



# People, Land and Livestock

*Proceedings of a Workshop on the  
Socio-Economic Dimensions  
of Livestock Production in the  
Communal Lands of Zimbabwe*

Edited by  
Ben Cousins



**PEOPLE, LAND AND LIVESTOCK**

**Proceedings of a Workshop on the Socio-economic  
Dimensions of Livestock Production in the Communal Lands of  
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**SOCIO-ECONOMIC DATA FOR LIVESTOCK DEVELOPMENT :  
NOTES AND OBSERVATIONS FROM ZAMBIA<sup>1</sup>**

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**1. INTRODUCTION**

Socio-economic data on livestock has been a neglected topic in rural development literature. Many interesting and relevant studies into nomadic and sedentary pastoral societies have been conducted across Africa, particularly by social anthropologists (e.g. Gulliver 1955). In addition, a number of surveys and topic-specific studies have been carried out as part of livestock development projects. However, the issue of how to incorporate social science more effectively into the livestock project cycle has only recently been considered (Dyson-Hudson 1985). Comparatively little has been written about methodologies appropriate for conducting surveys and studies on socio-economic aspects of livestock management.

The absence of appropriate literature is matched by a deficit in appropriate training. Within Southern and Eastern Africa, the role of social science in livestock development has received very little attention in universities and other training institutions. To my knowledge there are no manuals and training courses for livestock research and development equivalent to those provided by CIMMYT for crops in the region. At the national level limited attention is paid to socio-economic aspects of livestock development. For example, in

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<sup>1</sup> The contents of this paper reflect the personal views of the author and not the official viewpoint of the Adaptive Research Planning Team and Government of Zambia.

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Zambia there are no social scientists employed within government or parastatal agencies dealing with livestock development. At the first national conference on livestock development held in 1987, only one social scientist participated, and he was an expatriate not a Zambian national. This was certainly an under-representation because socio-economic issues were raised by nearly every paper presented.

This neglect in the literature and in training has had implications for the way that the socio-economic aspects have been handled within livestock projects. Two situations are common in Zambia and I suspect these prevail in neighbouring countries also. The first situation consists of projects which are run completely by technical staff with social scientists being involved, if at all, during project appraisal and project evaluations (Dyson-Hudson 1985). The second is where specific socio-economic studies have been commissioned by projects: either baseline studies or topic specific studies. Rarely, if ever, have social scientists been involved throughout the course of a project and as a consequence their studies can easily be left collecting dust on the shelves of the project coordinator's office. A further feature is a heavy reliance on input from expatriate social scientists, mainly because few if any nationals have been trained to do this type of work.

It is in this context of a poverty of guidelines for socio-economic data collection that I put forward a few ideas in this paper. These ideas are based on experience within Zambia's farming systems research programme, the Adaptive Research Planning Team (ARPT) which I joined in January 1983, and on previous anthropological research amongst sedentary pastoralists in North West Botswana. Field experience is supplemented by reference to relevant literature and personal communications with people directly involved in livestock data

collection. Although livestock research falls within its mandate and is gradually being incorporated into the programme, to date, ARPT has concentrated mainly on on-farm research into crops (Kean et al. 1986). My involvement has been with livestock data design and collection in Lusaka, Western and Southern Provinces, where the majority of Zambia's cattle and small ruminants are found.

## **2. KEY QUESTIONS FOR LIVESTOCK DATA COLLECTION**

I propose to tackle the subject of livestock data collection by addressing nine key questions which commonly face a livestock project, a programme within a government department, or an individual researcher involved in data collection. The questions are closely related and by no means exhaustive:-

1. Who are to be the end users of the data?
2. What types of technical improvements require a socio-economic input?
3. What types of data are required?
4. What are the most appropriate methodologies?
5. What is the unit of analysis?
6. What resources are available?
7. What is the time frame?
8. What kind of analysis and presentation is required?
9. What is expected from the farmer?

### **2.1 Who are the end users of the data?**

It is very important to identify the end users of the data before deciding on which data to collect. Two main types of end user can be considered, "primary users" and "secondary users". The primary end users are usually within the

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organisation or project concerned. Secondary users of data include those in related organisations, or in other projects which have similar objectives.

Primary users, especially in larger projects and organisations, are often not the ones directly responsible for collecting the data. It is essential to fully consult primary users before planning data collection activities. The more closely the primary users are concerned in the planning of data collection and in the analysis, the more useful the data will be. It is essential for primary users to state in writing the kinds of data they require and what they expect this data to be used for. Data requirements should be prioritised, both in terms of urgency and overall importance. As a general rule it is better to leave out data regarded as "interesting" or "possibly relevant". Primary users should also indicate when they require the data and in what form they want it to be presented. This reduces the chances of misunderstandings arising later.

Secondary users should always be consulted before starting to plan data collection. Very often secondary users are related organisations which are also involved in data collection activities and have useful experiences to share. Duplication of data collection can be more easily avoided if secondary users are consulted. Secondary users should not, however, be allowed to impose their priorities on the content of data collected.

### **2.2 What types of intervention require a socio-economic dimension?**

When planning interventions involving groups of farmers it is extremely important to recognise indigenous groupings within the community. Often access to grazing and water is restricted

according to membership of such groups which need to be properly understood when planning cooperative ventures in management improvement (Oxby 1980; Devitt 1982; Odell 1982).

**Fencing/Grazing Schemes:** Experience from Botswana is that such schemes are only feasible in communal areas if groups of farmers are involved (Willett 1981). The schemes have implications for land tenure and the inheritance of rights in arable and grazing land, as long-term investment is usually involved. In Zimbabwe experience with grazing schemes has demonstrated the value of a full knowledge of the local social structure, including land tenure and inheritance (Cousins 1988). In Zambia such schemes have failed to take off for a number of reasons, many of them social and economic (van Rootselaar and Bwalya 1987).

**Pasture improvement:** The improvement of communal pastures is a difficult research area requiring similar studies to the establishment of fencing schemes. Pasture improvement may often be possible only with fencing. Experience in Zambia has shown that without fencing, improving animal feed sources is difficult, especially if there is little benefit to crop production, because the farmer is unable to restrict access to the fodder to his or her own cattle. Local institutions need to be studied before group pasture improvement schemes are introduced (Odell 1982).

**Improved watering technologies:** Water is often a constraint to full use of grazing resources, and dirty water can affect animal health. The expansion and improvement of livestock watering facilities, especially if done on a self-help basis as in Western Province of Zambia (Zambia 1982), requires a good understanding of local institutions and patterns of cooperation. Experience in Botswana has shown a good response

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when such factors are considered in the planning of improved watering facilities (Fortmann and Roe 1981).

**Chemical tick control:** The control of tick-borne diseases through regular dipping of cattle has been tried in communal areas across Zambia. Varying degrees of participation have been achieved, the most enthusiastic response coming from areas affected by corridor disease. The Government is encouraging dipping on a self-help basis through local diptank committees. Building diptanks on a self-help basis has been proved possible. However a crucial organisational problem has been the effective operation of local diptank committees (Moll et al. 1987). The management by a local committee of a revolving fund for purchasing acaricides and the maintenance of dip at the correct strength has given problems. Group organisation and management therefore must be considered if regular dipping on a self-help basis is to be sustained in the long term. This is a clear example of an intervention which might have been more effectively undertaken had the social aspect of group formation and functioning been carefully considered in advance.

**Vaccination programmes:** If such programmes are to be carried out with a view to eradicating certain diseases, clearly the expense involved has to be justified, and 100 percent participation achieved. A socio-economic study may be required to establish the economic benefits of such a programme, and its social acceptability.

**Ox-mechanisation:** In communal areas draught oxen are usually shared resources. Sharing arrangements need to be properly understood before technologies to improve draught operations are developed and tested on-farm. Where there is much sharing of oxen, it is likely that the benefits from improved ploughs and yokes will be more widespread than where there is little

sharing. Experience from Northern Zambia where ox-mechanisation is being introduced as a new technology has shown that an understanding of sharing and inheritance rules will assist in predicting the adoption and impact of the new technology (Marks 1988).

### 2.3 What types of data are required?

The type of data required has a major bearing on methodology. While socio-economic data is differentiated from technical data, in the context of traditional livestock systems it is not possible to collect one type of data without reference to the other. Livestock are woven into the social fabric of village life, and management decisions are invariably influenced by both social and economic considerations. For this reason, while the technical objectives of organisations and projects concerned with livestock development may vary considerably, certain social and economic issues appear repeatedly. Prominent among these issues are land tenure and land use, livestock ownership, social and ceremonial functions, economic functions, livestock/crop interactions and indigenous technical knowledge. I briefly discuss the nature of these social and economic issues before discussing appropriate methodologies for investigating them.

**Traditional Land Tenure:** Traditional systems of land tenure are not a "free for all" as is sometimes assumed. The term "communal tenure" usually masks elaborate procedures and unwritten rules for regulating access to land (Sandford 1983). While the disadvantages of such systems are frequently stressed in the literature, certain advantages are often overlooked. For example, traditional tenure systems have the advantage of permitting movement of stock in response to seasonal grazing shortages and also drought. They permit individuals to reduce

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risks of mortality by loaning livestock to friends in other areas. They also easily facilitate absentee ownership by those living in urban areas who are planning to retire into farming. Perhaps most importantly, unlike exclusive tenure systems, they do not require a minimum size of herd or capital sum for someone to acquire rights. These advantages have to be reckoned with when trying to adjust and improve on traditional tenure systems.

Furthermore, there is a popular misconception that changes in land tenure easily lead to changes in livestock management. Communal tenure is often blamed for overgrazing, reluctance to dip animals, and control stock numbers. Experience in Botswana has shown that a change from communal to individual tenure does not always lead to improved management and may often have the reverse effect (Sandford 1983; Botswana 1982; Devitt 1982). Communal area rangelands, while coming under pressure from increases in human and livestock populations, are nevertheless managed under a proven land use system adapted to the local environment. By contrast, areas under commercial ranching and mechanised arable farming in Southern Africa are being subject to methods of land use which have not been proven to be sustainable in the long term.

A point sometimes overlooked is that so-called "communal" tenure systems do recognise individual rights, particularly with regard to arable land, fallow areas, and man-made water sources. In this respect certain improvements relating to livestock may be easier if targeted at introducing changes where individual rights are recognised, at least as a starting point. It may be easier to develop technologies which encourage more intensive use of arable areas for fodder, greater use of wells for watering; or introduce rules to regulate stock numbers on an individual basis, than try to

change the land tenure system which permits access to grazing on the basis of community membership.

**Ownership Pattern:** Rules relating to ownership of livestock and management decisions need to be fully understood when assessing the potential or impact of a new management intervention.

Often cattle in communal areas are not owned exclusively, but are subject to a number of claims by different individuals - a system sometimes called "multiple ownership". Multiple ownership is connected with social factors such as inheritance, bridewealth, loaning out, absentee ownership, funeral customs, kinship and marriage obligations. Before a major decision regarding a particular animal can be made, especially sale or slaughter, several people have to be consulted (Colson 1962). When expenditure is involved, such as on veterinary services, it also may mean that the keeper who is not the owner may be reluctant to pay.

However, there is a danger of using multiple ownership, like communal tenure, as a blanket explanation for failure of farmers in communal areas to change management. Indeed the farmer may use the argument "it's not my cow" as a convenient excuse for not following the recommendations which he doesn't believe are technically appropriate, but is too polite to say so.

Distribution of ownership, and particularly equality of access, are very important variables to consider in livestock development planning. Very often cattle ownership is skewed, with a few individuals owning large numbers while others own a few or none at all. To enable effective planning and targeting of livestock development programmes, an accurate

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picture of ownership patterns is essential to avoid biases to the more wealthy (or male) cattle owners.

**Ceremonial Functions:** Often cattle figure prominently in rituals associated with initiation, marriage, death, ancestor worship and chieftainship. In Zambia, cattle that are passed as brideprice are kept not just because of their value to the household, but also so they can be returned in the event of a divorce (Berling 1987). As bridewealth animals are often not the best, a number of sub-standard stock are retained that might otherwise be culled. The retention of animals for slaughter at funerals is also a custom reported to have negative herd management effects, including retention of poor stock and slaughter of good breeding stock (Fielder 1979). In Zimbabwe (and parts of Zambia also) individual animals are dedicated to ancestral spirits and the custom of giving a cow to the mother in law (mombe a mai) can make disposal difficult (Mungate 1983). As with multiple ownership, such customs can be held responsible for particular management practices, when in reality they may merely be used as pretexts for not adopting certain management improvements. Only detailed study can provide evidence of the real effects of such customs.

**Banking Functions:** In Zambia, the use of cattle as safe stores of wealth is possibly the most important reason for the huge increase in cattle numbers since the arrival of the money economy. The banking function of livestock is likely to become more popular if price inflation continues at a high rate. From this point of view livestock serve a "social security" function which overshadows market forces. This explains why farmers in communal areas are price sensitive where crops are concerned, while cattle are only sold because of a desperate need for cash (Fielder 1972). As long as the lack of better investment alternatives prevails, development interventions which aim at

increasing the beef value of cattle are unlikely to be adopted in the traditional sector (Wood 1987).

**Livestock Crop Interactions:** The role of cattle in crop production is a factor which, until recently, was overlooked in livestock research and development programmes in Zambia. In a recent study in Western Province, it was calculated that cattle manure provided more economic benefits than any other use including sale, draught power and milk (Wood 1987). Draught power and manure are important crop related outputs from livestock and probably deserve more attention in livestock research and development programmes than they currently receive.

**Indigenous Technical Knowledge:** It is quite common for experts working with livestock research and development to hold certain beliefs about herd management in communal areas which have very little substantiation in fact. Absence of commercial methods of livestock management is sometimes equated with absence of knowledge about any system of livestock management. For example, an assumption current among livestock specialists in Zambia is that usually the best male cattle are castrated for use as oxen rather than being retained for breeding. A related assumption is that farmers in communal areas don't have clear criteria for selecting bulls, contributing to low calving rates and poor breeding practices (Zambia 1986). A further common assertion is that bulls are kept for a very long time leading to inbreeding. While some surveys have shown that the number of oxen often exceeds the number of cows in smaller herds and that the bull-cow ratio is often low (den Held 1983), actual breeding practices under communal management have yet to be properly documented.

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On the basis of many studies conducted among cattle keeping peoples, we know that the body of indigenous technical knowledge about livestock management is considerable. Indigenous technical knowledge is an invaluable data resource for any development project, including livestock (Warren 1984; Gladwin 1983). The challenge remaining is how to effectively access and utilise this store of knowledge to further the aims of livestock development.

### **2.4 What are the appropriate research methodologies?**

This is a very important question and at the same time a difficult one. There are many variables which influence methodology including the topic under study, the amount of detail required, the resources available, the time available, the type of presentation and the general environment for data collection. In this section I concentrate mainly on the socio-economic topics discussed above.

**Land tenure:** This is an extremely complex and sensitive area of research. Studies in Botswana have shown that an understanding of informal processes within the community is often more important than understanding formal rules and regulations (Sutherland 1981; Werbner 1982). Studies of grazing committees show this to be the case also in parts of Zimbabwe (Cousins 1988). Land tenure is best dealt with by in-depth studies using classical anthropological methods. Any studies should be carried out by experienced researchers. Methods to avoid are formal surveys, rapid appraisal methods, and reliance solely on official statutes and regulations.

**Land use:** A more straightforward subject than land tenure. Use of aerial photography supported by informal ground level surveys is quite a cost-effective approach (Okali and Milligan

1982). Local farmers are usually able to give quite detailed explanations of their land use systems and both individual and group informal interviews can provide a lot of information quickly and at low cost.

If carrying capacity is a major issue, as it is in Zimbabwe, methods of assessment suited to communal management are in need of development (Cousins 1988). An approach being tested in Zambia is to focus on food availability during the common period of grazing shortage. A collection can be made of the main types of feed available, together with an assessment of the quantities and nutritional value of each. On the basis of this it may be possible to calculate the number of livestock which can be safely sustained through the hunger period on the available grazing and other feed sources. Estimates need to be checked against actual observations of pasture available and cattle condition during times of grazing shortage (K. Jeanes, personal communication).

Another possible approach, if very reliable records are available, is to graph livestock numbers over a longer period (say ten years) for a given area, and relate fluctuations in these numbers to rainfall and mortality rates.

Lastly, but not least, existing data on carrying capacity may be useful. However, if such data is based on station-type research for commercial levels of management they may have to be modified to fit livestock systems under traditional management systems. There have also been suggestions that a radically different approach, based on using local knowledge of livestock movements and grazing patches at critical periods, is more appropriate (Scoones 1988).

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**Livestock Ownership:** Like land tenure, this is a sensitive area of research. If time and resources permit, ownership is best left to experienced researchers using in-depth anthropological methods. Formal surveys of farmers are to be avoided.

When time and resources are limited, there are ways of getting very useful data on ownership using fast and low-cost approaches. An approach developed in Kenya uses local informants to group livestock owners they know into groups according to wealth (Grandin 1984). This approach is easy to implement and provides a very accurate overall picture of livestock ownership within a particular community. Its limitations are that it requires a full list of owners for a particular area, is area specific, and does not bring out the subtleties of ownership patterns (e.g. absentee ownership, ownership by women and children, etc).

Another low cost approach is to use official statistics. Often lists of cattle herds are kept by the veterinary department. While official statistics do not always give reliable information on actual ownership, if a standard procedure of recording is followed they may give an approximate picture of ownership, particularly who the more wealthy owners are and where they stay. Making good use of official statistics requires background information on the method of recording, the general relationship of herding and penning arrangements to ownership, and the population size and settlement pattern of the area under study. Making inferences from such statistics without this background understanding is very risky.

A method found by ARPT to be quite useful in Zambia has been to use agricultural extension staff as informants. During the zoning of farming systems, extension staff are required to give

information relating to livestock ownership for their camp area. This information, when compiled and analysed, provides a reasonably accurate picture of the distribution and ownership of livestock (including specific categories such as draught oxen) over a wide geographical area (Masi et al 1987).

A formal approach, asking the farmer direct questions on ownership, has been found useful in Zambia only when acquiring information about specific categories of animals within the herd, such as oxen or bulls (Masi et al 1987). Such direct questions are best put at the end of a questionnaire, in order to avoid the risk of a sensitive question spoiling the farmers' response to other questions which are not sensitive.

**Herd Composition:** This is an aspect of ownership where useful data, by different classes of animals, can often be obtained from veterinary records. This data may have certain biases. For example, very young stock are often not recorded, and some smaller and more remote herds may be left out. Provided the biases are known this data is very useful and can be used instead of attempting a livestock census, or a sample survey of herds. If highly detailed information is required, and long-term monitoring of herds is possible, very useful data on herd composition and also ownership will be generated during the course of monitoring.

**Livestock Productivity and Output:** Livestock productivity in communal areas, particularly reproductive rates, is an area where accurate data is extremely difficult to achieve (hence the abundance of unsubstantiated assumptions). Two methods, used in conjunction, may give useful data. The first method is to conduct in-depth interviews with a selected number of owners. For example, a farmer can be asked in detail about the calving record of specific cows in the herd, and also in

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general about the calving pattern within the herd. The in-depth interviews can be used to probe further to get the farmers' understanding of causes relating to such factors as low calving rate or high calf mortality rate. This approach can be complemented by monitoring a sample of representative herds over a longer time period, say three years. Herd monitoring is however a costly method, and very difficult to do well. Much depends on the skills and diligence of the enumerators employed, and also the good cooperation of the farmer involved. If data is complete and reliable, a formidable task of analysis remains.

An easier and low-cost approach is to use calculations based on experimental herds kept at research stations in which farmer management is simulated. While this approach has some flaws, in that many aspects of communal management are difficult to simulate (partly because they are not known), it can still give some useful data.

A final method of estimating reproductive rates can be tried when livestock statistics for a given area and time period are very accurate, with figures breaking down cattle by type (cows, heifers, oxen etc). Providing there is good recordings of births, mortality, sales, and other transfers in and out, approximate calculations of reproduction and mortality rates can be made.

An easier task is calculating the level and relative value of livestock outputs such as milk, draught power, manure, and beef. This is easier because data can be collected over a much shorter time period. Detailed monitoring of a small number of animals over a limited time period can generate a lot of useful data on these aspects. In Zambia and Kenya, focused formal surveys using frequent visits have been used effectively when

data requirements were very specific (Berling 1987; Conelly et al 1986). Formal approaches can be supplemented, and at times substituted, by informal interviews with farmers and literature reviews of research conducted in similar agro-ecological conditions. In evaluating the relative importance of different outputs it is important to supplement economic analysis by recording the farmers' own assessment of the importance of different outputs.

**Communal Livestock Management:** This topic is best handled at low cost using informal survey methods. If enumerators are being used a more formal approach can be used with quantification of management variables regarded as critical. However, experience from Niger and Kenya has shown such an approach to be costly and only to be recommended in cases where quantification is essential and where the end users of the data are very sure about which data is critical (Curry 1984; Mukhebi and Reynolds 1985). Experience with this approach in Zambia has been that very close supervision of enumerators is necessary to obtain reliable data.

**Marketing of Livestock:** Often a sensitive issue, particularly where there are veterinary regulations restricting cattle movements and the number of formal marketing channels is limited. Using an informal approach and interviewing key informants within an area can often give very useful information. Often cattle marketing is by individual villagers who are either agents for outside traders or traders in their own right (Mahoney 1977). These traders can provide the best information if their trust can be gained.

**Disease Control and Treatment:** In cases where veterinary services are developed, useful information on disease control and treatment can be obtained from veterinary assistants. It

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will normally be necessary to cross-check this information through informal interviews with farmers and informal observations, especially where there are strict regulations about livestock movements and the control of tick-borne diseases through dipping. In such situations veterinary staff may give wrong information in order to create the impression that they are efficient in doing their job. Moreover farmers, also aware of the regulations, rarely give honest answers to questions about livestock movement and dipping. In such cases another strategy is to identify key informants within the area who are able to give accurate information in confidence. As relationships with veterinary staff and farmers are built up over time, so the information given by them becomes more reliable.

One aspect of livestock health often missed during surveys is indigenous classifications of cattle disease, and the use of traditional medicines on livestock. This is something better studied by identifying individuals who may be specialists in this area of medicine and trying to collect information from them.

**Access to Livestock Services:** Access to services is one of the few topics connected with livestock which can be easily investigated using formal survey methods. Farmers and extension staff are usually very open and frank in describing the short-comings in existing services and listing services which are absent. Information can often be gathered by talking to key staff within appropriate government departments and input supply agencies and by consulting reports. Experience from the Sudan showed that a formal survey followed up by visits and informal surveys in a few selected areas was an effective approach (Ahmed et al. 1985).

## 2.5 What is the unit of analysis?

This is a sub-question within the broader question about appropriate methodologies. In many surveys this question is given inadequate attention, leading to potential problems in the analysis of data. With surveys relating to cropping, the household has been recognised as the most relevant unit of analysis within the region, being the main unit of production and consumption (Zambia and CIMMYT 1984). However, with livestock, and particularly with cattle, the household is often not appropriate.

As with all types of data, the most appropriate unit of analysis for livestock will depend on the topic under study. If herd management is the main topic, cattle or other livestock kept in a common pen is usually the appropriate unit of analysis. Cattle pens usually correspond with a social unit, such as a homestead, household, or cluster of adjacent households.

If outputs from livestock are being measured, then other units of analysis may be more appropriate. For example, if draught power is being studied, the appropriate unit might be a team of oxen, managed by one household but including services to others. If manure output and use is being studied, both the herd and individual households will be relevant units. For milk production and use the herd, individual cows, and households may be required. By contrast, for studies of grazing and disease control whole herds and herd groupings are appropriate units of analysis.

Another aspect of analysis relates to the distinction between ownership, control and access. The complex patterns of livestock ownership and use in communal areas often give rise

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to difficulties in deciding on units of analysis. This is particularly the case when trying to assess benefits from livestock and how these relate to proposed or actual interventions. A sensitivity to the issues related to ownership, control and access is therefore necessary in selecting appropriate units of analysis.

### **2.6 What resources are available?**

It is common, particularly for projects but also for institutions, to have unrealistic expectations about the range and amount of data which can be collected with a given amount of resources.

Shortage of skilled manpower is usually the biggest constraint to effective data collection and analysis. If the project or organisation does not have a specialist in data collection on the staff, it should consult with a specialist before planning any data collection activities. Such consultations should be contractual rather than informal, with a clear written agreement between the organisation and the specialist.

Transport is another resource often in short supply, together with field equipment. Four wheel drive vehicles are normally essential for effective mobility in the field. Minimal camping equipment will enable the team to spend nights in the field and increase the time for informal observation and dialogue with field staff and farmers.

Facilities for data processing and reporting are necessary, although they can be kept to a fairly inexpensive level. Computers are not usually necessary for data analysis, particularly when informal survey methods are the main tools. A word processor, however, generally improves the quality and

speed of reporting. The minimal tools for data processing and reporting are some large sheets of paper for manual analysis and a manual typewriter.

## 2.7 What is the time frame?

The time frame is often a crucial question when deciding on what data to collect and the methods to be used. Invariably end users require the data instantly to enable more effective planning. At the same time, those responsible for collection and analysis want to take time to do a professional job to ensure that the quality of data is good.

These factors tend to make the informal survey the most effective method when data is required quickly. When there is less urgency, for example with projects which are phased to begin with baseline studies, more elaborate methods of data collection can be used with more attention to quantification. However, even then great caution has to be exercised in terms of the scale of the data collection and the time set aside for data sorting and analysis if the results are to be available on time. Experience from livestock projects in countries such as Niger and Kenya has been that informal and anthropological methods are much faster than formal surveys in terms of producing useful baseline data to guide major decisions (Curry 1984; Mukhebi and Reynolds 1985).

An easy mistake to make is to rush into a large formal survey without having first done informal surveys, and with insufficient thought given to the content and end use of the formal survey.

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## **2.8 What kinds of analysis and presentation are required?**

The kind of analysis and presentation required often depends on what the end users wish to use the data for. When using socio-economic data to inform either technical scientists or policy makers, quantification of key variables has often been found to be necessary (Mukhebi and Reynolds op. cit.). Thus while informal and low-cost methods might be favoured by the social scientists conducting the research, the preferences of end-users may necessitate the use of more costly formal methods. The requirement for detailed quantification implies considerably more time and manpower for all stages of research. Regular checks on the accuracy and consistency of data need to be carried out, otherwise the data may be less reliable than that collected using informal methods.

Because of the greater costs and higher risk of error, it is advisable to minimise complex quantitative analysis of socio-economic variables. Often simple descriptive statistics supported by observations from the field which illustrate key principles are adequate. With socio-economic data collected in the context of a multidisciplinary project, it may be necessary to start with some quantitative analysis in order to gain the confidence of other members of the project. As they become more familiar with social science methods then more informal methods and more descriptive analysis can be used to good effect.

## **2.9 What is expected from the farmer?**

This is a crucial issue when planning data collection. It is often easy to come up with the ideal set of data requirements, only to find out that it may be impractical for the farmer to cooperate. This is particularly the case with technical data

on livestock management in communal areas. For this reason it is very necessary to involve the farmers in the design of such data collection before the content of the data and methods are finalised. For example in Zambia the programme staff designed a cattle monitoring survey which involved tagging of oxen to be followed through the season. Tags were obtained after much effort and at considerable expense. During implementation, farmers rejected this idea, and instead identification was by the farmers' names for the animals being monitored. Involving the farmer at the planning stage minimises later disappointments and misunderstandings.

Because of the considerable inconvenience caused to the farmer, some token of appreciation may be necessary. While it is not advisable to pay or directly compensate farmers for providing information, there are often effective ways of showing appreciation for good cooperation. For example, if farmers are practising tick control, some acaricides or tick grease can be donated. When animals are sick, some diagnostic services and treatment may be provided to the farmer. If such token payments interfere with management practices being studied, farmers can be assisted in other ways, for example with transport assistance, inputs for cropping or other small gifts.

### 3. CONCLUDING REMARKS

I have tried to present some brief answers to key questions related to socio-economic data for livestock development in communal areas. The answers are by no means exhaustive. Indeed, some are no more than suggestions made in the absence of either extensive first-hand experience or support from relevant literature. However, it is intended that they will at least provide a basis for further discussion and debate on

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this important topic. At best they may provide some preliminary guidelines for practitioners in the field.

One final remark is in order. Experience with livestock research and development programmes in Zambia has shown that often quite ambitious projects and government programmes are started with an inadequate research base, both technical and socio-economic (Sutherland 1987; van Rootselaar and Bwalya 1987). The result has been project failure and a poor response from farmers. Exceptions have been cases where projects have changed their objectives and aims during the early stages, and embarked on adaptive research work, instead of going straight into direct extension and development. While this has been the experience of projects, it has proved difficult to interest donors in adaptive livestock research. Moreover, while government has expressed an interest, it has inadequate financial and manpower resources to embark on this line of research. If significant progress is to be made in the future, donors may need to review their investment priorities in livestock development for communal areas, and consider placing more emphasis on adaptive research before embarking on large-scale livestock extension and development programmes.

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