capacity of grazing land in communal areas to sustain livestock populations. Recent research by Scoones suggests that the distinction between economic and ecological carrying capacity is a useful one, and that spatial and temporal variations in forage production are important in communal areas. 'Key resources' such as vleis and river banks, and browse, may be critical in the late dry season.

The implications of this debate on carrying capacity are that farmers' views that grazing schemes will enable them to increase stock numbers may often be ecologically feasible, that attempting to achieve reductions in stocking rates is premature until we have a better understanding of ecological carrying capacity, and that a programme of research on this issue is urgently required. The views of Scoones and others on alternative methods of designing grazing schemes need to be investigated.

19. The economic impact of the project has been assessed using both qualitative and quantitative methods. In qualitative terms, farmers perceive grazing schemes as improving their incomes by improving the productivity of cattle, by improving crop yields as a result of earlier ploughing, the provision of more manure and better protection of their crops, and by freeing labour formerly used for herding purposes for work on other income-generating activities. The analyses of farming systems researchers confirm the validity of these views.

Data were collected on herd structure and offtake rate, and these confirm that communal area herds within grazing schemes remain draught oriented, and that offtake rates are generally low because these are not beef production herds.

Insufficient data was available for a comprehensive quantitative assessment of economic impact, and in any case only a few schemes have become operational as yet. In order to estimate potential economic impact, a set of assumptions about livestock and cropping income were made and applied to demographic data for a 'typical' grazing scheme community in Natural Region IV. Three levels of economic impact were assumed: high, medium and low. An investment of $208.94 per household would have been recovered within a period of just over two years (high impact), of just over three years (medium impact) and five years (low impact). Thus the potential impact of grazing schemes on household income is theoretically very positive.
20. In order to evaluate the viability of grazing schemes an assessment was made of the resource base of each scheme. This was done by analysing three basic relationships. These were the land:people ratio, the people:cattle ratio, and the cattle:land ratio. Together they constitute indices of the degree of land pressure facing a community. These were used to categorise the resource base as 'good', 'intermediate' and 'poor'.

The other basic variable used to assess viability was the level of community participation in each scheme. The ratings obtained using the procedure described in 16 above were cross-tabulated with those obtained for the resource base, and the 3 x 3 table that resulted was used for an analysis of prospects and prescriptions.

Grazing schemes where both the resource base and the level of community participation are intermediate to good (nine schemes in all) stand a reasonable chance of becoming viable. Some need technological interventions (such as measures to intensify arable production) to boost their prospects for success, whereas others need a focus on organisational interventions.

Grazing schemes which display either low levels of participation or have a poor resource base (nine schemes) have much poorer prospects. Either major reallocations of resources (as in 'Model D' resettlement schemes) or major organisational interventions to raise the level of participation are needed.

Thus viability is reasonably assured in about half of the schemes in the project, but much more doubtful for the other half.

21. The question of replicability of grazing schemes appears to have already been answered by both government, which is promoting the concept widely, and rural communities, many of whom are keen to emulate neighbours with schemes. Success is not automatically assured, however. It is important to carefully assess the resource base and the degree of land pressure experienced by communities, and to introduce complementary measures involving the allocation of new resources or intensification of production where needed. Attention must also be paid to institutional development, with community participation being facilitated and rules governing joint-use and management of resources being allowed to emerge from within.

Unfenced grazing schemes based on herding appear not to be viable given the management problems they experience. The high cost of fencing may limit the spread of grazing schemes, but this constraint would be alleviated to an extent if the principle of 'matching contributions' was applied by donors. Research into the ecology of grazing land utilisation would assist the planning and implementation of schemes.

22. The allocation of grazing rights as a policy option was explored by means of seven group discussions and one with Senator Chief Ndaweni.
In only two cases was the reaction of participants at all positive. The generally negative response may have been due to the rejection by most people of the idea of a maximum stocking rate and memories of enforced destocking, to the apparent acceptance of inequality within rural communities, or to the perceived self-interest of cattle owners (who predominated at the discussions). Some positive responses stressed the benefits of non-owners, and put forward the idea of owners paying non-owners for the use of their 'grazing rights' in the form of ploughing services or long term loan of cattle. It was suggested that these customary mechanisms of sharing resources would be more acceptable than cash payments. One scheme in Mwenezi District has actively discussed this idea and it may have a wider appeal.

23. The pasture legume seed project was planned to establish 25 groups of 20 farmers each as producers of legume seed. The original project design was altered in a number of cases with seed either being distributed to farmers for production on their arable lands (rather than a group plot), or to communities which had adopted a grazing scheme. The objective of producing a cash crop was not always well understood by farmers or local Agritex staff.

No seed has yet been collected, partly because of erratic germination and production as a result of drought. Problems of fence cutting and invasions by goats have been experienced, but the palatability of pasture legumes and their resistance to drought have been well demonstrated. Fine Stem Stylo and Siratro appear to be the most useful species. Of the six legume plots visited all except one are planned to be used as nurseries to produce seed for veld reinforcement in a grazing scheme.

The impact of the legume project has been limited thus far, but the potential of pasture legumes to improve forage supply in communal areas has been demonstrated.

24. Despite delays in implementation and continuing uncertainties with regard to the sensitive issue of stocking rates, on balance the grazing scheme project has had a positive impact. The institutional development which has taken place demonstrate that rural communities have the potential to manage their common property resources.

25. With respect to the development of new grazing schemes, it is recommended that:

- grazing schemes continue to be vigorously promoted, with high levels of community participation as a primary objective.

- a firm statement be made as to government's intention to make stock limitation voluntary.
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<th>NAT REG</th>
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<td>154</td>
<td>1275</td>
<td>1982</td>
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<td>74</td>
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<tr>
<td>Denhere-Katsv.</td>
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<td>241</td>
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<td>47</td>
<td>421</td>
<td>1983</td>
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<td>II</td>
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</tr>
<tr>
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<td>1985</td>
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<td>93</td>
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CHAPTER TWO
EVALUATION OF PROJECT DEFINITION AND FRAMEWORK

2.1 The Project's place in the sector.

At independence in 1980 Zimbabwe's agricultural sector constituted an important component of the national economy. Its share of GDP was over 14 percent, of formal employment 32 percent, and of merchandise export 32 percent. More than 70 percent of Zimbabweans lived off the land. However, severe problems of a highly inequitable dualism were also apparent. The communal areas in particular were characterised by high levels of population concentrated in the poorer ecological zones. Inadequate provision of inputs, credit, infrastructure and services, combined with shortages of land and draught animals for a substantial proportion of the population, meant that much of the poverty in Zimbabwe was concentrated in the communal areas.

The Transitional National Development Plan for 1982/3 to 1984/5 stated that government's objectives for the agricultural sector were as follows:

(i) an acceptable and fair distribution of land ownership and use;
(ii) a greater degree of economic security and welfare for the rural population;
(iii) an increase in both land and labour productivity in all systems of agriculture;
(iv) substantial increase in employment to engage a rapidly growing labour force;
(v) achievement of and maintenance of food self-sufficiency and regional security;
(vi) extension of the role of agriculture as a major foreign exchange earner and source of inputs to industry;
(vii) integration of the commercial and peasant agricultural sectors into a national agricultural system;
(viii) conservation of land and environment for future generations;
(ix) promotion of local markets and inter-regional trade;
(x) development of human resources in rural areas to the full potential.

(Republic of Zimbabwe 1982a,p.65)

These objectives were to be pursued through, amongst others, a land resettlement programme, the reform and expansion of services to the sector, the establishment of a number of production systems including communal farming, cooperatives, private/family farms and state farms and a closer alignment of land use patterns and land capabilities.

The communal areas were to be the target of much public sector investment, aimed at alleviating rural poverty and stimulating rural renewal. It was also stated that government would investigate the traditional communal system with a view to its modification to achieve definition of a community membership in terms of management of common assets, and a control system, overseen by government, but managed by the members, to prevent over-exploitation of natural assets.
settlers. However, the pace of resettlement both past and present makes it doubtful whether this programme, as presently conceived, will provide very much relief to the pressure on grazing land.

A further ambiguity is in regard to how voluntary the proposed restructuring of land-use in communal areas is to be. While the National Conservation Strategy of 1987 stresses that comprehensive land use planning will involve the 'active participation and commitment of the local communities and not be imposed upon them' (Republic of Zimbabwe 1987,p.23), this sits very uneasily with the proposal that de-stocking may be necessary. Again, Agritex practice reflects this ambivalence towards the notion of participation, and this is particularly evident with regard to the issue of grazing scheme by-laws.

A proposal intended to give concrete expression to the idea of defining community membership in terms of 'management of common assets', and thus modifying in central ways the traditional land tenure system, was drawn up in 1984 and entitled the National Land Use Programme. However, it was never actively promoted by more than a handful of senior planners and failed to generate support at the highest levels of government.

Thus grazing schemes and the associated pasture legume project were interventions derived from a policy framework which gave them high priority, but lacked full coherence in its explication of the basic problems and appropriate solutions. This had important consequences for the evolution of the project.

2.3. Project objectives: derivation of type, capacity and location of project

2.3.1 Type of goods/services to be produced

Most of the proposed grazing schemes had their objectives described by Agritex in the following manner:

(a) to establish a simple, functional grazing management system that will improve the veld and animal and milk production,
(b) to demonstrate to other surrounding communities what can be done to improve veld and animal condition,
(c) to improve the grass by proper veld management so that the veld can be reinforced at the later date with high quality tropical legumes (e.g. fine stem stylo) which are adapted to the area.

They are taken from the proposals for the Kowoyo schemes, but are broadly similar to those contained in other proposals. The major focus is thus on the technical aspects of veld improvement, and a demonstration effect on neighbouring farmers.

In some cases the objectives of the project formed only a part of a wider conception, an all-embracing 'land reform' programme. The pilot project in Chiweshe Ward Buhera, designed by the Agricultural and Rural Development Authority (ARDA), is based on (a) 'the concept of reorganisation of land use to make best use of the available resources' and (b) assisting local communities to
'develop the sense of common enterprise (and) become able to manage their common resources'. (ARDA 1985,p.2.)

Similarly, in Mwenezi District project objectives were described as (a) to improve the standard of living of the majority of the Communal Lands population on an economically viable basis, (b) to demonstrate new land use systems for the increasing of the economic productivity of the livestock and agricultural economy and (c) to establish controlled grazing and protect the arable land in 3 pilot wards'. (Mwenezi D.A's Office 1984,p.3.)

In Chiweshe and Mwenezi, donor funding was sought for a comprehensive development plan involving infrastructure such as water supplies, and the large scale reallocation and consolidation of blocks of arable land and residential sites. In this they prefigured what became in 1986 the thrust of government planning efforts in all communal areas - the planning and reorganisation of land use and settlement. (See remarks on the First Five-Year National Development Plan above.)

In Kowoyo 'A', 'B' and 'C' the objectives included enabling the community to participate more fully in a proposed Dairy Marketing Board (DMB) milk collection scheme.

Many of the project proposals included references to the institutional aspects of management (e.g. elected grazing scheme or village committees), and to the question of control of stock numbers. For example, the Kowoyo proposals state that the community has agreed to draw up a set of by-laws to ensure that the stocking rate does not exceed the present stocking rate or that set by extension staff. In Chiweshe it is stated in the ARDA project proposal that a 'target capacity will be agreed on by the village committee and the livestock expert of Agritex and the Committee will devise an agreeable form of control over the admission of cattle into the common grazing'. (ARDA 1985,p.3.)

Given the central role of cattle in communal area farming systems, the fact that many households hold no cattle at all or have inadequate access to draught power, and thus the overriding motivation to increase cattle holdings in all communities, these proposals amount to a revolutionary step: voluntary stock limitation in the face of economic 'necessity', monitored and controlled by a fledgling institution with no experience of enforcing such rules.

And yet these crucial (perhaps central) components of the projects are not defined as objectives: they are included as unproblematic means to what is perceived as the greater good of 'technical viability'. They are thus implicitly accorded a secondary status in the hierarchy of values embodied in the project. There is no recognition of the radical nature of the innovation and its implications for institutional development.

It may be argued that institutions are necessarily only means to an end, but this fails to recognise that sustainable land use depends ultimately on the capacity to manage resources. Such management capacity in a situation of communal tenure has to reside in appropriate institutions. Not making institutional
development a prime objective in the grazing scheme project meant that not enough consideration was given to the necessary steps to foster such development.

An inconsistency running throughout the project was the inclusion of small stock (sheep and goats) in the calculation of the livestock units held by a community, without giving any serious consideration as to how the grazing movements of these animals were to be controlled. Three or four strand barbed wire fences are clearly inadequate to the task. The project proposals do not make it clear whether small stock (and goats in particular since these are the most common) are to be rotationally grazed together with cattle, herded within paddocks by means of herding labour, or left to graze outside the paddocks, which again would mean the use of herding labour in the summer months.

While in the high potential regions of the country cattle are clearly more important than goats, and thus outnumber them in many communities, this is not the case in the semi-arid zones to the south and west. In Chirindzi grazing scheme in Mwenezi District, for example, the average number of goats per household is 17.3, as compared to an average number of cattle of 7.4. The omission is thus a serious one.

On the other hand, the question of the improved management of goats in communal areas is, one that is proving extremely difficult to find practical answers to. Neither research nor development projects of various kinds (e.g. the goat project in Bikita District funded by the French Embassy) has yet come up with solutions which may be replicable elsewhere — and the problem of control of movement is one of the most intractable. Given this absence of proven solutions, the omission from the grazing scheme proposals is understandable.

2.3.2 Quantitative output targets of the project

Most of the project proposals for grazing schemes did not set quantitative output targets, but indicated the expected benefits in qualitative terms. Thus for the Kowoyo schemes, for example, Agritex stated that grazing would be improved and the problems of poor cattle condition, very low calving percentages, slow growth rates, reduced size of cattle in general and reduced milk production would disappear. The community would also eventually benefit by selling excess stock and milk.

The ARDA proposals for the Denhere-Katsvamutima scheme also stated the expected benefits in qualitative terms: increased forage production, increased ability to control stock numbers, a more efficient herd composition increasing draught availability, the sale of unproductive animals, i.e. increased beef off take, and improved access to veterinary extension and marketing facilities — which, together with increased forage supply, would raise calving rates and reduce mortality.

In the Mwenezi Land Use Reform Programme an attempt was made to quantify outputs. The application for funding states that livestock carrying capacity would increase by at least 50 percent within 3 years, representing 200 livestock
Units (LU) valued at $60 000. The basis of this calculation is not given however.

The ARDA proposal for Chiweshe Ward goes into most detail in respect of outputs. In the medium term (not specified), the calving rate is expected to rise by 8 percent, mortality to fall by between 1 and 10 percent for different classes of animal, the productive life of animals to start earlier and end earlier, animal weight to improve, and offtake to rise from 3.5 to 7.8 percent. This would result in an increase of 32 tonnes of live mass sold, bringing a total gross benefit of $25 600 per annum. Net cropping income would increase by $49 785 per annum.

Which statement of expected outputs was more appropriate - the unquantified listing of potential benefits, found in the majority of cases, or the attempt to specify in detail expected changes in production parameters and consequent increases in production? A number of points are relevant here.

Firstly, the basis for predicting changes in livestock production parameters in communal areas has been (and continues to be) very shaky. As research scientists in the department of Research and Specialist Services have commented, communal area livestock were almost completely neglected by researchers in the past and very little is known about them (Mombeshora 1985, p.84). Moreover, the effects of instituting rotational grazing in intensively stocked communal area situations, on both forage and livestock production, are not yet understood.

Secondly, the emphasis in both the qualitative and quantitative statements of output was primarily on improvements in cattle performance (growth, calving percentage, weight etc), sometimes leading to an assumption that benefits would accrue primarily through sales of animals. Only occasionally were statements included reflecting the importance of draught power and manure provision, and no attempt was made to quantify these important outputs.

Thirdly, there was no (explicit) recognition of one possible outcome of improved grazing management; namely an increase in the number of livestock held by the community as a whole. Benefits would then accrue in the form of non-owners acquiring cattle and owners acquiring more, without individual performance criteria necessarily improving at all. While the desirability of such an outcome is debatable, particularly in respect of sustainability, the lack of consideration of this possible (some would say probable) outcome gives the project proposals an air of unreality.

In the light of these factors it would have been more appropriate to treat the grazing scheme projects as 'learning experiences', or experiments, specifying the range of possible outputs and attempting to monitor and measure the consequences of instituting rotational grazing. (The Veld Trend Monitoring programme begun by Agritex's Veld and Pasture specialists in 1986 is just such an attempt). On balance, the purely qualitative statements of output had greater realism than the quantitative targets set in the Chiweshe Ward scheme.
ZIMBABWE
LOCATION OF EEC FUNDED GRAZING SCHEMES

Communal Land
Forest Land
National Parks, Recreational Parks
Safari Areas and Sanctuaries
Large and Small Scale
Farming Areas

Figure 1

1. CHIWUNDURA
2. ZINYORO
3. PENDERE-KATSIVAMUTIMA
4. CHIKOWORE
5. AVENZI (6 SCHEMES)
6. NTABAZINDUNGA
7. KONYOYA 'A', 'B', 'C'
8. CHIWEBIE
9. MUCHINJJE
10. ZIMUTO (4 SCHEMES)
2.3.3 Location of project

The location of grazing schemes within the project is shown in Figure 1 and summarised in Table 2 below. Every province except Matabeleland South is represented. Grazing schemes in communal areas are found in all the agro-ecological zones except Natural Region I, which is where Nyafaru Cooperative is found. Nine of the communities had adopted grazing schemes, either fenced or unfenced, in the pre-independence period.

Table 2. Location of grazing schemes

<table>
<thead>
<tr>
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<th>Province</th>
<th>Communal Land</th>
<th>Natural Region</th>
<th>Pre-ind. Scheme</th>
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<td>Musana</td>
<td>II</td>
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<td>Mash.West</td>
<td>Zvimbè</td>
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<td>II</td>
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Many of the communities adopting grazing schemes were self-selected. When Agritex field staff initiated discussions with farmers on the possibility of receiving assistance for the purchase of fencing materials, some communities responded enthusiastically, demonstrated that the idea had majority support, and showed their commitment by raising funds towards the project. (It would be
responded enthusiastically, demonstrated that the idea had majority support, and showed their commitment by raising funds towards the project. (It would be more accurate, however, to say that Agritex contacted community leaders, often including the traditional leaders known as 'kralheads' or 'sabhuku', who organised community support and contributions). Often these were communities which had adopted some form of grazing scheme, either fenced or unfenced, in the pre-independence period.

Agritex would then undertake the planning of the scheme (land classification using aerial photographs, design of paddock layout, agreement of boundaries, etc.) and submit a project proposal for funding application. If successful, this became the location of an EEC Microproject grazing scheme.

Schemes selected in this fashion were:

(a) Communities with pre-independence schemes:
- Chikwore
- Muchinjike
- Chiwundura
- Ntazinduna
- Zimuto schemes (Mangwaya, Mafuzha, Masimba, Mutakwa)

(b) Communities with no previous experience of grazing schemes:
- Denhere-Katsvamutima
- Zinyoro

Some schemes were selected primarily by decision of an outside agency initiating a rural development project in a particular location. For example, the Dairy Marketing Board milk collection scheme was targeted on Kowoyo in Chikwaka Communal Land because (a) it was accessible to Harare (50 kms away) and (b) it reflected many of the typical problems of communal areas (uneven ownership, scarcity of grazing etc.) The grazing scheme project, although the responsibility of Agritex and clearly separate from the milk collection scheme, was developed in practice as a complementary initiative by staff from both agencies. The fact that an unfenced rotational grazing scheme, utilising beacons to demarcate 'paddocks' had been operated in the area before the war probably contributed to the acceptance and adoption of the scheme by a majority in the communities concerned.

The Chiweshe Ward Development Project was initiated by the ARDA Manicaland Provincial Planning Unit in 1982, on the basis of an Agritex recommendation that this particular community was urgently in need of development. Somewhat isolated in its location behind the Bepe Hills, without roads, transport services and other facilities, and demonstrating many of the problems found generally in communal areas, it seemed to planners in Agritex and ARDA a good site for an ambitious integrated rural development project. (Also reported is a 'vague recommendation' from the District Council.)

The Mwenezi District Radical Land Use Reform Programme originated in a unique manner combining elements of self-selection and a 'hard sell' approach by
outsiders and a small leadership layer. The idea of a re-organisation of grazing, arable land and residential settlement appears to have originated within the Tagarika community in Ward 14, been taken up enthusiastically by elected councillors and other leadership elements in the District at large, and energetically promoted within other communities by the District Administrator and local Agritex staff. The other pilot schemes (Mangezi, Machingo and Mativenga in Ward 4, Ruvuma and Chirindi in Ward 23) are thus the result of a positive response to a major extension effort within the District.

Grazing schemes are community resource management projects of ambitious scale and scope, involving contentious issues such as the location of arable lands and control of stock numbers. Community awareness and commitment are thus critical, and consultation and selection are vital issues - failure to secure commitment at an early stage may preclude success irrespective of later attention or large amounts of funds being made available.

Agricultural extension in Zimbabwe has long stressed the need to be 'client-centred'. Thus the widely accepted methodology known as Programme Planning emphasises that farmers themselves should decide what their problems are and develop appropriate solutions with the help of extension agents. In theory at least extension staff give great importance to consultation with target groups.

In practice extension often involves an attempt to persuade farmers to see problems the same way that trained agriculturalists do, and to adopt technologies developed on research stations or in the large scale commercial farming sector. An influential legacy is the 'Master Farmer' tradition, where the 'progressive' few receive intensive training and demonstrate the benefits of modern technology to the 'backward' majority. Where the attitudes that accompany this tradition are strong, Programme Planning becomes an exercise in pretending to consult farmers, but in reality subtly informing them that the analyses and solutions of extension staff are the only ones worth considering.

A variation on this concern with the 'progressive' minority is the failure to consider the possibility that a community leadership may represent the private interests of a few rather than the public interest, and may be politically powerful enough to hold influential positions in the community despite this being the case. 'Community' projects may then turn out to benefit the elite rather than the majority, or may fail to get off the ground at all.

While the populist ideology of development now dominant in Zimbabwe tends to give priority to reaching the poorest of the poor, and VDCO's are in theory organs of popular participation for all, capture of the public sphere by minority interests can still take place. (This was clearly demonstrated in the course of this study by a legume plot in Zvimba). Thus even when 'the community' has been or is being consulted, it is always wise to ask: does this group, claiming to represent the majority, in fact do so?

There are thus broadly speaking two approaches to agricultural extension and community projects - the fully consultative, or 'bottom up' approach, and the outsider-dominated, or 'top down' approach. (Minority capture may be seen as a
variant of the latter.) These are stereotypes, of course, but the grazing scheme project includes examples of both extremes, with most schemes falling somewhere in between and exhibiting some characteristics of both. A characterisation of the various schemes using this typology is given below. (An unfenced scheme in Mhondoro, not part of this project, was also visited in the course of field work for comparative purposes, and is included in this analysis.)

A. 'Bottom up' approaches:
   A.1 Primarily self-motivated, little extension effort needed:
      - Tagarika
      - Zimuto schemes (Mangwaya, Mafuzha, Masimba, Mutakwa)
      - Chamatamba (Mhondoro).
   A.2 Full consultation by extension staff, fair degree of community commitment achieved:
      - Chikowore
      - Muchinjike
      - Ntabazinduna
      - Denhere-Katsvamutima
      - Chiwundura

B. 'Top down' approaches:
   B.1 Selected by outside agency, followed by intensive extension effort:
      - Kowoyo A, B, C (fair degree of commitment achieved)
      - Chiweshe (degree of commitment in doubt)
   B.2 Inadequate consultation, only a minority in favour:
      - Zinyoro.

2.4 Institutional and socio-cultural aspects of the project

2.4.1 Definition of target group

The 'target group' in the grazing schemes project is, in each instance, the whole community which has rights of access to a given area of grazing land. This is so because of the nature of customary land tenure in the communal areas. Membership of a community entitles individuals to a generalised 'Right of Avail', from which flows more specific rights to the use of natural resources such as arable land, water, building materials and grazing land. As outlined in Section 2.2, government has not yet acted to modify this system in any significant respect.

'Community' is not an unproblematic concept, neither theoretically nor in lived experience. Precise definition of what constitutes a community often proves elusive. For example, urban dwellers who hold neither land nor livestock in their 'home' areas, but who nonetheless retain the right to plant crops and graze animals should they return to their place of origin, are a case in point. Are they members of 'the community' or not?

Despite this lack of precise definition, however, one of the most striking impressions gained in the course of this study is that of the continuing strength of the notion of 'community' in the communal areas. Underpinning many
of the ideas and feelings of the respondents interviewed was the assumption that membership of a rural community implies definite rights and obligations from which no individual is exempt.

It is on the basis of this reality that grazing schemes are 'owned' and 'managed' by groups which include both cattle owners and those without cattle. Community membership entails the right to graze animals on common pastures, if not now then at some point in the future, and it would be wholly inappropriate to conceive of a project to improve grazing areas which was exclusive to those owning cattle at present. The target group for the grazing scheme project was thus correctly defined as the entire community.

More problematic is the delineation of community boundaries in terms of resource 'ownership'. In certain situations these boundaries are 'natural' and coincide with social reality - for example in the case of Chikowore in Musana, where a river on the western boundary and a range of hills to the north and east clearly define the 'traditional' grazing areas used by this community. More usually, the lack of distinct boundary lines under traditional tenure rule means that in the contemporary situation of increasing population pressure neighbouring communities often use the same grazing area and both may claim it as 'theirs'. It is for this reason that boundary disputes are so common whenever grazing schemes are implemented.

These difficulties, however, are probably inevitable given the fact that fencing of grazing for the exclusive use of one community represents a move towards new rules governing access to resources. They do not invalidate the choice of 'community' as target group.

2.4.2 Local institutions

The local institutions through which the project has been implemented are mostly grazing scheme committees, elected specifically for the purpose of representing the community interest in respect of grazing management. In the rural areas of Zimbabwe the committee as a organisational form has a long history, and farms' clubs, schools, savings clubs, women's groups and so on have provided useful experience of the workings of this kind of institution. Grazing scheme committees were a feature of the schemes established in the early 1970's (Danckwerts, nd) and in certain cases schemes which were resuscitated after independence were represented by many of the same committee members as before (e.g. Chiwundura, Chikowore).

Committees were also formed in certain areas during the later stages of the war for the purpose of organising support for the guerrillas, but also to begin to administer some aspects of social life in the absence of an effective local authority (Ranger 1985,p.291). After independence government policy was to build on this legacy by encouraging the 'establishment of village committees ... as the principal grassroot organisation representing the people in a community.' (Republic of Zimbabwe, 1982a,p.96) In Mwenezi District this kind of continuity was fundamental to the community-based attempts at land use reform which began soon after the war had ended.
In pre-independence grazing schemes committees were usually formed around the kraalhead, or saqhuku, the lowest level of traditional leader. Again there has been much continuity here, with kraalheads strongly represented on post-independence grazing scheme committees (Cousins 1987, p.49). Extension staff place great importance on consultation with the traditional leaders when proposing grazing schemes, and their presence on elected committees may be an important factor in securing community commitment.

In terms of familiarity, precedent and official policy thrusts the choice of elected committees as the institutional base for grazing schemes was an appropriate one. After 1984 the Prime Minister's directive establishing VIDCO's, (Village Development Committees), and WADCO's (Ward Development Committees) resulted in the institutional nexus in communal areas becoming more complex, but did not contradict the earlier choice.

VIDCO's are supposed to represent approximately 100 households. Their boundaries were delineated with some haste in 1984/5 by officials of the Ministry of Local Government, Urban and Rural Development, who used the demographic criterion without giving much consideration to the natural resource base. As a result many grazing schemes do not coincide with VIDCO's (Chikowore, Chiwundura, Mafuzhd, Mangwaya, Msimba, Mutukwa, Kowoyo A, B, C). In other cases there is either no distinction between the VIDCO and the grazing scheme committee (Chiweshe, Mativenga, Tagorika) or the two committees operate as separate entities (Muchinjike, Ntabazinduna, Denhere-Katsvamutima). In none of these variants has any problem arisen with regard to the articulation of the two kinds of committee.

2.4.3 The role of the community and the committee in the project

The underlying concept of the project envisages 'the community' as the central actor/decision-maker, but for most purposes only acting through its elected committee. In theory extension agents merely act as advisers and providers of technical services such as paddock design. The roles of the different actors is represented in Figure 2 as an 'ideal type', to which actual practice can be compared. (This idealised version of the process of establishing a grazing scheme is derived from both project proposals and statements made by extension staff in interviews.)

As stated above, the choice of target group and local institution was appropriate to the nature of the project. It is evident, however, that for the process depicted in Figure 2 to be effective, certain conditions would have to apply:

(a) the decision to adopt a scheme would have to reflect a consensus, or at least a majority opinion, within the community,

(b) the elected committee would have to enjoy a great deal of legitimacy,
Figure 2. The role of different actors in establishing a grazing scheme

1. Community decides to adopt scheme
2. Community elects a committee
3. Community indicates to Agritex location of arable & grazing areas
4. Committee & neighbouring communities & Agritex reach agreement on boundaries
5. Committee & community agree on by-laws to govern management of scheme
6. Committee secures contributions from community - as cash, labour or poles
7. Community erects fences - work organised by committee
8. Committee decides on rotations, organises fence maintenance, enforces by-laws
9. Agritex promotes idea of scheme
10. Agritex undertakes technical planning
11. Agritex advises on by-laws
12. Agritex assists in obtaining donor funding for fencing materials
13. Agritex advises on fence erection
14. Agritex advises on stocking rate and rotations
(c) the set of by-laws adopted would have to reflect the community's actual intentions with regard to resource management,

(d) community members would have to demonstrate their commitment to the scheme by contributing promised amounts of cash/labour/materials,

(e) the community and committee would have to understand and agree with the principle of rotational grazing and implement it following Agritex advice.

Was it realistic to expect these conditions to apply in communities expressing interest in the idea of a grazing scheme? Some are manifestly open to influence by outsiders such as extension agents - for example, the greater the number of community members who are informed about and convinced of the benefits of rotational grazing, the more likely are conditions (a) and (e) to be fulfilled. Similarly if by-laws are allowed to emerge through a process of community discussion, and are not imposed from the outside (or suggested as a precondition for obtaining donor funding), then condition (c) is more likely to be met.

Other conditions would seem to depend more on intra-community political dynamics - for example, condition (b) which in turn would influence the achievement of condition (d).

Sensible extension practice which followed its own precepts of fully consulting communities, encouraging participation in decision-making, and making available sound technical advice in an accessible form, would encounter no difficulties in achieving at least some of these conditions. It would also become aware of whether or not a committee and a leadership group were truly representative. For the most part, the design of this aspect of the project is not impracticable. The major stumbling block is the issue of the by-laws, and in particular the question of stocking rates.

As pointed out in section 2.2 above, the policy framework for this project contains a central ambivalence towards communal area stocking rates. On the one hand the rationality underlying high stocking rates is recognised, on the other the state intends to work towards lowering them in order to conserve the resource base. In the absence of a coherent policy and programme which addresses the apparent contradiction between farmers' objectives and those of government, extension staff have pragmatically approached the issue by avoiding any mention of maximum stocking rates or destocking, and focussed instead on encouraging farmers to sell their older stock. In this way they have hoped to increase the offtake rate and achieve stock limitation 'by the back door'.

In grazing scheme proposals, communities have sometimes been asked to sign sets of by-laws which state that maximum stocking rates as determined by Agritex will not be exceeded. Sometimes this has been a precondition for obtaining donor assistance, but the idea appears to have originated within Agritex fairly early in the project. The intention seems to have been to use the 'bait' of fencing for a scheme to achieve voluntary stock control 'via the front door'.

However, extension staff in discussions with the communities concerned have been reluctant to undermine their working relationship by making this a central issue. In large measure the formal sets of by-laws, usually drawn up by Agritex and then signed by committee members as part of the project proposal, are moribund. Few respondents who were questioned on them were even prepared to acknowledge their existence, and even those who did could not specify their contents. By-laws which are operative are those which were discussed and agreed at community meetings - these are largely to do with either management issues (rotations, control of burning, tree cutting) or policing issue (fines for not attending work, for cutting fences etc.), and are usually not in written form.

Institutional development, including the evolution of new rules governing resource access and use, has indeed taken place within the grazing scheme project. But in respect of by-laws this has happened in an informal and unplanned manner, and the central issue of stocking rates has essentially been avoided by both community members and local extension staff. (Where ideas on regulation of stock numbers have progressed furthest, in Tagarika within Mwenzi District, this has not been through the formal stipulation of a by-law suggested by outsiders, but instead has developed through discussions within the community.)

2.4.4 Implementing agencies in the project

In this discussion of project definition and framework the major focus thus far has been on the target group and local institutional development. The government and parastatal agencies responsible for project preparation and implementation are also important actors, however, and a brief discussion of their capacity and suitability is required.

The Agricultural and Rural Development Authority (ARDA) is a parastatal body charged with production on state farms, but also with planning and coordinating rural development projects in communal areas. Thus it has planned and implemented the Model D Resettlement Scheme in Matabeleland South, the Pungwe Valley Tea Project, the Rusitu Valley Dairy Project and other projects of a large scale nature requiring integrated planning and management. The EEC has funded two agricultural projects for smallholders which are the responsibility of ARDA, one in Mashonaland East (fruit and vegetable growing) and one in Manicaland (coffee and fruit growing).

In the grazing schemes project ARDA has been involved in two different schemes - (a) ARDA planners drew up the initial plans for the Denhere-Katsvamutima scheme in Zvimba; subsequently Agritex and an NGO, the Lutheran World Federation, took over implementation responsibilities - (b) the ARDA Manicaland Provincial Planning Unit has been largely responsible for both planning and implementation of the Chiweshe Ward Development Project in Buhera (although it's major role in implementation, apart from financial control, has been in coordination of the many different agencies involved.)

In Denhere-Katsvamutima a comprehensive plan was drawn up which was based on a wide-ranging data collection exercise, and which in technical terms was judged
adequate by the other parties concerned (such as Agritex). However, boundary disputes had not been fully resolved and many changes to the plan had to be made before implementation could begin. The lack of a continuing on-the-ground presence clearly hampered the ARDA planners.

The Chiweshe project planned a number of infrastructural developments (roads, diptank, water supply, buildings) in addition to reallocations and consolidation of arable blocks and residential sites, and a large-scale paddocking of grazing land. A number of different government department's services were required (Ministry of Energy and Water Resources Development, the Department of Rural Development, the Department of Veterinary Services, the District Development Fund and Agritex), and the Lutheran World Federation was to provide credit for cropping loans, a local project officer, and funds for certain activities. The District Administrator's office was to play a major coordination role at local level, with the ARDA Provincial Planning Unit providing overall technical coordination.

A complex structure of project implementation and management was proposed in the ARDA project document, and subsequently clarified when queries arose from the EEC Delegation and others. In the light of experience doubts must be raised as to (a) the practicality of the management structure and (b) the capacity within ARDA to coordinate the project. (See discussion of implementation in Section 3.2.2).

The District Administrator's Office in Mwenezi District has been largely responsible for planning, implementing and coordinating the ambitious Mwenezi Radical Land Use Reform Programme. Although this has been done with commendable energy and enthusiasm it is not clear that the officers concerned possessed all the management skills required - for example, for the drawing up of project documents, accounting for monies spent, and so on. However, it could be argued that such skills should be present at this level of administration, and thus that in itself it was not an inappropriate implementing agency. A major problem has been both the absence of District Administrators from their offices because of study leave etc., and the turnover of officers in this post (the present incumbent is the third since independence).

The major implementing agency has been the Department of Agricultural Technical and Extension Services (Agritex) formed in 1982 from an amalgamation of two previously separate extension departments. Agritex has a reputation for both technical competence and credibility amongst the rural population. Agritex staff are indeed technically competent in the planning of grazing schemes, although there are some issues which are not well understood by grassroots field staff, in particular, and which are in need of corrective action. (See Section 3.4.1).

With regard to questions of institutional functioning and development, however, the Department does not have a strong body of knowledge, experience and expertise to call upon. (This is probably a weakness of agricultural extension in general, not peculiar to Zimbabwe). Since many of the central issues involved in grazing schemes are social, economic and political in nature,
revolving around the evolution of local community institutions, this shortcoming has had severe consequences for this project.

In respect of management capacity one must recognise that Agritex faced a number of problems in its early years - a major reorientation towards the previously neglected communal areas, an exodus of experienced staff, an influx of largely inexperienced officers and an enormous programme of work in shouldering the major burden of rural and agricultural development activities undertaken by government. Despite these problems it has continued to perform a multitude of tasks and is still widely regarded as the most competent government department active in the communal areas. All the same, management skills have sometimes been lacking in critical areas of work, and the implementation of grazing schemes has demonstrated some of these - for example, monitoring and reporting of progress in grazing schemes, particularly in the early years, was inadequate.

As mentioned in Chapter One, however, the procedures for approving and financing microprojects were not well defined to begin with and have been improved over the years. Thus, some of the problems which arose in financial control, ordering of materials, etc., were not wholly of Agritex's making.

In general, Agritex must be judged as the most suitable agency for the implementation of this project, although there are weaknesses in certain aspects which are in need of remedy.

2.4.5 Overall project conception

Evaluating the project conception and definition as a whole, were the policy framework, objectives, activities, outputs, location, target group, institutions and implementing agencies adequate to their tasks and well integrated into a coherent and consistent framework?

To summarise the previous discussion:

- the policy framework contained major ambiguities and inconsistencies.
- objectives were too narrowly defined in terms of improved grazing management and failed to give adequate recognition to institutional development. The question of small stock was not seriously considered.
- the specification of outputs was appropriately qualitative in virtually all cases but too narrow in conception: a 'learning approach' could more usefully have been adopted.
- the location of grazing schemes was appropriately decided through self-selection in many cases, but in some resulted from an inappropriate 'top down' approach.
- the target group, local institutions and their respective roles in the project were adequately conceived on the whole, with the exception of the issue of grazing scheme by-laws.
the implementing agencies were, broadly speaking, the appropriate ones despite evident weaknesses in management capacity and a lack of focus on institutional issues.

Although it is clear from this analysis that major deficiencies existed in overall project design, there are a number of mitigating factors.

Firstly, this judgment is made with the benefit of hindsight. An understanding of the complexity of common property management in general is only slowly developing, and it is probably unrealistic to have expected full consideration to have been afforded the problem in the early years of Zimbabwe's independence.

Secondly, many of the inconsistencies and ambiguities arise from deep-seated problems of resource allocation in the society as a whole (for example, the issue of land shortage in the communal areas, which is another way of seeing the problem of 'over-stocking' - see Cliffe 1986). The national policy framework has not yet resolved this issue, and it would be unfair to blame those responsible for project design for failing to do so.

Thirdly, some of the technical failings in project design (e.g. the failure to consider the problem of small stock) derive from the fact that these are difficult questions on which there is as yet no general consensus as to a workable solution.

Allowing for these, one can say that in many ways this was a reasonably well-integrated project in its basic concept and design. Many of the inconsistencies and ambiguities have only emerged very strongly in the course of implementation, and it is to be hoped that useful lessons can be learned from the experience and incorporated into future planning.
CHAPTER THREE

EVALUATION OF PROJECT DETAILS : COMPARISONS BETWEEN TARGETS AND ACHIEVEMENTS

3.1 Physical and non-physical inputs

The physical inputs in the project consisted in the main of the supply of materials for fencing of paddocks. In addition, the following types of inputs were supplied in some schemes:

- In Denhere-Katsamutima, the EEC also funded the construction of cattle handling facilities, a sales pen, seed and fertilizer for legume plots, and a ripper. The reason for this was that the project had been expanded into a 'development project' by the Lutheran World Federation (LWF) who provided a contract ploughing service, credit for arable cropping and loans for the purchase of improved bulls. The EEC contribution was aimed at complementing these measures.

- In Chiweshe, a number of inputs which formed part of the comprehensive land reform programme were also funded by EEC, e.g. PVC pipes for a water reticulation system, water pumps, building materials for a storehouse, drinking troughs and water reservoirs.

- In Mwenezi, grids for each of the gateways were also to be funded.

- In Ntabazinduna the Delegation also agreed to fund 2 diptanks, 1.5 kms of PVC piping for a livestock water supply system and 20 water troughs. (These have not yet been supplied, however.)

- In Muchinjike - 10 bags of cement were to be provided by the community themselves.

The total quantities of various materials to be used in the schemes is shown in Table 3. It must be stressed, however, that these are the original estimates as contained in the project proposals - they are not a record of inputs actually used. Available records do not generally give a detailed breakdown of this, and in some cases (Zinyoro, Mwenezi, Chiweshe, Muchinjike) fencing is still ongoing.

In many schemes the original plan has undergone significant modification in the course of implementation, usually in response to an expressed need within the community. For example, in Chikowore Paddock 5 has not yet been fenced, because the community decided that it wanted to reserve this area for arable cropping in the future. Hence the scheme was 'completed' with some rolls of barbed wire not yet used. (This decision has recently been reversed.)

In Kowoyo many modifications to planned fence lines took place, mainly in order to accommodate homesteads and either existing or proposed arable lands.
<table>
<thead>
<tr>
<th>Scheme</th>
<th>Barbed wire (rolls)</th>
<th>Tying wire (rolls)</th>
<th>Straining wire (rolls)</th>
<th>Straining posts</th>
<th>Standards</th>
<th>Droppers</th>
<th>Gates</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chiwundura</td>
<td>145</td>
<td>4</td>
<td>4</td>
<td>100</td>
<td>1875</td>
<td>5375</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Zinyoro</td>
<td>97</td>
<td>2</td>
<td>2</td>
<td>70</td>
<td>?</td>
<td>?</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Denhere-K.</td>
<td>113</td>
<td>1070 kg</td>
<td>500 kg</td>
<td>215</td>
<td>1453</td>
<td>4544</td>
<td>10</td>
<td>Cattle handling facilities, sales-pen, legume seed and fertilizer, ripper</td>
</tr>
<tr>
<td>Chikowore</td>
<td>116</td>
<td>4</td>
<td>4</td>
<td>66</td>
<td>1388</td>
<td>4180</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Mwenezi (X6)</td>
<td>1440</td>
<td>172</td>
<td>16</td>
<td>28 840 poles</td>
<td>86 520</td>
<td>115</td>
<td>115 grids for gates</td>
<td></td>
</tr>
<tr>
<td>Ntabazinduna</td>
<td>638</td>
<td>14</td>
<td>14</td>
<td>484</td>
<td>9075</td>
<td>26 014</td>
<td>30</td>
<td>2 diptanks, 1.5 kms PVC piping, 20 troughs</td>
</tr>
<tr>
<td>Koyoyo (X3)</td>
<td>140</td>
<td>259 kg</td>
<td>259 kg</td>
<td>69</td>
<td>2058</td>
<td>6 174</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Chiweshe</td>
<td>(wire for 70 kms)</td>
<td>616</td>
<td>4438</td>
<td>15 000</td>
<td>-</td>
<td>Other inputs for Other components of land reform programme</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muchinjike</td>
<td>102</td>
<td>3</td>
<td>3</td>
<td>54</td>
<td>1224</td>
<td>3 685</td>
<td>5</td>
<td>10 bags cement</td>
</tr>
<tr>
<td>Zimuto (X4)</td>
<td>236</td>
<td>387 kg</td>
<td>387 kg</td>
<td>108</td>
<td>3215</td>
<td>9 645</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>
In other examples, modifications to the plans resulted in there being insufficient materials to complete the scheme. Ntabazinduna was fenced along its boundary with Fingo in order to close off certain paddocks, even though this was not in the original plan. The Regional Agricultural Extension Officer is attempting to negotiate compensation for some of this fencing from the local authorities in Fingo, but in the meantime, paddocks within the scheme itself are short of materials.

In Zimuto, the Mafuzha and Masimba schemes both ran short of materials because of 'kinks' in the original fencing lines caused by the wish to avoid a relocation of someone's arable lands or homestead.

In Chiweshe many modifications to the original plan have been made. VIDCO 6 has been brought into the scheme because the Secretary of the Project Committee, a key figure in the community, lives there and it was judged expedient to include his home village. VIDCO 4, on the other hand, will have most of its land flooded by the proposed Conde dam, and all development work there is at a standstill. The location of various blocks of arable land and some of the paddocks in VIDCO 5 have been changed because the original plan was deemed inappropriate by staff involved in implementation. As a result of all these changes, the final quantities of inputs used will no doubt be very different to the original estimates.

While a precise quantitative comparison between targets and achievement cannot be made in respect of physical inputs, these examples show that implementation of grazing scheme plans has been highly flexible and adaptive. In allowing a degree of community participation and involvement, this flexibility has probably had mostly positive effects.

Negative effects can be seen where materials run out before implementation is complete, but perhaps it can be argued that here is a prime example of the need for a substantial community contribution to make up the deficit. If agreed upon extension staff need to forcefully communicate this point of view to the communities concerned. (The question of the magnitude of community contributions will be taken up later in this report, see Section 3.3.4.)

3.2 Implementation details, adaptiveness and evaluation

3.2.1 Adaptation of procedures

Apart from the two 'land reform' projects of which grazing schemes form only one component (i.e. Mwenezi and Chiweshe) procedures for planning, implementing and monitoring the individual schemes have been broadly uniform. At the same time they have been deliberately modified during the course of the project in an attempt to streamline the process and avoid the lengthy delays which characterised planning and implementation in some of the early schemes. An EEC Microprojects Coordinator was appointed in July 1984 as part of this streamlining - although final clarification of his role was not achieved until May 1985. (A second Coordinator to cover the southern provinces of the country was appointed in March 1987 and is based in Masvingo.)
The procedures which were to be followed before this appointment are represented in the form of a flowchart in Figure 3. Immediately apparent is the extremely long chain of events involved, the many levels of staff involved (within the Ministry of Agriculture, Lands and Rural Resettlement in particular) and the relative complexity of the process as a whole. There was thus a high probability of delays occurring should, for example, a document be misplaced or anyone involved not fully understanding his role.

The procedures which were subsequently instituted are shown in Figure 4. The major innovations are twofold: (a) payment for fencing materials is made directly by the EEC Delegation after the submission of invoices by the Microprojects Coordinator. (b) The Microprojects Coordinator is involved in the process from the very beginning, appraising community commitment, appraising the project document before submission to Ministry of Finance, Economic Planning and Development (MFEPD) and ensuring speedy procurement, delivery and payment for materials.

Those schemes whose proposals were processed using the improved procedures benefited greatly in terms of lack of delay and ease of management, as is clear when the implementation record for each scheme is examined (See below).

The fact that the need to clarify roles and responsibilities and modify procedures was a 'learning process' for all the parties concerned is clear from the following:

(i) The Director of Agritex commented in August 1984: 'The EEC has in some cases negotiated finances and projects direct with provinces and as a result Agritex has spent monies not on their vote or credit.' He appears to have been referring to Zinyoro and Chiwundura grazing schemes in Midlands Province.

(ii) The question of whether or not Sales Tax would be charged on fencing materials took over a year to resolve. Funds were first disbursed in 1983, but it was not until January 1985 that the question was finally settled by the Commissioner of Taxes. The lack of clarity on this issue affected the cost apportionment between the three parties (donor, community, government) in the cases of Chikowore and Ntabazinduna and caused delay in their approval.

(iii) Even after the appointment of the Microprojects Coordinator in July 1984, funds continued to be transferred from the European Development Fund (EDF) Account in Zimbabwe to MFEPD for 'votes of credit' to be established. Thus the grant for Ntabazinduna grazing scheme was made in this fashion in January 1985, but the 'vote of credit' was never used and the money had to be paid back in August 1985.

(iv) Although the EEC Delegation and MFEPD had earlier agreed that suppliers would be paid direct, as late as March 1985 the Assistant Director (Technical) of Agritex was still informing Mashonaland Central
Figure 3. Procedures for planning, approval and funding 1982-1985

Community requests scheme

Agritex plans scheme, draws up project proposal

Community signs project proposal

Agritex hierarchy checks proposal

Agritex approves

Sec. Agric. approves

MFEPD approves

EEC approves

EEC releases funds

MFEPD creates vote of credit for scheme

Sec. Agric. notifies Agritex Head Office

Document modified if inadequate

Min. of Agric. pays suppliers

Invoices & requisitions sent to Min. of Agric.

Invoices & requisitions sent to Agritex Head Office

Materials delivered

Agritex selects best quotation & makes out requisition orders

Agritex field staff obtain quotations

Agritex Head Office notifies field staff
Figure 4. Procedures for planning, approval and funding

Community requests scheme.

Agritex plans scheme and draws up project proposal.

Community signs project proposal.

Agritex hierarchy checks proposal.

Agritex approves.

Sec. Agric approves.

EEC Microprojects Coordinator appraises.

EEC Microprojects Coordinator appraises.

MFEPD approves.

EEC approves.

Microprojects Coordinator and Agritex seek cheapest supplier.

Materials delivered.

Document modified if inadequate.

EEC Microprojects Coordinator appraises Community commitment.

EEC pays suppliers.

Microprojects Coordinator sends invoices to EEC.
Provincial staff that no expenditures could be made until a 'vote of credit' had been established within the Ministry of Agriculture. In May 1985 a meeting between the EEC Delegation, Agritex and the Secretary for Agriculture finally clarified that the 'vote of credit' procedure would no longer be used.

3.2.2 Implementation record: comparisons between schemes

Where in the process have the major bottlenecks been, and which agencies have been responsible for the delays? Figures 5 to 8 compare the implementation timetables for the ten different funding proposals in the grazing schemes project. (N.B. The data used to construct these histograms were taken from Agritex and EEC Delegation records which are not complete in a number of instances; they are therefore only estimates of the duration of different phases of these projects.)

In Figure 5 is shown the time between the first discussions of a grazing scheme by community members and extension staff, and the first formal submission of a project proposal. (This period thus includes the technical planning of the scheme by Agritex.) The schemes requiring relatively short periods of extension input initially were usually those with experience of pre-independence schemes (Chiwundura, Chikowore, Ntabazinduna, Zimuto schemes). The ambitious 'land reform' programmes (Mwenzi and Chiweshe) both required lengthy periods of community discussion. The exceptions to this pattern are:

(a) Denhere-Katsvamutima (no pre-independence scheme, 10 months), where major problems of defining which communities were participating in the scheme and of delineating mutually acceptable boundaries with neighbours, were later encountered.

(b) Muchinjiwe (a pre-independence scheme, 24 months); here three different villages are cooperating in the grazing scheme and a long period of discussion was needed to reach full agreement.
In Figure 6 is shown the time between the first formal submission of a project proposal by local extension staff (at either district, regional or sometimes provincial level) and final approval by the EEC Delegation. Included in this phase therefore is the vetting of the proposal by Agritex Head Office staff, the Secretary for Agriculture's office, officials in MFEPD, the Microprojects Coordinator and finally the EEC Delegation.

Denhere-Katsvarmutima was approved quickly (4 months) as was Kowayo (5 months) and other schemes took between 10 and 16 months. (No data was available on Zinyoro, Chiwundura and Mwenezi.)
Many delays occurred during the approval process for various projects.

For **Chikowore**, a misunderstanding between the Mashonaland Central Provincial Office and Agritex Head Office meant that the proposal originally submitted in December 1983 was not sent to the Secretary for Agriculture for approval until September 1984. During this period, the community was also required to give its agreement to the setting of maximum stocking rates. Further delays were caused by the need to increase the community contribution to overall costs and reduce the EEC contribution by 1.2 percent. Final approval was given in March 1985.

For **Kowoyo**, approval in principle was achieved between October and December 1984, but clarification of who would be responsible for administering funds and implementation took until March 1985. (The Dairy Development Programme in the DMB was given this responsibility.)

For **Ntabazinduna**, the project document had to be re-submitted several times: Agritex Head Office required an adjustment in the cost apportionment, then required the signatures of community leaders and the local Council; the EEC Delegation returned the proposal for further readjustments in costings, and then again for a formal assurance that the stocking rate would not be exceeded, and also that 'equal grazing rights' would be allocated to each member of the community. Each resubmission involved a time period of between two and four months.

---

**Figure 6:** Months between first submission of project proposals and final approval by EEC Delegation

A little more detail is required to explain the reasons for these delays, reasons which vary from one scheme to another.

---

<table>
<thead>
<tr>
<th>Project</th>
<th>Months between first submission and final approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denhere</td>
<td>?</td>
</tr>
<tr>
<td>Zinyoro</td>
<td>?</td>
</tr>
<tr>
<td>Chiwundura</td>
<td>?</td>
</tr>
<tr>
<td>Chikowore</td>
<td></td>
</tr>
<tr>
<td>Mwenezi</td>
<td></td>
</tr>
<tr>
<td>Ntabazinduna</td>
<td></td>
</tr>
<tr>
<td>Kowoyo</td>
<td></td>
</tr>
<tr>
<td>Chiweshe</td>
<td></td>
</tr>
<tr>
<td>Muchinjike</td>
<td></td>
</tr>
<tr>
<td>Zimuto</td>
<td></td>
</tr>
</tbody>
</table>
For Chiweshe the project proposal had to be revised several times, to include the contributions of the Lutheran World Federation; to revise cost estimates; and to include an acceptable management structure. Negotiations with the EEC Delegation on the question of recurrent costs for the pumping of water also caused delays.

For Muchinjiike Agritex Planning Branch were asked to visit the site and assess the project's viability because of the problematic location of Masere sub-village - this took several months to organise and report on. (A further delay of 6 months, between February and August 1986, is unable to be accounted for from available records.)

For Zimuto schemes the Microprojects Coordinator required resubmission of the proposals with revised and updated costings and a set of signed by-laws. This took about six months to secure.

In Figure 7 is shown the months between final approval by the EEC Delegation and the first, and also the final, delivery of fencing materials. In some cases only one delivery was made (Chikowore, Kowoyo and Muchinjiike), but in the others the first disbursement of donor funds usually amounted to approximately 50 percent of the total, with a second payment being made after satisfactory progress had been reported.

For Mwenezi the first disbursement of $25 000 was not satisfactorily accounted for until three years had elapsed (January 1984 to January 1987). The full grant of $73 000 has not yet been released to the District Administration because of poor project implementation progress and lack of proper project accounting.

For Chiweshe four payments have thus far been made to ARDA, and six paddocks remain to be fenced.

In general the histogram shows that not much time elapsed between final approval and the delivery of the first materials. Apart from Ntabazinduna, the longest delay was in the case of Chiwundura (4-5 months). For Ntabazinduna the delay of 10 months appears to have been caused by the fact that the system of payments was in process of being modified during this period, and possibly because of time-consuming tendering procedures carried out by the responsible regional Agritex office.
Figure 7: Months between final approval by EEC Delegation and first and final deliveries of materials

Figure 8 shows the months between the first delivery of materials and completion of fencing, or, if not complete, to October 1987. Although not formally stated in project proposals, there was an expectation amongst extension staff that fencing would normally be completed within at least one year. Many of the Agritex progress reports which were made soon after fencing began refer optimistically to fencing being completed within a few months.

The data presented here shows that only Kowoyo (8 months) and Ntabazinduna (12 months) come close to fulfilling this expectation. (In the latter fencing is still not complete, however, because funds were insufficient to purchase all the materials needed. This is partly due to price rises since planning was done, and partly due to one boundary being fenced which was not in the original plan.)

In Denhere-Katsvamutima and Zimuto fencing took 15 months to complete. In the latter materials were insufficient, because of changes to the original plan. Chikowore took 16 months to complete, and Chiwundura 24 months.

Muchinjike was not yet complete after 14 months, with another 10 kms of fencing still to erect. Chiweshe had completed 7 paddocks or 40 kms worth of fencing, out of a planned total of 13 paddocks and approximately 70 kms. A shortage of transport at the District Administrator's office and the ordering of incorrect materials has slowed progress, but so has a lack of motivation in the community.
Transport problems appear to be the major stumbling block in Mwenezi too, where 45 months have elapsed since the first materials arrived and only Tagarika in Ward 14 has completed its fencing. Transport from the District Administrator’s office is needed to take community members to cut poles on commercial ranches in the District, but the vehicles are often needed elsewhere.

Still incomplete 54 months after fencing first started is Zinyoro. Lack of community commitment is clearly the cause. The future of this scheme has been in doubt for some time, with the Microprojects Coordinator warning the community in April 1987 that fencing had to be complete by the end of the year or unused materials would be taken away.

![Figure 8: Months between first delivery of materials and completion (or to October 1987)](image)

In summary, the record is a mixed one. Different schemes have experienced long delays at different stages in the whole process, due to:

- a necessarily lengthy period of consultation with the community (Mwenezi, Chiweshe, Muchinjike).

- Misunderstandings within Agritex (Chikowore).

- Lack of clarity on project procedures (Ntabazinduna, Kowoyo, Chikowore, Chiwundura, Zinyoro).
- The requirement that by-laws be signed by the community (Chikowore, Zimuto).

- Assurances with regard to maximum stocking rate being required by the EEC Delegation (Ntabazinduna).

- Project documents requiring revision, often in connection with cost apportionment (Ntabazinduna, Chikowore, Zimuto, Muchinjike, Chiweshe).

- Inadequate accounting for first payments (Mwenezi, Chiwundura, Zinyoro).

- Slow progress in fencing work carried out by the community (Zinyoro, Denhere, Chikowore, Chiwundura, Chiweshe).

- Transport problems affecting the delivery of materials (Mwenezi, Chiweshe).

It is clear that bottlenecks have not been caused by any one agency, but by a number of the actors involved, in different ways and for a variety of reasons.

3.3 Cost estimate and financing plan

3.3.1 Cost apportionment

EEC Microprojects may not be funded with more than 50 percent of the total costs met by the donor, the other 50 percent to be met by local community and government services contributions. The contribution of the local community should be partly or totally in kind, i.e. labour or materials.

Cost apportionment in the grazing schemes project is shown in Table 4. Community contributions have usually consisted of labour to erect fences and locally cut timber for use as straining posts, standards, or droppers.

In some communities timber for this purpose has either not been available in sufficient quantities or it was judged that it would be environmentally damaging to cut trees for this purpose. Thus in Mwenezi, for example, community members have been transported by the District Administration to cut poles on nearby commercial ranches, which were paid a small fee for every pole cut. In Ntabazinduna the District Council has provided droppers from a woodlot under its control, and this has been included in the total for the community's contribution. In Chiwundura neighbouring commercial farmers contributed $5 362 for the purchase of poles, and this was included as a community contribution.

In Zinyoro the tree species cut for fencing poles have been those which are quickly attacked by soil pathogens, and they have not lasted for more than a season. (There are appropriate species locally, and this problem appears to be a symptom of the organisational malaise which has plagued Zinyoro from the beginning.)
<table>
<thead>
<tr>
<th>Scheme</th>
<th>Contributor</th>
<th>Fencing Materials</th>
<th>Labour</th>
<th>Government salaries/mileage</th>
<th>Other</th>
<th>Totals</th>
<th>% contribution</th>
<th>Total costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chiwundura</td>
<td>EEC</td>
<td>8245</td>
<td>1050</td>
<td></td>
<td>810</td>
<td>8245</td>
<td>53%</td>
<td>15 467</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>5362</td>
<td></td>
<td></td>
<td></td>
<td>6412</td>
<td>42%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Government</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>810</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Zinyoro</td>
<td>EEC</td>
<td>5575</td>
<td></td>
<td></td>
<td>810</td>
<td>5575</td>
<td>53%</td>
<td>10 439</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4054</td>
<td>39%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Government</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>810</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Chikwore</td>
<td>EEC</td>
<td>10110</td>
<td>2006</td>
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<td></td>
<td>10110</td>
<td>50%</td>
<td>20 220</td>
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<td></td>
<td>Community</td>
<td>4436</td>
<td></td>
<td></td>
<td></td>
<td>6442</td>
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</tr>
<tr>
<td></td>
<td>Government</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3668</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>Mwenezi</td>
<td>EEC</td>
<td>60 555</td>
<td>95 180</td>
<td></td>
<td></td>
<td>12 364</td>
<td>30%</td>
<td>241 018</td>
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<tr>
<td></td>
<td>Community</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>95 180</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Govt/ARDA</td>
<td>60 555</td>
<td></td>
<td></td>
<td></td>
<td>72919</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ntabazinduna</td>
<td>EEC</td>
<td>57 843</td>
<td>15 424</td>
<td></td>
<td>3696</td>
<td>12 157</td>
<td>51%</td>
<td>137 236</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>48 116</td>
<td></td>
<td></td>
<td></td>
<td>70 000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Govt</td>
<td>6 424</td>
<td></td>
<td></td>
<td></td>
<td>63 540</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes
1. Contribution by Mbembezaan ICA on behalf of community.
2. For personnel, transport and 10% contingency.
3. For diptanks, PVC piping, troughs and 12% contingency.
4. Includes materials supplied by District Council on behalf of community.

continued...
<table>
<thead>
<tr>
<th>Scheme</th>
<th>Contributor</th>
<th>Fencing Materials</th>
<th>Labour</th>
<th>Government Salaries/Mileage</th>
<th>Other</th>
<th>Totals</th>
<th>% contribution</th>
<th>Total Costs</th>
</tr>
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<tr>
<td>Kowoyo</td>
<td>EEC</td>
<td>10 893</td>
<td></td>
<td></td>
<td>6573</td>
<td>10 893</td>
<td>41%</td>
<td>26 390</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>5 478</td>
<td>3176</td>
<td>8 654</td>
<td>33%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Government</td>
<td></td>
<td></td>
<td>270 (Transport)</td>
<td>26%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muchinjike</td>
<td>EEC</td>
<td>11 725</td>
<td></td>
<td></td>
<td>3190</td>
<td>11 725</td>
<td>50%</td>
<td>23 444</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>5 244</td>
<td>2393</td>
<td>7 636</td>
<td>33%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Government</td>
<td></td>
<td></td>
<td>533 (Sundries)</td>
<td>17%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>360 (Transport)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zimuto¹</td>
<td>EEC</td>
<td>23 496</td>
<td></td>
<td></td>
<td></td>
<td>23 496</td>
<td>50%</td>
<td>47 345</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>10 885</td>
<td>4516</td>
<td>15 401</td>
<td>32%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Government</td>
<td></td>
<td></td>
<td>8 448</td>
<td>18%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denhere-Kats_yamutama</td>
<td>EEC</td>
<td>12 000</td>
<td></td>
<td></td>
<td></td>
<td>14 000²</td>
<td>21%</td>
<td>122 500</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td></td>
<td>7500</td>
<td>8 000³</td>
<td>13%</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Government</td>
<td></td>
<td></td>
<td>38 000</td>
<td>31%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LWF</td>
<td></td>
<td></td>
<td>43 000⁴</td>
<td>35%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes
1. Cost estimates for Zimuto schemes were later revised because of price increases.
2. Cattle handling facilities, vet equipment, borehole, legume seed and fertilizer.
3. Labour for handling facilities, borehole, dam, assistance for resiting homesteads.
4. Cropping credit, livestock credit, project managers salary, transport, and accommodation.

(NB. Cost apportionment for Chiweshe not given because data available only for total programme.)
Some communities have also raised fairly large sums of cash as part of their contributions (see Annexe A). The following are particularly notable:

<table>
<thead>
<tr>
<th>Community</th>
<th>Contribution per household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kowoyo B</td>
<td>$22.00</td>
</tr>
<tr>
<td>Chikowore</td>
<td>$12.50</td>
</tr>
<tr>
<td>Kowoyo C</td>
<td>$10.65</td>
</tr>
<tr>
<td>Kowoyo A</td>
<td>$10.53</td>
</tr>
<tr>
<td>Muchinjike</td>
<td>$10.00</td>
</tr>
</tbody>
</table>

In some cases not all households have made their contributions, and the committee is still trying to persuade the defaulters to do so. Usually all households, whether cattle-owners or not, are expected to make equal contributions.

The community contribution to total costs has ranged from 32 percent (Chikowore and Zimuto, to 46 percent (Ntabazinduna), although in some cases, as pointed out above, this has partly comprised donations made on behalf of the community.

The labour input for fence erection shown in Table 4 is based on estimates drawn up by Agritex at project planning stage. These are based on the standard figure of 34 labour days per kilometre of fencing, and make no allowance for differences in topography or vegetation in different locales. Community contributions in kind (usually locally cut timber for straining posts, etc) have been costed at the price of commercial equivalents.

It has proved impossible to quantify the community's actual contribution in labour days during project implementation because of the lack of reliable data. Many grazing scheme committees have kept what appear to be reasonably accurate records of the attendance of community members at work sessions, but these records do not specify the hours of work that each session represented. On enquiry these appear to have varied from one or two hours a day on occasions to a full working day on others, within the very same scheme. Thus 'attendance' gives no indication of 'labour days'. With regard to contributions in kind, no records have been kept of the actual number of poles cut for straining posts etc., and precise quantification is therefore not possible either. In this case, however, the Agritex estimates are probably reasonably accurate.

An assessment of the significance of community contributions must therefore be based on what was planned for rather than what was actually carried out. In general, the idea of a community contribution of some kind, comprising a significant proportion of total costs, was well understood and accepted in most of the communities in the project. Significant exceptions are Denhere Katsvamutina and Chiweshe (see section 3.3.2 below), and Zinyoro, where community participation has been problematic from the outset. In this respect, then, the project has met one of the basic criteria for EEC Microprojects - that a significant input be made by the project beneficiaries themselves.
Government's contribution has usually been in the form of proportions of the salaries of extension personnel, in accordance with the time needed to visit communities to advise them or supervise fencing work, and the costs of transport for such visit. The latter has been calculated according to standard government rates. In some cases (e.g. Muchinjike, Chikowore, Kowoyo) government transport has also been used for the transport of fencing materials. Government contributions have ranged from 3 percent of the total (Ntabazinduna) to 30 percent (Mwenezi).

In the latter case a contribution of $60 555 was agreed for the purchase of materials, the government agency being ARDA (Masvingo Provincial Planning Unit), and the actual source of the funds being the German Agency for Technical Assistance (GTZ). It is thus an exception to the normal mode of government contribution.

3.3.2 The role of the Lutheran World Federation

In two schemes, Denhere-Katsvamutima and Chiweshe, a non-governmental organisation, the Lutheran World Federation (LWF) has made significant contributions. In both cases the aim has been to complement the grazing scheme with supporting grants and services which would give the project a more holistic and integrated character. Contributions to these two schemes are part of a wider programme known as the Cattle Rehabilitation and Development Programme (CRDP).

In the case of Denhere-Katsvamutima the LWF's involvement dates from 1984, when responsibility for implementation was given to LWF rather than Agritex, and a revised project proposal was agreed to by Agritex, the District Administrator and the EEC Delegation. Out of a total budget of $163 511 LWF's contribution was to come to 36 percent, covering the cost of a revolving loan scheme for cropping credit (at reduced rates of interest), the acquisition of improved bulls, and services, including those of a Project Manager. Experienced fencers were also paid to assist with fencing work, and later a tractor was introduced to provide contract ploughing services for farmers in the project. (The costs mentioned above were later revised so that the total came to about $123 000 with LWF contributing 35 percent.)

In the Chiweshe Ward Development Project a similar contribution was planned, with the salary, transport and accommodation of a Project Manager being paid for (cost of $51 000), and credit at low interest rates for cropping and for stock acquisition being provided ($125 960). Veterinary supplies worth $1 000 were also to be made available.

The Project Manager was to have project management and coordination responsibilities at local level, and form part of the complex management structure which ARDA proposed for the project (see Section 2.4.4 above).

Although it is not within the brief of this evaluation to assess the performance of LWF, it must be noted that in both of these projects symptoms of the 'donor dependency' syndrome were observed in the course of the field survey. At the
end of the group discussion in Denhere-Katsvamutima a long 'shopping list' of items needed by the community was enunciated, with a request that the EEC finance them. In Chiweshe a problem that manifested early in the project was the desire of people to be paid for their labour in erecting fences, constructing a dip tank and performing other tasks. In 1987 work on fencing was being paid for by government in the form of the 'food for work' programme.

An evaluation of the Denhere-Katsvamutima project carried out by LWF's own Planning, Research, Evaluation and Monitoring Unit comes to the same conclusion.

When looking at problems that have become apparent ... most members of Denhere-Katsvamutima want someone to come and provide. They do not look for resources and solutions ... Agencies provided all materials for the three components of the project. Community's input is less than that from outside, and is mainly in the form of labour. It could be that this approach is killing initiative or just not freeing the creative capacity of the community. (Dhlembeu 1986, pp. 38-39)

In the case of Chiweshe the 'donor dependency' syndrome is probably not the result primarily of the LWF's contribution, but may have been inherent in project design from the outset. (Note comments on 'top down' selection in Section 2.3.3 above). However, the all-embracing nature of community support services, provided on highly favourable terms, probably contributes to the syndrome and LWF is playing a central role in this regard.

Thus, despite the best of intentions and a seemingly well-founded objective of assisting communities in a comprehensive and integrated fashion, an unintended consequence of this approach may be the stifling of community initiative and self-reliance. It is reported, however, that in other LWF projects a different approach to funding has been taken - e.g. in Mataga and Chichevo grazing schemes, where significant contributions of money are made by the communities concerned. There may be an important lesson in this, which will be discussed below.

### 3.3.3 Variations in fencing costs

Table 5 shows the total fencing costs and cost per hectare for the different grazing schemes based on the estimates in the original or revised project proposals. Data on actual costs incurred in implementation is either unavailable or unreliable.

Costs have varied greatly from one scheme to another. In the earliest schemes to be planned, Chiwundura and Zinyoro, costs are $12 and $13 per ha. respectively. Costs per ha. are also below $20 for Ntabazinduna and Chiweshe.

In Chikowore, Kowoyo and Zimuto costs fall between $20 and $40 per ha.

In Mwenezi, Muchinji and Denhere-Katsvamutima costs are very high, ranging from $48 per ha. to $81 per ha. in the case of the latter.
What accounts for this variation? Inflation-based price rises may be partly responsible, but does not explain the difference between Mwenezi ($48 per ha., costed in 1984) and Chiweshe ($16 per ha., costed in 1985).

The size of the scheme may be another factor, but again there are inconsistencies in the data. Schemes less than 1 000 ha. in extent vary from $13 per ha. (Zinyoro) to $81 per ha. (Denhere-Katsvamutima).

Individual variations in design (e.g. the number of 'kinks' in fence lines, numbers of gates etc.) may also account for cost variations. It is thus difficult to account for the variability in any systematic manner.

Table 5: Costs of fencing (materials and labour) *(as given in project proposals)*

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Year of planning</th>
<th>Ha.</th>
<th>Fencing costs ($)</th>
<th>Cost per ha. ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chiwundura</td>
<td>1982</td>
<td>1275</td>
<td>14 637</td>
<td>11.48 (12)</td>
</tr>
<tr>
<td>Zinyoro</td>
<td>1982</td>
<td>744</td>
<td>9 629</td>
<td>12.94 (13)</td>
</tr>
<tr>
<td>Denhere-Katsvamutima</td>
<td>1983</td>
<td>241</td>
<td>19 500</td>
<td>80.91 (81)</td>
</tr>
<tr>
<td>Chikwore</td>
<td>1983</td>
<td>602</td>
<td>16 552</td>
<td>27.50 (28)</td>
</tr>
<tr>
<td>Mwenezi</td>
<td>1984</td>
<td>4 472</td>
<td>216 290</td>
<td>48.37 (48)</td>
</tr>
<tr>
<td>Ntabazinduna</td>
<td>1983</td>
<td>6 870</td>
<td>121 383</td>
<td>17.67 (18)</td>
</tr>
<tr>
<td>Kowoyo A, B, C</td>
<td>1984</td>
<td>646</td>
<td>19 547</td>
<td>30.26 (30)</td>
</tr>
<tr>
<td>Muchinjiike</td>
<td>1985</td>
<td>305</td>
<td>19 362</td>
<td>63.48 (63)</td>
</tr>
<tr>
<td>Zimuto</td>
<td>1985</td>
<td>1 084</td>
<td>38 897</td>
<td>35.88 (36)</td>
</tr>
<tr>
<td>Chiweshe</td>
<td>1985</td>
<td>3 540</td>
<td>56 033</td>
<td>15.83 (16)</td>
</tr>
</tbody>
</table>
3.3.4 Alternative approaches to funding

A key issue in the project is the degree of community participation in the planning, implementation and management of a grazing scheme. The stipulation that there be a substantial contribution to meeting the cost of a Microproject from the community itself is intended to guarantee a requisite level of commitment. However, as Chapter 4 will show, levels of commitment have varied between schemes, and in some cases are clearly inadequate. The question can then be asked: are there alternative approaches to funding which can yield more positive results?

Of the schemes which have involved cash contributions of more than $10 per household, it is interesting to note that in two of these the level of community participation has been rated as 'high', and in three it has been rated 'fair'. Although clearly not in itself a guarantee of high levels of participation, this seems to indicate that it may well be an important contributory factor.

Other examples from grazing schemes not funded by the EEC support this contention. Thus in Mataga Ward in Zvishavane District the LWF is providing funds on the principle of matching local contributions (Chavunduka, personal communication). In Chamatamba in Mhondoro, the community is not being assisted by any donor but is raising funds towards fencing through its own efforts. In both these schemes levels of commitment are reported to be high.

These examples also demonstrate that communities can raise considerable sums of money from their own resources. It is therefore recommended that the principle of matching contributions be considered as an alternative approach to the funding of grazing schemes.

Although a more detailed study of the feasibility of this proposal would need to be carried out, two important aspects are immediately apparent.

The first is that of the time-scale of donor funding. Donors prefer to complete disbursements within a relatively short period of time, and to see the results of their assistance fairly quickly. Given the relatively large sums of money involved in fencing of grazing schemes, however, ($10 000 appearing to be about the minimum amount required), these requirements would be unattainable if communities were to be asked to raise something like $5 000 to $10 000 themselves.

In both Mataga and Chamatamba it is taking several years for the communities to raise the cash they need. Households make small contributions when and as they are able to; in drought years any kind of contribution is difficult. In Chamatamba funds are being raised by means of small-scale projects (one is a pen-fattening scheme) and through winning prize monies in conservation competitions organised by the Natural Resources Board. Small sums of money are accumulated over time before fencing is purchased.

Thus accepting the principle of matching contributions would mean, as a corollary, accepting much longer delays in disbursement of funds, and a longer time-schedule for project completion. In the present framework of
funding procedures this may not be possible. It is therefore recommended that the possibility of setting up a "Fencing Trust Fund" be investigated, from which matching contributions be made to communities which have already raised funds themselves. Other alternatives also need to be considered.

The second aspect is that of the principle of equal contributions from all members of the community. Although this is the general rule in most schemes, in a community like Kowoyo C, where $22 per household was agreed as the standard contribution, a third of households have not yet contributed this sum. It is rare for a community to claim that everyone is fully paid-up. Given the inequalities in rural society, the fact that a significant minority own no cattle at all, and that a proportion of households are headed by widows, this is not surprising.

It may be more realistic for communities to accept some kind of sliding scale of contributions. In Muchinje, the by-laws state that when the scheme is complete that cattle owners only will contribute $10 per annum. This example shows that the principle may be acceptable to others. It is recommended that this suggestion also be investigated in a study of alternative approaches to the funding of grazing schemes.

3.4 Agritex performance in planning, supervising and monitoring the project

Agritex has been the major implementing agency in the project, and a synoptic overview of performance in respect of the various phases and aspects is in order.

3.4.1 Planning

As discussed in some detail in Section 2.3.3, the location of grazing schemes followed a process of self-selection in the majority of cases, and a 'bottom up' approach was usually adopted. Where a 'top down' approach was used numerous problems have followed. The selections of the Changwena scheme in Chirumanzu and the Gwenzi scheme in Zvimba were clearly mistakes but ones which were quickly recognised and corrected.

The technical planning of grazing schemes is carried out by staff at district, regional or provincial level, and then subjected to a thorough check at Agritex Head Office. Although this has sometimes resulted in delays, it allows faults in planning to be corrected and is undoubtedly justified.

An inconsistency, however, is found in relation to livestock other than cattle - in Kowoyo these were excluded in the calculation of livestock units, whereas elsewhere they have been included. Consideration was not generally given to how small stock would be managed within the grazing scheme (see Section 2.3.1).

Planning is based on data on livestock holdings collected by local extension staff. Often this is poorly done and the data are highly unreliable.
(a) Data collection is irregular and unsystematic.

(b) Extension Workers sometimes do not fully understand how to calculate Livestock Units.

(c) Different conversion factors are used to calculate Livestock Units (e.g. some staff use a factor of 0.8 for cows, others use 0.7 and this does not vary systematically with Natural Regions).

It is recommended that Agritex's Animal Production Branch address this weakness by working out guidelines on livestock data collection, and by means of staff training.

There is also a good deal of confusion surrounding the vexed issue of stocking rates and carrying capacity. Carrying capacity should be based on a detailed veld condition assessment, according to recommended planning procedures, but currently many extension staff are using 'rule of thumb' figures based on general estimates of carrying capacity for different Natural Regions. At the same time there is a recognition amongst field personnel that these 'ideal' figures, and the recommended stocking rates that derive from them, have little relevance to most communities in the communal areas. Many officers report that cattle condition is good despite high stocking rates, and appear willing to accept that true carrying capacity may be higher than their estimates, but are confused about how to incorporate this perception into planning procedures.

Annexe B summarises briefly the current debate on carrying capacity. It would appear urgent that this issue be addressed within Agritex so that the real difficulties faced by field staff in planning grazing schemes may be alleviated. A programme of applied research into appropriate stocking rates for communal areas is recommended.

Consultation with communities at the planning stage is important to ensure that paddock boundaries are respected and to facilitate community commitment. In most cases this has been adequately carried out, with community leaders making the basic demarcation between arable and grazing land before planning begins. Agreement of boundaries with neighbouring communities is also important in the early stages. Agritex staff are generally very aware of this issue and pay careful attention to it, but inadequate consultations were apparent in Denhere-Katsvamutima and Chiweshe (where ARDA planners had major responsibility). Even where extension staff have made every effort to resolve a dispute, often bringing in both traditional leaders such as Chiefs as well as elected Councillors, some disputes have proved to be an intractable problem (e.g. Muchini/ike).

Cost estimates have caused some of the most common problems, either because an unacceptable cost apportionment was submitted, or because of price rises. Some cost estimates did not contain any provision for contingencies such as these, and it is recommended that in future realistic allowance for inflation be made.

Finally, it is reiterated that inadequate consideration was given in the planning of grazing schemes to institutional issues (see Section 2.3.1) and to the range of relevant outcomes and outputs (see Section 2.3.2).
3.4.2 Supervision

Agritex staff at grassroots level (Extension Workers and Extension Supervisors) have been responsible for pegging fence lines, assisting and advising communities on the erection of fences and generally overseeing the implementation of the plan. Respondents from communities who were interviewed in the course of the field survey were unanimous in their opinion that this assistance had been invaluable. The generally high standard of fencing bears out their view.

An exception is possibly the case of Zinyoro, where the community have consistently used inappropriate local tree species for fencing poles. However, this probably reflects a problem of community motivation rather than inadequate supervision, since the people concerned appear to have known full well that their poles would not last very long.

3.4.3 Monitoring

Agritex has its own internal system of reporting on projects, and in addition staff are required to make regular reports (usually on a quarterly basis) on donor-assisted projects such as grazing schemes. In general, this has not been done, reports on progress in the schemes tending to appear on an irregular basis and often only in response to a request for a report from the donor. This was more often the case before 1986 than after, however. Since the beginning of that year the Assistant Chief of Animal Production has been given specific responsibility for grazing schemes, and he has managed to achieve a much more regular and systematic monitoring of progress.

However, a basic weakness has continued to manifest itself - this is the problem of over-positive reporting, and a neglect of the problems, difficulties and deviations from plan often to be found in these projects. The most striking example of this is in Zinyoro, where reports have appeared at various times stating that boundary fencing was complete, that community motivation was improving, that the project was 80 percent complete, and so on, even though none of these were true. Provincial and Head Office staff appear to have failed for a long time to perceive that this was a highly problematic scheme, perhaps requiring further investigation or some kind of intervention. Clearly the monitoring system within Agritex has been at fault in this instance.

In Kowoyo reports on the scheme were consistently optimistic from the beginning, and although some fence cutting was reported in October 1985, the complexity of the social situation within the community (e.g. the problem of 'squatters', the significant number of unemployed ex-herders, and the problems caused by the politically powerful Chairman of the joint committee) has never been reflected adequately.

In Chiweshe a recent report from the Agricultural Extension Officer states that a 'strong self-help attitude has developed amongst the community', whereas the strong impression here is that a strong donor-dependency has developed as a result of the project.
In Ntabazinduna the problem of over-optimistic reporting manifested from the very beginning with the assertion that 'there is no doubt that the whole community is aware of the need to destock'. It was later stated that the community had agreed to the principle of allocating equal grazing rights to community members. Neither of these assertions were based on extensive consultations within the community, but were the result of discussions with some community leaders who clearly knew what assurances to make in order to ensure donor assistance.

In Zimuto the fact that fencing materials were insufficient in Mafuzha and Masinba schemes was never properly reported on, and the boundary dispute between these two communities was not reflected in progress reports.

It may be argued that reporting on this kind of detail is unnecessary and time-consuming. However, the consequence has been a lack of generalised discussion within Agritex of the kinds of problems that may commonly arise in projects such as grazing schemes, and thus of ways and means to avoid these problems or tackle them when they arise. In fact these kinds of difficulties are discussed by extension staff when they meet informally, but rarely have they been put high on the agenda for formal discussion. A valuable opportunity to learn from experience, and in particular from experience of the common social and institutional problems, has largely been missed.

A different kind of weakness in the monitoring system has arisen where the implementing agency has not been Agritex but some other agency, as in the case of Mwenezi (D.A's office), and Chiweshe (ARDA), and latterly Venhere-Katsvamutima (LWF). Information on the progress of these schemes has not always been available within Agritex itself, resulting again in the missing of an opportunity to learn from experience. This has been particularly true of the Mwenezi land reform programme, where Masvingo Province is well acquainted with the schemes but Agritex Head Office has virtually no information at all.

A positive development was the initiation in 1986 of the Veld Trend Monitoring programme by Agritex Veld and Pasture Specialists in Animal Production Branch. This will provide data on veld condition trends in seven grazing schemes, one in each province, over a five year period, and perhaps begin to fill in some of the missing gaps with regard to knowledge of fodder production under high stocking rates in communal area conditions. Recently the collection of animal performance data, including regular weighing of different classes of cattle, was included in this monitoring exercise.

A major problem encountered in carrying out this evaluation was the lack of an adequate data base. Thus a reasonably accurate estimate of the economic impact of grazing schemes could not be made, partly because only a small number of schemes have become operational and partly because reliable data on livestock numbers and performance, and on other relevant aspects such as cropping area and crop yields, has not been collected. (Other consultancy reports such as Sandford's 1982 study also refer to this problem, and have made recommendations for alleviating it).
It is recommended here that the Veld Trend Monitoring Programme be expanded to include the collection of relevant socio-economic data in the grazing schemes concerned. Agritex’s Monitoring and Evaluation Unit are well placed to assist in the design of a monitoring programme and possibly in the collection and analysis of data. In some respects relevant data collection may already be planned for in terms of the department’s proposed Management Information System, and it may be that the cost of complementing these efforts will not be unduly high.

3.4.4 The problem of unreported plan modification

A problem that contains elements of planning, supervising and monitoring is that of the major modification to the original plan which then goes unreported, and in some cases, unrecorded on any map or plan.

In Chiwundura, for example, the final location and size of paddocks is very different to that in the original plan drawn up in 1982. Yet the local extension worker was carrying around the original plan when interviewed in October 1987, and had only the vaguest idea of what was actually on the ground. (She is a relatively recent incumbent of the post.) The situation was further complicated by the fact that the community is not using the recommended SDG system but a variant of a rotational resting system, the veld in the paddocks being grazed mostly in the winter months. For most of the summer their animals graze on unfenced communal grazing outside the paddocks. Exactly when the animals are grazing which areas was extremely difficult to ascertain, and certainly extension staff appeared confused.

In this situation it is extremely difficult for local extension staff to give appropriate advice to farmers, and impossible for visiting Provincial or Head Office specialists to diagnose the problems and advise extension staff on, for example, such issues as length of stay in paddocks.

In Chiweshe the original plan (reproduced in Annexe A) has been changed many times, and yet these changes have not been properly recorded anywhere. Extension staff and the LWF officer could give only an approximate indication of fencing lines. The implications of these changes for materials and costs appeared not to have been worked out. The changes have been made to accommodate community needs.

Again, while the positive side to this is the community participation that it allows, the negative side is a lack of clarity on the management implications. Planning then takes place in an ad hoc, unsubstantiated manner and may result in poorly laid-out schemes.

These two are the most extreme examples, but in virtually every scheme visited significant changes to the original plan had been made, and most of these had gone unrecorded. It is recommended that adaptive planning be fully recorded and reported on for the benefit of present and future extension staff and to draw out general lessons for grazing scheme design.
3.5 Rural support services

Assessed in this section is the extent to which government or parastatal service organisations have been supportive of the grazing schemes funded by the E.E.C.

3.5.1 The Department of Veterinary Services (DVS)

This Department is responsible for the prevention and control of animal diseases, in both the commercial and communal sectors. Before independence the activities of DVS were mainly of a regulatory nature, but since 1980 it has shifted its emphasis increasingly towards promoting production. (GFA 1987, p.42).

The activities of the Department of direct relevance to operating grazing schemes in communal areas are:

- the supervision of about 2 000 diptanks, by 1 000 Dip Attendants, each dip servicing between 200 and 250 farmers and about 1 200 - 1 700 head of cattle. Cattle have to be dipped once a week between November and June and fortnightly between July and October. The Dip Attendant keeps a register of all cattle owners in his area and the number of cattle dipped. Cattle are also inspected, and vaccinations and treatments are carried out as required.

- the operation of 220 Animal Management and Health Centres (AMHCs), manned by Veterinary Extension Assistants (VEAs). An Agritex Extension Supervisor or Extension Worker will also be based at the AMHC. The Centres will aim to provide a diagnosis, treatment and advisory service at the ward level. The dip attendants are to be supervised by the VEAs, who will systematise herd inspections and data collection. The construction of AMHCs began in 1986, and the last batch of VEAs were due to finish their training by the end of 1987.

These activities together provide a basis for the prevention, control and treatment of animal diseases in the communal areas, and opportunities to promote improved animal management practices.

With regard to grazing schemes, the location of diptanks has sometimes been an occasion of conflict between communities. In Denhere-Katsvamutima and Chikowore the necessary access of outsiders to a dip tank located within the scheme has caused problems with the operation of the scheme. In Muchinjiike access to a dip tank outside the scheme by grazing scheme members has been problematic. In these cases DVS has been sympathetic, and in the case of Denhere-Katsvamutima agreed to construct a new dip outside the scheme for non-members to use, even though this meant that the existing dip would be used by a much smaller number of farmers than is normally the case. In Muchinjiike negotiations were taking place in late 1987 for the reallocation of farmers in the scheme to another dip tank, to reduce inter-community conflict.

In two other cases, DVS has been supportive of the desire of grazing scheme members to have a new dip tank built and thereby reduce long walking distances. In Chiweshe and Kowoyo A dip tanks have been built using
community labour and donor funds, but DVS has supervised construction work and agreed to administer the diptanks.

In general, then, DVS has been supportive of grazing schemes with regard to the location of diptanks.

In respect of the Animal Management and Health Centres, none had become operational by the time of the field survey in October 1987, and thus no impact could be discerned as yet.

Finally, the collection of data on animal numbers by dip attendants has been supportive in an indirect manner, by providing Agritex staff with data for planning purposes.

3.5.2 The Cold Storage Commission (CSC)

The CSC is one of the parastatal marketing boards operating under the authority of the Agricultural Marketing Authority (AMA) and acts as the sole or residual buyer at annually determined prices of beef, a controlled product.

According to the GFA report (GFA 1987, p.45) the share from communal area cattle of the total CSC throughput of around $150 million per annum amounted to $14 million in 1984 and $15 million in 1985, the rest coming from the commercial sector. While the CSC's present supply composition is about 60 percent high quality beef and 40 percent low grades, the domestic demand is 90 percent low grades. Thus 300,000 additional cattle from the communal areas could be absorbed, allowing more high quality beef to be exported (GFA 1987, p.46). The CSC is therefore attempting to increase the supply of beef from communal area farmers.

At present CSC operates a network of 125 sale pens in the communal areas, at which regular auction sales are held. However, many farmers have to travel 20 - 60 kms to the nearest sale pen, and it is CSC's declared intention to raise the number to 250, i.e. more or less one sale pen per four wards.

The CSC is the main buyer of cattle at the sale pen auctions, although a small number of private sales do take place. Communal area farmers also sell animals to local butchers, as well as to other farmers. (According to data collected by Sandford in 1982 other farmers are the major purchasers of cattle, mainly in order to build up breeding herds and draught teams. Sandford 1982, p.115).

Other incentives for increased cattle sales to CSC are the increased prices for lower grade animals announced in 1986 and, more recently, the extension of the Cattle Finance Scheme to farmers in the communal areas. This is known as the Livestock Improvement Scheme and makes credit available to Communal and Resettlement farmers 'wishing to expand their cattle holdings in accordance with recommended stocking rates or to improve the quality of their stock.' Finance is available only to farmers operating within grazing schemes, either to whole villages, to farmer groups, or to individuals within the scheme (in which case the farmer must apply through the Village Committee).
The criteria applied are that applicants must have security of tenure; that the grazing area must be fenced and paddocked and contain adequate handling, dipping and watering facilities; that applicants have a registered brand to identify the cattle; that applicants be credit-worthy; that applicants be competent in cattle management; and that a deed of suretyship be signed.

Credit is offered for different classes of animals (breeders, grazers, feeders, bulls and calves), for varying periods of time and at interest rates ranging from 12.5 percent to 14 percent per annum. Cattle remain the property of the CSC and must be returned to CSC for slaughter or disposal within an agreed period of time. Progeny of female animals are the property of CSC.

Applications for the first finance period in early 1988 were closed in November 1987. In none of the grazing schemes visited in October did farmers or extension staff report any applications to join the scheme. Thus the scheme has had no impact thus far on any of the E.E.C. funded grazing schemes. (The potential impact of the scheme is discussed below.)

With respect to the existing network of sale pens, on several occasions farmers mentioned the long distance to take cattle for sale to CSC as a constraint (e.g. in Denhere-Katsvamutima, Zimuto, and Chiwundura). Sales to local butchers took place partly because of the distance factor, partly because they offered better prices.

Although communal area farmers do not keep cattle primarily as beef animals, their other functions being far more important, occasional sales in order to meet the need for cash do play a role in the livestock production system. Thus in Table 6 ('Perceived benefits of grazing schemes') one of the parameters of improved cattle performance mentioned by a fair number of farmers was 'higher prices when selling'. Since the local market may not always be open to a sale, the CSC sale pens provide an opportunity to make a sale when the need arises. This is particularly true in the drier southern regions where crop production is inherently more risky and livestock are a more important source of cash income.

The support services provided by CSC to grazing schemes in the project have thus been limited thus far, but may play a more important role in the future.

3.6.3 The Dairy Marketing Board (DMB)

The DMB is the other statutory board serving the livestock sector. Although in the past it was oriented entirely towards the large scale commercial sector, in recent years the DMB has begun to focus on dairy development in the small-scale commercial and communal sectors as well.

The pilot project in the communal areas has been located at Kowoyo, and the DMB Dairy Development Section has played a major role in stimulating interest in the three grazing schemes found there. The rationale for these efforts is the diagnosis that feed supply is the critical limiting factor for milk production and that improvements in breed (genotype), health and management will have minimal impact unless the quantity and quality of feed supply to milk producing animals is improved. Since the
bulk of forage is derived from communally grazed veld, improved management and production, through the adoption of a grazing scheme, is seen as necessary.

The DMB's efforts at Kowoyo have been complementary to those of Agritex, who have played the leading role with regard to planning and implementation of the grazing scheme. The DMB's main focus has been on the promotion of Dairy Committees (made up of interested farmers), and the organisation of a milk collection scheme. Improved bulls and advice on management have also been provided, and the growing of supplementary forage on individually held arable land has been promoted. Agritex and DMB staff at the local level work hand in hand. The DMB also played an important role in the transport of fencing materials to the Kowoyo Schemes, and continue to make funds available for fence repairs.

Thus the Dairy Development Section in the DMB has made a significant contribution to the planning and implementation of three of the grazing schemes in the project.

3.5.4 The Agricultural Finance Corporation (AFC)

Communal area farmers can apply to the AFC for medium term loans for the purchase of draught oxen, but none of the grazing scheme members who were interviewed reported the use of this facility. AFC do not at present keep records of the numbers of farmers who have taken out loans for this purpose, and so it is difficult to assess the significance of this service.

3.5.5 Potential impact of rural support services

At a workshop held by the Department of Research and Specialist Services in February 1988 to discuss research priorities for the communal area livestock sector, a number of papers suggested that improvements in productivity could only be achieved where communities had begun to (a) manage the basic feed resource of the veld and (b) control the movement of stock. Much stress was therefore laid on grazing schemes as the most likely context in which innovations aimed at improving quantity and quality of feed, animal health, breeding practices, milk production etc., would be adopted by communal area farmers.

Service organisations such as CSC, DVS and DMB appear to support this view. The Coordinated Agricultural and Rural Development (CARU) programme in Gutu District supported by GTZ, similarly emphasises the centrality of a grazing scheme in livestock improvement projects. The three cattle packages recommended by the GFA consultancy report of 1987 all make mention of improved veld management, rotational grazing and the need for community level cooperation.

Thus there appears to be a broad consensus amongst development agencies that grazing schemes provide the basis for more generalised improvements in the productivity of communal area livestock, particularly cattle. The positive response of communities adopting grazing schemes to innovations such as improved bulls (e.g. Denhere-Katsvamutima, Tagarika) pasture legumes (e.g. Chikowore), milk collection (Kowoyo), regular dosing and
castration (e.g. Chikowere, Koweno, Zimuto, Tagarika) would seem to corroborate this view.

What, then, is the potential impact on grazing schemes of increased levels of the existing forms of support, and of new forms of support such as the Animal Management and Health Centres, and the CSC's Livestock Improvement Scheme? Answers to these questions can only be speculative in character, and in any case fall outside the terms of reference for this evaluation study. They are therefore dealt with only briefly here.

In general, programmes and projects which aim at enhancing the productivity of livestock would indeed appear to stand a better chance of succeeding where a community has adopted a grazing scheme, and where levels of participation indicate the scheme may well succeed. Also important, however, is the resource base of the community - this must provide an adequate supply of the basic resources (grazing land and arable land) in proportion to the population, both present and future, if the scheme is to prove viable (see Section 4.4).

Thus, the impact of an expanded extension programme aimed at encouraging the adoption of improved management and disease control practices, such as the one planned by DVS and Agritex and based at the Animal Management and Health Centres, is likely to be significant in communities with grazing schemes. The factor of distance from the AMHC may, however, prove critical, and this needs to be carefully monitored in the first year or two of the AMHC's operation.

The impact of the CSC's Livestock Improvement Scheme is more difficult to anticipate. On the positive side, past experience with pen-fattening schemes in communal areas shows that farmers are willing to participate in small scale beef production projects when the ratio of costs to benefits is advantageous. The pen-fattening being presently undertaken at Chamatamba grazing scheme in Mhondoro demonstrates that these projects can indeed be undertaken by communities working together as a group.

More negatively, the Improvement Scheme involves going into debt with the CSC and paying interest on this debt, and communal area farmers may not welcome this. The scheme is fairly complex in its modus operandi and this may prove an obstacle to its adoption. Participants in the scheme are thus likely, at least initially, to be limited to those few farmers who own herds of ten or more head. This minority may view the risks involved with greater equanimity, and are more likely to be sales-oriented than the majority of farmers, even within a community which has adopted a grazing scheme. It is possible, therefore, that the Scheme will have only a limited impact.
CHAPTER FOUR
PROJECT ASSESSMENT

4.1 Impact on populations and institutions

4.1.1 Common property management: an emerging theme in development

As Chapters One and Two of this report make clear, a central issue in development planning in Zimbabwe at the moment is the question of land use planning in communal areas. Government has announced its intention to restructure settlement and land use in order to make optimal use of limited resources; at the same time the participation of the local community in this exercise is envisaged, utilising the recently created Village Development and Ward Development Committees (VIDCOs and WADCOs).

But resource use has to be actively managed, not only planned for and here the active participation of the resource users themselves is not merely desirable — it is essential. Since the system of land tenure in the communal areas is likely to remain at root communal in nature, many of the critical resources are 'common property resources': not owned or managed by individuals but belonging to the community which uses them, with access and exploitation governed by rules and regulations both formal and informal.

It is increasingly being recognised that these rules (norms, conventions) and the social and legal institutions which buttress them are at the centre of the problem of resource management in many developing countries. Older 'traditional' mechanisms are not always sufficient to ensure sustainable use as populations grow, markets emerge and communities are integrated into wage labour economies. New institutions may need to emerge, or older ones may need to be adapted to new tasks. A growing body of scholars is now actively seeking to understand the workings of traditional systems of joint-control drawing out lessons for the contemporary situation, and addressing the need for action-agendas. Common property management is a strongly emergent theme in both development studies and development projects (see National Research Council, 1986).

Grazing schemes in Zimbabwe's communal areas involve the modification of traditional tenure rules and the development of a new kind of resource management institution, the committee. Sometimes management decisions and procedures are embodied in sets of by-laws, either formally written down and officially sanctioned or else informally held in the memories of community members. They are thus a prime example of the evolution of a common property management system. However, grazing schemes are by no means assured of success; failure is just as possible an outcome. Thus it is important to establish whether or not grazing schemes are succeeding, under what conditions they succeed, and what the reasons are for failure.

A survey of 'expert opinion' carried out in January 1987 asked policymakers and planners active in communal area development the question: 'What are the essential requirements for grazing schemes to succeed?' Many replied that in addition to economic and technical viability,
questions of community organisation and mobilisation are vital. The importance of identifying cohesive communities and encouraging active community participation in both planning and management was emphasised (Cousins 1987, p.64).

This evaluation study has, for all these reasons, attempted to assess the degree of community participation in grazing schemes, analyse the implications for the evolution of effective common property management in the communal areas, and develop a set of indicators for assessing the likelihood of success.

4.1.2 General observations

In the course of field visits to the various grazing schemes and legume plots a total of 83 interviews were carried out, sometimes involving more than one person at a time. The interviews were semi-structured, allowing in-depth discussion of issues as they arose. An important focus was the relationship between the individual and the community, and the individual and the common property resource of grazing land. Also discussed at some length was the question of defining a maximum stocking rate for the grazing scheme, and how those households presently owning no cattle could be accommodated.

Some of these issues were also raised in the seven group discussions which were held.

The following general observations are drawn from these interviews and discussions.

(a) The idea of community is powerfully present in communal area social life and comprises an important component of household identity. Where people live in their 'home' in a very basic way - it is their place of origin, in a social economic and spiritual sense. The rights to build a homestead, plough the land and graze animals, which remain important even to urban-based households, are obtained by virtue of recognised membership of a home community. This membership is conferred and maintained by a network of social relationships, into which one is either born or requests entry. Membership implies obligations as well as rights, and thus access to resources also functions as a mechanism of social control.

The role of this definition of 'community' in the traditional land tenure system has been well-described before (e.g. Hughes 1974), but it is important to reiterate its continuing importance. In discussing grazing schemes with rural householders the major assumption underlying many of their ideas and arguments was the notion of community membership, with its concomitant rights and obligations. Thus, for example, the idea of excluding non-cattle owners from membership of the scheme was unthinkable, and the rule that all households should contribute equally in terms of labour and cash was universally agreed to be the only acceptable one.

In the standard set of grazing scheme by-laws which Agritex has advised communities to adopt, number 8 states that the cost of fence repairs and maintenance will be shared 'probably on the basis of the number of stock run in the scheme' (see Annexe C). This notion of differential
obligations was strongly rejected by all respondents, despite the fact that cattle ownership patterns are highly skewed (see Cliffe 1986, p.31). Despite manifest inequalities between households, community is a concept of central significance.

(b) **There is a strong connection between a community and the natural resource base.** Part of what defines a community is shared use of grazing, water and woodland resources. Grazing schemes build on this connection in proposing new rules of access and exploitation, an important aspect of which is the exclusion of outsiders by means of permanent fencing. The delineation of community boundaries thus becomes a much more pressing matter than before.

The threat of exclusion can also be used to bring dissenting members of the community into line - e.g. in Muchinjike one farmer refused to move out of the grazing area and the fence line had to be adjusted accordingly. However, he is banned from using the grazing land until he joins the scheme, and will have to move the fence back to its planned position when he does so.

(c) **Traditional leaders continue to play an important role in community decision-making, particularly with regard to natural resources.** This is true mostly of kraalheads (samusha, sabhuku), but sometimes applies also to headmen (sahunu) sub-chiefs or chiefs. Thus all the grazing scheme committees contain kraalheads and often they are in the post of Chairman.

Traditionally the allocation of land and other rights to individuals was made by the chief as the ultimate tribal authority, but approaches were made initially to the kraalhead, whose recommendation was usually accepted by higher levels of the tribal hierarchy (Hughes 1974, p.40; Holleman 1969, p.88). After Independence District Councils were given the responsibility of allocating land, but to 'persons who according to the customary law of the community ... are regarded as forming part of a community' (Republic of Zimbabwe, 1982c, p.136).

It is my strong impression that at a localised level kraalheads are still playing an important role in decisions over land allocation. Thus recent institutional innovations may be reinforcing rather than undermining their position as the representative of community ownership of natural resources. If this is the case, then innovations which are perceived to radically undercut their authority may be expected to be resisted (for example, perhaps the allocation of equal grazing rights which can then be exchanged between community members).

(d) **Communities adopting grazing schemes demonstrate a keen sense of proprietorship over their common property resources.** This was evident in the strength of feeling with which many people spoke of 'our' grass and trees and fences, in the animated manner in which disputes over boundaries are talked about, and in the pride with which members of some of the operating schemes described improvements to either their void or their cattle. (This is a generalisation, of course, and true to a greater or lesser extent in different communities).
Was this sense of proprietorship already there before the scheme, or has it developed as a result of the scheme? My impression is that the often considerable amounts of labour time and money that people have invested in a scheme, the sacrifices involved in relocating homesteads and arable lands, and the commitment required to argue a case in sometimes long, drawn-out boundary disputes, all contribute to a developing awareness of the need to conserve and manage scarce resources.

This raises the question of the motivation for adopting a scheme. Each respondent interviewed was asked to list the benefits of grazing schemes, and the results are shown in Table 6 below. Only the first three benefits mentioned were analysed.

### Table 6: Perceived benefits of grazing schemes

<table>
<thead>
<tr>
<th>Benefit</th>
<th>First benefit mentioned (%)</th>
<th>Second benefit mentioned (%)</th>
<th>Third benefit mentioned (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced herding</td>
<td>44</td>
<td>32</td>
<td>21</td>
</tr>
<tr>
<td>Grass growth improved</td>
<td>33</td>
<td>21</td>
<td>8</td>
</tr>
<tr>
<td>Cattle performance improved</td>
<td>20</td>
<td>38</td>
<td>58</td>
</tr>
<tr>
<td>Protection of arable lands</td>
<td>3</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>-</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

**Note:** Performance includes mentions of cattle condition, draught power, calving percentage, milk production and sales.

Now it is clear that a major reason for adopting a grazing scheme is the reduction in the labour time required for herding cattle which is afforded by fenced paddocks. This benefit ranks first in the list of benefits first mentioned, and second in the list of benefits mentioned second and third. This accords with the results of other surveys (Cousins 1987, p.47) and is not surprising given the growing significance of the labour constraint in communal area farming systems (FSRU 1985, p.35; see also the discussion of this issue on p.72).

However, there is a strong connection in people's minds between increased grass growth, as a result of better veld management and improved cattle performance. These two benefits are thus inextricably linked, and if added together the data show that improved production of grazing land is the major perceived benefit of a grazing scheme. Hence the developing sense of community proprietorship over grazing land is rooted in perceptions of increased individual benefits.
People were also questioned on the benefits to non-cattle owners. (Only a small minority of respondents were non-owners themselves, since committees were the main source of respondents and the majority of committee members are owners. However, the replies of non-owners were entirely consistent with those of owners.) Benefits to non-owners are of two types:

- present benefits: protection of arable lands, cattle borrowed from owners in better condition, cattle lent more readily, more thatching grass available.
- future benefits: grass in better condition when cattle acquired.

The reciprocal relations which exist between owners and non-owners of cattle, either through kinship, general community membership, or because of mutual economic benefits, ensure that non-owners are generally able to plough their lands each season. This fact, together with the retention of the right of access to communal grazing, means that differential ownership of cattle does not in itself necessarily undermine community solidarity, although this is an aspect in need of further research.

(e) **Members of grazing schemes reject the idea of maximum stocking rates in the short term, but acknowledge the existence of upper limits which cannot be exceeded without damage to the resource.** Very few respondents felt (or were willing to admit) that their grazing schemes were overstocked or near their upper limits. Most were of the opinion that rotational grazing would result in better grass production, allowing cattle numbers of increase as well as improving cattle performance (see Table 6 above). Non-owners acquiring cattle in due course would then be able to benefit directly from participation in the scheme.

At the same time, most respondents also stated that at some point the upper limits would be reached, and veld and therefore cattle would begin to suffer. Some agreed that the community would at that stage have to institute rules governing the numbers of animals on the scheme; others felt that just persuading owners of older, less productive animals to sell these off would be sufficient. No-one was willing or able to put a precise figure on this upper limit, but some people indicated that this knowledge would develop as they gained experience of grazing management. In Chikwore scheme, one respondent illustrated his point about the existence of an upper limit by referring to his observation that leaving animals too long in one of the paddocks resulted in decreased grass production.

When questioned on current levels of cattle performance, which were acknowledged to be low, most respondents indicated that drought was a major cause, as was the uncontrolled access of neighbours cattle to 'their' grazing.

Can cattle numbers in fact increase beyond present numbers without irreversible damage being done to the productivity of grazing land? The validity or otherwise of this view will be discussed in a later section.
(f) Grazing scheme by-laws that have emerged from community discussions show an awareness of the need to conserve and manage resources but do not include provisions for limiting stock numbers. Some sets of by-laws have been signed by committee members as pre-conditions for obtaining donor assistance - these were generally drawn up and proposed by Agritex staff. An example is given in Annex C - these are from Kowoyo, but basically the same set was signed by the four Zimuto schemes. The first three by-laws all relate to the setting of a maximum stocking rate for the scheme.

In Chikowore the community also agreed to adopt by-laws which stipulate a maximum stocking rate, in their case specified as 100 LUs. The number of livestock units per household is then to be adjusted downwards as non-owners acquire cattle and move them onto the scheme.

In Chiweshe an agreement was signed between representatives of the local community, the District Administrator, the Council Chairman and the two donor agencies involved, the EEC and LWF. This also stipulated a maximum stocking rate, which was taken as the existing number of LUs at the start of the project.

In Mwenezi the District Council has adopted a slightly modified version of the Communal Land (Model) (Land Use and Conservation) By-laws gazetted in 1985. This allows the Council to set aside areas for grazing as part of a plan, and then specify the maximum number of livestock to be grazed, which owners may use the area, and the maximum number permitted for each owner. These have not yet been ratified by government and are not yet operative.

These examples cover 15 different grazing schemes (see Table 7). Yet in none of the interviews with members of these communities did anyone cite the setting of a stocking rate as one of the by-laws which had been agreed to. Instead, in these and in the other schemes in the project (with the exception of Zinyoro), a different version of the by-laws was presented. These are rules and regulations which have been discussed at community meetings and agreed upon, often at the very outset of the project. Very often they have not been written down but exist in the memories of community members. In two cases these by-laws are very narrow in focus and refer only to attendance at fence-erecting work sessions, or to fines for cutting fences or to be imposed on outsiders whose cattle trespass on the scheme (Chiweshe and Mangezi).

More often, though, the by-laws also mention the requirements that everyone's cattle follow the agreed rotation, that burning of grass is strictly forbidden, that no-one is allowed to cut trees or thatching grass in the scheme without the permission of the committee, and that all cattle must be kraaled at night. They are thus focussed on agreeing rules for joint use of shared resources and demonstrate an awareness of the need to conserve and manage these resources, even if in only rudimentary ways (see Table 7 and Annex A).

While the source of these by-laws is usually said to be the community itself, or sometimes the committee, Agritex staff have clearly had an influence too. What then is the attitude of local extension staff to the two sets of by-laws, the 'official' and the 'unofficial', which seem to lead a parallel existence?
### TABLE 7

**INSTITUTIONAL DEVELOPMENT**

<table>
<thead>
<tr>
<th>SCHEME</th>
<th>OPERATING / INCOMPLETE</th>
<th>COMMITTEE</th>
<th>WOMEN ON COMMITTEE</th>
<th>BY-LAWS CONTENTS</th>
<th>BY-LAWS WRITTEN?</th>
<th>RECORDS (? = no records seen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chiwundura</td>
<td>O</td>
<td>Yes</td>
<td>No</td>
<td>Management</td>
<td>No</td>
<td>Minutes</td>
</tr>
<tr>
<td>Zinyoro</td>
<td>I</td>
<td>?Yes</td>
<td>No</td>
<td>None</td>
<td>No</td>
<td>'Food for work' labour records</td>
</tr>
<tr>
<td>Denhere-K</td>
<td>O</td>
<td>Yes</td>
<td>Yes</td>
<td>Management &amp; Stocking Rate</td>
<td>Yes</td>
<td>Minutes; Stock No's; Rotations</td>
</tr>
<tr>
<td>Chikowore</td>
<td>O</td>
<td>Yes</td>
<td>Yes</td>
<td>Management</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Tagarika</td>
<td>O</td>
<td>Yes</td>
<td>Yes</td>
<td>Management (individual maxima)</td>
<td>Yes</td>
<td>Minutes</td>
</tr>
<tr>
<td>Mangezi</td>
<td>I</td>
<td>Yes</td>
<td>Yes</td>
<td>Policing only</td>
<td>Yes</td>
<td>(Kept by EW-Stock Ngs.only)</td>
</tr>
<tr>
<td>Machingo</td>
<td>I</td>
<td>No</td>
<td>-</td>
<td>Management</td>
<td>No</td>
<td>?</td>
</tr>
<tr>
<td>Mativenga</td>
<td>I</td>
<td>Yes</td>
<td>Yes</td>
<td>Management</td>
<td>Yes</td>
<td>?</td>
</tr>
<tr>
<td>Ntabazinduna</td>
<td>I</td>
<td>Yes</td>
<td>&quot;A Few&quot;</td>
<td>Management</td>
<td>No</td>
<td>?</td>
</tr>
<tr>
<td>Kowoyo A</td>
<td>O</td>
<td>Yes</td>
<td>No</td>
<td>Management</td>
<td>No?</td>
<td>Minutes</td>
</tr>
<tr>
<td>Kowoyo B</td>
<td>O</td>
<td>Yes</td>
<td>No</td>
<td>Management</td>
<td>No?</td>
<td>?</td>
</tr>
<tr>
<td>Kowoyo C</td>
<td>O</td>
<td>Yes</td>
<td>No</td>
<td>Management</td>
<td>No?</td>
<td>?</td>
</tr>
<tr>
<td>Chiweshe</td>
<td>I</td>
<td>Yes</td>
<td>No</td>
<td>Labour attendance</td>
<td>No</td>
<td>Labour records</td>
</tr>
<tr>
<td>Muchinjike</td>
<td>I</td>
<td>Yes</td>
<td>No</td>
<td>Management</td>
<td>Yes</td>
<td>?</td>
</tr>
<tr>
<td>Zimuto (X4)</td>
<td>O</td>
<td>Yes</td>
<td>Yes</td>
<td>Management</td>
<td>Yes</td>
<td>Stock No's; Minutes (x:1) Stock Ngs; Rotations (x:2)</td>
</tr>
</tbody>
</table>

**Notes:**
1. Written by-laws drawn up by District Council and awaiting Ministry approval
2. Written by-laws drawn up by A gritex and signed by Chairman, but not held by committees.
3. 'Management' refers to by-laws relating to rotations, night kraaing, fence repairs, burning, tree cutting etc.
A good way to characterise the situation on the ground is to relate an incident in Zimuto, at a group discussion with the committees of four grazing schemes. After individual respondents had denied the existence of any by-laws involving the setting of a maximum stocking rate, the group meeting was asked to respond as the local Extension Supervisor translated the 'standard' set of by-laws which members of the committees had signed before funding was approved. The meeting enthusiastically agreed that they were well aware of the first three by-laws all relating to stocking rates and in fact agreed with them!

I take this to be an expression of two attitudes. The first involves acceptance of a set of rules which originate in the needs and concerns of outsiders, in this case government and donors, but which it is beneficial to give one's formal agreement to - and which one has little intention of following. The second involves the idea referred to in (e) above, that in the long run there may well be a need to have rules regulating the number of animals on a scheme.

The first relates to an immediate benefit, the second to a longer term possibility. Together they amount to a pragmatic approach to rule-making concerning a common property resource. Local extension staff in Zimuto, and elsewhere, appear to share this approach with the farmers they work with day to day, and to accept that regulation of stock numbers is something that communities will have to learn about over the course of time, and in so doing will develop their own set of rules. Although it is true that in no scheme has the idea of a maximum overall stocking rate been incorporated into locally designed by-laws, in Tagarika in Mwenzi District, the idea of a maximum allocation per individual household has clearly been discussed. This obviously implies an overall limit as well. The figure quoted in interviews was 8 LU or 12 head of cattle. Those with more than this number, however, are supposed to lend them to the non-owners or those with less, along the lines of the traditional 'kuronzer' system. The scheme also actively encourages the sharing of draught power between households in the ploughing season. Thus emerging from within this community are new ideas about regulating stock numbers which take the needs of non-owners into account. Although it is early days yet, Tagarika may well be pointing the way forward for other communities.

(g) Grazing scheme committees are local institutions which enjoy community support, but their performance as regards management of schemes has been deficient in important aspects. Data on grazing scheme committees is shown in Table 7 and in the profiles of the schemes contained in Annexe A. Committees are most often made up of six or seven members comprising a Chairman, Vice-Chairman, Secretary, Vice-Secretary, Treasurer, and one or two 'police' whose function it is to check on the condition of the fencing. In ten of the schemes women are members of the committee, and in Mutakwa and Masimba they are dominant on the committee. Non-cattle-owners are represented on eight committees, but usually by only one or two members.

Machingo has not yet elected a committee to manage their scheme - work on fencing is organised by the VIDO of which they form a part. It is claimed that a committee exists in Zinyoro, but it does not appear to ever meet or have any support within the community.
Most committees say they meet regularly, once or twice a month. Meetings with the whole community present are called regularly in eight schemes, and only when the need arises in seven. In all schemes except Zinyoro the committees have been elected at general meetings. In general, the strong impression was gained that these committees enjoy strong community support and are seen as legitimate representatives of community interests.

In ten schemes the records kept by the secretaries of the committees were viewed. In two cases these consisted only of labour days contributed by community members for fencing or other work. In three cases only the minutes of committee meetings had been recorded. In one scheme (Mangezi) records of stock numbers were maintained by the extension worker. In only four schemes were records of stock numbers kept by committees and in only three were the dates of rotations recorded. The records were neatly written and easy to read in very few schemes.

For the most part, then, record keeping is indifferent in quality and will need to be improved if a sound information base for management decision-making is to be built up. According to senior Agritex officials this aspect of extension workers performance also needs improvement, and it is probably the case that a training input for extension staff will have to precede any attempt to upgrade record keeping by committees.

As mentioned above, sets of by-laws which enjoy community commitment are generally not written down. Only in Mafuzha, Mngweya, Muchinjike and Chikowore are they held in written form. This lack of formalisation may hamper the effective implementation of these by-laws, and is a weakness that needs to be remedied.

Most of these by-laws specify penalties, usually cash fines, for failure to observe their provisions. However, in cases where transgressions have occurred the committees have not always been willing, or able, to impose these fines. Fines have been imposed and cash collected in only four of the schemes. For by-laws to be effective they will have to be strictly observed or gradually lose all force. Enforcement by an external authority (e.g. the district Council), as is sometimes proposed, is unlikely to be any more effective than similar attempts in the pre-independence period.

Finally, there is the question of future maintenance and repair of the fences. A test of the management capacities of grazing scheme committees is whether or not this has been actively discussed, with some kind of decision made as to how the costs of repairs are to be met. In nine cases this issue has been discussed and agreement reached on ways of resolving it. In nine schemes the question has not yet been raised.

In general, grazing scheme committees need to become more management-oriented and to develop certain skills and capacities; at present their performance is deficient in significant aspects. Extension staff (or community development workers) need to make training in these aspects an urgent priority.
4.1.3 Common property management: a learning process approach

The discussion above should make it clear that in general the project has made a positive impact on the target group and its local institutions. The question of the viability of schemes under high stocking rates will be taken up in the next section. To conclude this assessment of the social/institutional impact of the project, two factors will be highlighted: firstly, the question of the learning process by which an appropriate mode of common property management can emerge within a community, and secondly, an appraisal of the degree of community participation achieved in the various schemes.

Two kinds of learning process are represented in Figures 9 and 10. Both are again 'ideal-types' rather than descriptions of actual communities, but perhaps Tagarika comes closest to the model of a community engaged in a positive feedback cycle (Figure 9), and Zinyoro is the best example of a group locked into a negative feedback cycle (Figure 10).

In the positive cycle the process of adopting a grazing scheme, mobilising community commitment and implementing the scheme tends to increase community cohesion and expand the capacity for common property management. This in turn facilitates the development of new rules which regulate herd size and lead to sustainable levels of forage production.

In the negative cycle poor community organisation is manifest and may indicate that only a minority is in favour of the grazing scheme, perhaps because they see an opportunity to gain privileged access to the resources offered by a donor agency. Low levels of community participation lead to conflicts over fencing and contributions, and the result may be less community cohesion and a reduced capacity for common property management. Eventually the scheme collapses and the community as a whole is worse off than when it started.

These models are abstractions, but could perhaps be used to identify certain processes and possible outcomes in actual situations. Institutional development is seen as the core of the issue, and technical improvements are linked to the emergence of management capacity. There may be lessons for the training of extension staff in this kind of emphasis.

4.1.4 Assessing community participation

A scoresheet comprising ten indicators of degree of community participation has been used to assess each scheme. The scoresheet is shown in Figure 11 and the scores obtained in Table 8. The data on which the scores are based is found in summary form in Annexe A. The only item in need of illustration is number 10, 'factors specific to each scheme'. Three examples will suffice.

For Chikowore a score of 2 was given indicating high levels of participation, because of sound organisation for fence maintenance, a high level of cash contributions to fencing, and a well maintained legume plot.
Figure 9. Community participation: the positive feedback cycle

- Community awareness of need to manage common resources
  - Community leadership accepts proposal of grazing scheme
    - Discussion within community
      - Majority commitment achieved
        - Committee elected
          - By-laws and contributions agreed
            - Boundaries defined and disputes resolved
              - Fencing begins: committee collects contributions and organises labour
                - Homesteads and arable lands relocated
                  - Regular meetings, well attended
                    - Fencing completed and rotational grazing begins under committees supervision
                      - Plans modified to accommodate individual/community needs
                        - Pasture legumes planted in veld
                          - Crop production improves
                            - Livestock production improves
                              - Veld condition improves
                                - By-laws operative: generally observed but penalties imposed for transgressions
                                  - Household incomes improve
                                    - Non-owners acquire cattle / owners increase herds
                                      - New rules made on community and household maxima
                                        - Increased cattle sales
                                          - Herd size regulated
                                            - Sustainable production of forage
                                              - Increased production of forage
                                                - Community participation and capacity for common property management
                                                  - Increased community cohesion and capacity for common property management
Figure 10. Community participation: the negative feedback cycle

Community with resource base under stress

- Veld degrades, forage production declines

- The wealthy increase their herds

- Fences neglected or stolen / arable lands invade grazing

Less community cohesion and reduced capacity for common property management

- By-laws ineptible

- Little improvement in veld condition or livestock production

- Household incomes not improved

Committee formed

- Opposition to scheme but overcome by minority who favour it

- Little or no community contribution agreed

- By-laws signed to satisfy donors

- Plans modified to accommodate those resisting relocation

- Irregular meetings, poorly attended

- Relocations resisted

- Poor attendance at work sessions and slow progress

- Fencing begins: fence cutting

- Fencing completed: poorly maintained, no rotations practiced
Figure 11: Scoresheet for community participation

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Score 1</th>
<th>Score 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Regularity of community meetings to discuss scheme.</td>
<td>Regular</td>
<td>When a problem arises.</td>
</tr>
<tr>
<td>2. Internal opposition.</td>
<td>None</td>
<td>A few people</td>
</tr>
<tr>
<td>3. Fence cutting by members.</td>
<td>None</td>
<td>Isolated cases</td>
</tr>
<tr>
<td>4. Infringement of by-laws.</td>
<td>None</td>
<td>Isolated cases</td>
</tr>
<tr>
<td>5. Cash contributions to fencing.</td>
<td>&lt;$10,00 or more per household</td>
<td>&lt;$10,00 per household</td>
</tr>
<tr>
<td>6. Labour contribution to fencing</td>
<td>All labour from community</td>
<td>Some labour from paid workers</td>
</tr>
<tr>
<td>7. Number of defaulters on contributions</td>
<td>None</td>
<td>Isolated cases</td>
</tr>
<tr>
<td>8. Plans for fence maintenance</td>
<td>Definite plans</td>
<td>Still being discussed</td>
</tr>
<tr>
<td>9. Community knowledge of grazing management</td>
<td>Generally good</td>
<td>Uneven</td>
</tr>
<tr>
<td>10. Factors specific to each scheme</td>
<td>Indicates high level of participation</td>
<td>Indicates average level of participation</td>
</tr>
</tbody>
</table>

**Scoring:**

- 15 : High level of participation
- 10 - 15 : Fair level of participation
- < 10 : Low
### Table 8: Levels of community participation

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Score</th>
<th>Level of participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mangwaya</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Chikowore</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Tagarika</td>
<td>16</td>
<td>High</td>
</tr>
<tr>
<td>Muchinjike</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Masimba</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Mafuzha</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Denhere</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Chiwundura</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Mutakwa</td>
<td>12</td>
<td>Fair</td>
</tr>
<tr>
<td>Mangezi</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Mativenga</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Ntabazinduna</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Kowoyo</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Machingo</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Chiweshe</td>
<td>6</td>
<td>Low</td>
</tr>
<tr>
<td>Zinyoro</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>
For Chiweshe a score of 1 was given, indicating an intermediate level of participation, because while there was generally a positive attitude to the relocation of arable land and homesteads, there was also evidence of 'donor dependency' (e.g. wanting to be paid for labour contributions).

For Zinyoro a score of 0 was given because of the lack of progress, the absence of community meetings, the weakness of the committee, and the fiasco of selecting inappropriate tree species for fencing poles.

Scores obtained were used to assess the viability of the schemes, in conjunction with ecological criteria. (see Section 4.4)

4.1.5 Pre-disposing factors for high levels of community participation

Analysis of the schemes which have achieved high levels of community participation allows one to suggest ten factors which pre-dispose or contribute to this end.

(a) Community and resource base:
   - the degree of coincidence between community and resource boundaries.
   - relatively few relocations of arable land or homesteads required.

(b) Community characteristics:
   - strong and legitimate leadership.
   - low level of recent in-migration.
   - size: the smaller the better.
   - a history of cooperation between villages.
   - having adopted a grazing scheme before independence.

(c) Decision making process:
   - adequate time allowed for discussion and mobilisation within the community.
   - community consulted on design of scheme.
   - a developing understanding of the principles of grazing management.

More speculatively, a number of other factors may or may not predispose towards participation. The evidence here is less clear, and much more research is required on this whole issue.

(a) Resource base:
   - a resource base not under severe pressure.
(b) Community characteristics:
- strong ties of kinship within the community.
- strong reciprocal relations between cattle owners and non-owners.
- the coincidence of 'traditional' and VIDCO boundaries.

(c) Decision making process:
- the active involvement of women.
- the active involvement of non-cattle owners.
- boundary disputes helping to contribute to community identity.

4.2 Impact on ecological balance

4.2.1 Methodological issues

An attempt was made in the course of field visits to gather data on veld condition, livestock numbers, herd structure and cattle condition. (Note: the assistance of Frank Chinembiri, Assistant Chief of Animal Production in Agritex, was invaluable in this regard.)

Field visits were carried out in the month of October, before the rains had started. As repeatedly stressed by Mr Chinembiri and other Agritex staff, a veld condition assessment done at this time of year is not recommended and may give a false picture. Many species cannot be readily identified and basal cover is likely to be very different once rains fall and annual grass species germinate. Nevertheless, it was decided to gather what data we could and analyse it in the light of these reservations.

There is a second methodological flaw involved in attempting to use such data to assess the ecological impact of grazing schemes. Veld and pasture specialists stressed in discussion that the results of rotational grazing were unlikely to be visible so soon after schemes had been initiated. They estimated that veld regeneration would take at least five years, and that the usefulness of data on present veld condition would lie in it constituting a base-line survey. (This point is even more relevant when it is realised that only seven of the schemes in the project have been operational as yet, four of them for two seasons and three for only one season - see Table 1).

For these reasons the conclusions drawn here are put forward very tentatively. The Veld Trend Monitoring programme initiated by Agritex Animal Production Branch in 1986 aims to provide the long-term data required for a proper assessment of impact of rotational grazing management in communal area grazing schemes. One season's data has been collected and this was used in this evaluation study to supplement the data collected in the field.

As regards cattle condition the month of October is a good period to make assessments because the end of the dry season is a critical time for
communal area livestock. The greater the availability of forage the better the chances of surviving through to the next season. Usually this is a period of high mortality rates and 1987 was a particularly late season, rainfall in any quantity only beginning in December.

4.2.2 Veld condition

Table 9 shows assessments of two aspects of veld condition which were felt to be relevant - basal cover and the prevalence of sheet erosion. The profiles in Annexe A also provide information on the prevalence of surface capping (a condition which hinders water penetration and promotes high levels of runoff), and contain general comments on veld condition which make reference to species composition and other indicators.

Table 9: Veld condition assessment (October 1987)

(a) Basal cover (n = 15)

<table>
<thead>
<tr>
<th>Good generally</th>
<th>Good on vleis</th>
<th>Poor on toplands</th>
<th>Poor generally</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tagarika</td>
<td>Kowoyo C</td>
<td></td>
<td>Denhere-Katsvamutima</td>
</tr>
<tr>
<td>Chikowore</td>
<td>Mutakwa</td>
<td></td>
<td>Mativenga</td>
</tr>
<tr>
<td>Muchinjike</td>
<td>Mafuzha</td>
<td></td>
<td>Ntabazinduna</td>
</tr>
<tr>
<td>Kowoyo A</td>
<td>Masimba</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kowoyo B</td>
<td>Mangezi (&quot;fair&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chiweshe</td>
<td>Machingo (&quot;poor in two paddocks&quot;)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Sheet erosion (n = 15)

<table>
<thead>
<tr>
<th>None/slight</th>
<th>&quot;Evident in some paddocks&quot;</th>
<th>Widespread</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tagarika</td>
<td>Denhere-Katsvamutima</td>
<td>Mutakwa</td>
</tr>
<tr>
<td>Chikowore</td>
<td>Mangwaya</td>
<td>Ntabazinduna</td>
</tr>
<tr>
<td>Kowoyo C</td>
<td>Mafuzha</td>
<td></td>
</tr>
<tr>
<td>Chiweshe</td>
<td>Masimba</td>
<td></td>
</tr>
<tr>
<td>Chiwundura</td>
<td>Mangezi</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Machingo</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mativenga</td>
<td></td>
</tr>
</tbody>
</table>

In six schemes basal cover is generally good, while in seven it is poor on the toplands but good in the vlei areas. In Mutakwa, Mafuzha and Masimba (all in Zimuto) it was the opinion of Mr Chinembiri that this condition was endemic to this particular kind of environment and could be seen even on commercial ranches where low stocking rates obtained. In three schemes basal cover is generally poor - in Ntabazinduna there is practically no grass cover at all, the vegetation consisting mainly of thorn bush.

Table 9 also shows that sheet erosion is either absent or slight in five schemes, is evident in some paddocks in a further eight and is widespread in two - again Ntabazinduna features in the latter category.
Taken together with various comments on condition based on species composition or other factors and summarised in Annexe A, the following broad picture emerges:

In most of the schemes the veld is in condition typical of communal area grazing land: heavily utilised, dominated by either 'increasers' or 'invaders', but with isolated patches of more desirable species such as Hyparrhenia. Basal cover, however, is generally either good or fair, with only a handful of schemes evidencing very poor cover and widespread sheet erosion.

In the seven schemes which have been operational for one or two years, the situation is as follows:

In Chikowore the veld shows definite signs of regeneration. In Tagarika grass species indicate a stable condition, with old arable areas showing signs of regeneration and gullies in process of healing. In Chiwundura the veld is still dominated by species of poor forage value but some more desirable species are beginning to appear. (These improvements may, however, be at the expense of surrounding unfenced grazing land.)

In Kowoyo A, B and C which are located mostly in vlei areas, the situation appears to be stable without many signs of improvement as yet. Grass species of poor forage value (Sporobolus, couch) contribute to basal cover and do provide some grazing.

In Denhere-Katsvamutima the veld shows no signs of improvement as yet, and severe overgrazing is evident around the borehole and diptank. Basal cover is poor and sheet erosion can be seen along the Musengezi river areas. Rotational grazing has not been rigorously followed, with the most distant paddocks to the west of the scheme used less often than they should be.

4.2.3 Cattle condition

Estimates of cattle condition in the various schemes are shown in Table 10. In seven cases condition was either 'good' or 'fair to good'. These included Tagarika and Chikowore, where signs of veld regeneration are evident, but did not include Chiwundura.

In another seven cases cattle condition was assessed as either 'fair' or 'poor to fair', while in three schemes cattle were in 'poor' condition. (No cattle were seen in Mativenga, Chirindi and Ruvima.)

There is a poor correlation between cattle condition and veld condition - for example in Chiwundura veld is improving but cattle condition is poor, whereas in Mutakwa veld condition is generally poor but cattle condition was judged to be 'fair to good'. Again in Machingo the veld is unevenly utilised, basal cover is poor in two paddocks and there are signs of sheet erosion, but cattle condition was good.
<table>
<thead>
<tr>
<th>SCHEME</th>
<th>NATURAL REGION</th>
<th>RECOMMENDED STOCKING RATE (LU: ha)</th>
<th>PRESENT STOCKING RATE (LU: ha)</th>
<th>(C) as % of (A)</th>
<th>(D) (C) ÷ 2</th>
<th>CATTLE CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mangezi</td>
<td>IV</td>
<td>1: 8-10</td>
<td>1:1.96</td>
<td>408%</td>
<td>204%</td>
<td>Good</td>
</tr>
<tr>
<td>Machingo</td>
<td>IV</td>
<td>1: 8-10</td>
<td>1:2.87</td>
<td>279%</td>
<td>140%</td>
<td>Good</td>
</tr>
<tr>
<td>Tagarika</td>
<td>IV</td>
<td>1: 8-10</td>
<td>1:2.26</td>
<td>353%</td>
<td>177%</td>
<td>Very Good</td>
</tr>
<tr>
<td>Mativenga</td>
<td>IV</td>
<td>1: 8-10</td>
<td>1:2.73</td>
<td>293%</td>
<td>147%</td>
<td>?</td>
</tr>
<tr>
<td>Chirindi</td>
<td>V</td>
<td>1:10-15</td>
<td>1:1.20</td>
<td>833%</td>
<td>417%</td>
<td>?</td>
</tr>
<tr>
<td>Ruvuma</td>
<td>V</td>
<td>1:10-15</td>
<td>1:1.09</td>
<td>917%</td>
<td>459%</td>
<td>?</td>
</tr>
<tr>
<td>Chiweshe</td>
<td>IV</td>
<td>1: 8-10</td>
<td>1:2.42</td>
<td>331%</td>
<td>166%</td>
<td>Good</td>
</tr>
<tr>
<td>Denhere-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Poor to Fair</td>
</tr>
<tr>
<td>Katsavamutima</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muchiñjike</td>
<td>II</td>
<td>1: 2-4</td>
<td>1:0.93</td>
<td>215%</td>
<td>108%</td>
<td></td>
</tr>
<tr>
<td>Kowoyo A</td>
<td>II</td>
<td>1: 2-4</td>
<td>1:0.80</td>
<td>250%</td>
<td>125%</td>
<td>Fair</td>
</tr>
<tr>
<td>Kowoyo B</td>
<td>II</td>
<td>1: 2-4</td>
<td>1:0.98</td>
<td>204%</td>
<td>102%</td>
<td>Fair</td>
</tr>
<tr>
<td>Kowoyo C</td>
<td>II</td>
<td>1: 2-4</td>
<td>1:0.76</td>
<td>263%</td>
<td>132%</td>
<td>Poor to Fair</td>
</tr>
<tr>
<td>Chikowore</td>
<td>II</td>
<td>1: 2-4</td>
<td>1:3.55</td>
<td>56%</td>
<td>28%</td>
<td>Fair to Good</td>
</tr>
<tr>
<td>Mutakwa</td>
<td>IV</td>
<td>1: 8-10</td>
<td>1:2.15</td>
<td>370%</td>
<td>186%</td>
<td>Poor to Fair</td>
</tr>
<tr>
<td>Masimba</td>
<td>IV</td>
<td>1: 8-10</td>
<td>1:4.57</td>
<td>175%</td>
<td>88%</td>
<td>Poor to Fair</td>
</tr>
<tr>
<td>Mafuzha</td>
<td>IV</td>
<td>1: 8-10</td>
<td>1:1.91</td>
<td>419%</td>
<td>210%</td>
<td>Fair</td>
</tr>
<tr>
<td>Mangwaya</td>
<td>IV</td>
<td>1: 8-10</td>
<td>1:1.44</td>
<td>556%</td>
<td>278%</td>
<td>Fair</td>
</tr>
<tr>
<td>Ntabazinduna</td>
<td>IV</td>
<td>1 : 8-10</td>
<td>1:1.7</td>
<td>470%</td>
<td>235%</td>
<td>Poor</td>
</tr>
<tr>
<td>Chiwundura</td>
<td>III</td>
<td>1 : 6-8</td>
<td>1 : 2.1</td>
<td>286%</td>
<td>143%</td>
<td>Poor</td>
</tr>
<tr>
<td>Zinyoro</td>
<td>III</td>
<td>1 : 6-8</td>
<td>1 : 2.4</td>
<td>251%</td>
<td>126%</td>
<td>Poor</td>
</tr>
</tbody>
</table>

Note: In column (C) the lower figure in column (A) has been used to calculate the proportion.

* Recommended stocking rates are taken from grazing scheme project proposals in Agritex files, and vary slightly from those given in the Beef Production Manual.
Column D shows the present stocking rate as a proportion of the recommended rate multiplied by two. Thus Mangezi would be 104 percent 'overstocked' if the recommended stocking rate was taken as 1 LU : 4 ha. (Instead of 1 LU : 8 ha.) The reason for calculating this is the widespread opinion that recommended stocking rates taken from research conducted with the commercial beef producer in mind may not be relevant in the communal areas. The basis for the $x^2$ multiplication is the proposal made in 1985 by Agritex for a 'grazing trials' research project aimed at testing the feasibility of grazing schemes. (Unfortunately this was never implemented.) Two of the four treatments proposed involved stocking rates which were equal to double the assessed carrying capacity (Ivy, 1985).

Looking at Table 10, apparent is the poor correlation between stocking rate and cattle condition. Thus in Tagarika which is 'overstocked' cattle were in 'very good' condition, whilst at the other extreme in Zinyoro, the veld is understocked (using the figures in column D) but cattle condition was 'poor'. Mutawwa and Masimba provide a similar contrast.

Given these inconsistencies, and in view of the methodological difficulties outlined above, it is difficult to make unequivocal statements about the ecological impact of the project. In some schemes (Chikowore, Tagarika, Kowoyo) there are signs that rotational grazing may be having the desired effects on grazing land, whilst in others (Chiwundura, Denhere-Katsvamutima) the results are not so encouraging.

A further difficulty is the lack of agreement among ecologists and pasture scientists on the questions of carrying capacity and stocking rates in communal grazing situations. This is an extremely important debate and it is briefly discussed below.

### 4.2.4 The debate on carrying capacity

Just what is the carrying capacity of communal area grazing land? Most scientists would probably accept Whitlow's broad definition of carrying capacity as the human and livestock population an area of land can support without a cycle of degenerative changes being set in motion. (Whitlow 1980, p.178). But any attempt to specify the carrying capacity of a given area runs into much more complex problems, both at the conceptual and definitional level and in respect of precise measurement.

In recent years a debate on the subject has been raging, not least with regard to grazing land in Zimbabwe's communal areas. This was partly prompted by a controversial consultancy report in 1982 by Sandford, and partly by the efforts of local proponents of Savory's Holistic Resource Management approach. (For a summary of different positions in this debate see Cousins 1987, pp.68-75.)
The data presented here would seem to suggest that there is indeed no simple correlation between the recommended stocking rates which function as the 'conventional wisdom' within Agritex today and the actual capacity of grazing land in communal areas to sustain livestock populations. As Sandford wrote in 1982:

When actual stocking rates ... are far in excess of carrying capacities for long periods of time then one should ask whether this apparent prolonged defiance of the Laws of Nature may not have been due to an initial underestimate of the true carrying capacity.

(Sandford 1982, p. 57)

A critical distinction is that between economic and ecological carrying capacity. The former is that which offers maximum economic returns and is determined by the economic objectives of the producers. The latter refers to Whitlow's definition quoted above. A recent contribution to the debate by Scoones (1987) investigates the implications of these different measures of carrying capacity and economic productivity for livestock development in Zimbabwe. An excerpt from his paper is presented in Annexe B.

Scoones asks the question: 'How have so many livestock survived in the communal areas for so long at levels well above (conventionally) acceptable carrying capacity?' Based on extensive field work in Zvishavane District, his paper suggests two possibilities. The first is drought induced movement of stock in response to spatially variable forage production, partly through the *kuronzera* mechanism of loaning out animals to other households. The second is a seasonally variable grazing of different types of forage resources, e.g. extensive grazing in the rainy season, crop stover in the post-harvest period, 'key resources' such as vleis, river banks and drainage lines in the mid-to-late dry season, and browse in the late dry season. Particularly critical are the latter two.

Observations of cattle foraging behaviour made in the course of this evaluation certainly seem to support Scoones' contentions. Cattle in all of the areas visited were making extensive use of vlei land, river banks and browse in the month of October. It was also apparent that the relatively large areas of fallowed arable land in some communities (e.g. Chikowore and Muchinjike) were making a sizeable contribution to animal nutrition.

What are the implications of this debate on carrying capacity for an evaluation of grazing schemes? These are:

(a) Farmers' views that a grazing schemes will enable them to increase stock numbers may not be ecologically inappropriate.

(b) Attempting to achieve reductions in stocking rates is premature until we have a better understanding of what ecological carrying capacity is.

(c) Initiating a programme of applied research on the issue of appropriate stocking rates in communal areas is a matter of urgency.

(d) The views of Scoones and others on alternative methods of designing grazing schemes need to be investigated by Agritex and other agencies such as LWF.
4.3 Financial and economic impact

Assessing the economic impact of grazing schemes has been largely a matter of using crude 'questionnaires' based on aggregates and averages, often derived from data collected elsewhere than the grazing scheme itself. This is so because of the well-known paucity of reliable data on communal area farming systems and household income patterns. It was particularly difficult in this study because of the time constraint and the limitations on data collection during field work, and because so few of the schemes have reached the operational phase.

Economic impact has thus been evaluated using both qualitative and quantitative approaches. For the latter, estimates of crop and livestock income taken from other studies have been used to assess the potential impact of a grazing scheme on the incomes of households in a 'typical' community in Natural Region IV. For the former, farmers' opinions as to the potential impact of a scheme, derived from interviews, have been assessed in the light of the analyses of the FSRU, and the results shown in diagrammatic form.

4.3.1 Qualitative evaluation of economic impact

The work of the Farming Systems Research Unit emphasises the high degree of interdependence between the different components of communal area farming systems and the complexity of the interactions between these components.

The crop enterprises are extremely dependent on livestock, cattle and donkeys, for draught power to prepare the land and for manure to improve soil fertility and structure. Livestock also depend on crop residues for survival during the dry months. Both crops and livestock provide outputs for domestic consumptions and cash generation. (FSRU 1985, p.26)

According to farmers interviewed in the course of the evaluation, the grazing scheme which their community has adopted will improve their incomes in three ways:

(a) by improving the productivity of cattle (i.e. less mortality, better growth rates, improved draught power provision, more milk, more manure, better prices when selling animals).

(b) by improving crop yields as a result of earlier ploughing, the provision of more manure and better protection of crops from animal damage.

(c) by freeing labour formerly used for herding purposes to work on cropping, or in other income-generating activities.

Studies by FSRU and others confirm that shortages of manure and draught power are significant constraints in crop production, and that labour bottlenecks are particularly acute at planting to weeding time (November to December). Another peak period for labour is at harvesting. (FSRU 1985, p.29-37).
Figure 12. Impact of a grazing scheme on Communal Area farming system
(model from F.S.R.U. (1985, p.27)
Overcoming the draught shortage constraint can be done by increasing the number of draught animals, increasing the draught power performance of the existing animals, and reducing the draught requirements. The first two in turn imply improving animals' feed supply in quantity and quality, and improving their health. The major source of feed is natural veld, and this can be made more productive through restoring denuded land, improving plant composition and practising appropriate grazing management. (FSRU 1985, pp. 67-68).

With regard to labour bottlenecks in cropping, alleviation of this constraint 'could significantly improve performance' (Shumba 1985, p. 33). Herding is now largely the responsibility of adults, and women in particular, since most children are at school for a large part of the day. Although the practice of group herding is widespread, the shortage of available labour often means animals are kept in the kraals until late in the morning (FSRU 1985, p. 38).

The diagnoses of researchers thus tend to confirm the logic of the arguments presented by the farmers themselves. Grazing schemes, where they succeed in improving the productivity of veld, are indeed likely to improve the incomes of community members in the three ways listed above.

This qualitative assessment of impact is summarised in diagram form in Figure 12, using the FSRU model of a typical farming system.

4.3.2 Herd structure and percentage offtake

Data were collected on cattle herd structures in communities with grazing schemes, and an attempt was made to calculate cattle offtake for those with information on cattle sales. The results are presented in Tables 11 and 12.

In Table 11 the comments on herd structure are made with reference to a 'typical' communal herd which is oriented to draught power requirements and therefore contains a high proportion of oxen. The figures used for comparative purposes were taken from GFA (1986), where the following herd structure is given for Chivi, in Natural Region IV: bulls 5%; cows 30%; heifers 12%; oxen 31%; steers 8%; calves 12%. (GFA 1986, p. 107).

In general the table shows that herds in grazing scheme communities are still draught-oriented, although there is also a great deal of variability between herds, particularly with regard to young stock. The reliability of this data is low, however, with sometimes large inconsistencies between data supplied by extension staff and that supplied by grazing scheme committee members. Perhaps the only conclusion that can be drawn from the data is that grazing schemes are not resulting in major changes in herd structure which reflect a shift to commercial beef production.

Table 12 shows cattle offtake figures for eleven schemes, but again the reliability of the data is in doubt. Thus the offtake of around 20 percent for Tagarika is based not on written records, but the memory of one respondent. In the table commercial offtake represents sales to local buyers as well as Cold Storage Commission (CSC) sales, and 'subsistence offtake' refers to animals slaughtered for immediate consumption.
<table>
<thead>
<tr>
<th>Scheme</th>
<th>% bulls</th>
<th>% oxen</th>
<th>% cows</th>
<th>% steers</th>
<th>% heifers</th>
<th>% calves</th>
<th>comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muchinjike</td>
<td>5.8</td>
<td>20.8</td>
<td>39.3</td>
<td>4.6</td>
<td>17.3</td>
<td>12.1</td>
<td>Oxen and steers rather low. Many cows</td>
</tr>
<tr>
<td>Kowoyo 'B'</td>
<td>1.8</td>
<td>44.1</td>
<td>43.2</td>
<td>1.3</td>
<td>4.4</td>
<td>5.3</td>
<td>Calves and weaners very low. Oxen and cows high</td>
</tr>
<tr>
<td>Kowoyo 'C'</td>
<td>3.9</td>
<td>37.5</td>
<td>33.9</td>
<td>1.2</td>
<td>1.8</td>
<td>22.6</td>
<td>Calving % high</td>
</tr>
<tr>
<td>Kowoyo 'A'</td>
<td>1.9</td>
<td>31.6</td>
<td>37.7</td>
<td>3.3</td>
<td>21.9</td>
<td>3.5</td>
<td>Calves very low—incorrect classification?</td>
</tr>
<tr>
<td>Chikowore</td>
<td>1.2</td>
<td>19.5</td>
<td>27.6</td>
<td>8.9</td>
<td>23.2</td>
<td>19.5</td>
<td>Many calves and weaners. Oxen low</td>
</tr>
<tr>
<td>Chiweshe</td>
<td>2.2</td>
<td>28.3</td>
<td>29.6</td>
<td>14.3</td>
<td>13.2</td>
<td>12.4</td>
<td>Typical CA herd</td>
</tr>
<tr>
<td>Mangezi</td>
<td>3.4</td>
<td>28.6</td>
<td>34.0</td>
<td>3.0</td>
<td>8.9</td>
<td>22.2</td>
<td>Calving % high. Steers very low—may have been marketed</td>
</tr>
<tr>
<td>Machingo</td>
<td>3.2</td>
<td>21.8</td>
<td>32.3</td>
<td>11.3</td>
<td>16.9</td>
<td>14.5</td>
<td>Oxen rather low</td>
</tr>
<tr>
<td>Mangwaya</td>
<td>2.1</td>
<td>27.8</td>
<td>17.6</td>
<td>18.7</td>
<td>19.3</td>
<td>14.4</td>
<td>Very few cows</td>
</tr>
<tr>
<td>Mutahwa</td>
<td>3.8</td>
<td>30.0</td>
<td>29.2</td>
<td>7.7</td>
<td>8.5</td>
<td>20.8</td>
<td>Calving % high</td>
</tr>
<tr>
<td>Mafuzha</td>
<td>2.2</td>
<td>38.9*</td>
<td>36.7</td>
<td>*</td>
<td>10.5</td>
<td>11.8</td>
<td>(*Figures for oxen and steers not separated)</td>
</tr>
</tbody>
</table>
In general the data show low offtake figures characteristic of communal area herds. (Offtake from large scale commercial ranches is in the order of 18 to 21 percent.) They thus confirm the impression gained from an examination of herd structure: grazing schemes are not resulting in changes in farmers' objectives with regard to cattle. The major functions remain the provision of draught, manure, milk, occasional sales and a store of wealth.

Table 12: Cattle Offtake

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Natural Region</th>
<th>Commercial offtake (%)</th>
<th>Subsistence offtake (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kowoyo 'A'</td>
<td>II</td>
<td>1.2</td>
<td>2.9</td>
</tr>
<tr>
<td>Kowoyo 'B'</td>
<td>II</td>
<td>0</td>
<td>2.7</td>
</tr>
<tr>
<td>Kowoyo 'C'</td>
<td>II</td>
<td>0</td>
<td>1.5</td>
</tr>
<tr>
<td>Chikwore</td>
<td>II</td>
<td>4.9</td>
<td>8.4</td>
</tr>
<tr>
<td>Chiweshe</td>
<td>IV</td>
<td>5.5</td>
<td>6.4</td>
</tr>
<tr>
<td>Mangezi</td>
<td>IV</td>
<td>11.5</td>
<td>14.7</td>
</tr>
<tr>
<td>Tagarika</td>
<td>IV</td>
<td>19.9</td>
<td>20.8</td>
</tr>
<tr>
<td>Mutakwa</td>
<td>IV</td>
<td>14.3</td>
<td>19.3</td>
</tr>
<tr>
<td>Masimba</td>
<td>IV</td>
<td>5.5</td>
<td>5.5</td>
</tr>
<tr>
<td>Mafuzha</td>
<td>IV</td>
<td>1.4</td>
<td>2.8</td>
</tr>
<tr>
<td>Mangwaya</td>
<td>IV</td>
<td>4.0</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Mean % offtake: 6.3

4.3.3 Quantitative evaluation of economic impact

This section attempts to assess the impact of grazing schemes on farmers' incomes in the "with" and "without project" situations. Estimates of income increases have been made at three levels of improved productivity (high, medium and low). Different assumptions have been made for each level, and then applied to demographic data collected for a grazing scheme in Natural Region IV (Tagarika in Ward 14 of Mwenezi District).

It should be stressed that these assumptions are speculative, since no scheme has been operational for more than two years and no measurement of the relevant variables has been attempted by any agency. However, one researcher has commented that the assumption of a 25 percent improvement in cattle productivity appears 'realistic' (Clatworthy 1988, p.5.) and thus it may be said that the assumptions have 'face validity' at least.

The estimates have been applied to only one scheme in order to demonstrate the possible order of magnitude of economic impact. The speculative nature of the assumptions means that carrying out these calculations for every scheme would serve no real purpose.
The assumptions are as follows:

(a) Average cropping income in the low potential areas of the country is $261.00 per unit (based on Avila's [1987] figure of $435 per unit, adjusted by a factor of 0.6 to take account of the likelihood of drought years.

(b) Average income from cattle in a communal area farming system is $127 per unit. (Based on ARDA 1987, using figures of $61.20 for draught; $7.30 for milk; $24.00 for manure and $34.50 for meat; all per LU).

(c) Three levels of improved productivity from cattle are possible: high (25 percent), medium (17 percent) and low (12 percent), each over a five year period. These improvements will result from either increases in the productivity of existing cattle, or increases in the number of cattle without reductions in the productivity of existing animals.

(d) Three levels of improved crop income are possible as a result of constraints of poor draught availability and labour bottlenecks being alleviated: high (15 percent), medium (10 percent) and low (5 percent).

(e) Income from stock other than cattle (goats, sheep, donkeys) and from non-farm sources (e.g. craft) is ignored.

The assumptions have been applied to a grazing scheme in Natural Region IV, because this is the location for half of the schemes (see Table 1). Tagarika, with a population of 160 households, holding 304.7 LU of cattle (and a further 185 LU of other stock) on 1105 ha. of grazing land (i.e. stocking rate of 1 LU : 2.26 ha.) has been chosen for the purposes of this example.

Estimating impact on income yields the following results:

**High level of impact**

Additional crop income $39.16 per household p.a.
Additional cattle income $60.45 per household p.a.
(or $15,937 for the community).

**Medium level of impact**

Additional crop income $25.10 per household p.a.
Additional cattle income $41.12 per household p.a.
(or $10,755 for the community).

**Low level of impact**

Additional crop income $13.05 per household p.a.
Additional cattle income $29.02 per household p.a.
(or $6,731.20 for the community).
Total costs for the grazing scheme in Tagarika were estimated in 1984 to be $33 110.00. Thus at the three levels of impact assumed here the investment would have been recovered within just over two years (high level), just over three years (medium level) and five years (low level).

In the 'without project' situation farmers' incomes would remain at the estimated average of $502.85 (crop and cattle income only). (A recent survey of rural income reports a mean income from all sources of $700.54 - see Jackson et al 1987, p.53).

In the 'with project' situation the percentage increase in combined income amounts to 20 percent at the high level of impact, 13 percent at the medium level, and 8 percent at the low level. Thus the economic impact of grazing schemes is potentially significant.

Against this positive picture one must weigh the effects of what farmers in the low potential regions perceive to be the major constraint on agriculture: drought. A recent analysis of the variability of rainfall in different Natural Regions shows that the probability of a 'normal' season occurring in Natural Region IV is 40 percent, and in Natural Region V 35 percent. (Hussein 1967). Achieving these levels of crop and livestock income on a regular basis will therefore depend on technologies and policy measures which reduce the debilitating effects of drought.

These considerations also suggest that grazing schemes are more likely to yield reliable economic benefits in the higher potential regions where rainfall is higher and the risk of drought less. The majority of the communal area population, however, is concentrated in Natural Regions IV and V. Agro-ecological factors are likely to be critical to sustainable economic benefits.

The Terms of Reference for this study require that a Project Internal Rate of Return be estimated. As stated above, however, the lack of a reliable data base means that economic impact has had to be assessed using a somewhat speculative set of assumptions regarding potential improvements in crop and cattle income. In this situation the estimation of a Project Internal Rate of Return is a meaningless exercise, and it has not been attempted.

It is recommended that in future all EEC funded grazing scheme projects be monitored much more effectively by Agritex with a view to providing an adequate data base for evaluation purposes (see comments on monitoring in Section 3.4.3).

4.4 Viability of grazing schemes

The establishment of grazing schemes as presently designed involves the expenditure of large sums of money which are beyond the reach of most communities - at least in the short term. Two important questions therefore are firstly, how viable are these schemes in economic, environmental and institutional terms, and secondly, how replicable are they in the broad context of communal area development planning?
4.4.1 Evaluating viability: the resource base

As noted in Section 4.3 grazing schemes have the potential to make a significant impact on farming system constraints and therefore on rural incomes, but the realisation of this potential depends critically on their success in improving the productivity of grazing land. While it is generally accepted that such improvements are seen when rotational grazing is practised on commercial ranches at conservative stocking rates, the situation in densely stocked communal areas is much less clear cut.

As discussed in Section 4.2 there is currently no consensus amongst ecologists and pasture scientists on the key question of carrying capacity. In the eyes of farmers the grazing scheme they have adopted will allow them to increase their stock holdings, and they strongly reject the notion of a ceiling on numbers in the short term. The economic logic underlying this view is well expressed by Avila (1987, p. 5):

... economic reality dictates that cattle numbers will increase with or without improvements in rangeland management .... In terms of controlling stocking rates, the success of grazing schemes is extremely dubious because under the present production system the optimal cattle herd size for the vast majority of households is at least four times larger than the current size.

The question is then, what are the upper limits, i.e. what is ecological carrying capacity, in fenced paddocks through which cattle are rotationally grazed, perhaps reinforced with sub-tropical pasture legumes?

The first aspect to be considered in assessing viability is thus ecological in nature, and relates to the resource base and how it will respond to management interventions, given that most communities aim to increase stock numbers.

Obviously this is a difficult task given our present state of understanding. Here an attempt is made to assess the resource base, and thus the prospects for sustainable improvements in veld productivity, in each scheme. This has been done by analysing three basic relationships:

- the land: people ratio (grazing area per household)
- the people: cattle ratio (cattle per household, and percentage cattle ownership)
- the cattle: land ratio (present stocking rate, and present condition of grazing).

The rationale for this procedure derives from the understanding that it is economic necessity, not peasant irrationality, that gives rise to the desire to increase stock numbers in grazing schemes. Thus where the land:people ratio is at present low, where a relatively high proportion of households own cattle, in fairly substantial numbers, where present stocking rates are on the low side for communal areas, and finally where the present condition of grazing is good – here the future pressure on grazing will be reduced and the scheme stands a greater chance of seeing improvements in productivity. The converse is then also true. Basically then, these are indices of land pressure.
<table>
<thead>
<tr>
<th>Scheme</th>
<th>Natural Region</th>
<th>% cattle ownership</th>
<th>Grazing per household(ha)</th>
<th>Cattle per household</th>
<th>Cattle per cattle-owning household</th>
<th>Goats per household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denhere - Katsavumutima</td>
<td>II</td>
<td>56.7</td>
<td>3.21</td>
<td>5.36</td>
<td>6.18</td>
<td>2.67</td>
</tr>
<tr>
<td>Muchinjike</td>
<td>II</td>
<td>51.0</td>
<td>5.17</td>
<td>2.93</td>
<td>5.77</td>
<td>?</td>
</tr>
<tr>
<td>Kowooyo'A'</td>
<td>II</td>
<td>60.0</td>
<td>1.84</td>
<td>2.86</td>
<td>7.57</td>
<td>0.14</td>
</tr>
<tr>
<td>Kowooyo'B'</td>
<td>II</td>
<td>22.3</td>
<td>2.27</td>
<td>2.77</td>
<td>9.46</td>
<td>0.20</td>
</tr>
<tr>
<td>Kowooyo'C'</td>
<td>II</td>
<td>46.6</td>
<td>1.26</td>
<td>2.27</td>
<td>4.87</td>
<td>0.20</td>
</tr>
<tr>
<td>Chikwore</td>
<td>II</td>
<td>71.9</td>
<td>13.09</td>
<td>5.35</td>
<td>7.24</td>
<td>0.80</td>
</tr>
<tr>
<td>Chiwundura</td>
<td>III</td>
<td>81.0</td>
<td>8.28</td>
<td>5.29</td>
<td>5.69</td>
<td>0.97</td>
</tr>
<tr>
<td>Zinyoro</td>
<td>III</td>
<td>?</td>
<td>10.1</td>
<td>5.41</td>
<td>?</td>
<td>2.03</td>
</tr>
<tr>
<td>Chiweshe</td>
<td>IV</td>
<td>75.7</td>
<td>8.59</td>
<td>5.53</td>
<td>7.30</td>
<td>0.97</td>
</tr>
<tr>
<td>Mangezi</td>
<td>IV</td>
<td>59.7</td>
<td>6.88</td>
<td>3.38</td>
<td>5.97</td>
<td>6.12</td>
</tr>
<tr>
<td>Machingo</td>
<td>IV</td>
<td>62.0</td>
<td>12.03</td>
<td>3.54</td>
<td>4.28</td>
<td>9.14</td>
</tr>
<tr>
<td>Tagarika</td>
<td>IV</td>
<td>90.0</td>
<td>6.91</td>
<td>2.92</td>
<td>5.84</td>
<td>5.125</td>
</tr>
<tr>
<td>Mativenga</td>
<td>IV</td>
<td>?</td>
<td>6.15</td>
<td>2.14</td>
<td>?</td>
<td>5.62</td>
</tr>
<tr>
<td>Mutakwa</td>
<td>IV</td>
<td>60.2</td>
<td>2.53</td>
<td>1.40</td>
<td>2.32</td>
<td>1.05</td>
</tr>
<tr>
<td>Mašimba</td>
<td>IV</td>
<td>77.0</td>
<td>9.06</td>
<td>2.90</td>
<td>3.75</td>
<td>1.61</td>
</tr>
<tr>
<td>Mafuzha</td>
<td>IV</td>
<td>62.8</td>
<td>12.14</td>
<td>7.90</td>
<td>9.54</td>
<td>4.38</td>
</tr>
<tr>
<td>Mangwaya</td>
<td>IV</td>
<td>33.3</td>
<td>7.21</td>
<td>6.23</td>
<td>6.93</td>
<td>2.77</td>
</tr>
<tr>
<td>Ntabazinduna</td>
<td>IV</td>
<td>?</td>
<td>4.91</td>
<td>2.45</td>
<td>?</td>
<td>5.73</td>
</tr>
<tr>
<td>Chirindi</td>
<td>V</td>
<td>?</td>
<td>16.96</td>
<td>7.36</td>
<td>?</td>
<td>17.30</td>
</tr>
<tr>
<td>Ruvima</td>
<td>V</td>
<td>?</td>
<td>12.80</td>
<td>10.25</td>
<td>?</td>
<td>5.60</td>
</tr>
</tbody>
</table>
(Note: The thinking behind this procedure derives in part from Cliffe's report on 'Policy Options for Agrarian Reform, 1986, pp. 113-123. However, I have been unable to include arable land per household, as Cliffe does, because the data on this aspect was not collected.)

The indices were used to categorise the resource base in each grazing scheme as 'good', 'intermediate' and 'poor'. The criteria are specified in more detail in Table 14. The data on which the scores are based are contained in Table 10 (stocking rates), Table 13 (average cattle and grazing per household), and Annex A (present veld condition). The actual scores given are shown in Table 15.

4.4.2 Evaluating viability: community participation

However good the resource base, a grazing scheme will only succeed if the community which adopts it develops the capacity to manage its common property resources in a wise and sustainable manner. As discussed in Section 4.1, institutional development and high levels of participation and commitment are at the heart of the matter. Thus the second aspect to be assessed in considering viability is the degree of community participation in the schemes in the project. Used here are the ratings given to each community in Section 4.1 and shown in Table 16.

4.4.3 Evaluating viability: analysis and implications

The relationship between the two critical variables, each divided into three categories, is shown in a 3 x 3 table (Table 16). Because of the small number of cases no statistical analysis is possible, and the data must be interpreted by means of qualitative judgments.

No clear pattern of correlation between the variables emerges. Communities with a poor resource base may nevertheless display a high level of community participation (e.g. Tagarika), or at least an intermediate level. Similarly, communities with an intermediate resource base may display low levels of participation (Zinyoro), Chiweshe, Machingo).

If the table provides a poor basis for explaining why communities show greater or lesser levels of participation, it is more useful for interpreting the prospects for success, and for indicating what kinds of interventions are needed.

Thus grazing schemes which fall into cells number 1, 2, 4 and 5 may be said to stand a reasonable chance of success - both the resource base and the degree of participation are at levels which make it a fair possibility. Those schemes with high levels of participation but only an intermediate resource base in cell 4, (i.e. Muchinjike, Masimba and Mangwanya), need technological interventions in order to boost their chances of success. (These could, for example, include a major focus on veld reclamation, pasture legumes establishment, measures to intensify arable production, irrigation, agroforestry projects and so on).

Schemes in cell 2, on the other hand, need a major focus on improved levels of participation and commitment - i.e. an organisational intervention is
### Table 14: Criteria for assessing resource base

<table>
<thead>
<tr>
<th></th>
<th>Good 2</th>
<th>Intermediate 1</th>
<th>Poor 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Grazing area per household</td>
<td>Enough for 10 cattle</td>
<td>Enough for 5-10 cattle (at double recommended stocking rate)</td>
<td>Enough for &lt;5 cattle</td>
</tr>
<tr>
<td>Natural Region II</td>
<td>&gt;5.9 ha</td>
<td>2.9-5.8 ha</td>
<td>&lt;2.9 ha</td>
</tr>
<tr>
<td>Natural Region III</td>
<td>&gt;17.6 ha</td>
<td>8.0-17.5 ha</td>
<td>&lt;8.0 ha</td>
</tr>
<tr>
<td>Natural Region IV</td>
<td>&gt;23.6 ha</td>
<td>11.8-23.5 ha</td>
<td>&lt;11.8 ha</td>
</tr>
<tr>
<td>Natural Region V</td>
<td>&gt;29.4 ha</td>
<td>14.7-29.3 ha</td>
<td>&lt;14.7 ha</td>
</tr>
<tr>
<td>(2) Cattle per household</td>
<td>10 or more</td>
<td>5-9</td>
<td>&lt;5</td>
</tr>
<tr>
<td>(3) Present stocking rate as % of recommended rate x 2</td>
<td>&lt;100%</td>
<td>100-200%</td>
<td>&gt;200%</td>
</tr>
<tr>
<td>(4) % cattle ownership</td>
<td>&gt;80%</td>
<td>60-79%</td>
<td>&lt;60%</td>
</tr>
<tr>
<td>(5) Present condition of veld grazing</td>
<td>&quot;Good&quot;</td>
<td>&quot;Fair&quot;</td>
<td>&quot;Degraded&quot;</td>
</tr>
</tbody>
</table>

**Bases of criteria used:**

1. 10 cattle = sufficient for sustainable reproduction of a draught team of 2 oxen
2. National average for Communal Areas is ±5 cattle per household (GFA 1986, p67)
3. See Section 4.2.3 in text
4. % households without cattle generally 25-35% (see data in Cliffe 1986, p31)
5. Based on assessments in field visits and in reports from Veld Trend Monitoring Programme (Agriex Animal Production Branch)
Table 15. Assessment of resource base

<table>
<thead>
<tr>
<th>Scheme</th>
<th>(Scores for criteria specified in Table 14)</th>
<th>Total</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chikowore</td>
<td>2  1  2  1  2</td>
<td>8</td>
<td>Good</td>
</tr>
<tr>
<td>Chiwundura</td>
<td>1  1  1  2  1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Denhere-Katsvamutima</td>
<td>1  1  1  2  0</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Zinyoro</td>
<td>1  1  1  ?  1</td>
<td>4/8=5</td>
<td></td>
</tr>
<tr>
<td>Muchinjike</td>
<td>1  0  2  0  1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Kowoyo A</td>
<td>0  0  1  1  2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Chiweshe</td>
<td>0  1  1  1  1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Machingo</td>
<td>1  0  1  1  1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Kowoyo B</td>
<td>0  0  1  0  2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Masimba</td>
<td>0  0  2  1  0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mafuzha</td>
<td>0  1  0  2  0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mangwaya</td>
<td>0  1  0  2  0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Kowoyo C</td>
<td>0  0  1  0  1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Mutakwa</td>
<td>0  0  1  1  0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Tagarika</td>
<td>0  0  0  0  2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Mativenga</td>
<td>0  0  1  ?  0</td>
<td>1/8=1.3</td>
<td></td>
</tr>
<tr>
<td>Mangezi</td>
<td>0  0  0  0  1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ntabazinduna</td>
<td>0  0  0  0  0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Rating:**

- > 6 = good
- 3-5 = Intermediate
- <3 = Poor
Table 16. Assessing the viability of grazing schemes

<table>
<thead>
<tr>
<th>Resource Base</th>
<th>Community Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Fair</td>
</tr>
<tr>
<td>Chikowore</td>
<td>Chiwundura</td>
</tr>
<tr>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Muchinjike</td>
<td>Mafuzha</td>
</tr>
<tr>
<td>Masimba</td>
<td>Kowoyo A</td>
</tr>
<tr>
<td>Mangwaya</td>
<td>Kowoyo B</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Denhere-Katsvamutima</td>
</tr>
<tr>
<td>Taganka</td>
<td>Kowoyo C</td>
</tr>
<tr>
<td>Poor</td>
<td>Mutakwa</td>
</tr>
<tr>
<td></td>
<td>Mangezi</td>
</tr>
<tr>
<td></td>
<td>Mativenga</td>
</tr>
<tr>
<td></td>
<td>Ntabazinduna</td>
</tr>
</tbody>
</table>
called for. In the case of Chiwundura this would involve the attempt to institute a fully-fledged SDG rotational grazing system. (The flaw in omitting arable holdings as an indicator of land pressure is evident in the case of Chiwundura, where people reduced their lands in order to establish the grazing scheme, and it is difficult to see how the next generation can be allocated fields without encroaching on grazing land.)

Schemes which fall into cell 5 need both kinds of intervention, technological and organisational, in order to improve their prospects of viability. Thus Denhere-Katsvamutima, for example, merits attention from Agritex on both counts: the veld is in poor condition at present and suggestions for improvement such as those made by the Midlands Veld and Pasture Specialist (e.g. veld reinforcement with exogenous grass species) need to be taken very seriously. On the other hand, the community needs to reduce the donor dependency which has developed and become more self-reliant, and strengthen its commitment to rotational grazing.

Grazing schemes which fall into cells 3, 6, 7, 8 and 9 display either low levels of participation or have a poor resource base, and their chances of success are much smaller. Communities such as Ntabazinduna clearly need a major reallocation of resources, such as is involved in significant levels of resettlement, in order to ameliorate the enormous pressure on the resource base that exists at present - not to mention in the future.

Similarly the schemes in cell 6 (Chiweshe, Machingo, Zinyoro) are all in need of major organisational interventions if viability is to become a prospect. The level of community participation needs to be drastically increased. This is not yet an impossible task in the first two mentioned. In Zinyoro, however, it may be impossible to retrieve the situation.

4.4.4 Land pressure and land shortage

Cliffe (1986,p.64) marshalls an impressive array of evidence in support of the view that while from a conventional land management viewpoint the communal areas are overstocked, in terms of the draught power needs of the people they are understocked. Thus the problem can be reconceptualised as a question of land shortages.

Thus, in Cliffe's view, transformation of communal areas by means of internal reforms cannot by itself offer a solution to people living in areas of great land pressure. Complementary measures including expanded resettlement, incorporation of neighbouring ranching land into a Communal Land (perhaps in the form of a Model D resettlement scheme) and increased intensification of production through irrigation are also needed.

In some grazing schemes the need for more land was strongly expressed in interviews and discussions - for example, in Mwenezi, in Chiwundura and in Ntabazinduna. In the latter the vegetation has been so reduced by a combination of drought and heavy grazing pressure that most of the community's cattle are being kept on a ranch belonging to the army, 20 kms away - an informal version of 'Model D' resettlement.

Grazing schemes are clearly not the complete answer to the problems of communal area livestock - other kinds of technological interventions and
policy measures are needed as well. Urgently required is the comprehensive national policy on livestock development which government has been promising for some time, and which takes account of the complexity of the problems. This policy, in turn, must complement others in an integrated strategy of agrarian reform.

4.5 Replicability of grazing scheme

How replicable is the project in communal areas in general? Can grazing schemes contribute usefully to development efforts, and in particular to government's stated desire to reorganise land use in these areas?

Firstly, it must be noted that while relatively few schemes have been funded by donor agencies since independence, and even fewer of these are as yet operational, a great many more are currently on the drawing board. Thus a survey in late 1986 identified 106 schemes either operational or planned, with 36 of the operating schemes as yet unfenced (Cousins 1987, pp. 31-33).

Many of these schemes are as a result of the drive by Agritex to engage in land use planning throughout the communal areas, and are sometimes linked to the pilot villagisation programme. Some schemes undoubtedly derive from the desire by many communities to emulate neighbours with operational or planned schemes. (This appeared to be the case for Chikowore, Kowoyo, Zimuto, Mwenezi, and in Mhondoro, where members of unfenced schemes were interviewed.)

Thus the issue of replicability appears to have been pre-judged, by both government and rural communities. However, there are a number of crucial issues which need to be considered when assessing the prospects for grazing schemes in the future.

4.5.1 Analysing the resource base

Communities vary greatly in the degree of land pressure they are experiencing, and a careful analysis of the various dimensions of this problem needs to be made when planning a grazing scheme. Such analysis should take into account, for example, the future draught power needs of a community, and also the question of arable land for the next generation. Where the resource base is clearly inadequate, then complementary measures, involving the allocation of new resources (e.g. more land through resettlement, 'Model D' schemes, etc) or the intensification of arable production (e.g. through small-scale irrigation schemes) need to be introduced. On the other hand, there are undoubtedly some communities not suffering from such extreme land pressure, and these are prime candidates for grazing schemes.

4.5.2 Institutional development

The potential clearly exists within the social structure of the communal areas for communities to begin to develop appropriate modes of common property management, but assisting agencies need to focus much more explicitly on the central issue of institutional development.
Rules governing joint-use and management of resources must be allowed to emerge from within, with both communities and outsiders consciously engaged in a 'learning process' of the kind represented in Figure 9. (See also Chapter Five.)

Community participation must be carefully facilitated by extension agents with appropriate skills and attitudes. This will often involve local level field workers of different government departments or donor agencies working together and sharing a common view of the importance of encouraging participation. Appropriate skills and attitudes may need to be developed through training.

4.5.3 The costs of fencing

The high costs of fencing are often considered to be a stumbling block to the more widespread adoption of grazing schemes. Members of both planned and operating but unfenced schemes cite 'lack of funding' as their major problem (Cousins 1987, p.55). Does the high cost involved militate against the replicability of grazing schemes? Are there alternatives?

In the course of field visits interviews were carried out with members of communities claimed to be operating unfenced schemes, in Zimuto and in Mhondoro Communal Lands. In addition, interviews in the four fenced schemes in Zimuto included questions on the operation of rotational grazing before fencing was introduced. The focus of this aspect of the evaluation was on the feasibility of unfenced schemes as an alternative to high-cost designs involving fencing.

In unfenced schemes, most of which were first started before independence, 'rotations' usually consist of a seasonal rest of one portion of the grazing area. Sometimes three 'paddocks' are marked off by means of beacons, and animals are rotated through each of these areas. Herding is necessary to prevent animals straying into the wrong 'paddock'.

All respondents stressed the highly labour-intensive nature of this arrangement, and the difficulty they often experienced in maintaining the planned rotation. They also emphasised the problem of keeping animals from neighbouring communities out of their grazing scheme. None felt this was a viable long-term alternative to fencing and all were keen to receive donor assistance for the purchase of materials. Chamatamba community in Mhondoro, is raising funds itself to buy fencing because of the high priority they accord it.

Thus the possibilities of promoting unfenced schemes based on herding labour are probably limited. Although it is true that school-leaver unemployment is a major problem, it is not yet feasible to suggest that holders of 'O level' certificates should be herding cattle without any form of remuneration. The labour constraint in communal area farming is still a very real one.

If grazing schemes are to be fenced, does this mean that only a few, privileged communities will be the recipients of (relatively) scarce donor funds? The economic analysis suggested in Section 4.3 suggests that this form of investment in rural development is probably justified, but given
the fact that there are over 5000 VIDCO's in the country the total sums of money required are very large. The spread of grazing schemes may well be slowed down by this factor, although some District Administrations have been donating fencing materials as part of their public works programmes, and so donor agencies are now not the sole dispensers of funds for fencing.

However, if the principle of matching contributions, as discussed in Section 3.4, was applied the spread of schemes benefitting from external funding could be widened, even though the rate of implementation would be correspondingly slowed. A study of the feasibility of alternative modes of funding would need to take this factor into account.

4.5.4 Applied research and design alternatives

The prospects for grazing schemes would be enormously enhanced if those responsible for planning and implementing them had a better understanding of the ecological issues involved, and if greater clarity existed on the thorny issue of appropriate stocking rates. A programme of applied research on these issues is urgently needed. Scientists from the Department of Research and Specialist Services, Agritex and the University of Zimbabwe share a number of concerns, and a collaborative programme is perhaps possible. Work currently being carried out on 'Sustainability of Nutrient Cycling in Communal Area Farming Systems' by the Department of Biological Sciences at the University is particularly relevant, as is the research of Ian Scoones and Ken Wilson (both research associates at the University).

In addition, ideas on the design of grazing schemes which differ from the conventional SDG system are now being put forward - for example by Scoones and the advocates of Holistic Resource Management. These need to be tested on the ground, perhaps in conjunction with the research mentioned above. The anticipated problems which led to the 'Grazing Trials' programme proposed by Agritex in 1985 to be abandoned can perhaps be overcome if a community-based, participatory approach is adopted from the start. (Scoones and Cousins, 1988).
CHAPTER FIVE

THE ALLOCATION OF GRAZING RIGHTS AS A POLICY OPTION

The evaluation study was required to investigate the allocation of 'grazing rights' or 'grazing shares' as a policy option. The issue was discussed at seven group discussions convened for this purpose, and twelve different grazing scheme committees were present (all four schemes in Zimuto, and all three in Kowoyo, attended the same discussions). The idea was also discussed with Senator Chief Ndaweni of Ntabazinduna.

5.1 Grazing rights: putting a price on grazing

The approach to common property management suggested by Reynolds (1981) has had a degree of influence within Zimbabwe. Its rationale is derived from the view that under communal tenure a disparity exists between private and social costs, and that the latter needs to be included within the former. This is provided by the equal allocation to each member of a community of a grazing 'share', which is the right to graze a certain number of livestock units. The total number of units allowed would equal the carrying capacity of the grazing land. Individuals thus have a limited but guaranteed right of access to grazing. Those owning fewer animals than represented by their share have the choice of purchasing animals to fulfil their quota or selling spare grazing rights (on an annual basis) to another member of the community. They are thus compensated by those who use those same rights. A price for grazing is thus established among members of a community.

These procedures appear to give pre-eminence to a market-type mechanism which will provide a 'natural incentive' to efficient management, but the operation of the system would in fact depend upon the effectiveness of community institutions. For example, it is envisaged that a community management group is established and formed within 'natural community boundaries', and that this group annually sets the stocking rate of the grazing areas (with technical advice from government extension services). Regular community meetings would ensure that 'the majority interest in land and grazing husbandry is predominant over the minority interest in grazing exploitation' (Blackie 1982, p.16). Crucial to the successful operation of the 'share holding' concept is active member participation, a shared commitment to equity, and effective representative institutions at local level.

Also important in this proposal (and echoing the concerns of Lawry et al) is the overseeing of the system by central government, both to ensure the democratic functioning of local institutions and to retain overall accountability for the management of common assets. For example, central authority would have an ultimate say over the annually determined stocking rate.

5.2 Results of group discussions

The concept of 'grazing rights' was explained to those attending the discussions, sometimes using simple role plays, responses then being invited. It was made clear that this was not a concrete proposal being
put to the community by government or donors, but simply an idea for discussion. In the explanation given it was stressed that the decision as to total number of livestock units would be the community's. Usually one or two people did not grasp the principle immediately, and clarification was sought. Most people understood very quickly what was involved, including the implication of a maximum stocking rate.

In six discussions the reactions of most of the participants was negative and in two it was guardedly positive. Representative comments from each discussion are listed below, followed by an analysis of possible reasons for these responses.

1. **Chikowore** (Generally negative response)

   **Negative comments**
   - (a) "Non-cattle-owners will fence off their portions of the grazing and not allow us to use it."
   - (b) "Finding the money to pay will not be easy."
   - (c) Getting rid of excess stock is seen as problematic
   - (d) "It is a problem for owners to pay those without cattle."

   **Positive comments**
   - (a) "Non-cattle-owners will feel more involved in the scheme"
   - (b) "Good, because present arrangement is unfair, but it would be better for mutual agreements to be made rather than paying for shares."

2. **Muchinjike** (Strongly negative response)

   **Negative comments**
   - (a) Limitation on stock numbers is rejected.
   - (b) "A painful reminder of the tax on surplus animals under the previous regime."
   - (c) "Makes sense to help non-owners only if they are relatives."
   - (d) Accumulating a debt to non-owners is seen as a potential problem.

   **Positive comments**
   - None
3. **Kowoyo** (Generally negative response)

**Negative comments**

(a) Accumulation of debt to non-owners may be a problem.

(b) "Don't see how it helps the grazing."

(c) "I would rather produce extra fodder on my arable land."

(d) Resistance to ideas of limiting numbers per individual.

**Positive comments**

(a) "If everyone agrees I cannot stand against their wishes."

(b) "It is good if all benefit and if it is chosen and not forced on us."

4. **Denhere-Katsvamutima** (Generally positive response)

**Negative comments**

(a) "What if non-owners refuse to exchange."

(b) "Reducing my cattle is retrogressive - it forces me to join the laggards."

(c) "The committee can have its own programmes to reduce numbers to the level we want."

**Positive comments**

(a) "Good if it helps non-owners to get their own cattle."

(b) "Good if it improves commitment of non-owners."

(c) "Instead of paying cash we could do ploughing."

(d) "I will save to buy cattle."

(e) "This is socialism."

5. **Chiweshe** (Strongly negative response)

**Negative comments**

(a) Strong reminders of DC's policy of 'rings' under previous regime.

(b) "I foresee destocking coming again."

(c) "We are still helping each other with ploughing - we have no need for this idea."

(d) "We will not exceed our maximum numbers here because our sons will inherit our cattle."

**Positive comments**

(a) Similar to kuronzera idea.

(b) Good idea if no reduction in numbers follows.
6. **Zimuto** (Generally positive response)

**Negative comments**

(a) "Non-owners are just lazy - why reward them?"

(b) "Individuals may demand more than the agreed price."

(c) Worries about stock reductions expressed.

**Positive comments**

(a) General acceptance of principle indicated. Agreement with idea of a maximum stocking rate and selling old stock to maintain it. (Also some signs of being 'polite'.)

7. **Chiwundura** (Strongly negative response)

**Negative comments**

(a) "Why should non-owners benefit because of my cattle?"

(b) "Have-nots should have complained right at the beginning."

(c) "Non-owners already benefit from my cattle."

(d) "Non-owners are generally drunkards and gamblers."

(e) Bad experiences with lending cattle to those on resettlement schemes.

8. **Chief Ndaweni** (Negative response)

**Negative comments**

(a) "Reminds me of de-stocking policies of the past."

(b) "People are not all the same - some will never acquire cattle."

(c) "Outsiders would come in and buy shares."

(d) "Non-owners already benefit from the scheme."

**Positive comments**

None
5.2 Analysis and implications

What are the reasons for this generally negative response? One explanation is the link with the principle of setting a maximum stocking rate, which is an idea rejected in the short-term by most community members. In some cases the memory of destocking policies enforced by the District Commissioners in the past was evoked, particularly where the mechanism of issuing metal rings in accordance with the maximum allocation per individual was used.

Another factor is the apparent acceptance by most people of the inequalities that are found in rural communities, so that the idea of a redistribution of benefits from owners to non-owners, or from large owners to the rest, is not immediately seen as a great advantage. Many responses stressed the benefits that non-owners already derived from a grazing scheme, and the reliance of non-owners on owners for draught power.

A major underlying factor, of course, is that fact that these discussions were attended mostly by cattle owners, who are dominant on grazing scheme committees. Thus the responses may simply reflect the perceived self-interest of a faction within these communities. Given the fact that in most communities non-owners constitute a minority, this is a serious problem for the whole concept.

It is important to note that a number of positive responses were also recorded. Some of these stressed the benefits to non-owners, and to the whole community if the commitment of non-owners to the grazing scheme was thereby enhanced. Others emphasised the need for such a system to be voluntarily chosen by majority opinion, and not forced on the community.

Some of the positive responses also put forward the idea of payment 'in kind' rather than cash, as being more acceptable and in line with the customary reciprocal arrangements between households. This suggestion echoed some of the points made by those who were negative in their response, and raises an interesting possibility.

This is the idea that an equal number of grazing rights be allocated to households, but that compensation to those not owning sufficient animals to use their rights be in the form of either ploughing services, or the longer term loan of animals as in the traditional kuronzera system. Thus an innovation would be introduced which aimed to regulate the overall number of cattle on a grazing scheme, but which was based solidly on customary, and thus more readily accepted, mechanisms of sharing resources and spreading benefits.

As mentioned before, one scheme in the Mwenezi Radical Land Use Reform Programme has already discussed this kind of idea, and is actively promoting sharing of livestock. This is Tgarika, in Ward 14, where the whole programme appears to have had its genesis. Although at the moment the arrangement seems to be informal in operation, clearly this is a locally-developed innovation which needs to be studied and perhaps promoted elsewhere.
In general, the idea of a formalised allocation of equal grazing rights, whose distribution is annually renegotiated, is not a readily acceptable one to rural communities, even those which have adopted a grazing scheme. The principle, however, may be more so—especially where the mechanisms adopted take on a more traditional form. This bears out the conclusion made in Section 4.5.2 above, that institutional innovation must be encouraged to emerge from within communities, facilitated by outsiders but not imposed by them.
CHAPTER SIX

THE PASTURE LEGUME SEED PROJECT

6.1 Project design

Sub-tropical pasture legumes have been proved to be a practical way of reinforcing natural veld, improving its carrying capacity and the quality of the grazing in the better rainfall areas. Animal performance can be greatly improved even when given no other form of winter supplementary feed (Maclaurin 1985). However, this is a proven technology in the commercial ranching sector, and no reliable results have been achieved in communal areas at high stocking rates.

The project was designed in 1982 as an attempt to prepare the conditions for large-scale veld reclamation and improvement projects in communal areas. The objectives were to establish a number of peasant farmers as producers of pasture legume seed, and to provide them with a lucrative cash crop at the same time. At the time the supply of seed was relatively scarce, and it was anticipated that there was likely to be a continuing shortage in the future.

Initially the project envisaged a target group of 50 groups of 20 farmers (i.e. a total of one thousand farmers) engaging in seed production. Later the target was halved, to 25 groups, i.e. five hundred farmers. Also part of the project, but not the subject of this evaluation, was pasture improvement using legumes in the Small Scale Commercial Farming sector, involving a total of 125 farmers.

The 25 groups of communal area farmers were to be selected by Agritex field staff and located 'in the more suitable areas', i.e. in the better rainfall regions. Each group was to be issued with 12 kg. of pasture legume seed, fertilizer and lime, and sufficient fencing materials to fence a 4 ha. plot. The plot was to be shared by 20 individual farmers, giving them 0.2 ha. each, from which they would produce a highly lucrative perennial seed cash crop.

Total seed production from each plot (i.e. the project output) was anticipated to be 600 kg. per annum, a total of 15 tonnes from the 25 plots, valued at approximately $650,000. The project envisaged the seed being sold either to government (for use in larger scale projects), or commercially. Each participating farmer would undertake to return 2 kg. of seed to Agritex, thus making possible its redistribution to yet other farmers.
Cost apportionment in the project was to be as follows:

**EEC**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost (in $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 kg seed @ $10.00/kg</td>
<td>$3,000</td>
</tr>
<tr>
<td>2 Tons Single Super Phosphate @ $144/ton</td>
<td>$2,880</td>
</tr>
<tr>
<td>50 Tons Lime @ $200/ton</td>
<td>$1,000</td>
</tr>
<tr>
<td>Transport</td>
<td>$1,500</td>
</tr>
<tr>
<td>20 km fencing @ $450/km</td>
<td>$9,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$14,380</strong></td>
</tr>
</tbody>
</table>

By mid 1983 assuming 15% inflation, Total **$19,987**

**Local Community**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost (in $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour 500 farmers x 20 days x $2.00</td>
<td>$20,000</td>
</tr>
<tr>
<td>Tillage one-fifth ha. x 500 x $100</td>
<td>$1,000</td>
</tr>
<tr>
<td>Land $10/yr. for 5 years x 500</td>
<td>$25,000</td>
</tr>
<tr>
<td>Returned seed 2 kg x 500 x $8.00</td>
<td>$8,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$63,000</strong></td>
</tr>
</tbody>
</table>

**Government**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost (in $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff wages 100 visits x quarter day x 4 x 5 years @ $10.00/day</td>
<td>$5,000</td>
</tr>
<tr>
<td>Planning and Administration</td>
<td>$4,500</td>
</tr>
<tr>
<td>Transport (Provinces and H.O.) 5 years</td>
<td>$6,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$15,000</strong></td>
</tr>
</tbody>
</table>

Management procedures for the disbursing and accounting of funds were the same as those used in the grazing schemes project in the 1982-1985 period.

**6.2 Project implementation**

The Delegation agreed to disburse all the funds at the same time, rather than in two phases, given the nature of the project. Thus $9,560 was advanced on 17 October 1983 and a further $9,565 on 10 November, 1983. A final accounting took place in 1985, with the Secretary for Agriculture requesting a transfer of $143,95 to the pasture improvement component of the project to the legume seed for peasant farmers component, to compensate for overexpenditure to this amount.

The first legume plots were planted in the 1983/4 season. Germination was generally poor, this being a year of poor and irregular rainfall. More seed was planted the following year, yielding better results.
Interviews with Agritex officials revealed that the original project design had not been followed in all cases. Instead of organising groups of farmers, in Mashonaland West inputs were distributed to individual farmers for sowing in their arable lands. (This appears to have been the method generally used when Agritex later began to distribute legume seed to farmers, using its own funds.)

The objectives of the project were not always well understood by Agritex field staff. Thus in Musana, Mashonaland Central, the idea that the seed would be produced as a cash crop was not communicated to local extension staff or to farmers. It was instead understood to be primarily used for veld reinforcement.

The generally poor germination achieved in the first year meant that no seed was collected. The market situation also appears to have subsequently altered. According to the Provincial Agricultural Extension Officer in Mashonaland Central, a market glut rather than a severe shortage of pasture legume seed was apparent from 1984 onwards (perhaps because of production by large scale commercial farmers). Some groups also encountered problems with unauthorised grazing of the legume plots after fences were either cut by outsiders, or the plots were invaded by goats. Thus far no group appears to have harvested seed regularly, sold it as a cash crop, or returned seed to Agritex in substantial quantities. (A verbal report was received that one group had returned a certain amount of seed.)

Three species of pasture legumes were used in the project: Siratro (*Macroptilium atropurpureum*), Fine Stem Stylo (*Stylosanthes guianensis*), and Silverleaf (*Desmodium uncinatum*). Performance of these species in some plots is discussed in the next section.

No final report on this project appears to have been submitted by Agritex, and information on the results obtained is generally scarce. However, the Veld and Pastures Section in Agritex was severely depleted of staff in the course of 1984 and 1985, and this probably accounts for the poor monitoring of the project.

6.3 Observations during field visits

Table 17 summarises the results of interviews and observations made during the course of field visits to six different legume plots, located in four different provinces. Although a visit to one legume plot in each of the provinces (but not Matabeleland North or South) was planned, Agritex staff in Manicaland and Masvingo Provinces had not organised visits.

The full 4 ha. proposed as the plot size was achieved in only two cases, (Chikwore and Mukarakate), with a modification being made in Denhere-Katsvamutima to allow 2 ha. of improved grass species to be planted for seed production purposes. In Muchinji, a 4 ha. plot has been fenced, but only 1,5 ha. of seed planted thus far. In Chlwundura two plots of 0,5 ha. each have been fenced and planted, and in Kandengwa in Zvimba Communal Land, a plot of about 1 ha. was fenced and planted.
<table>
<thead>
<tr>
<th>Location</th>
<th>Natural Region</th>
<th>Area Planted</th>
<th>Participating Farmers</th>
<th>Conditions of legumes</th>
<th>Utilisation</th>
<th>Problems experienced</th>
<th>Future intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Chikowore (Mash. Central)</td>
<td>II</td>
<td>4 ha</td>
<td>Community project: 46 households</td>
<td>Fair-some bare patches</td>
<td>No seed collected. Unplanned grazing by neighbour's cattle</td>
<td>Fence cutting. Plot located far from homesteads. Uneven germination</td>
<td>Reinforce veld in grazing scheme</td>
</tr>
<tr>
<td>2. Muchinjike (Mash. Central)</td>
<td>II</td>
<td>1.5 ha</td>
<td>Community project: 59 households</td>
<td>Uneven-good cover in patches</td>
<td>No seed collected. Unplanned grazing by neighbour's cattle</td>
<td>Fence cutting. Uneven germination</td>
<td>Reinforce veld in grazing scheme</td>
</tr>
<tr>
<td>3. Mukarakate (Mash. East)</td>
<td>II</td>
<td>4 ha</td>
<td>Community project: ± 50 households</td>
<td>Excellent. A prize winning plot.</td>
<td>No seed collected. Used for grazing</td>
<td>Pests attacking plants</td>
<td>Reinforce veld in planned grazing scheme</td>
</tr>
<tr>
<td>4. Kandengwa (Mash. West)</td>
<td>II</td>
<td>±1.0 ha</td>
<td>Group of ± 30 farmers</td>
<td>Virtually none surviving</td>
<td>None</td>
<td>No droppers supplied; fence destroyed; plot abandoned</td>
<td>Not clear</td>
</tr>
<tr>
<td>5. Denhere—Katsvamutima (Mash. West)</td>
<td>II</td>
<td>2 ha (+ 2 ha grass seed nursery)</td>
<td>Community project: 84 households</td>
<td>Poor-eaten by goats</td>
<td>No seed collected. Improved bulls grazing in dry season</td>
<td>Invasion by goats</td>
<td>Reinforce veld in grazing scheme</td>
</tr>
<tr>
<td>6. Chiwundura (Midlands)</td>
<td>III</td>
<td>1 ha</td>
<td>Community project: households</td>
<td>Uneven germination: good cover in patches</td>
<td>No seed collected. Unplanned grazing by cattle</td>
<td>Uneven germination. Gate removed.</td>
<td>Reinforce veld in grazing scheme</td>
</tr>
</tbody>
</table>
The target group also showed variations from project design. In most of the plots visited the project had become a community project linked to a grazing scheme that was being established, or being planned. Only in Kandengwa was a smaller group of farmers involved. It appears that local extension staff were free to adapt this aspect of the project to fit local conditions, and where a grazing scheme was planned have felt it most appropriate to link the idea of seed production to veld reinforcement of paddocks.

With regard to the condition of the plots, the stand was generally still uneven, with good cover in certain patches only. Exceptions were Muchinlike, a prize-winning plot with an excellent stand and healthy growth, and Chikowore, where condition was fair. In Kandengwa only a handful of Fine Stem Stylo plants survive, but the fence has been largely destroyed and the plot abandoned.

No group has yet collected seed, and the only utilisation thus far has been in the form of grazing of animals, either intentionally (Mukarakate and Denhere-Katsvamutima) or by accident. The palatability of legumes has thus been demonstrated to farmers and they have no doubts as to their potential to improve veld should large-scale reinforcement prove feasible.

Two plots have experienced a serious problem of fencing cutting by outsiders, carried out for the purpose of grazing their cattle in the plots. In Muchinlike this is a symptom of a wider problem concerning boundaries for their grazing scheme. In Chiwundura one of the fences had been recently removed by unknown persons and cattle had grazed the plot. In Mukarakate a problem of insect pests attacking the legumes had been experienced, and strong community organisation has meant the plot is well managed and thus far unattacked by outsiders. There are also no goats to be found in Mukarakate, this being a serious problem in Denhere-Katsvamutima.

In terms of future utilisation, all the plots except in Kandengwa were planned to be used as nurseries to produce seed for reinforcement of the veld in a grazing scheme. When questioned on the issue of returning some seed to Agridex, farmers indicated their willingness to do so should they be asked, or to donate seed to other farmers. This aspect however, has clearly not been stressed by extension staff.

As regards the performance of the different species, the best stands had been obtained with Fine Stem Stylo, and farmers and extension staff emphasised its tolerance of drought. However, its low growing habit made it appear less useful to farmers, and seed collection was perceived to be a potential problem.

Siratro was performing reasonably well and was perceived as the most useful of the legumes. Silverleaf was not germinating or surviving very well and was not perceived as a potentially useful pasture legume.

In addition to these six plots a cursory visit was made to a legume plot established in Zimuto in the 1970's by an extension specialist. This is not an EEC funded plot and no farmers were interviewed, but it is interesting because it is located in Natural Region IV. Siratro and Fine
Stem Stylo are again performing well, even where rainfall is generally fairly low and unreliable.

6.4 Impact and future prospects

If the six plots visited are taken as representative of the full 25 in the project, then the impact of establishing legume seed nurseries has thus far been very limited. No seed has been collected or returned to Agritex, and veld reinforcement is still at the planning stage. Problems in growing the crop and in preventing incursions of outsiders' cattle or marauding herds of goats have been experienced.

On the positive side, however, some of the legume species have demonstrated a capacity to survive in communal area conditions of drought and heavy utilisation. Farmers themselves perceive them as potentially useful veld reinforceers, and in most cases appear committed to attempting such an exercise when they have established paddocks for rotational grazing. It appears they have the potential to survive even in the drier zone of Natural Region IV.

It is also reported by extension staff that the distribution of seed to individuals has been fairly successful. Small quantities of legumes are being established on contour banks or within fenced areas of arable land, and are being used as supplementary feed for cattle in winter.

It is recommended that extension staff give a higher priority to legumes than they have done up to now, but to focus most of their attention on those communities which are adopting grazing schemes. Establishment of nurseries stands a reasonable chance of success where community organisation is strong. Attention needs to be paid to the potential problem of invasion of goats, and wire mesh fencing may be required for nursery plots.
CHAPTER SEVEN

CONCLUSIONS

This chapter briefly summarises and brings together the evaluative judgments which are scattered through the main text of the report. The chapter which follows contains the major recommendations of the study.

7.1 Overall project conception

Government policy with regard to communal area livestock has been based on the view that overgrazing is leading to ecological degradation, the recognition that often it is in the individual farmer’s interest to increase his cattle holdings, the view that communal tenure constitutes an obstacle to better management, and an emphasis on grazing schemes as the only viable intervention in the short-term.

There are significant ambiguities and inconsistencies in this policy framework. For example, it is not clear how stock numbers will be reduced, or precisely how customary rules of tenure will be modified. Both the need for destocking and the voluntary and participatory nature of the proposed restructuring of land use have been emphasised - but how these potentially conflicting policy goals will be reconciled has not been spelled out.

Agritex practice has reflected the lack of coherence in this framework and the ambivalence it displays towards the notion of community participation.

The objectives of the project were narrowly defined in terms of improved grazing management. Many individual proposals included references to the institutional aspects of management (e.g. ‘elected grazing scheme committees’) but saw these as unproblematic means to the ‘higher’ end of technical viability. The revolutionary nature of what was being proposed (voluntary stock limitation in the face of economic necessity) was not adequately conceptualised, and institutional development was implicitly assigned a secondary status in project design.

The place of small stock (sheep and goats) in the proposed grazing management regimes was not given adequate attention, and it was not clear how their movement was to be controlled. This is partly due to the general lack of technical solutions to these problems.

Output targets for the planned grazing schemes were not stated in quantitative terms in most proposals, but indicated instead the expected benefits in qualitative terms (e.g. increased forage production, improved provision of draught, increased offtake, etc.) Given the uncertainties surrounding livestock production parameters in communal areas, and even more so in regard to the effects of rotational grazing under high stocking rates, this was more appropriate than detailed projections of benefits in quantitative terms.
Partly because of these uncertainties, and partly because one possible outcome of improved grazing management is an increase in overall cattle numbers (for example, as non-owners acquire cattle and put them onto the scheme), it would have been useful to have adopted a 'learning approach' to grazing schemes. A wide range of possible outputs could have been specified and then monitored and evaluated.

Assessing the location of the grazing schemes in the project, many communities selected themselves by responding enthusiastically to Agritex's prompting; often these had adopted some form of grazing scheme in the pre-independence period. Within this group, a few schemes were primarily self-motivated while others needed much attention from Agritex staff before an adequate degree of community commitment was achieved.

Two grazing schemes (Donhere-Katsvamutima and Chiweshe) were located in particular communities as a result of their selection by an outside agency, and varying degrees of commitment to the schemes were then achieved as a result of the extension effort which followed. In one community (Zinyore) inadequate consultation took place and only a small minority was actually in favour of the scheme: implementation here has been highly problematic.

In general, then, 'bottom up' approaches which involve a high degree of consultation with beneficiaries have predominated over 'top down' approaches in this project.

The target group in the project was defined as the entire membership of the community with rights of access to a given area of grazing land. Despite certain problems in respect of precise definition of community membership, on the one hand, and of resource boundaries on the other, the target group was the appropriate one. This is because of the continuing strength and legitimacy of communal tenure of grazing land.

The local institutions through which the project has been implemented are mostly grazing scheme committees. In terms of familiarity with this organisational form, precedent and official policy, this choice was appropriate, the creation of VIDOCS and WADOCS in 1985 not invalidating the earlier choice.

The role of the community and the committee in the project was envisaged in the following terms: 'the community' would be the central decision-maker, acting through its elected committee, extension agents playing a mainly advisory role. In the main, the conditions necessary for these roles to be effectively enacted are attainable by an extension agency which follows its own precepts of fully consulting communities, encouraging participation in decision-making, and making available sound technical advice in an accessible form.

Much more problematic, however, is the issue of the control of stocking rates and the by-laws which attempt to create a mechanism for such control. In general, extension staff in communal areas avoid any mention of maximum stocking rates and instead encourage farmers to sell their older stock, hoping to achieve stock limitation 'via the back door'. In grazing scheme proposals, communities have sometimes been asked to sign sets of by-laws which state that maximum stocking rates as determined by Agritex will not
be exceeded. The intention seems to have been to use the 'bait' of fencing to achieve voluntary stock control 'via the front door'.

However, grassroots extension staff in daily contact with the communities concerned have been reluctant to make this a central issue, and in large measure formal by-laws drawn up by Agritex are moribund. By-laws which are operative are those which have been discussed and agreed at community meetings, and these are mainly concerned with management issues (e.g. rotations) or policing issues (e.g. fines for fence cutting). They are not usually held in writing. The evolution of new rules governing resource use has taken place, but the central issue of stocking rates has been largely avoided by both community members and local extension staff.

The major implementing agency in the project has been the Department of Agricultural Technical and Extension Services (Agritex). Although there are a few issues not well understood by grassroots field staff (e.g. calculation of Livestock Units), on the whole Agritex staff are technically competent in the planning of grazing schemes. Management skills, however, have been lacking in some critical areas of work— for example, monitoring and reporting of progress on grazing schemes was inadequate at the beginning of the project.

The major problem within Agritex is the lack of a strong body of knowledge, experience and expertise with respect to questions of institutional functioning and development. These are central issues for grazing schemes, and this shortcoming has had severe consequences.

Although this analysis has revealed major deficiencies in overall project design, it must also be recognised that these are judgments made with hindsight, that many of the inconsistencies and ambiguities arise from deep-seated problems of resource allocation in Zimbabwe which the national policy framework has not yet resolved, and that there is no general consensus on solutions to some of the technical problems. On the whole this was a reasonably well-integrated project in its basic concept and design.

7.2 Comparing targets and achievements

Physical inputs in the project consisted in the main of the supply of fencing materials. A detailed comparison of planned inputs with those actually used is not possible because adequate records of the latter have not been kept. It is clear that many significant modifications to original plans have been made in the course of implementation, usually in response to an expressed need within the community—for example, to avoid forcing homesteads to move to another location. Implementation has thus been flexible and adaptive. In terms of facilitating community participation and commitment, this flexibility has had mostly positive effects, but a negative result has sometimes been a lack of sufficient fencing material to complete all the planned paddocks.

Planning and implementation procedures have evolved and been deliberately modified during the course of the project in an attempt to streamline the process and avoid the lengthy delays which characterised the earlier schemes. Those schemes whose proposals were processed using the improved
procedures benefited greatly in terms of lack of delay and ease of management. The clarification of roles and responsibilities which was required was a 'learning process' for all the parties concerned: Agritex, officials at Ministry of Agriculture headquarters, Ministry of Finance, Economic Planning and Development, and the EEC Delegation.

The implementation record reveals that delays here occurred in each of the different phases of the project (period between first discussions with the community and first submission of a project proposal; period between first submission and final approval by the EEC; period between final approval and delivery of materials). The record is a mixed one: different schemes have experienced long delays at different stages in the whole process. Some of the reasons for this have been: a necessarily lengthy period of consultation with the community (particularly where ambitious 'land reform programmes' have been planned); misunderstandings within Agritex; lack of clarity on project procedures; the requirement that by-laws be signed by the community; assurances on a maximum stocking rate being required by the EEC Delegation; project documents requiring revision, often of cost apportionment; inadequate accounting of payments; transport problems.

Cost apportionment has followed EEC Microproject requirements (a maximum of 50 percent of total costs met by the donor), the communities contributions ranging between 32 percent and 46 percent. Community contributions have mostly consisted of labour to erect fences and locally cut timber although in some cases fairly large sums of money have been raised as well. Government contributions have been in the form of staff salaries and transport, and have ranged between 3 percent and 30 percent of total costs.

In two schemes the Lutheran World Federation (LWF) has made significant contributions, aiming to complement the grazing scheme with supporting grants and services which would give the project a more integrated character. In both of these schemes symptoms of a 'donor dependency' syndrome were observed, which indicate that too much external assistance may be stifling community initiative.

Variations in the cost of fencing have occurred between schemes which cannot be fully accounted for. In some cases inflationary price rises over time may be responsible, in others design factors (e.g. 'kinks' in fence lines) may be having an effect.

Alternative approaches to funding of grazing schemes need to be considered. The degree of community participation in the planning, implementation and management of a scheme is crucial to its success, and the stipulation that a substantial contribution to meeting the costs of a scheme should come from the community is intended to guarantee a requisite level of commitment and enhance the degree of participation.

There are indications from schemes within the project that large cash contributions are well correlated with high levels of commitment. Communities are capable of raising fairly considerable sums of money from their own resources, and the principle of matching contributions from donor agencies may be a feasible one to apply. (LWF is already doing so in the Mataga grazing scheme).
The corollary would be donor agencies accepting longer delays in the disbursement of funds and a longer time-schedule for project completion. The possibility of setting up a "Fencing Trust Fund" needs to be investigated, as does the feasibility of promoting more widely the principle of a sliding scale of contributions from community members.

The performance of Agrifex in planning, supervising and monitoring the project has been competent in many respects (technical planning, consultation with communities, supervision of fencing work), but inadequate in others (cost estimates by field staff, consideration of institutional issues, and irregular reporting). There is a degree of confusion over the vexed issue of stocking rates and carrying capacity in communal areas, and a major problem has been that of over-positive reporting and a neglect of the problems, difficulties and deviations from plan often found. Modifications from the original plan have often gone unreported or unreconciled, with consequent problems for materials supply and appropriate extension advice on grazing management.

Many modifications have been made in order to accommodate community needs. While this does encourage commitment to the scheme, a negative effect is a lack of clarity on the management implications, and the possibility that ad hoc planning may result in poorly laid out schemes.

7.3 Project impact

Common property resource management is increasingly viewed as a central issue in development, and is at the heart of the Zimbabwe government's plans to restructure land use in the communal areas. Grazing schemes involve the modification of traditional tenure rules and the emergence of new resource management institutions. This evaluation study has therefore attempted to assess the degree of community participation in the project, analyse the implications for the evolution of effective common property resource management in the communal areas, and develop a set of indicators for assessing the likelihood of the success of a grazing scheme.

Impact on populations and institutions

The many semi-structured interviews carried out in the course of this study focussed on community identity, communal resources, and people's perceptions of these. In general it would found that:

(a) the idea of 'community' is powerfully present in communal area social life and comprises an important component of household identity.

(b) there is a strong connection between a community and the natural resource base - part of what defines a community is shared use of grazing, water and woodland resources.

(c) traditional leaders continue to play an important role in community decision-making, particularly with regard to natural resources.

(d) communities adopting grazing schemes demonstrate a keen sense of proprietorship over their common property resources, and this is
rooted in perceptions of increased individual benefits from improved cattle production off grazing land.

(e) members of grazing schemes reject the idea of maximum stocking rates in the short term, but acknowledge the existence of upper limits which cannot be exceeded without damage to the resource.

(f) grazing scheme by-laws which have emerged from community discussions show an awareness of the need to conserve and manage resources, but do not include provisions for limiting stock numbers.

(g) grazing scheme committees are local institutions which enjoy community support, but their performance as regards management of schemes is deficient in some respects. Record keeping is indifferent, many do not hold their agreed by-laws in written form, only some have actually imposed fines when by-laws have been broken, and many have not yet discussed the question of the maintenance and repair of fences.

Grazing scheme by-laws are of two kinds, the 'official' version usually drawn up by Agritex and sometimes signed as a precondition for obtaining donor assistance, and an 'unofficial' version which has emerged from community discussion. The first kind includes an agreement to limit stock numbers, but the second does not. Members of grazing schemes will only admit to the existence of the first kind when specifically questioned about them.

Two attitudes appear to be held. The first involves acceptance of a set of rules which originate in the needs and concerns of outsiders, and which it is beneficial to give one's formal agreement to, even though one has no intention of following them. The second involves the idea that in the long run there may well be a need to have rules regulating stock numbers. Together they amount to a pragmatic approach to rule-making concerning grazing land management, which appears to be shared by local extension staff.

While it is true that no scheme has included a maximum stocking rate in its locally evolved set of by-laws, in Tagarika in Mwenezi District the idea of a maximum allocation per individual household has clearly been discussed. Those with more than 12 head of cattle are supposed to lend them to non-owners or to those with less than this number, as in the traditional 'kuronzera' system. Emerging from within this community are new ideas about regulating stock numbers which take the needs of non-owners into account. Tagarika demonstrates that this sensitive issue can be approached by encouraging institutional innovation from within rather than by imposing rules from the outside.

A learning process approach to common property management may assist extension staff to identify critical processes and possible outcomes in different communities. In a 'positive cycle' the decision to adopt a grazing scheme, the mobilisation of community commitment, and the effective implementation of the scheme tends to increase community cohesion and expand the capacity for common property management. This in turn
facilitates the development of new rules which regulate herd size and lead to sustainable forage production.

In a 'negative cycle' poor community organisation is evident, leading to conflicts over fencing and contributions, and the result may be less community cohesion than before and a reduced capacity for common property management.

Assessing community participation. Using a scoresheet comprising ten indicators of community participation, analysis of the data collected in interviews showed that five schemes had high levels of participation, eight had fair levels, and three had low levels. On balance the project has had a significant impact on the capacity of the target communities to manage their communal grazing land, and demonstrated the potential for institutional development in respect of common property resources in the Communal Lands of Zimbabwe.

A number of factors which probably predispose towards high levels of community participation have been identified (e.g. the degree of coincidence between community and resource boundaries, strong and legitimate leadership, a history of cooperation between villages, etc.). More research on these questions is, however, required.

Impact on ecological parameters

With regard to veld condition, the fact that an assessment was carried out at the end of the dry season, coupled with the short period of time that has elapsed since rotational grazing was first begun, means that only tentative conclusions can be drawn.

The broad picture that emerges is of veld in a condition typical of communal areas: heavily utilised, dominated by either 'increasers' or 'invaders', but with isolated patches of more desirable species such as *Hyparrhenia*. Basal cover is mostly good or fair, with only a handful of schemes evidencing very poor cover and widespread sheet erosion.

With regard to cattle condition, in seven schemes cattle condition was 'fair to good', while in another seven condition was 'poor to fair'. There is a poor correlation between cattle condition and veld condition - for example in Chiwundura veld is improving but cattle condition was poor. There is also a poor correlation between stocking rate and cattle condition - for example in Tagarika cattle were in 'very good' condition despite severe 'overstocking'.

Given these inconsistencies and the methodological problems encountered, it is difficult to make unequivocal statements on ecological impact. In some schemes there are signs that rotational grazing may be assisting in veld regeneration, but in others there are few signs of improvement.

A further difficulty is the lack of consensus amongst scientists on questions of carrying capacity and stocking rates. A debate on these issues is still in progress, with some ecologists arguing that currently recommended stocking rates are derived from commercial beef production objectives, and that the true ecological carrying capacity of veld (a more
appropriate criterion in communal areas) may be much higher. A programme of applied research on this question is urgently required.

Economic impact

Members of grazing schemes are of the opinion that the scheme will improve their incomes by improving the productivity of their cattle, by improving crop yields, and by freeing labour for productive activities other than herding. This qualitative assessment of economic impact is confirmed by the diagnoses of Farming Systems researchers.

Data collected on herd structure and percentage offtake in grazing schemes show that these herds are still draught oriented, and that the introduction of the scheme is not resulting in any change in farmer's objectives with regard to cattle. The major functions remain the provision of draught, manure, milk, occasional sales and a store of wealth.

In order to assess the economic impact of the project in quantitative terms, the lack of available data has meant that a set of assumptions have had to be made, which have then been applied to a 'typical' community in Natural Region IV (Tagarika in Mwenezi District). Three levels of improved productivity (high, medium and low) have been assumed, and data on 'crop and livestock' income derived from other research, have been used as a baseline.

At a high level of improved productivity household income in Tagarika would increase by $99,61 p.a. as a result of the adoption of the grazing scheme. For the community as a whole the total investment would be recovered within just over two years. (Medium impact: $67,22 per household p.a., investment recovered in three years; low impact: $42,07 per household p.a., investment recovered in five years). Achieving these levels of crop and livestock income on a regular basis, however, will depend on technologies and policy measures which reduce the debilitating effects of drought. Grazing schemes will yield more reliable economic benefits in the higher potential regions, but the need is greatest in the lower potential regions.

7.4 Viability and replicability of grazing schemes

Viability

Indices of land pressure were used to evaluate the resource base of each grazing scheme, in three dimensions, the land:people ratio, the people:cattle ratio, and the cattle:land ratio. Three categories of resource base were adduced: 'good', 'intermediate' and 'poor'.

The rationale for this procedure derives from the understanding that it is economic necessity that motivates increasing stock numbers, and that where future pressure on grazing is reduced the chances of improving productivity will be much higher.
The other criterion used to assess viability was the level of community participation, which was rated as either 'high', 'fair' or 'low' (as described above).

Analysis of the relationship between these two variables (resource base and community participation) shows no clear pattern of correlation. It does, however, provide a basis for interpreting the prospects for success of different grazing schemes and indicating the kinds of interventions which are needed. Thus communities with fair to high levels of participation and intermediate to good resource bases may be said to stand a fair chance of seeing their grazing scheme succeed. On the other hand, communities where either the resource base or the level of participation are poor will need major interventions in these dimensions if they are to succeed.

Using these criteria, nine of the schemes are viable, although interventions to improve the resource base (e.g. by planting of pasture grasses in Denhere-Katsvanutima) or the level of participation (e.g. in Kowoyo A and B) would improve their prospects. In nine schemes viability is much more problematic, and major interventions to improve the resource base (e.g. Ntabazinduna) or the level of participation (e.g. Zinyoro) are needed if it is to be achieved.

One kind of policy intervention which is urgently needed is the relief of extreme land pressure by means of resettlement. 'Model D' grazing schemes, or other measures. In Mwenezi, Chiwundura and Ntabazinduna this need was strongly expressed in interviews and analysis of the resource base bears out farmers' views.

Replicability

Communities vary greatly in the degree of land pressure they are facing, and a careful analysis of the resource base needs to be carried out when planning land use. Where that base is clearly inadequate, complementary measures involving the allocation of new resources are required, in addition to the introduction of a grazing scheme. Some communities, however, can adopt grazing schemes without this being an immediate and pressing need.

This study has revealed the potential that exists for communities to begin to actively manage their grazing lands and other common property resources and that the institutional development that this requires can take place in communal areas. Assisting agencies, however, need to focus more explicitly on this issue, and rules governing resource management must be encouraged to emerge from a process of community discussion and debate. The depth of community participation will determine the extent to which the 'positive cycle' learning process outlined in Figure 9 can begin to take place.

The high costs of fencing may limit the widespread adoption of grazing schemes, and people interviewed on the question of the feasibility of unfenced, 'herding' schemes felt this was not a viable alternative. However, some District Administrators are now providing fencing as part of their public works programmes, and the application of the principle of
matching contributions would spread both donor agency and government funds more widely.

Government agencies and many rural communities are keen to see more grazing schemes in the communal areas, and this study concurs that they are indeed replicable on a much wider scale. A better understanding of how the existing livestock-grazing system actually functions, in ecological and economic terms, would aid in the design of appropriate schemes, and a programme of applied research on this issue is urgently needed. Alternative views on the design of grazing schemes (e.g., those of Scoones, and Savory) also need to be investigated.

**7.5 Grazing rights as a policy option**

This study has investigated the acceptability of grazing rights or 'shares' within a community. Those (in total) would equal the carrying capacity of the grazing land and could be exchanged within the community at a price determined by the group.

A generally negative response to the idea was evoked at a number of group discussions. One reason is the link with maximum stocking rates and the memory of forced destocking in the past. Another factor is the apparent acceptance of inequalities in the community, although the fact that cattle owners rather than non-owners were better represented at the discussions may have biased this view.

Some positive responses were also recorded. The suggestion was made in some cases that it would be 'in kind' rather than cash that was made by cattle owners to non-owners. In compensation for not being able to use their grazing rights, the basic principle would be more acceptable. 'In kind' would mean the provision of ploughing services or the longer term loan of animals as in the traditional *kudzorera* system.

Thus the idea of a formalised allocation of equal grazing rights, for which a price is set, is not readily acceptable in most rural communities. The underlying principle, however, of an upper limit to livestock numbers and a redistribution of livestock benefits within the community, may be more so, particularly where the redistribution mechanisms take on a more traditional form.

**7.6 The pasture-legume seed project**

The original project design had as its objective the establishment of a number of communal area farmers as producers of pasture legume seed, as a cash crop. The target groups was 25 groups of 20 farmers, who would share a 4 ha plot and return some of their seed to Agritex.

Project design was modified by Agritex in the implementation stage. Thus in Mashonaland West most seed was distributed to individual farmers for sowing in their arable lands, and in other cases the project became a community project linked to a grazing scheme. The objective of producing a cash crop was not always well understood by either local extension officials or farmers.
No seed has yet been collected in any of the plots which were visited. In some cases poor germinations have been achieved, and a market glut rather than a severe shortage of seed was apparent from 1984 onwards. Thus far no group appears to have harvested seed regularly, sold it as a cash crop, or returned seed to Agritex in substantial quantities.

In most plots cover was still uneven, but some utilisation has taken place through the grazing of livestock, either intentionally or by accident. Problems have been experienced with fence cutting by outsiders, invasions of goats and insect pests.

More positively, some of the legume species (Fine Stem Stylo and Siratro) have proved that they can survive in conditions of drought and heavy utilisation. Farmers perceive them as potentially useful for veld reinforcement, and appear committed to attempting to use them for this purpose. Pasture legumes do appear to have the potential to improve forage production in communal areas, but probably need to be given a higher priority in communities adopting grazing schemes.

7.7 Summary

EEC-funded grazing schemes were amongst the first to be funded in post-independence Zimbabwe, and were the forerunners of other schemes funded by non-government agencies and latterly by government itself. Despite long delays in implementation (only seven have been fully operational for more than one season), on balance the project has had a significant impact on thinking about livestock in the communal areas. It is too early to be able to assess the ecological, and thus the long-term economic implications of rotational grazing under the high stocking rates characteristic of this sector, but the institutional developments which have been a consequence of the project are very important. They demonstrate that rural communities indeed have the potential to take responsibility for the management of their common property resources. The 'Tragedy of the Commons' is a possibility - but not an inevitability.

The project has also revealed inconsistencies and ambiguities in government policies with regard to livestock in the communal areas. There is a lack of consensus amongst scientists on key questions of carrying capacity which is in urgent need of further research and clarification. The major government department involved in the project, Agritex, has been shown to display great strengths, particularly in its emphasis on consultation with communities and a willingness to adapt plans in a flexible manner, but it also shows weaknesses in certain important respects. Donors may need to adjust their funding procedures for projects such as these which involve whole communities.

All these issues need to be addressed if the further evolution of grazing schemes is to be facilitated. Since some of these are controversial, debate, discussion and no doubt compromise will have to precede the development of appropriate guidelines for grazing schemes in future. It is hoped that this evaluation study may contribute to that discussion.
CHAPTER EIGHT

RECOMMENDATIONS

8.1 Development of new grazing schemes

8.1.1 It is recommended that grazing schemes continue to be vigorously promoted by Agritex and other agencies, and that they continue to form a central component of government's livestock development policy for the communal areas. Adoption of a grazing scheme should be voluntary, planning of the scheme should be carried out in close consultation with the community concerned, and achieving a high level of community participation should be a primary objective. (This recommendation recognises the positive aspects of current policy and practice, and suggests building on them as a firm basis for future development.)

8.1.2 The current ambiguity in government policy with regard to stocking rates in communal areas needs to be directly addressed. It is recommended that a firm statement be made as to government's intention to make stock limitation or reduction a voluntary process, i.e. that there will be no compulsory destocking.

8.1.3 It is recommended that the lack of consensus amongst scientists on questions of carrying capacity of communal grazing land and hence of appropriate stocking rates be taken cognisance of. The practical implication of this is that Agritex should not have as an explicit or implicit objective the reduction of stocking rates in communal areas to those which are recommended for commercial ranches. A clearer statement needs to be made of Agritex's current goal of stabilising the existing high stocking rates, and simultaneously promoting a recognition of the harmful effects of continuously increasing numbers of livestock. The interim nature of this objective should also be clearly stated.

8.1.4 It is recommended that a research programme be initiated on the question of carrying capacity and appropriate stocking rates in communal areas and that this be treated as a matter of urgency. It is recognised that these concepts may contain inherent difficulties, and that more useful methods of assessing upper limits to stock numbers and sustainability may be required. The development of such methods could well form the central focus of a research programme. The possibility of collaboration between Agritex, the Department of Research and Specialist Services, and the Department of Biological Sciences at the University of Zimbabwe should be investigated.

8.1.5 It is recommended that alternative ideas on the design of grazing schemes (for example, by advocates of Holistic Resource Management, Ian Scoones, and others) be investigated and tested where feasible. A community based, participatory approach to this research should be considered. The cost implications and the managerial ability of communities to implement these kinds of schemes should be included as important criteria.
8.1.5 It is recommended that grazing scheme projects focus more clearly on institutional development and adopt a 'learning process' approach to such development. New structures, rules and norms should be encouraged to emerge from within communities and not be imposed upon them. Extension agents can facilitate this process by making suggestions to communities, by giving examples from other communities which have adopted certain approaches, and by encouraging communities to write down their own sets of by-laws. This should be done in close consultation with Local Government Promotion Officers (LGPOs) from the Ministry of Local Government, Urban and Rural Development.

8.1.7 It is recommended that the signing of by-laws designed by outsiders no longer be made a pre-condition for donor funding. The adoption of by-laws by communities should be encouraged, as should their formalisation in writing. Agritex staff and LGPOs certainly have a role to play in advising communities on how to go about this, but the by-laws should reflect the community's actual intentions with regard to grazing management. Where District Council (Model) By-laws are used as the basis for drawing up these by-laws, they should be suitably modified to again reflect what has actively been discussed and agreed upon by the whole community.

8.1.8 It is recommended that a by-law stating that a maximum stocking rate will be adhered to should only be included where this has been thoroughly debated and agreed upon within a community. (This is stated as a separate recommendation from 8.1.7 in order to give it special emphasis.).

8.1.9 It is recommended that assessments of the viability of grazing schemes, and of internal land reform proposals in general, should take into account the degree of land pressure facing a community. Comprehensive measures of such pressure, similar to those employed by Cliffe (1986), need to be used in order to reflect the complexity of the resource scarcity situation facing many communities. Often complementary measures, including resettlement, will need to be recommended along with the planning of a grazing scheme.

8.1.10 It is recommended that the feasibility of establishing more 'Model D' resettlement schemes be seriously considered in the case of communities which neighbour onto commercial ranches and which face severe pressure on grazing land.

8.1.11 It is recommended that methods of establishing pasture legumes in the paddocks of operational grazing schemes be investigated and pursued by Agritex's Veld and Pasture Specialists. Field staff in Agritex should give this a higher priority than they have done up to now, and the results should be carefully monitored.
8.2 Methods of improving the performance of assisting agencies in grazing scheme projects

8.2.1 It is recommended that Agritex give consideration to developing guidelines on participatory approaches to resource planning and management. These would build on the intuitively sound current practices of extension staff, and take into account the many initiatives now being taken in Africa and elsewhere to give the notion of 'Farmer Participatory Research and Extension' a sound practical and theoretical basis (see Farrington and Martin 1987).

The three branches in Agritex which could take responsibility for developing these guidelines are Planning Branch, Training Branch and the Branch of Agricultural Management Services.

8.2.2 It is recommended that Agritex's Animal Production Branch draw up guidelines for the calculation of Livestock Units, livestock data collection by field staff, record keeping for grazing schemes, and the question of the control of small stock.

8.2.3 It is recommended that monitoring and reporting on grazing schemes by Agritex field staff receive attention from senior management officials. In particular the syndrome of 'over-positive' reporting on projects needs to be addressed, and it should be stressed that there is a need to learn from experience, both good and bad.

8.2.4 It is recommended that any modifications which are made to the layout and design of grazing paddocks are immediately reported and included in revised plans. Changes in the management of grazing (e.g. length of stay in paddocks) also need to be reported to relevant specialists so that appropriate advice may subsequently be given.

8.2.5 It is recommended that the issue of appropriate data collection from grazing schemes for monitoring and evaluation purposes be investigated by Agritex's Monitoring and Evaluation Section in the Branch of Agricultural Management Services. These data should include socio-economic variables, and should aim to complement the current Veld Trend Monitoring Programme being undertaken by Animal Production Branch.

8.2.6 It is recommended that a study be carried out on the feasibility of applying the principle of 'matching contributions' to the funding of grazing schemes, possibly through the agency of a 'Fencing Trust Fund'. Agritex's Branch of Agricultural Management Services is well qualified to undertake such a study, which would involve consultations between various government departments, donors such as the E.E.C., and non-government organisations such as the Lutheran World Federation.
8.3 Grazing schemes and land use planning in communal areas

8.3.1 It is recommended that land use planning (sometimes called 'land reform') in communal areas be based on a holistic approach to resource utilisation, but give particular emphasis to community veld management in its initial phases. This is because (a) grazing land is a critical resource in the overall farming system; (b) the issue of grazing affects all households within the community (even non-cattle owners - see Section 2.4.1 above); (c) the institutional development made possible by the adoption of a grazing scheme lays a sound basis for the inclusion of other kinds of resources (e.g. trees, water) in management regimes at a later stage.

8.3.2 It is recommended that land use planning commence with a decision-making unit which can constitute itself fairly readily, and soon begin to function effectively as a resource management community. In most cases this will be the 'village' rather than the ward - the 'village' in some cases meaning the VIDCO, in other cases being the people under one or several kraalheads who use the same area of grazing land. Ward planning should commence only if all the decision-making units within the ward have voluntarily accepted the need for such planning.

8.3.3 It is recommended that the feasibility of renegotiating VIDCO boundaries so that they align with those of 'resource management communities' (i.e. that group of people who jointly use a shared resource and recognise each other's rights to do so) be investigated by the Ministry of Local Government, Urban and Rural Development, together with Agritex.

8.4 Training needs

8.4.1 Given the development of guidelines on participatory approaches to resource planning and management in communal areas (see recommendation 8.2.1 above), it is recommended that these be included in Agritex in-service training courses as rapidly as possible. Integration of the technical and the institutional aspects of resource management would need to be effected, building on the experiences gained in grazing schemes, community woodlots and similar projects. The SARAR method of participatory training recently introduced into the Ministry of Health by the United Nations Development Programme (UNDP) is recommended as an approach of particular relevance.

8.4.2 Guidelines produced by Animal Production Branch on the calculation of Livestock Units, livestock data collection, record keeping and the control of small stock (see recommendation 8.2.2 above) should be included in the appropriate in-service training courses as soon as they become available.
8.4.3 It is recommended that immediate action be taken to train those local extension staff responsible for operating or planned grazing schemes in simple but comprehensive record keeping procedures to be recommended to grazing scheme committees. Such training could take the form of a one-day course at provincial level, and be run by Provincial Specialists after appropriate procedures and formats had been agreed at national level.
REFERENCES


GFA 1987 Study on the Economic and Social Determinants of Livestock Production in the Communal Areas - Zimbabwe. GFA, Hamburg.


Scoones, Ian 1987 'Economic and Ecological Carrying Capacity: Implications for Livestock Development in the Dryland Communal Areas of Zimbabwe'. Paper presented at a seminar, Department of Biological Sciences, University of Zimbabwe. 24 September (28 pp).


ANNEXE A : PROFILES AND PLANS OF GRAZING SCHEMES

A. 1  Chiwundura
A. 2  Zinyoro
A. 3  Denhere-Katsvamutima
A. 4  Chikowore
A. 5  Tagarika
A. 6  Mangezi (no plan available)
A. 7  Machingo
A. 8  Mativenga
A. 9  Ntabazinduna
A.10  Kowoyo A
A.11  Kowoyo B
A.12  Kowoyo C
A.13  Chiweshe
A.14  Muchinjike
A.15  Mangwaya
A.16  Mafuzha
A.17  Masimba
A.18  Mutakwa

(Note: Chirindi and Ruvima were not visited and are not included in Annexe A.)
**No of Households (1987): 154**

**Cattle Ownership (1987):** 93%

**Fencing Region: April 1983**

**Fencing Complete?** Yes

**Materials Needed:** Grids for roads through paddocks

### Area of Scheme
- 1275 HA

### No of Paddocks
- 4

### Livestock (1987)

<table>
<thead>
<tr>
<th></th>
<th>No.</th>
<th>L.U.'s</th>
<th>Cattle Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>615</td>
<td>409.0</td>
<td>1986: -</td>
</tr>
<tr>
<td>Goats</td>
<td>149</td>
<td>22.4</td>
<td></td>
</tr>
<tr>
<td>Sheep</td>
<td>143</td>
<td>23.5</td>
<td></td>
</tr>
<tr>
<td>Donkeys</td>
<td>90</td>
<td>40.6</td>
<td>1985: 780</td>
</tr>
<tr>
<td>Total</td>
<td>561.9</td>
<td></td>
<td>1984: 742</td>
</tr>
</tbody>
</table>

### Stocking Rate:
- 1987: 1 L.U.: 2.1 HA
- 1986: -
- 1985: 1 L.U.: 2.2 HA
- 1984: 1 L.U.: 1.0 HA

### Trend:
- Increasing

### Veld Condition
- Basal Cover: Fair to poor
- Surface Capping: -
- Sheet Erosion: Observable in some areas
- Other: Dominated by species of poor forage value, but some better species beginning to appear

### Committee
- Elected 1979
- SEP: 18

### Traditional Leaders: 4

### Women: 0

### Non-Owners: 0

### Museums: Monthly in summer, otherwise irregular.

### Community Meetings: When the need arises.

### Record Keeping: Minutes of meetings only.

### By-Laws
- IN WRITING: No
- ORI: Committee, discussed at community meeting.

### Contents: Outsiders cattle; rotations; thatching grass, tree and fires; fence cutting.

### Operational? Yes, but few fines yet imposed.

### Max. Stocking Rate? Not widely discussed; a sensitive issue. Keen awareness of shortage of grazing land; many of opinion that government should purchase adjoining farms.

### Grazing System: Paddocks used as grazing reserve, with animals on adjoining communal grazing in summer. Slight being followed.

### Perceived Benefits: Thatching grass returning. Few benefits to cattle in yet, reduced browsing.

### Perceived Problems: Insufficient land; flooding of summer grazing by proposed irrigation scheme; lack of grids on roads.
MIDLANDS PROVINCE
Gweru Region
CHIWUNDURA COMMUNAL LAND

CHIWUNDURA GRAZING SCHEME

Scale: 1" = 266.32

LEGEND
- Gravel road
- Track
- Existing fence
- River and Dam
- Paddock Area (ha)

Mayo Ranch
Savannah Ranch

To KWE KWE

To GWERU

Miezu Agricultural College Farm

Miezu School

Existing fence

Gravel road

Area (ha)

202

5

3

4

1

2

312

312

319

220
A.2  GGRAZING  SCHEME:  ZINYORO  

No  OF  HOUSEHOLDS  (1987)  :  74

PFI-IND独EMENCE  SCHEME?  No

INDEPENDENCE:  FIRST  DISCUSSED:  1982/3

INITIATIVE  Councillor  and  Agritex

FENCING  BEGUN:  1983
FENCING  COMPLETE?  No-9  out  of  17  kms  complete

MATERIALS  NEEDED:  Standards  of  better  quality-  community  to  supply.  Gates  needed.

AREA  OF  SCHEME  744  HA.  NO  OF  PADDocks  4

WATER  IN  ALL  PADDocks?  Yes
PREVALENCE  OF  VLEIS?  Some  in  paddocks
DIPTANK  IN  SCHEME?  No
USED  BY  OUTSIDERS?  -

COST  OF  MATERIALS:  EPC  $  575
COMMUNITY  $  ?
OTHER  $  ?

COMMUNITY  LABOUR:  'Equal  contributions'  in  theory  but  not  in  practice.  No  corrective  action  as  yet
OUTSTANDING  CONTRIBUTIONS:  No  records  kept  of  labour  contributions,  but  many  not  contributing.
MAINTENANCE  COSTS:  Not  discussed.  Scheme  regarded  as  a  government  project
BOUNDARY  DISPUTES:  Yes-with  Tyavano  village,  now  incorporated  into  scheme

INTERNAL  OPPOSITION:  Not  openly  expressed  but  indicated  by  low  work  attendance  and  fence  cutting?

FENCE  CUTTING:  Much  fence  cutting  along  boundary

RELOCATIONS:
HOMESTEADS:  No
ARABLE  LANDS:  No

COMMUNITY  IDENTITY  AND  COHESION:  5/6  kraals  under  a  sadhunu.  Kraals  scattered  and  joint  work  organisation  is  difficult.  Leadership  of  scheme  is  weak  and  has  little  support.  All  members  in  same  VIDEO  but  boundaries  not  well  known.

COMMUNITY  DIFFERENTIATION:  Few  urban  migrants;  no  local  wage  labour.  A  few  large  herd-owners.  Non-owners  gain  access  to  draught  through  beerbrewing;  a  few  hire  animals.

AGRITEX
CONSULTATION:  No  evidence  of  community  consultation-  only  a  self  appointed  leadership  was  involved  initially
PLANNING:  AED  has  never  seen  original  plan.  Community  input  was  minimal.
IMPLEMENTATION:  Very  low  level  of  community  commitment  caused  many  problems  e.g.  incorrect  tree  species  used  for  standards.
MONITORING:  Reports  have  been  irregular  and  consistently  misleading.

LIVESTOCK  (1987)  

<table>
<thead>
<tr>
<th></th>
<th>No.</th>
<th>L.U.'s</th>
<th>CATTLE  NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATTLE</td>
<td>21.7</td>
<td>1986:</td>
<td></td>
</tr>
<tr>
<td>GOATS</td>
<td>21.5</td>
<td>1985:</td>
<td></td>
</tr>
<tr>
<td>SHEEP</td>
<td>11.5</td>
<td>1984:</td>
<td></td>
</tr>
<tr>
<td>DROMEDARY</td>
<td></td>
<td>250</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL  36.7

STOCKING  RATE:
1987  1  L.U.:  2.39  HA
(October  1987)
1986  Poor
1985  
1984  

TREND:

VELD  CONDITION

BASAL  COVER:  Good  on  vleis  but  poor  on  toplands
SURFACE  CAPPING:-
SHEET  EROSION:  Observed  in  certain  areas
OTHER:  Species  indicate  heavy  utilisation

COMMITTEE
ELECTED  1983  and  1986  STR:  5/6?
TRADITIONAL  LEADERS:  (Councillor  still  active  although  not  on  committee)
WOMEN:  0
NON-OWNERS:  ?
MEETINGS:  None
COMMUNITY  MEETINGS:  None
RECORD  KEEPING:  None  seen
BY-LAWS:
IN  WRITING?  No  by-laws  discussed  as  yet
ORIGIN:  -
CONTENTS:  -

OPERATIONAL?  -

MAX.  STOCKING  RATE?  Not  yet  discussed  within  committee  or  community.

GRAZING  SYSTEM:  Community  has  almost  no  knowledge  of  grazing  management

PERCEIVED  BENEFITS:  Reduced  herding.

PERCEIVED  PROBLEMS:  Payment  for  standards  now  required.
MIDLANDS PROVINCE

CHILIMANZI COMMUNAL LAND

ZINYORO GRAZING SCHEME

Scale 1:50 000  Map Ref. 1930Dl TP535725
**A.3**  
Grazing Scheme: **Deniere-Katsavamutima**  
Natural Region 2

<table>
<thead>
<tr>
<th>No of Households (1987): 75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Independence Scheme? No</td>
</tr>
<tr>
<td>Post Independence: First Discussed: 1983</td>
</tr>
</tbody>
</table>

**Fencing Begun:** March 1984  
**Fencing Complete:** Yes–June 1986  
**Materials Needed:**

<table>
<thead>
<tr>
<th>Area of Scheme 241.0 HA</th>
<th>No of Paddocks 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water in All No water in paddocks 5 and 6</td>
<td></td>
</tr>
</tbody>
</table>

**Prevalence of Vleis?** In paddocks  
**Dip Tank in Scheme?** Yes  
**Use by Outsiders?** No–after permission sought to exclude neighbours’ cattle

**Cost of Materials:**  
- EEC $312.50  
- Community $-  
- Other $?

**Community Labour:** Equal contributions but LMF fences employed

**Outstanding Contributions:** Some not paid $4 annual fee

**Maintenance Costs:** $4.60 annual ‘joining fee’ for repairs, feeding of bulls etc

**Boundary Disputes:** Serious problem which held up implementation. Surrounding villages used same grazing area and dip. Compromise reached with assistance of outsiders, including Chief Zviniba. Disputes caused major modifications to original plans

**Internal Opposition:** 50% of community reluctant at first, fears of destocking expressed.

**Fence Cutting:** By neighbours in early stages of fence erection. Police brought in to warn neighbours

**Relocations:**  
- Homesteads: ± 11 - Some assisted to resettle  
- Arable lands: ± 11 -

**Community Identity and Cohesion:** 2 kraal heads with history of cooperation and shared use of grazing land. Scheme has promoted cohesion, particularly in defence of boundaries. Coincident with VIDCO.

**Community Differentiation:** One third of households have urban migrants. Very little local wage labour. Some large herds owners who employ herders. High proportion are cattle owners. Non-owners borrow drought, hire at 120/livestock or hire project labour.

**Agritex:**  
**Consultation:** Long period of discussion over boundaries and location of paddocks. Families in grazing area were problematic—only overcome with LMF assistance.  
**Planning:** Many modifications to original ARDA plan before fencing completed (boundary disputes etc)  
**Implementation:** Lengthy delays due to unresolved conflicts

**Monitoring:** Irregular and over-optimistic reporting, information not always consistent

### Livestock (1987)

<table>
<thead>
<tr>
<th>No.</th>
<th>L.U.'s</th>
<th>Cattle Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>442</td>
<td>319.7</td>
</tr>
<tr>
<td>Goats</td>
<td>99</td>
<td>14.8</td>
</tr>
<tr>
<td>Sheep</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donkeys</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>334.5</td>
<td>1984: 400</td>
</tr>
</tbody>
</table>

**Stocking Rate:**  
**Cattle Condition:**
- 1987: 1 L.U.: 0.72 HA (October 1987)  
- 1986: -  
- 1985: -  
- 1984: 1 L.U.: 1.0 HA  
**Trend:** Increasing

**Field Condition:**
- Basal Cover: Very poor, especially on uplands  
- Surface Capping: Yes  
- Sheet Erosion: Yes–along Musengezi river  
- Other: Generally forage production looks very poor

**Committee:**
- Elected 1984: 6 (4 from each village)  
- Traditional Leaders: 7  
- Women: 4  
- Non-Owners: 0  
- Meetings: Monthly  
- Community Meetings: Monthly  
- Record Keeping: Rotations and stock numbers  
- By-Laws:  
- In Writing: 4 (not seen; formal by-laws not known to Agritex)  
- Origin: Often discussed at community meetings  
- Contents: Annual joining fee; fines for non-attendance; dipping and night kraalising; rotations; arable land allocation.

**Operational:** Some fines imposed for non-attendance at work. Rotations not always followed—no sanctions yet.

**Max. Stocking Rate:** Not much discussed. A sensitive issue. Committee of opinion that numbers can still be increased. Upper limit might be reached in long term

**Grazing System:**  
SDG put rotations not followed. Severe overgrazing around borehole and dip tank. More distant paddocks utilised. Paddock 5 for 2 Mashona bulls

**Perceived Benefits:** Reduced herding; more grass; cattle in better condition (in non-drought years)

**Perceived Problems:** Water supply in some paddocks. Control of goats which destroy legume nursery. Community still requesting donor assistance (dams, boreholes, more fencing)—indicative of ‘donor dependence’
CATTLE OWNERSHIP (1987) 73.9%
MATERIALS NEEDED: still have barbed wire

PRE-INDEPENDENCE SCHEME? yes
POST INDEPENDENCE: FIRST DISCUSSED: 1981/2
INITIATIVE: Agritex
FENCING COMPLETE? 4 out of 5 paddocks complete

LIVESTOCK (1987)

<table>
<thead>
<tr>
<th>Livestock</th>
<th>No.</th>
<th>L.U.'s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>246</td>
<td>162.1</td>
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<tr>
<td>Goats</td>
<td>37</td>
<td>5.6</td>
</tr>
<tr>
<td>Sheep</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donkeys</td>
<td>4</td>
<td>2.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>169.7</td>
<td></td>
</tr>
</tbody>
</table>

COSTS:
- EEC: $3010
- COMMUNITY: $4436
- OTHER: $-

COMMUNITY LABOUR: whole community, organised in sub-groups

OUTSTANDING CONTRIBUTIONS: 6 owners not paid $12.50

MAINTENANCE COSTS: labour only, organised in sub-groups. No cash raised as yet still have wire

BOUNDARY DISPUTES: not over demarcation but over incursions of neighbours' cattle

INTERNAL OPPOSITION: very little

FENCE CUTTING: minor problems by neighbours

RELOCATIONS: yes

HOMESTEADS: 13

ARABLE LANDS: 18

COMMUNITY IDENTITY AND COHESION: Strong leadership by Headman Chikwore. Small community which has resisted entry by newcomers. Strong ties of kinship and high degree of cohesion, reinforced by identification with the scheme and tensions with neighbour. Well defined physical boundaries. Not coincident with VICO

COMMUNITY DIFFERENTIATION:
Large number of migrants. Little local wage labour. Small numbers of large owners. Non-owners mostly hire draught

AGRITEX

CONSULTATION: extended period of meetings with community and leadership. Community allowed a significant input into location of paddocks

PLANNING: Well planned.

IMPLEMENTATION: flexibly implemented e.g. paddock 4 extended to include water point; paddock 5 not fenced at first because of need for arable; new fencing is planned because of incursions by neighbours' cattle.

MONITORING: field staff have excellent knowledge of scheme but not fully reflected in irregular reports.

COMMUNITY MEETINGS:
Regularly, once a month

COMMUNITY MEETINGS: Fairly often, when necessary

RECORD KEEPING: yes data on livestock numbers and

BY-LAWS:

IN WRITING?: yes

ORIGIN: Agritex


OPERATIONAL?: Not on restrictions of numbers. Others: yes

MAX. STOCKING RATE: included, but not operational. Committee members aware of principle but not numbers. Some anxiety about reductions of stock numbers.

GRASSING SYSTEM:
Flexible 2-3 week rotations through 4 paddocks in summer. From June on open gates. Cattle on vlei and browse in October

PERCEIVED BENEFITS:
Cattle in better condition. More calves last year. Some Hyparheria coming back

PERCEIVED PROBLEMS:
Tambudzi village in same VICO also need a grazing scheme but have little grazing land left. Negotiations are continuing.
No of Households (1987): 160

% Cattle Ownership (1987): 50%

Fencing Begins: August 1984

Materials Needed:

Area of Scheme: 1105 HA

No of Paddocks: 7

Water in All Paddocks: No—not adequate in paddock 1

Prevalence of Vleis? Yes

Diptank inScheme? No

Used by Outsiders? No

Cost of Materials: EPC

Community $ (See Table)

Other $ (Money from scheme)

Community Labour: Equal contributions

Outstanding Contributions: No cash collected. No problems with work attendance reported.

Maintenance Costs: Still have 8 rolls of wire. Repair work done on chief days.

Ordinary Disputes: Minor dispute with neighbour resolved with assistance of Agritex.

Internal Opposition: Minority reluctant because of fear of paying for materials, fears of destocking etc.

Fence Cutting: Neighbours pulled up poles while fencing in progress

Relocations:

Homesteads: Yes-137

Arable Lands: Yes-number not known

Community Identity and Cohesion:

3 sections under strong local leadership. Interdependence with regard to grazing and draught power. Coincident with VIDO. Indications of strong commitment to land reform.

Community Differentiation:

Many men at home. No local wage labour. Very few large hardowners. Only 50% cattle ownership. Non-owners gain access primarily through beer brewing and borrowing. Some hire draught.

Agritex and D.A.'s Office:

Consultation: Planning built on strong local initiatives. Relocations easily accepted because first decision made by local committee.

Planning: No problems

Implementation: Delayed by shortage of transport at DA's office.

Monitoring: Very poorly reported within Agritex. Irregular progress reports from DA's office. Payments not adequately documented at first.

Livestock (1987)

<table>
<thead>
<tr>
<th></th>
<th>1986</th>
<th>1987</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>304</td>
<td>409.7</td>
</tr>
<tr>
<td>Goats</td>
<td>123</td>
<td>2.26</td>
</tr>
<tr>
<td>Sheep</td>
<td>8</td>
<td>39.7</td>
</tr>
<tr>
<td>Donkeys</td>
<td>54.6</td>
<td></td>
</tr>
</tbody>
</table>

Total: 489.7

Stocking Rate: Cattle Condition:

1987: 1 LU: 2.26 HA (October 1987)

1986: Very good

1985: Very good

1984: Very good

Trend:

Veal Condition

Basal Cover: Quite good for the region

Surface Capping: slight

Soil Erosion: slight

Other: gullies healing

Committee (same as VIDO)

Elected: 1982

Members:

Traditional Leaders: 1

Women: 3

Non-Owners: 3

Meetings: Twice a month

Community Meetings: Monthly

Record Keeping: Minutes of meetings only

By-Laws:

(a) Council version (b) Community version

In Writing (c) District Council version, awaiting approval

Origin: Councillors and committee, discussed with community

Content:

Cutting fences; crossing fences; work attendance; rotations; outsiders cattle.

(a) Declaring plan area; specifying stocking rates; conservation measures; fines specified in detail

Operational? Yes-one infringement and fine imposed

Max. Stocking Rate: Indications that discussed at committee level, including allocation of maximum number (1 LU) per household. Principle of upper limit is acknowledged but in long term only. Need for non-owners to acquire cattle is definitely

Grazing System: No 2-week paddock. Since 1985/6, committee makes decisions—community members less knowledgeable

Perceived Benefits: Cattle condition and performance better than neighbours. Preferred gradual beginning to grow.

Perceived Problems: No water in paddock 4; NAC loans for non-owners to acquire cattle.
No of Households (1987): 59

Pre-independence Scheme? Yes
Post Independence: First discussed: 1982/3
Initiative: Agritex
Fencing Complete? Boundaries complete. 10 km of internal fencing still to complete

Area of Scheme: 305 ha. No of paddocks: 5

Water in all
Paddocks? Yes, but water a problem in winter
in paddocks 4 and 5.
Prevalence of Vleis? Present
Dip Tank in Scheme? No - just outside scheme
Used by outsiders? Yes - source of severe problems

Cost of Materials: EEC $1,725
Community $424.
Other $-

Community Labour: Men do work when home at weekends, hence slow progress


Maintenance Costs: Discussed and planned for: fines for infringements of by-laws will purchase materials.

Boundary Disputes: Severe problem on north and north-west boundaries, and with Musenwe sub-village. Neighbours have little grazing land left.

Internal Opposition: Isolated cases in Hungwe and Mandizvidza villages.

Fence Cutting: By neighbours - a severe problem

Relocations:
Homesteads: A few
Arable Lands: A few

Community Identity and Cohesion: 3 villages in one VDC. Mucheneje village well organized and cohesive and in a leadership role. Hungwe and Mandizvidza villages less enthusiastic about scheme but cooperating. VDC identity may be developing as a result of the scheme.

Community Differentiation: A large proportion of active men are weekly migrants. Little local wage labour. A few large herders. Non-owners hire tractors or draught animal.

Agritex
Consultation: Extended period of community meetings and discussion. Community fully consulted on location of paddocks.
Planning: Problem of Musenwe sub-village not resolved.

Implementation: Local needs accommodated at implementation stage. Flexible implementation of pilot villagization scheme.
Monitoring: Field staff have excellent knowledge of scheme progress but not reflected in formal reports.

Livestock (1987)

<table>
<thead>
<tr>
<th>No.</th>
<th>L.U.'s</th>
<th>Cattle Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>173</td>
<td>103.8</td>
</tr>
<tr>
<td>Goats</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Sheep</td>
<td>-</td>
<td>143</td>
</tr>
<tr>
<td>Donkeys</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>103.8</td>
<td></td>
</tr>
</tbody>
</table>

Stocking Rate: 1987: 7.1 L.U. 3.94 ha (October 1987)
1986 -
1985 -
1984 -
Trend: Increasing

Veld Condition

Rasal Cover: High
Surface Capping: -
Sheet Erosion: -

Committee
Elected 1987? Yes
Traditional Leaders: 2
Women: 0
Non-owners: ?
Meetings: once a month
Community Meetings: once a month
Record Keeping: not yet started

By-laws
In Writing? Yes
Origins: Agritex discussed with committee. Not yet discussed at general meeting.
Contents:
Fence cutting; grazing in wrong paddocks; hunting; bee cutting; waterfenches; annual contributions

Operational? Not yet
Max. Stocking Rate? General awareness of the scheme but specific numbers not discussed. Opinion that grazing is sufficient.

Grazing System: Not yet operational

Perceived Benefits: Reduced herding; improved cattle condition and performance; improved veld condition (anticipated).

Perceived Problems: Boundary disputes and fence cutting by neighbours.
No of Households (1987): 10

**Pre-independence Scheme:** Non-automated

**Post Independence:** First discussed: 1982

**Initiative:** Agritex

Cattle Ownership (1987): 91.3%

Fencing begun: May 1986

Fencing Complete: Yes

Materials Needed: Grids on roads are felt to be a need

<table>
<thead>
<tr>
<th>Area of Scheme: 216.4 ha</th>
<th>No of Paddocks: 6</th>
</tr>
</thead>
</table>

**Water in all paddocks:** Yes

**Prevalence of vleis:** Found in paddocks

**Bipartite in Scheme:** No

**Used by outsiders:** -

**Cost of Materials:**

<table>
<thead>
<tr>
<th>Type</th>
<th>Community</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEC</td>
<td>$720</td>
<td>$</td>
</tr>
<tr>
<td>COMMUNITY</td>
<td>$2729</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>$1000.0</td>
<td></td>
</tr>
</tbody>
</table>

**Maintenance Costs:** Intend to collect cash when materials needed.

**Boundary disputes:** A major problem. Neighbours pulled down poles. Resolved through discussions with kraalheads and with help of Agritex aerial photographs.

**Internal opposition:** None

**Fence cutting:** None—poles pulled down in beginning.

**Relocations:**

<table>
<thead>
<tr>
<th>Homesteads</th>
<th>Arable Lands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes: 5</td>
<td>None</td>
</tr>
</tbody>
</table>

**Community identity and cohesion:**

30 families under one kraalhead. Some community and grazing area as pre-independence. Entry by outsiders resisted. Small size may enhance cohesion, not coincident with VDCO.

**Community differentiation:** Many urban migrants in Masvingo. Only a few local wage labourers. Few large herdsmen. Non-owners are few in number, gain access to draught through herdboys, relatives, some hire.

**Agritex Consultation:** Easy to motivate community because of pre-independence scheme. Fencing desired to reduce labour and facilitate control of animals.

**Planning:** On same grazing area as pre-independence. Committee decided to relocate 5 families.

**Implementation:** Few problems.

**Monitoring:** Adequately reported while fencing in progress.

<table>
<thead>
<tr>
<th>Livestock (1987)</th>
<th>Cattle Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. L.U.'s</td>
<td>1986: 101</td>
</tr>
<tr>
<td>CATTLE</td>
<td>107</td>
</tr>
<tr>
<td>GOATS</td>
<td>83</td>
</tr>
<tr>
<td>SHEEP</td>
<td>13</td>
</tr>
<tr>
<td>TOTAL</td>
<td>193</td>
</tr>
</tbody>
</table>

**Stocking rate:** Cattle condition:

1987 1 LU: 1.44 ha (October 1987)

1986: Generally fair, some poor

1985

1984

**Trend:**

**Veal condition:**

<table>
<thead>
<tr>
<th>Pasture Cover</th>
<th>Not evident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Carpes</td>
<td>Not evident</td>
</tr>
<tr>
<td>Sheet Erosion</td>
<td>Evident on topland</td>
</tr>
<tr>
<td>Other</td>
<td>Grass species indicate overgrazing. Forage production seems very low.</td>
</tr>
</tbody>
</table>

**Committee:**

Elected 1982

| Size | 7 |

<table>
<thead>
<tr>
<th>Traditional Leaders</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>0</td>
</tr>
<tr>
<td>Non-Owners</td>
<td>0</td>
</tr>
</tbody>
</table>

**Meetings:** Every two months

**Community Meetings:** Every two months

**Record Keeping:** Rotation and stock numbers, well kept records.

**By-laws:** (a) Agritex version (b) Community version (gone to D.A.)

**In writing:** Yes—both. (b) in Shona.

**Origin:** (a) Agritex (b) Community meeting

**Contents:** (a) Standard set — see Kowoyo

(b) No outsider's cattle; rotations; fines for non-attendance at work.

**Operation:** (a) No

(b) Extension water claims, they are operational. No fines yet imposed.

**Max. Stocking Rate:** Has been discussed and idea of selling old stock is accepted. But limitation in short-term is rejected. Non-owners need to be accommodated.

**Grazing System:** Starting 1980/1. 200-2 weeks per paddock depending on grass growth.

**Perceived Benefits:**

Better grass growth anticipated.

**Perceived Problems:**

Control of grazing grids: for road, drought.
No of Households (1987): 29

Pre-independence Scheme? Yes - unfenced

Post Independence: FIRST DISCUSSION: 1983/4

Initiative: Agritex

A Cattle Ownership (1987): 0.8

Fencing begun: August 1986

Fencing complete? No - materials insufficient

Materials needed: Barbed wire for paddocks, gates desired

Area of Scheme 352 ha.

Water in All

Paddocks? Yes

Prevalence of Vleis? Some in paddocks

Dip Tank in Scheme? No

Used by outsiders? No

Cost of materials: EEC

(20c per household - Community $ 641.7
and poles) Other $ 350.8

(Revised later because of price increases)

Community labour: 'equal contributions'. Some non-attendance, fines of 50c imposed.

Outstanding contributions: None at present

Maintenance costs: Plan to collect contributions when needed.

Boundary disputes: Yes with Masamba scheme. Resolved with assistance of Agritex and LGU.

Internal opposition: Minor. Overcome by threat of exclusion.

Fence cutting: Occasional pulling down by outsiders en route to grinding mill at business centre.

Relocations:

Homesteads: None

Arable lands: Yes 2

Community identity and cohesion:

Strong sense of identity and close ties with neighbouring material community. Small community under one kraalhead.

Part of a larger VICO-not seen as problematic.

Community differentiation:

Many men working in Harare. No local wage labour at present. A few large herders work only. Non-owners in small minority gain access to draught mainly through beer brewing.

Agritex consultation: Community keen because of pre-independence scheme, keen on fences because of reduced labour and ease of management.

Planning: On basis of pre-independence scheme but paddocks reduced from 6 to 5. Dispute with Masamba over veld area resolved by use of maps.

Implementation: Materials insufficient because of links in fence to accommodate homesteads.

Monitoring:

Adequately reported while fencing in progress, but modifications to plan not reflected

Livestock (1987):

<table>
<thead>
<tr>
<th>LIVESTOCK (1987)</th>
<th>No.</th>
<th>L.U.'s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>229</td>
<td>165.4</td>
</tr>
<tr>
<td>Goats</td>
<td>127</td>
<td>19.1</td>
</tr>
</tbody>
</table>

Cattle Numbers

<table>
<thead>
<tr>
<th>CATTLE NUMBERS</th>
<th>1986: 219</th>
</tr>
</thead>
</table>

Stocking rate:

<table>
<thead>
<tr>
<th>ocado</th>
<th>10: 1.91</th>
</tr>
</thead>
</table>

Veld condition:

Basal cover: Very poor on toplands

Surface capping: Not very evident

Sheep erosion: Some

Other: Grass species provide average to poor fodder and indicate overgrazing

Committee

Elected 1984 & 1987: Size: 9

Traditional leaders: 1

Women: 3

Non-owners: 0

Meetings: Twice a month

Community meetings: Monthly

Record keeping: Stock numbers and rotations

By-laws: (a) Agritex version (b) Community version (gone to P.A.)

In writing: Both: (a) in Shona

Origin: (a) Agritex (b) Community meeting

Contents: (a) Standard set-see Kowoys: rotations, weeding of Lopholena

Operational:

(b)-No

(b)-Yes but no fines yet imposed

Max, stocking rate: Has been discussed, but no statement on numbers yet made. Committee members see potential for increase in stock numbers before an upper limit is reached

Grazing system: Aim to start 1987/8 with 1-2 weeks per paddock depending on grass growth. Committee will make decisions

Perceived benefits:

Reduced herding, grass cover improved, better drought power, more milk production

Perceived problems:

Materials needed to complete scheme. Control of goats.
MASVINGO REGION
ZIMUTHO C.L.

MAFUZHA GRAZING PLAN

Scale 1:12,500

LEGEND

LEGEND

REAL CENTRE
FOR ROAD
TRAC
FENCE
MAFUZHA SCHOOL
ARABLE AREA
302.4 HA
To Gwengo School

Gwengo School

AGROTEX
TOPOGRAPHICAL SECTION
Victoria Province

By MASVINGO PROVINCIAL H. 1965
A.17
GRASSING SCHEME: MASIMBA
NATURAL REGION IV

No. OF HOUSEHOLDS (1987): 31

PRE-INDEPENDENCE SCHEME?: Yes—unfenced
POST-INDEPENDENCE: FIRST DISCUSSED: 1984
INITIATIVE: Agritex

% CATTLE OWNERSHIP (1987):??%

FENCING BEGUN: July 1987
MATERIALS NEEDED: Barbed wire, poles, standards

AREA OF SCHEME 281 HA.

No. OF PADDOCKS 6

WATER IN ALL

Paddock no one paddock lacks water

PREVALENCE OF VLEIS?: Yes — in paddocks

DIPTANK IN SCHEME?: no

COST OF MATERIALS: EEC $ 4 347

(4% per household & poled COMMUNITY $ 1218

OTHER $ —

(*revised later because of price increases)

COMMUNITY LABOUR: 'Equal contributions'

OUTSTANDING CONTRIBUTIONS: Some

MAINTENANCE: COSTS: have decreased. No cash collected but regular maintenance work done.

BOUNDARY DISPUTES: With Masinhas scheme in vlei area. Resolved with assistance of Agritex.

INTERNAL OPPOSITION: None reported.

FENCE CUTTING: None reported.

RELOCATIONS:

HOMEesteads: None

ARABLE LANDS: None

COMMUNITY IDENTITY AND COHESION: Small-scale and based on one kraalhead. Part of a larger vleik with 2 other villages. Women very active.

COMMUNITY DIFFERENTIATION:

Many men working in Masvingo. No local wage labour at present. Non-owners gain access to draught through hire, borrowing, borrowing from relatives.

AGRITEX

CONSULTATION: Community keen because of pre-independence scheme.

PLANNING: Committee assisted Agritex in planning location of paddocks.

IMPLEMENTATION: Materials insufficient for paddocks 5 and 6.

MONITORING:

Adequately reported while fencing in progress but shortfall in materials not reported.

LIVESTOCK (1987)

<table>
<thead>
<tr>
<th>No.</th>
<th>L.U.'s</th>
<th>CATTLE NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATTLE</td>
<td>90</td>
<td>54.0</td>
</tr>
<tr>
<td>COATS</td>
<td>50</td>
<td>7.5</td>
</tr>
<tr>
<td>SHEEP</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>DONKEYS</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>TOTAL</td>
<td>61.5</td>
<td></td>
</tr>
</tbody>
</table>

STOCKING RATE: CATTLE CONDITION:

1987 1 LU:4.57 HA (OCTOBER 1987)

1986

1985

1984

TREND: —

VLEI CONDITION

BASEAL COVER: Good on vlei but poor on topland.
SURFACE CAPPING: On vlei margins
SHEET EROSION: On rocky areas
OTHER: Bare patches in two paddocks and rocky areas—very little grass

COMMITTEE

ELECTED 1984 SIZE: 7

TRADITIONAL LEADERS: 1

WOMEN: 4 including Chair and Secretary

NON-OWNERS: 0

MEETINGS: Twice a month

COMMUNITY MEETINGS: Twice a week to work on fences

RECORD KEEPING: None seen

BY-LAWS: (a) Agritex version (b) Community version

IN WRITING?: (a) Yes (b) Claimed, not seen

ORIGIN: (a) Agritex (b) Community meetings.

CONTENTS: (a) Standard act—see Kweyo (b) Abantu from work field 41; fence repairs; rotations

OPERATIONAL? (a) No (b) Fence repairs carried out; no fence yet imposed.

MAX. STOCKING RATE: Deny knowledge of by-law. Aim to increase numbers because scheme is below capacity. Upper limits may be reached in long term.

GRAZING SYSTEM: Aim to begin rotational grazing 1987/8 despite being incomplete. SIDC-2 week/paddock. Committee decides on rotations.

PERCEIVED BENEFITS: Reduced herding, better grass, healthier animals.

PERCEIVED PROBLEMS:

Control of goats; anticipated fence cutting en route to vlei.
A.18  GRAZING SCHEME: MUTAKWA

No of Households (1987): 93

No of Paddocks: 6

Water in All

"Docks? Yes

Prevalence of VLFeS? Found in paddocks

Diptank in Scheme? No

Cost of Materials: EEC $ 7002

10.45 per household -- Community $ 3560

plus poles) Other $ -

Communal land because of price increased

Community Labour: Equal contributions. Some men fined for non-attendance

Outstanding Contributions: All paid

Maintenance Costs: Discussed and agreed to contribute cash if necessary

Boundary Disputes: Yes, antedating fencing

Internal Opposition: Some reluctant

Fence Cutting: Yes-neighbours

Relocations: Homesteads: None

Abable Lands: None

Community Identity and Coherence: 2 kraalheads-cooperation based on common use of grazing land in past. Women important on committee. Not coincident with VICO-combined with two other villages-no conflicts.

Community Differentiation: Many men working in Mozambique. No wage labour at present -used to be Mozambicans. For large landowners. Non-owners gain access to draught through leasing borrowing, hiring and exchanging for labour. All involved.

Agritex

Consultation: Community keen because of positive experience with pre-independence scheme

Planning: No problems

Implementation: No problems

Monitoring: Adequately reported

Pre-independence Scheme? Yes - boundary only fenced

Post Independence: First discussed: 1985

Initiative: Agritex

Fencing Begin: May 1986

Fencing Complete? Yes

Livestock (1987)

<table>
<thead>
<tr>
<th>No.</th>
<th>Livestock</th>
<th>Cattle Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>Cattle</td>
<td>1986: -</td>
</tr>
<tr>
<td>98</td>
<td>Goats</td>
<td>1985: -</td>
</tr>
<tr>
<td>10</td>
<td>Sheep</td>
<td>1984: 2.15</td>
</tr>
<tr>
<td>5</td>
<td>Donkeys</td>
<td></td>
</tr>
</tbody>
</table>

Stocking Rate:

1987: 1 LU: 2.15 HA

(October 1987)

Cattle Condition:

1987: Fair to good

1986: -

1985: -

1984: -

Trend:

1984: -

Veld Condition:

Basal Cover: Good in vleis but poor on toplands

Surface Capping: On toplands

Sheet Erosion: On toplands but not excessive

Other: Pasture condition very poor-no grass, shrub encroachment and soil erosion

Committee

Elected 1986: 1172: 7

Traditional Leaders: 1

Women: 5

Non-owners: 1

Meetings: Monthly

Community Meetings: 'When necessary'

Record Keeping: Stock numbers

By-laws: (a) Agritex version (b) Community version

In Writing? (a) Yes (b) Not soem

Origin: (a) Agritex (b) Community meeting

Contents: (a) Standard set - see Kowoyo

(b) Abandoning from work; fence repairs; hoof humus; rotations; tree cutting.

Operational? (a) No (b) Yes-rules imposed, but not all paid.

Max. Stocking Rate? Issue has been discussed, but resistance to including in a by-line. Accommodation of non-owners through owners selling old stock.

Grazing System: Aim to begin 1987/8. 900-2 week/paddock depending on grass growth

Perceived Benefits: Anticipate reduced herding, improved grass growth, stronger draught animals.

Perceived Problems:

Control of goats and sheep
ANNEXE B

CURRENT VIEWS ON CARRYING CAPACITY AND STOCKING RATES
ON COMMUNAL GRAZING LAND


To summarise, there is considerable confusion as to what is meant by overstocking, overgrazing, and environmental damage resulting from these processes. The principle of stocking levels relies on an underlying concept of stable carrying capacity which is of limited use in areas where primary productivity fluctuates widely from year to year. The concept of overgrazing is first of all only valid with respect to a specified management aim: what is overgrazed pasture from the viewpoint of a commercial beef rancher may be good grazing in the view of subsistence pastoralists. Secondly, the term overgrazing implies some degree of environmental damage but this may range from the trivial - for example a very temporary low grass cover (observed in any bad dry season and rapidly reversed with the onset of adequate rain) - to a longer term change in species composition affecting productivity and nutritional value of grazing (in ways which could be interpreted as good or bad according to management aim) to a serious loss of ground cover with erosion and long term, major, effectively irreversible decline in primary productivity available to domestic stock. Finally, theoretical models show there is potentially enormous variability in the processes leading up to these conditions, and in the likely future dynamics of such systems, particularly in response to intervention. This is not to maintain that pastoralist mismanagement and consequent environmental damage never occur, but to suggest the need for a better defined approach to the problem in general and in particular for methods which will allow objective evaluation of individual cases.


Vorster's comment made in 1960 is equally relevant today. He notes: "there seems to be no definite information available on the extent to which the pastures may be stocked without causing erosion, and the stocking rates recommended for the reserves appear to be based on lower levels of veld utilisation rather than on maximum carrying capacity" (Vorster, 1960).

Despite the increased complexity of assessment procedures the underlying assumption is still that stocking rate trials measuring productivity with beef production parameters or
experience of well run commercial ranches and the associated range indicators used are appropriate to CA situations. This can be questioned.

In beef ranching systems economic objectives are different and the economic CA is at a low stocking rate, where a "climax" herbaceous vegetation with low bush/tree cover may be optimal for the production system. This is not necessarily so in the CAs where higher stocking rates are economically desirable. A few examples will serve to illustrate this:

1) The replacement of perennials by annuals is regarded in conventional range management as a bad thing. However this may represent a shift in response to changing rainfall rather than an indicator of range trend (cf Dye and Spear, 1983). The presence of annuals may be advantageous in systems where protein deficiencies are a major constraint and where rapid responses to occasional rainfall sustains production (cf PENNING de BRIES et al, 1983).

ii) "Bush encroachment" is another indicator of poor range condition, but in most instances increased woody plants in dryland grazing areas are a definite advantage. Not only is browse crucial forage for all stock in the resource crunch periods of the dry season, but also some trees encourage valuable grass species such as Panicum maximum (KENNARD and Walker, 1973).

What are needed are indicators that reflect ecological CA and do not translate the objectives of a particular production system into a picture of what the environment should look like in all situations. By confounding economic and ecological CA existing assessment procedures may end up recommending stocking rates that undermine economic sustainability in CAs and do not directly address the key issue of ecological sustainability. (P.12-13).

CAs will always be high stocking rate systems because of the multipurpose nature of cattle production: having a high economic CA makes economic sense. In order to find development strategies that ensure economic and ecological sustainability in tandem we need to look at how CA grazing systems are actually managed and concentrated on those factors that can maintain an economically viable stocking rate at ecologically sustainable levels. Two factors have been highlighted: macro level use of resources by adaptive movement and temporally and spatially specific use of "key resources". These two factors ought to be the cornerstone of the design of grazing policies. Currently they are basically not considered in development attempts, since the focus is basically on the transfer of commercial management systems to CAs. These may not be applicable as they assume different production objectives and are based on technical criteria that are open to question. (p.26).
ANNEXE C

GRAZING SCHEME BY-LAWS

The following by-laws are agreed upon concerning the operation of the Grazing Scheme:

1. The maximum stocking rate of the scheme to be determined annually (May or June) by Agritex, in accordance with the conditions pertaining each year. This information to be communicated in writing to the Grazing Scheme Committee.

2. The stocking rate, set by Agritex, not to be exceeded.

3. The number of stock that may be depastured by each member of the scheme to be fixed by the Grazing Scheme Committee each year (June). This allocation not to be altered until the next year.

4. A register of all stock depastured to be maintained by the Committee for its own administrative purposes.

5. Rotations within the scheme to be in accordance with advice from Agritex.

6. Excess stock to be fattened and sold to Cold Storage Commission or sold direct to other buyers (e.g. local butcheries).

7. Regular patrols to be organised by the Committee to check on the state of fences etc.

8. The cost of fence repairs and maintenance to be shared by the community according to methods decided upon by the Committee. (This will probably be on the basis of the number of stock run in the scheme).

9. Traditional access routes to be catered for (e.g. in positioning of gates). This refers to collection of water from streams etc.

10. All stock to be maintained in a healthy state e.g. regular dipping.

11. In the event of these by-laws not being adhered to, the members of the Grazing Scheme would be liable for the full cost of materials.

Chairman: (Name)...........................(Signature)......................

Member:  (Name)...........................(Signature)......................

Member:  (Name)...........................(Signature)......................

Council S.E.O. (Name)...........................(Signature)......................

Agritex:  (Name)...........................(Signature)......................
A. BACKGROUND

- Half of the land in Zimbabwe lies in Communal Areas, the largest part consisting of marginal soils with poor and unreliable rainfall, unsuitable for crop cultivation.

Due to past land allocation policies, insufficient land use planning, inadequate land management and population growth, natural resources in Communal Lands, particularly soils and vegetation cover, are now deteriorating.

- Planned and controlled grazing, based on limitation of the size of the herds, communal farmers' adoption of grazing by-laws and respect of existing communal lands conservation legislation are considered important elements towards improving animal husbandry and preventing further environmental degradation. Thus the introduction of grazing schemes could mean a major breakthrough in communal lands development.

- Fourteen grass-root initiatives to implement grazing schemes in their respective areas were worked out with the help of AGRITEX and ARDA. These schemes, considered as pilot ones, are funded as Microprojects from the resources of the Fifth European Development Fund.

These pilot schemes were designed to provide further insight into benefits of rotational grazing, encourage the widespread adoption of legumes for pasture improvement and to test the capability of target groups to run such schemes.

- The schemes cover 18,900 ha. of paddocks for some 11,800 head of cattle and should benefit 5,400 rural families. They are located throughout the five different agro-ecological regions of the country.

Tripartite financing is applied with 50% contribution from the EEC Microprojects fund and the remainder from the local community on a self-help basis component, with AGRITEX or ARDA for supervision.

- The fourteen pilot grazing schemes, including a countrywide Pasture Improvement and Legume Seed Production Project, receive(d) EDF aid for a total amount of some 28,400 000.

Experiences from these schemes could, in years to come, be widely diffused in conjunction with other instruments to improve land use in areas which will become free of trypanosomiasis and where a danger of uncontrolled growth of cattle numbers exists.

B. GENERAL OBJECTIVES AND FRAMEWORK

The evaluation study should assess the objectives, design, implementation progress, operation aspects and impact of the grazing schemes. It should include critical assessments of the social, institutional, economic and ecological framework of these schemes.
Objectives, as initially determined in the various project documents, will also be assessed as well as the impact of the activities in the area, especially whether the targets were or will be achieved and sustainable benefits in the long run established.

The evaluation will be primarily based on AGRITEX and ARDA project documents, field visits, surveys, interviews with farmers, local project staff and on discussions with those responsible for the implementation of these schemes.

The evaluation will take account of the General Evaluation Criteria attached.

C. EVALUATION COMPONENTS

C.1. Objectives

The study should assess how the objectives were originally defined, whether they were realistic, given the prevailing social, institutional, political and economic situation, and whether the objectives were modified where and when appropriate, the reasons for the delays, etc.

C.2. Design

The analysis will include a judgement on whether the grazing schemes were correctly chosen priorities and whether any needs were omitted which should have been covered during the relevant period. It will evaluate whether the inputs proposed to meet the various objectives - in particular the management and financial structures for planning, implementing and monitoring the various programmes - were appropriate.

C.3. Implementation

The study will examine each grazing scheme and analyse the natural resource base, soils, grass cover, rainfall pattern besides its self-help component. It will compare the results achieved with intended results (project effectiveness) and the means employed (efficiency). It will pay attention to the financial and budgetary control of the project, to the monitoring of the project by those concerned (AGRITEX, ARDA, Local Communities) to the links with other development activities and to the participation of the population at all stages. Being self-help community schemes, the people's labour input (man-days) and any contributions in kind during project planning and implementation shall be assessed and quantified by the Consultant for each grazing scheme. Although not always part of the grazing scheme, the provision of rural support services shall be evaluated. The implementation of grazing bye-laws and law enforcement on land use and management controls as well as land conservation practices will be presented and assessed.

The two following points will be studied:

- What would be the effects of a Grazing Tax to be used for the financing of the extension and livestock improvement services?

- What are the current conditions for marketing and do enough incentives exist?
C.4. Impact and Viability

The impact of grazing schemes on farmers' incomes and on the return to labour will be assessed in the "with" and "without project" situations. The effects on the family income and on the farm system in the areas covered should be described where possible.

Attention should be paid to the role of women in such schemes.

The impact should also be assessed in terms of pasture and improved livestock performance during different periods of the implementation/operation. After comparing the efficiency of the different grazing schemes, the project's internal economic rate of return should be estimated. The long term viability of the project's achievements should be assessed in economic, social, institutional and environmental terms, particularly in relation to the strong self-help component of these schemes.

C.5. Conclusions

The conclusions should cover both the development of the grazing schemes in Communal Lands and more general lessons applicable to other land use projects. Recommendations shall be made in conjunction with official plans for Communal Lands' internal re-organisation and land use reform.

D. WORK METHOD

Special attention should be given to uniformity of methodology in evaluating the grazing schemes so as to ensure compatibility of the results and conclusion.

The Consultant will refer to previous and on-going evaluation material on Grazing Schemes. There are a number of on-going evaluations by Agritex on different aspects of Grazing Schemes being undertaken at the present time.

The Consultant will review survey work already completed by the University of Zimbabwe and Agritex, Veld and Pasture Branch.

The Consultant will carry out the evaluation by means of the following:

(a) An analysis of the data contained in project proposals, project reports and any other relevant documents held by Agritex, ADDA, DAD, the WEC Delegation or other agencies. The data collected by Agritex field staff for routine monitoring of extension programme plans will also be analysed if it proves both relevant and available.

(b) Field visits to all the grazing schemes listed in Table 1, plus one pasture log on plot in each Province (Matabeleland North and South excepted). The Consultant will be accompanied on the field visits by the Agritex Assistant Chief of Animal Production, the relevant Provincial specialists, and other key Agritex field staff (e.g. the Extension Worker for the community which has adopted the grazing scheme). The field visits will take place over a total of 21 working days.
The visits should be followed up by full discussions on the various schemes, Communal Land Use Planning Programmes and the integrated approach which Agritex is trying to take in implementing pilot grazing schemes. He will also review survey work already in hand.

(c) An analysis of the data collected by the Consultant on the field visits.

Before presentation of the draft Evaluation Report a one-day workshop will be held to discuss the preliminary findings with personnel from Agritex, other agencies, and the DEC Delegation.

The evaluation will be completed within a total of 3.5 months. Should the Consultant find that further follow-up studies are still necessary, he will make recommendations to that effect.

II. TIME SCHEDULE AND REPORTING

The evaluation study will be carried out between October 1st 1987 and January 14th 1988. The Draft Evaluation Report will be presented to the Administration no later than December 31st 1987, in 7 copies. (4 for the Client, 3 for the DEC Delegation)

The final report will be published by 31st January in at least 25 copies. (20 for the Client and 5 for the DEC Delegation)
TAGARIKA

VICTORIA PROVINCE
Mwenezi District
PORTION OF WARD 14
Land Reform Plan
Scale 1:5000

LEGEND

LAND CLASSIFICATION
1. Land
2. Village
3. Land Reform

LEGEND

1. Existing
2. Existing Proposed
3. New
4. Proposed
5. Land Improvements
6. Land Reforms
7. Popular Rights
8. Village

Legend:

- Existing
- Existing Proposed
- New
- Proposed
- Land Improvements
- Land Reforms
- Popular Rights
- Village
A.6

Grazing Scheme: Mangezi

Pre-Independence Scheme? No
Post Independence: First Discussed: 1981/2
Initiative: Councillor and D.A.'s office

Fencing Complete? No—two paddocks not yet complete

<table>
<thead>
<tr>
<th>材料需要</th>
<th>No of Paddocks</th>
<th>No of Households</th>
<th>Cost USED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diptank in Scheme?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prevalence of Veis?</td>
<td>Very few</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paddock?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water in All</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Community Labour: 'Equal contributions'

Outstanding Contributions: No cash—some absentees from fencing work and not yet paid.

Maintenance Costs: Asked for donor assistance

Boundary Disputes: None

Total Livestock (1987)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>203</td>
<td>10.4</td>
<td>1986: -</td>
</tr>
<tr>
<td>Goats</td>
<td>367</td>
<td>55.1</td>
<td>1985: -</td>
</tr>
<tr>
<td>Sheep</td>
<td>20</td>
<td>3.0</td>
<td>1985: -</td>
</tr>
<tr>
<td>Monkeys</td>
<td>21</td>
<td>10.5</td>
<td>1984: -</td>
</tr>
<tr>
<td>Total</td>
<td>210.2</td>
<td>1984: -</td>
<td></td>
</tr>
</tbody>
</table>

Stocking Rate: Cattle Condition:

<table>
<thead>
<tr>
<th>Stocking Rate</th>
<th>Cattle Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>1 LU: 1.96 HA (October 1987)</td>
</tr>
<tr>
<td>1986</td>
<td>Good</td>
</tr>
<tr>
<td>1985</td>
<td></td>
</tr>
<tr>
<td>1984</td>
<td></td>
</tr>
</tbody>
</table>

Veld Condition

Basal Cover: Fair
Surface Capping: in two paddocks
Sheet Fencing: in two paddocks
Other: fair to good fodder value; plenty of browse bushes

Committee

Elected 1985
Sings: 14

Traditional Leaders: 1
Women: 7
Non-owners: 'Some'
Meetings: Twice a month
Community Meetings: Regularly
Record Keeping: Not yet

By-Laws: (a) Council version (b) Community version

In Writing? (a) Yes (b) No

Origin: (a) Councillors (b) Community meeting

Content: (a) Sue Tagarika
(b) Fencing cutting; outsider's cattle; tree cutting; gully reclamation

Operational? Probably not

Max. Stocking Rate? Signs of discussion at committee level, but rejected in short term. Confident of being able to increase numbers and allow non-owners to participate

Grazing System: Not widely discussed yet. Seku-2 weeks/paddock is proposed

Perceived Benefits: Reduced herding. Improved cattle performance

Perceived Problems: Shortage of water in some paddocks; control of large numbers of sheep and goats.

Agritex and D.A.'s Office

Consultation: Important input from outsiders and through example of Tagarika.

Planning: Adequate, but problems of stock transit routes not yet resolved.

Implementation: Transport problems a severe bottleneck.

Monitoring: Poorly reported within Agritex. Irregular reporting from D.A.'s office and payments not adequately documented at first.
GRAZING SCHEME: MACHINGU

No of Households (1987): 47

Livestock (1987)

<table>
<thead>
<tr>
<th>No.</th>
<th>L.U.'s</th>
<th>Cattle Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1987</td>
<td>1.07ha</td>
<td></td>
</tr>
<tr>
<td>1986</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1984</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MATERIALS NEEDED: Grids for roads.

Pre-independence Scheme: No
Post independence: First discussed: 1982
Initiative: Councillor and DA's office

Fencing begun: June 1985
Fencing complete: No-2 paddocks still to complete

No of paddocks: 4

Cattle ownership (1987): 62%


Water in all paddocks?

No one paddock lacks water.

Prevalence of vleis? Very few in area.

Dirt tank in scheme?

No.

Post independence: First discussed: 1982

Initiative: Councillor and DA's office.

Fencing complete: No-2 paddocks still to complete

No of paddocks: 4

Terrestrial needed:

Grids for roads.

Community identity and cohesion:

Small community with close ties to Mangezi (in same VICO together).

Community differentiation: Many men are urban migrants. No local wage labour. Very few large herdowners. Many non-owners (38%) who gain access to draught through hiring. Some beer brewing, some liquor sales.

Acrex and D.A.'s office
Consultation: (See Mangezi)

Planning:

Implementation:

Monitoring:

Operational? No

Max. stocking rate: Not much discussion yet. Some acceptance of principle of maximum number per household. Need for non-owners to acquire cattle.

Grasping system: Very little discussion as yet-no consensus on system to be followed.

Perceived benefits: Anticipated: reduced herding; improved cattle condition and performance

Perceived problems: Water for cattle; reduced flexibility in drought-induced movement of cattle.
### A.8  
**GRASSING SCHEME: MATIVENGA**

<table>
<thead>
<tr>
<th>No OF HOUSEHOLDS (1987)</th>
<th>107</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATTLE OWNERSHIP (1987)</td>
<td>75%</td>
</tr>
</tbody>
</table>

**FENCING BEGUN:** August 1985

**MATERIALS NEEDED:**

<table>
<thead>
<tr>
<th>COST</th>
<th>USED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIPTANK</strong></td>
<td><strong>COST</strong></td>
</tr>
<tr>
<td><strong>FENCING</strong></td>
<td><strong>OUTSIDE LABOUR</strong></td>
</tr>
</tbody>
</table>

**COMMUNITY BOUNDARY DISPUTES:**

<table>
<thead>
<tr>
<th>heißin</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTERNAL OPPOSITION:</strong></td>
<td><strong>EXTERNAL OPPOSITION:</strong></td>
</tr>
</tbody>
</table>

**COMMUNITY DIFFERENTIATION:**

<table>
<thead>
<tr>
<th>A.8.1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMMUNITY LABOUR:</strong></td>
<td>'Equal contributions'</td>
</tr>
</tbody>
</table>

**OUTSTANDING CONTRIBUTIONS:** No cash collected. Some reluctant to contribute labour.

**MAINTENANCE COSTS:** Not yet discussed, but willingness to levy contributions in future expressed.

**BOUNDARY DISPUTES:** Yes-resolved with assistance of Agritex. No longer a problem.

**INTERNAL OPPOSITION:** Yes-from those to be relocated. 10 households not yet moved.

**FENCE CUTTING:** Yes-from people still in grazing area.

**RELOCATIONS:**

- **HOMESTEADS:** Yes-8
- **ARABLE LANDS:** Yes-4

**COMMUNITY IDENTITY AND COHESION:**

- Council chairman, whose son is VIDEO chairman. Coincident with VIDEO. Some internal strains e.g. 10 households refusing relocation.

**COMMUNITY DIFFERENTIATION:**

- A fair number of urban migrants. Few local wage labourers. A few large herdsmen, who do employ herdies. Non-owners gain access to draught through herdsbreeding and long-term loans of cattle.

**AGRITEX AND D.A.'S OFFICE**

**CONSULTATION:** (see margin)

**PLANNING:**

**IMPLEMENTATION:**

**MONITORING:**

### LIVESTOCK (1987)

<table>
<thead>
<tr>
<th>No.</th>
<th>L.U.'s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CATTLE</strong></td>
<td>229</td>
</tr>
<tr>
<td><strong>GOATS</strong></td>
<td>601</td>
</tr>
<tr>
<td><strong>SHEEP</strong></td>
<td>13</td>
</tr>
<tr>
<td><strong>DONKEYS</strong></td>
<td>24</td>
</tr>
</tbody>
</table>

**TOTAL:** 241.1

**STOCKING RATE:**

- **1987:** 1 L.U.: 2.73 (OCTOBER 1987)
- **1986:**
- **1985:**
- **1984:**

**TREND:**

**VEGETATION:**

- **BASAL COVER:** Very poor with massive base patches
- **SURFACE CAPPING:** Observed
- **SHEET EROSION:** Evident
- **OTHER:** Tufts dying. Species of poor value

**COMMITTEE (Same as VIDEO)**

- **ELECTED:** 1983/4/6
- **STEP:** 8
- **TRADITIONAL LEADERS:** 1
- **WOMEN:** 1
- **NON-OWNERS:** 2
- **MEETINGS:** Not known
- **COMMUNITY MEETINGS:** Not known
- **RECORD KEEPING:** Not seen

**BY-LAWS:**

- **(a) Council version:**
- **(b) Community version**

**IN WRITING:**

- **(a)** Yes
- **(b)** Claimed but not seen

**ORIGIN:**

- **Drawn up by committee, discussed with community**

**CONTENTS:**

- **Attendance at work:** no compensation for crop damage to those resisting relocation. Reliance on District Council to enforce

**INOPERATIONAL:** Not yet awaiting official approval

**MAX. STOCKING RATE:** Not yet discussed, but awareness of need for control of numbers in long-term is expressed. In the short term numbers need to expand.

**GRAZING SYSTEM:** Not yet such distinguished/poor awareness of management system.

**PERCEIVED BENEFITS:** Anticipated-improvements in grass and cattle, reduction in hard labour.

**PERCEIVED PROBLEMS:** Water supply in paddocks, control of goats and sheep, transport of poles.
A.9

GRAZING SCHEME: NTABAZINDUNA

No OF HOUSEHOLDS (1982): 1390

PRE-INDEPENDENCE SCHEME? Yes-fenced

POST INDEPENDENCE: FIRST DISCUSSED: 1981

INITIATIVE: Agritex

1 CATTLE OWNERSHIP (1987):

FENCING BEGUN: October 1985

FENCING COMPLETE? No

MATERIALS NEEDED: Wire and standards for 26 km; water supplies; 2 distants

AREA OF SCHEME 6874 HA.

WATER IN ALL

PADDOCKS? Only in about 6 paddocks

PRECEDENCE OF VELOTS? Some in paddocks

DIPTANK IN SCHEME? Yes

USED BY OUTSIDERS? -

COST OF MATERIALS: FEC $57 743

(Droppers from D.Council) COMMUNITY $48 116

OTHER $0

COMMUNITY LABOUR: Equal contributions in some villages, in others fencers were paid, cash collected from community

OUTSTANDING CONTRIBUTIONS: Many defaulters, not yet penalised.

MAINTENANCE COSTS: Discussed in only some villages. Proposals vary from cash contributions to asking D.Council

BOUNDARY DISPUTES: None reported

INTERNAL OPPOSITION: Very little reported. Urban workers less enthusiastic.

FENCE CUTTING: None reported

RELOCATIONS:

HOMESTREADS: Yes-some

ARABLE LANDS: Yes-some

COMMUNITY IDENTITY AND COHESION:

Large community made up of several kraalhead areas united under Chief Khayisa Nkweni. Strains because of population growth, limited resources and high degree of commuting to Bulawayo. Tensions between Chief and elected Councillors

COMMUNITY DIFFERENTIATION:

High rate of urban migration especially in younger households. Much local wage labour. A few large herdowners and many non-owners, who mostly hire DDF or local tractors.

AGRITEX

CONSULTATION: Scheme easily accepted because of Chief's influence and experience of pre-independence scheme. Issue of stock reduction agreed with Chief but not whole community.

PLANNING: Agritex did not accept pre-ind boundaries and designed new layouts, which pleased acceptable to community.

IMPLEMENTATION: Modifications to plan suggested by community and accepted by Agritex.

MONITORING: Progress and problems reasonably well reported on with the exception of issue of stock reduction

LIVESTOCK (1987)

<table>
<thead>
<tr>
<th>No.</th>
<th>L.U.'s</th>
<th>CATTLE NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATTLE</td>
<td>654</td>
<td>1986</td>
</tr>
<tr>
<td>GOATS</td>
<td>801</td>
<td>1986</td>
</tr>
<tr>
<td>SHEEP</td>
<td>487</td>
<td>1985</td>
</tr>
<tr>
<td>DONKEYS</td>
<td>148</td>
<td>1985</td>
</tr>
<tr>
<td>TOTAL</td>
<td>-</td>
<td>4063.9</td>
</tr>
</tbody>
</table>

STOCKING RATE: CATTLE CONDITION:

1987: 1 L.U. 1.7 HA (OCTOBER 1987)
1986: 1.0
1985: 1.2
1984: generally poor

TREND:

YEILD CONDITION

BASAL COVER: Very little in most paddocks

SURFACE CAPPING: -

SHEET EROSION: -

OTHER: Some grass cover in southern section. Elsewhere there bush predominates

COMMITTEE: 6 committees for 6 sub-units

ELECTED 1985 SIZE usually 6-7

TRADITIONAL LEADERS: Many on committees

WOMEN: Few

NON-OWNERS: Many

MEETINGS: Variable; twice a month or monthly

COMMUNITY MEETINGS: When the need arises

RECORD KEEPING: None seen

BY-LAWS

IN WRITING: No

ORIGIN: General meeting in 1985

CONTENTS: Rotations; using paddocks of home village only; night kraalings; fence cutting

OPERATIONAL? Not yet

MAX. STOCKING RATE: Not yet discussed by most committees. Widespread awareness of resource shortage, but non-owners need to be accommodated. A sensitive issue.

GRASSING SYSTEM: In dry season most cattle on army ranch 20 km distant (Started 1982). 2 villages aim to start rotations 1987/8. SOG system proposed but committee members mostly propose 2-3 months per paddock.

PERCEIVED BENEFITS:

Anticipated-reduced browsing, better grass growth and improved cattle condition.

PERCEIVED PROBLEMS:

Water supply in paddocks; need for grids and gates on roads; more fencing materials; future of grazing given rising populations; drought.
No OF HOUSEHOLDS (1987) : 148  
PRE-INDEPENDENCE SCHEME? Yes-unfenced  
POST INDEPENDENCE: FIRST DISCUSSED: 1984  
INITIATIVE Agritex and DMB  
FENCING BEGUN: August 1985  
MATERIALS NEEDED: -  
FENCING COMPLETE? Yes  
PRE-INDEPENDENCE SCHEME? /No OF AREA OF SCHEME  
PREVALENCE OF VLEIS? Most of grazing land is vlei  
DIPTANK IN SCHEME? No, but nearby  
COST USED DIPTANK  
COST OF MATERIALS: $40 $73 (EEC)  
$10.53 per household) COMMUNITY EEC  
$5 $10 OTHER (BMB)  
$5200 (for all Kwoyo scheme)  
COMMUNITY LABOUR: 'Equal contributions from all households'  
OUTSTANDING CONTRIBUTIONS: Substantial number  
MAINTENANCE COSTS: No cash collected; DMB donation of $5200 being used for fence repairs. Mobilising labour for repairs often the focus of community meetings  
BOUNDARY DISPUTES: Many disputes, which delayed implementation. Resolved with assistance of Agritex and kraalheads  
INTERNAL OPPOSITION: Strong opposition from ex-herders and from 'squatters' in grazing area  
FENCE CUTTING: A severe problem when fences first erected. Fences still 'guarded.' An offence in by-laws but no fines yet imposed. Cattle break fences  
RELOCATIONS: HOMESTEADS: A few but some 'squatters' not yet moved.  
ARABLE LANDS: A few but some 'squatters' not yet moved  
COMMUNITY IDENTITY AND COHESION: Several kraalheads grouped together on basis of use of the same grazing area. High density of settlement, many 'newcomers' and presence of 'squatters' all contribute to internal strains. No sanctions yet applied to non-contributors, Kwoyo A,B and C in one VICO  
COMMUNITY DIFFERENTIATION: Many migrants working in Ilala. Increasing numbers of local wage labourers. A few large herd owners. Non-owners mostly hire draught animals  
AGRITEX  
CONSULTATION: Community leaders contributed their ideas on location of paddocks. Traditional leaders played important role in definition of boundaries  
PLANNING: Initially long delay in planning  
IMPLEMENTATION: Many minor modifications to plan at implementation to accommodate homesteads and arable lands. Maps and reports do not reflect these changes.  
MONITORING: Reporting fairly regular and informative  
LIVESTOCK (1987)  
No. L.U.'s CATTLE NUMBERS  
CATTLE 424 329.8 1986: 394  
GOATS 20 3.0 1985: 301  
SHEEP - - 1984: 291  
DONKEYS 12 6.0  
TOTAL 339.8  
STOCKING RATE: TREND: increasing  
CATTLE CONDITION: 1987: 1 LU: 0.08 HA  
1986 fair  
1985  
1984  
TREND: increasing  
VEGETATION: BASAL COVER: good  
SURFACE CAPTING:  
SHEET EROSION: Not very noticeable  
OTHER: Emergics and Spaddocks dominant  
COMMITTEE  
ELECTED 1984 SIZE: 6  
TRADITIONAL LEADERS: 3  
WOMEN: 0  
NON-OWNERS: 0  
MEETINGS: Monthly or bi-weekly  
COMMUNITY MEETINGS: When problems arise  
RECORD KEEPING: Minutes of meetings and irregular record livestock numbers. Rotations not recorded.  
BY-LAWS: 2 sets: (a) Agritex version (b) Community version  
IN WRITING: Only Agritex version-not held by committees.  
ORIGIN: (a) Agritex (b) Committee and community meetings  
CONTENTS: (a) Stocking rates; rotations; selling excess stock etc (b) Rotations; fence maintenance; outsider's cattle no burning  
OPERATIONAL? No fines yet imposed: Enforcement is problematic  
MAX. STOCKING RATE: Awareness of issue demonstrated by committee members but strongly rejected in the short term. Pre-independence destocking remembered  
GRAZING SYSTEM: Short duration grazing. Modern idea awareness of the system, but rotation not always followed. Cattle go back to vleis in paddocks when stover in fields is finished. Goats tethered outside scheme  
PERCEIVED BENEFITS: Improvements to health and to cattle. Labour for herding is reduced (emphasized strongly by women)  
PERCEIVED PROBLEMS: Cattle breaking fences, enforcement of by-laws, water supply in paddocks
### A.11  
**GRAZING SCHEME: KOWOYO 'B'**  
**NATURAL REGION II**

**PRE-INDEPENDENCE SCHEME?** Yes-unfenced  
**POST INDEPENDENCE: FIRST DISCUSSED?** 1984  
**INITIATIVE?** Agritex and DMB

#### No of Households (1987): 82

<table>
<thead>
<tr>
<th>LIVESTOCK (1987)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No.</strong></td>
</tr>
<tr>
<td><strong>CATTLE</strong></td>
</tr>
<tr>
<td><strong>GOATS</strong></td>
</tr>
<tr>
<td><strong>SHEEP</strong></td>
</tr>
<tr>
<td><strong>DONKEYS</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>STOCKING RATE?</strong></th>
<th><strong>CATTLE CONDITION?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1987 1 LU: 0.90 HA</td>
<td>(OCTOBER 1987) fair</td>
</tr>
<tr>
<td>1986</td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td></td>
</tr>
<tr>
<td>1984</td>
<td></td>
</tr>
</tbody>
</table>

| **TREND?** | Increase 1983-1986 |

<table>
<thead>
<tr>
<th><strong>VELD CONDITION?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BASE COVER</strong>: fair to good</td>
</tr>
<tr>
<td><strong>SURFACE CAPING</strong>: evident in vleis</td>
</tr>
<tr>
<td><strong>SHEET EROSION?</strong>:</td>
</tr>
<tr>
<td><strong>OTHER</strong>: Some Hypersena, couch and much Spartina</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>COMMITTEE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ELECTED 1984</strong></td>
</tr>
<tr>
<td><strong>TRADITIONAL LEADERS</strong>: 4</td>
</tr>
<tr>
<td><strong>WOMEN</strong>: 2</td>
</tr>
<tr>
<td><strong>NON-OWNERS</strong>: 1</td>
</tr>
<tr>
<td><strong>MEETINGS</strong>: Twice a month initially, now monthly</td>
</tr>
<tr>
<td><strong>COMMUNITY MEETINGS</strong>: Occasionally</td>
</tr>
<tr>
<td><strong>RECORD KEEPING</strong>: None seen</td>
</tr>
<tr>
<td><strong>BY-LAWS</strong>: 2 sets: (a) Agritex version (b) community version</td>
</tr>
<tr>
<td><strong>IN WRITING?</strong> Only Agritex version-not held by committee</td>
</tr>
<tr>
<td><strong>ORIGIN</strong>: (a) Agritex (b) Community meeting</td>
</tr>
<tr>
<td><strong>CONTENTS</strong>: (a) Stocking rate; rotations; selling excess stock; rate; (b) Rotations; fence maintenance; outsiders cattle; burning etc.</td>
</tr>
<tr>
<td><strong>OPERATIONAL?</strong> No fines imposed yet, enforcement is problematic</td>
</tr>
<tr>
<td><strong>MAX. STOCKING RATE?</strong> Chairman denies inclusion in by-laws. Committee members demonstrate awareness of need to limit numbers in long run but reject in the short term.</td>
</tr>
<tr>
<td><strong>GRAZING SYSTEM?</strong> Short duration grazing but rotation, not always followed. Cattle go back to vleis in paddocks when showers finished.</td>
</tr>
<tr>
<td><strong>PERCEIVED BENEFITS?</strong> Improvements in grass condition and in cattle. Labour for herding reduced.</td>
</tr>
<tr>
<td><strong>PERCEIVED PROBLEMS?</strong> Continual repair of fences. Lack of water supplies in paddocks. Enforcement of by-laws</td>
</tr>
</tbody>
</table>

### Materials Needed:

| **AREA OF SCHEME**: 186 HA. |
| **No of paddocks**: 3 |
| **WATER IN ALL PADDOCKS?** No |

| **PREVALENCE OF VLEIS?** Many vleis in paddocks |
| **DIPTANK IN SCHEME?** No |
| **USED BY OUTSIDERS?** - |

<table>
<thead>
<tr>
<th><strong>COST OF MATERIALS?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EEC</strong></td>
</tr>
<tr>
<td><strong>COMMUNITY</strong></td>
</tr>
<tr>
<td><strong>OTHER</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>COMMUNITY LABOUR?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>'Equal contributions from all households'. Divided into sub-villages to do the work</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>OUTSTANDING CONTRIBUTIONS?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Substantial number</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>MAINTENANCE COSTS?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>No cash collected. DMB donation of $5000 raised used for fence, repairs. Mobilising labour for repairs often the focus of community meetings</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>BOUNDARY DISPUTES?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Many disputes which delayed implementation. Resolved with help of Agritex and Kraalheads</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>INTERNAL OPPOSITION?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant - from those whose homes and lands had to be relocated and from ex-herders.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>FENCE CUTTING?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>A severe problem when fence being erected. Fences still 'guarded'. No fines imposed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>RELOCATIONS?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Some moved - this provoked opposition</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>HOMESTEADS?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Some moved; this provoked opposition</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>ARABLE LANDS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Some moved; some gardens stayed and fenced</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>COMMUNITY IDENTITY AND COHESION?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Several kraalheads grouped together on basis of use of same grazing area. Density of settlement and need to relocate homes and lands caused internal strains</td>
</tr>
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<tbody>
<tr>
<td>August 1985</td>
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<thead>
<tr>
<th><strong>MATERIALS NEEDED?</strong></th>
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<table>
<thead>
<tr>
<th><strong>POST INDEPENDENCE: FENCING COMPLETE?</strong></th>
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<tbody>
<tr>
<td>Yes</td>
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<table>
<thead>
<tr>
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<tr>
<td>1984</td>
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<tr>
<td>Agritex and DMB</td>
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<table>
<thead>
<tr>
<th><strong>CATTLE OWNERSHIP (1987)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>29.3%</td>
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<table>
<thead>
<tr>
<th><strong>PREVALENCE OF VLEIS?</strong></th>
</tr>
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<tbody>
<tr>
<td>Many vleis in paddocks</td>
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<table>
<thead>
<tr>
<th><strong>DIPTANK IN SCHEME?</strong></th>
</tr>
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<tbody>
<tr>
<td>No</td>
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<table>
<thead>
<tr>
<th><strong>USED BY OUTSIDERS?</strong></th>
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<tr>
<th><strong>COST OF MATERIALS?</strong></th>
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<tr>
<td><strong>EEC</strong></td>
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<tr>
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</tr>
<tr>
<td><strong>OTHER</strong></td>
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<thead>
<tr>
<th><strong>COMMUNITY LABOUR?</strong></th>
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<tbody>
<tr>
<td>'Equal contributions from all households'. Divided into sub-villages to do the work</td>
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<tr>
<th><strong>OUTSTANDING CONTRIBUTIONS?</strong></th>
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<tr>
<td>Substantial number</td>
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<tr>
<th><strong>MAINTENANCE COSTS?</strong></th>
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<tr>
<td>No cash collected. DMB donation of $5000 raised used for fence, repairs. Mobilising labour for repairs often the focus of community meetings</td>
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<tr>
<th><strong>BOUNDARY DISPUTES?</strong></th>
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<tr>
<td>Many disputes which delayed implementation. Resolved with help of Agritex and Kraalheads</td>
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<tr>
<th><strong>INTERNAL OPPOSITION?</strong></th>
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<td>Significant - from those whose homes and lands had to be relocated and from ex-herders.</td>
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<th><strong>FENCE CUTTING?</strong></th>
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<td>A severe problem when fence being erected. Fences still 'guarded'. No fines imposed.</td>
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<th><strong>RELOCATIONS?</strong></th>
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<td>Some moved - this provoked opposition</td>
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<th><strong>HOMESTEADS?</strong></th>
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<td>Some moved; this provoked opposition</td>
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<tr>
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<td>Some moved; some gardens stayed and fenced</td>
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A12 GRAZING SCHEME: KOWOYO 'C'

PRE-INDEPENDENCE SCHEME: Yes-enclosed
POST INDEPENDENCE: FIRST DISCUSSED: 1984
INITIATIVE: Agritex and Dep

CATTLE OWNERSHIP (1987): 46.6%
FENCING BEGUN: August 1985
FENCING COMPLETE: Yes
MATERIALS NEEDED:

AREA OF SCHEME: 107 HA.
NUMBER OF PADDOCKS: 3

SALT IN ALL:
PADDOCKS: No - cattle have to go a long way to get water
PREVALENCE OF VLEIS: Many vleis in paddocks
DIPTANK IN SCHEME: No
USED BY OUTSIDERS: -

COST OF MATERIALS:
[$10.65 per household] -- COMMUNITY
[See Kowoyo W]

COMMUNITY LABOUR: 'Equal contributions from all households'

OUTSTANDING CONTRIBUTIONS: One third of community

MAINTENANCE COSTS: Small fund to pay those who repair fences. Contributions of 20-25c per household

BOUNDARY DISPUTES: A problem in initial stages. overcome by traditional leaders and VIMCO

INTERNAL POSITION: From those to be relocated and from ex-herders

FENCE CUTTING: Isolated cases. No fines imposed. Cattle break fences. (Fence maintenance very poor)

RELOCATIONS:
HOMESTEADS: Yes-some
ARABLE LANDS: Yes-some

COMMUNITY IDENTITY AND COHESION:
Kraalheads grouped because of use of same grazing area. High density of settlement, newcomers in recent years and invasion of grazing area all contribute to strains. No sanctions applied to non-contributors yet. Not very cohesive

COMMUNITY DIFFERENTIATION:
High migrancy. Only a few large herd owners. Ownership of cattle < 50%. Non-owners hire cattle at $22-$25/acre

AGHTSX (See Kowoyo 'A')

CONSULTATION:

PLANNING:
IMPC

IMPLEMENTATION:

MONITORING:

LIVESTOCK (1987)

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<tr>
<th>No.</th>
<th>L.U.'s</th>
<th>CATTLE NUMBERS</th>
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<tr>
<td>CATTLE</td>
<td>146</td>
<td>247.4</td>
</tr>
<tr>
<td>GOATS</td>
<td>30</td>
<td>4.0</td>
</tr>
<tr>
<td>SHEEP</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>247.4</td>
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STOCKING RATE: 1 LU: 0.76 HA
(October 1987)
1987: 1985: 263
1986: 772
1984: poor to fair, but old and lactating cows worse off

TREND: Increasing slowly

WEED CONDITION

BASAL COVER: good on vleis, very poor on uplands
SURFACE CAPPING: in isolated cases
SHET EROSION: not very noticeable
OTHER: much Sporobolus; some couch; bush encroachment

COMMITEE
ELECTED 1984
1985: 6
TRADITIONAL LEADERS: 4
WOMEN: 1
NON-OWNERS: 1
MEETINGS: Monthly or more often when needed
COMMUNITY MEETINGS: Many meetings last year to discuss fence maintenance
RECORD KEEPING: Not done

BY-LAWS: (a) Agritex version (b) Community version
IN WRITING? Agritex version only not held by committee
ORIGIN: (a) Agritex (b) Community meeting

CONFLICTS: (a) Stocking rates: rotatons; selling ewes stock; etc
(b) Rotations; outsiders cattle: no burning of grass; etc

OPERATIONAL: No fines imposed - enforcement is problematic

MAX. STOCKING RATE: Chairman aware of issue but thinks stock can be increased

GRAZING SYSTEM: Short Duration Grazing - not always followed

PERCEIVED BENEFITS: Reduction in herding; calving & improving; no more building in grazing area

PERCEIVED PROBLEMS: Water for livestock; cattle breaking fences
**No of Households (1987): 412**  
**Cattle Ownership (1987): 75.7%**  
**Fencing Begun: July 1986.**  
**Materials Needed: -**  

<table>
<thead>
<tr>
<th>Area of Scheme</th>
<th>No of Paddocks</th>
<th>PRE-Independence Scheme?</th>
<th>Post Independence: First Discussed: 1982/3</th>
<th>Initiative Agritex and ARDA</th>
</tr>
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<tbody>
<tr>
<td>3540 HA</td>
<td>13</td>
<td>No</td>
<td>Fencing Complete? No - 7 out of 13 paddocks complete</td>
<td></td>
</tr>
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**Water in All Paddocks?** Not perennial-dry up  
**Presence of VeLis?** Some  
**Dip Tank in Scheme?** Yes  
**Used by Outsiders?** No  
**Cost of Materials: EDC** 
<table>
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<tbody>
<tr>
<td>$60,000</td>
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**Community Labour: 'Equal contributions' - but significant absenteeism: LWP paid 2 fences and supplied food. Community also made bricks for warehouse-100 per household.**  
**Outstanding Contributions:** No cash contributed. Absenteeism from work, no sanctions applied yet.  
**Maintenance Costs:** Not yet discussed  

**Boundary Disputes:** On west of scheme and between VIDCO 5 and 6 within scheme  
**Internal Opposition:** Significant at first because of fears of destocking and having to pay for infrastructure  
**Fence Cutting:** Fence on western boundary of VIDCO 5 pulled down  
**Reallocations:**  
- **Honestlands:** Yes; 413 (whole community - 'land reform')  
- **Arable Lands:** Yes; 467 (whole community - land reform)  
**Community Identity and Cohesion:** Land development project with significant conflict/differences between villages within the ward. Isolated location pre-project meant shared disadvantages, but physically distant villages mean overall identity is problematic. Project imposed and 'sold' from above, 1 VIDCOs within the project area.  
**Community Differentiation:**  
Not a great deal of urban migration; little local wage labour; some large herd-owners who employ herdsmen. Non-owners gain access to draught through hire, hire and tractor hire.  
**Agritex and ARDA:**  
**Consultation:** Project basically planned from above and 'sold' to community, who saw roads, dip tanks and works as higher priorities than grazing  
**Planning:** Top-down to begin with; now responding to community pressures but without being documented  
**Implementation:** Erratic community participation. Poor coordination between government departments and other agencies (ARDA, LWP)  
**Monitoring:** Irregular reporting by ARDA and Agritex. Situation on the ground not reflected in reports  

**Livestock (1987):**  
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<tr>
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<th>Cattle Numbers</th>
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<tbody>
<tr>
<td>Cattle</td>
<td>2279</td>
<td>1367.4</td>
</tr>
<tr>
<td>Goats</td>
<td>400</td>
<td>60.0</td>
</tr>
<tr>
<td>Sheep</td>
<td>150</td>
<td>22.5</td>
</tr>
<tr>
<td>Donkeys</td>
<td>20</td>
<td>3.0</td>
</tr>
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</table>

**Stocking Rate:**  
1987: 1 LU: 2.42 HA  
1986: Good condition throughout year  
1985: Stable  
1984: Stable  

**Veld Condition:**  
Basal Cover: low but good for the region  
Surface Capping: not evident  
Sheet Erosion: isolated cases  
Other: Several brownable tree species. Grazing very unevenly utilized  

**Committer (Closely linked with VIDCOs):**  
**Elected 1985:** SEEM: 10  
**Traditional Leaders:** 4  
**Women:** 1  
**Non-Owners:** 0  
**Meetings:** Once or twice a month  
**Community Meetings:** Every two months on average  
**Record Keeping:** Labour days and brick contributions only  
**By-Laws:** No  
**In Writing:** No  
**Origin:** Committee and some community meetings  
**Contents:** Fine for non-attendance at work; fence cutting, no burning, no discussion of rotations yet.  
**Operational:** Not yet. No fines imposed for non-attendance at work  
**Max. Stocking Rate:** Sensitive issue, and strongly rejected, despite clause on stock limitation in ARDA project document signed by 3 VIDCO chairman.  
**Grazing System:** No grazing management planned even though 7 paddocks complete. Knowledge of rotational grazing very poor.  
**Perceived Benefits:** Primarily reduced herding. Better grass growth is anticipated by some.  
**Perceived Problems:**  
Loans to acquire cattle; delays in allocation of arable land in Land Reform programme.