

## Animal husbandry in Moretele 1 of North-West Province: implications for veterinary training and research

S S Letsoalo<sup>a</sup>, R C Krecek<sup>b</sup>, C A J Botha<sup>c</sup> and X Ngetu<sup>d,†</sup>

### ABSTRACT

Little is known regarding the keeping of animals in the Moretele 1 area of North-West Province, South Africa. Therefore, the status and dynamics of animal husbandry, as well as a general assessment of the needs of animal owners in this area were researched. Results of the investigation will be used to make recommendations for improved veterinary extension servicing in the area. Semi-structured interviews, based on discussions with relevant stakeholders in the community and a resultant problem conceptualisation, were undertaken at 266 randomly selected households in 51 villages and centres in the area, after which the data was checked and verified before being captured and analysed. The findings reveal that within the field of veterinary extension delivery: 1) there is a demand for visual and written extension material, 2) the extension services must function where clients reside, 3) limitations in terms of infrastructure are present and should be addressed through partnerships and coordination amongst all the role-players in the Moretele 1 area, and 4) cattle and poultry are the most important of the animal species and should be the focus points of extension, but the need to curb zoonotic disease should not be disregarded. In this regard veterinary clinics, private veterinarians and other role-players should be used in partnership with extension workers. Lastly, the veterinary clinic is regarded as helpful in many respects by the community consulted and the service should be upgraded and made available to a wider client base, especially where private and state veterinarians are unavailable or too expensive in such resource-limited communities.

**Key words:** animal husbandry, community needs assessment, North-West Province, questionnaire, veterinary extension services

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### INTRODUCTION

In its commitment to community involvement, the University of Pretoria, the Onderstepoort Community Outreach Committee of the Faculty of Veterinary Science approached the people of Moretele 1, North-West Province, to discuss their needs in terms of animal health and production. The long-term objective of this was to develop a relevant training and research programme for the university together with the community. This

was carried out together with the veterinarian and animal health and agricultural extension officers employed by the Department of Agriculture, North-West Province (previously Agricor).

A meeting held at the University of Pretoria's Hammanskraal campus during April 1996 included in its agenda a preliminary analysis of the needs of this community to indicate in which direction the Faculty of Veterinary Science's Community Outreach Programme should be focused. Twenty people, comprising farmers, veterinarians, veterinary scientists, anthropologists, donor organisations, community leaders and agricultural extension officers participated in the meeting, many of whom were already involved in this community. These participants were divided into 3 groups to discuss and formulate the needs and problems of the community, which were identified and grouped under the headings: social and development, administrative and animal health. Causes and effects of the animal health

problems were discussed and 4 key areas that would contribute to improved animal health were identified. These were information, training, activities and coordinated intervention.

Participants proposed and endorsed an action plan which included a coordinated community needs assessment (CNA) with competent professional expertise to undertake the needs assessment and resource analysis with the community. The CNA study, methods, results and implications undertaken in Moretele 1 are reported.

### MATERIALS AND METHODS

#### Study area

Moretele 1 is located approximately 60 km north of Pretoria, in an area of the North-West Province of South Africa that was part of the former Boputhatswana homeland. There are an estimated 350 000 inhabitants in the area. The average annual rainfall is 588 mm. The average minimum and maximum temperatures that are characteristic of this area are 12 °C and 25 °C.

The veld types are Mixed Bushveld, Kalahari Thornveld and Springbok Flats Turf Thornveld<sup>1</sup>. Land ownership includes both free access by the individual as well as control by tribal authority. Details about animals species owned and the average number of animals are included in the results of this study.

A questionnaire consisting of 36 probing questions was designed and interviews were held with 266 people randomly chosen from 51 villages in the Moretele 1 district (Fig. 1) using a systematic sampling technique<sup>3–5</sup>. Questions were designed to include demographic information about the owners and their animals, number of people animal owners provide for, activities performed to obtain money, on which animal the owner is prepared to spend more money, and who makes the decisions regarding animals, as well as agricultural activities. Questions designed to gain insight into the veterinary services in the area included how often owners used veterinary clinics and for what purpose, perception of the veterinary clinic and how they could be improved.

<sup>a</sup>Department of Agricultural Management, Faculty of Agriculture, Horticulture and Nature Conservation, Technikon Pretoria, Private Bag X680, Pretoria, 0001 South Africa.

<sup>b</sup>Department of Veterinary Tropical Diseases, Faculty of Veterinary Science, University of Pretoria, Private Bag X04, Onderstepoort, 0110 South Africa.

<sup>c</sup>Department of Agricultural Economics, Extension and Rural Development, University of Pretoria, Pretoria, 0001 South Africa.

<sup>d</sup>Department of Medicine, Faculty of Veterinary Science, University of Pretoria, Private Bag X04, Onderstepoort, 0110 South Africa.

<sup>†</sup>Current address: Intervet, PO Box 6065, Halfway House, 1685 South Africa.

\*Author for correspondence.

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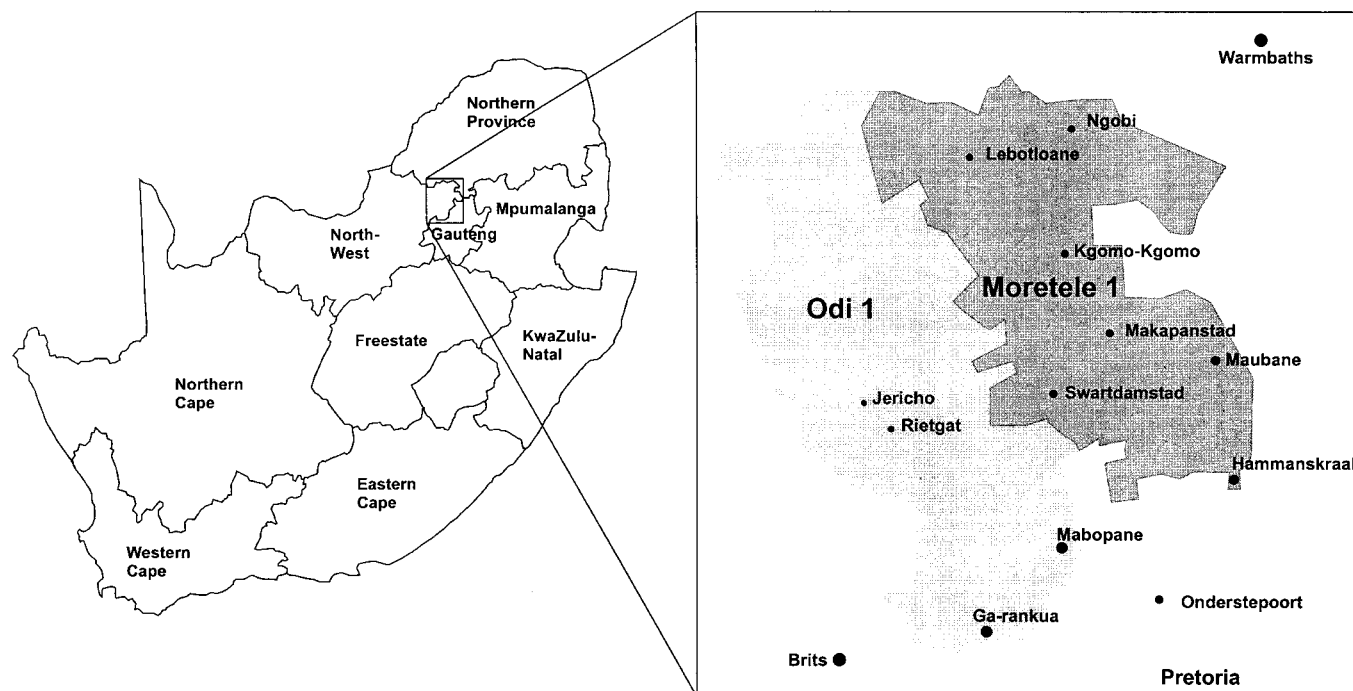


Fig. 1: Map of South Africa and study area of Moretele 1, North-West Province.

Ten extension and animal health officers were selected and trained to implement these semi-structured interviews and questionnaires. These interviews were conducted over a period of 3 months (from 21 September to 18 November 1996) and 213 (80 %) of them were conducted from Monday to Friday during working hours (8:00–16:00), while 53 (20 %) were conducted on Saturdays and Sundays. Large parts of the Moretele 1 area are peri-urban and therefore most of the animal owners and able-bodied men work during the week.

## RESULTS

### General profile of the interviewees

The general profile of the interviewees included age, education level, gender and type of household. Seventy-three percent of the respondents were not the owners of animals, but were the representatives tasked to care for the animals (*i.e.* they indicated that any decisions taken would

require the owners' consent). This was probably the result of interviews conducted during the week when owners were away. Most of the interviewers, however, were only available during the week.

**Age:** of those interviewed, 162 (61 %) were above 60 years of age and 83 % of the respondents had no permanent jobs. The implication is that the majority of those who had access to and responsibility for animal-keeping and husbandry in the Moretele 1 area, were either retired or unemployed.

**Education level:** fifty-nine percent of the interviewees had levels of education below standard 6 and 40 percent were above this level. Only 1 had a university degree, while 4 held college diplomas and 5 post-standard 10 certificates. If formal education of standard 3 and above is taken as indicative of literacy, more than 70 % of the respondents were literate (Table 1).

**Gender:** of 266 interviewees, 39 (14.7 %) were females and 227 (85.3 %) males.

Usually rural areas are characterised by the dominance of women engaging in the agricultural activities<sup>2</sup> but the reverse is suggested in the current study. Lack of available data makes it difficult to cross-validate this finding in the Moretele 1 area.

### Household information

**Economic Situation Scoring (ESSCORE):** in this survey, the ESSCORE<sup>4</sup> was used as an estimate of level of poverty in the Moretele 1 community. However, it was found that this scoring system did not fit the large variety of living conditions characteristic of the area. Sixty-nine percent lived in houses with fewer than 4 rooms (ESSCORE 3 or below), and 21 % owned refrigerators (ESSCORE 4).

**Dependents:** more than 75 % (199) interviewed had an average of 4 dependants. More than 50 % of the respondents indicated that they were willing to spend more on their animals in an attempt to gain higher incomes. It is accepted that respondents chose to spend their money first on their basic needs and then on higher-order needs. Whether they did have money to spend on their animals after catering for their dependants was not clear, but the ESSCORE suggests levels of poverty that may not allow for this.

**Activities:** of 266 interviewees, 83 % (221) did not have permanent jobs. Sixty-one percent received monthly pensions. They sold their labour and some were handy-men. They all indicated their preference

Table 1: The educational profile of the interviewees in Moretele 1 ( $n = 266$ ).

Level of education	Number	Percentage
Never been to school	34	12.8
Sub-Standard A – Standard 2	40	15.0
Standard 3 – Standard 5	86	32.3
Standard 6 – Standard 8	84	31.6
Standard 9 – Standard 10	12	4.5
Tertiary qualification	10	3.8
Total	266	100

Table 2: Information on animal husbandry in the Moretele 1 area ( $n = 266$ ).

Activity	Number of respondents* (%)	Average (maximum) number of animals/person	Respondents willing to spend more on animals (%)	Reasons for keeping animals (% respondents)
Cattle	105 (39.5)	12 (157)	78.9	Commercial only (23.3) Commercial, consumption, ritual and home purposes (38.3)
Poultry	90 (33.8)	9.8 (223)	61.7	Consumption sales Traditional practices (n/a)
Dogs	74 (27.8)	2 (8)	47.5	Security, not pets No economic value (n/a)
Goats	60 (22.6)	9 (160)	57.1	Ritual and traditional activities (20.3) Commercial (13.5)
Cats	17 (6.4)	1 (11)	N/a	Pets, getting rid of mice and some insects (n/a)
Donkeys	16 (6.0)	4 (16)	54.9	Traction/draught (fetching wood and water, transport)
Pigs	15 (5.6)	7 (30)	54.1	N/a
Sheep	11 (4.1)	13 (87)	57.1	N/a
Mules	2 (0.8)	3 (n/a)	50.0	Traction (0.8)

\*The total numbers and percentages are greater than 266 and 100 %, respectively, because some individuals kept several types of animals and practised more than one agricultural activity.  
N/a = not available.

to be either professionals or technicians in a variety of careers. Only 24 % of the respondents mentioned agriculture as an occupation of preference.

The payments (salaries and remuneration) they aspired to ranged from R1000 to R15 000 per month. An analysis of individual cases might be useful to establish how realistic these expectations are.

*Animal-keeping:* interviewees are involved in both plant and animal production. Although no one has been identified as involved in plant production only, 52 % were in animal production only, 20 % in crop production and 5.3 % in vegetable production.

As indicated in Table 2, cattle are the animals most frequently owned in this area. It is interesting to note that none of the respondents own horses. Although dogs do not appear to have commercial value, this animal ranks number 3.

Table 2 also contains information regarding several aspects of animal-keeping in the Moretele 1 area. It includes the average number of animals kept per respondent, the percentage of respondents who are willing to spend more money on the animals, and the reasons for keeping animals. Cattle and poultry emerged as those species in which owners are prepared to invest.

### Decisions relevant to animal husbandry

Most decisions concerning their animals are made by the owner (Table 3), but in certain cases the advice of animal health officers is sought. Apart from the Onderstepoort Mobile Clinic staff, no veterinarians were consulted (OMC).

### Service provision

*Agencies:* 7 institutions and agencies were listed by the interviewees as sources of remedies and advice for their animals (Table 4). Immediately before and during the survey, the former parastatal institution called Agricor was in the process of being replaced by Agriserve to be absorbed into current government structures. For practical reasons, therefore, the 2 can be regarded as being the same institution. Most of the former Agricor staff are currently employed in the Department of Agriculture of the North-West Province government.

*Remedies:* cattle, goats, sheep, pigs, poultry, dogs and cats, but not donkeys or mules, are treated for external parasites using a variety of methods, which include sprays and pour-ons. Some interviewees mentioned that they use diesel or engine oil for controlling external parasites.

Cattle, goats, sheep, pigs and dogs are occasionally or irregularly vaccinated and dewormed, while these procedures are never performed on donkeys, cats and mules.

*Feedstuffs:* commercial sources of feedstuffs, licks and salts for animals include the following (in order of preference): Lion Bridge, Magalies Co-operative, Noord Transvaal Koöperasie (NTK), Metro Wholesalers, Tswana Mills, Agri-trading, white farmers, chemist and Pyramid Co-operative.

*Equipment:* animal husbandry equipment and spares are obtained from the following institutions/agencies in order of preference: Lion Bridge, Onderstepoort Veterinary Institute, Faculty of Veterinary Science situated at Onderstepoort, NTK, Agricor, Spar, Vasfontein, OK Bazaar and Shoprite stores.

### Veterinary clinics

Eighty-one of 266 (30.5 %) people responded to this part of the questionnaire. This percentage is low, but the recently formed OMC had not yet reached many parts of the Moretele 1 area; this influenced the responses to this part of the questionnaire. Forty-six referred to the Agricor Clinic and 10 to that of Onderstepoort, while 25 did not mention a veteri-

Table 3: Kinds of decisions made by animal owners in Moretele 1 and who makes them.

Decisions made	Owner (%)	Animal health officer (%)	Veterinarian (%)
Keeping of animals	98.5	—	—
Feeding	82.7	—	—
Treating animals when sick	74.4	8.3	—
Where to buy remedies	63.2	9.8	—
What remedies to buy	60.2	13.5	—
Use of services for animal well-being	56.4	1.5	—
Vaccinations	49.6	25.6	—
Use of mobile clinic	18.8	2.3	1.5

Table 4: Numbers and percentage of agencies that are consulted by animal owners in Moretele 1 area ( $n = 266$ ).

Agencies	Number	Percentage
Agricor	172	64.7
Noord Transvaal Koöperasie (NTK)	30	11.3
Lion Bridge	26	9.8
Agriserve	4	1.5
Onderstepoort institutions*	2	0.8
MEDUNSA	2	0.8
Magalies Co-operative	2	0.8

\*Includes both Faculty of Veterinary Science, University of Pretoria, Onderstepoort, and the ARC - Onderstepoort Veterinary Institute.

for services rendered. They consider that services should be cheaper.

For development and assistance purposes, the people interviewed indicated that they are willing to spend more on their animals with the ratings as listed in Table 2 for each animal species.

## DISCUSSION

The principles of adult education are important to working in Moretele 1 area, since the decision-makers are mostly older people (above 60 years of age). Written material could be used, and is requested since many of the clients are literate. It is felt that, in this regard, posters, pamphlets and other forms of visual communication on all aspects of stock farming could be used. The aims of the specific communications should be determined before any decisions are made concerning the nature of written material to be used, *i.e.* awareness-raising, persuasion, or transfer of information. In this regard the veterinary clinic and animal health officers can play a crucial role. The communities reported a need for information regarding several aspects of animal husbandry and farming and those needs must be addressed.

The animal owners, who are the actual decision-makers regarding animal-keeping and husbandry, are absent during working week-days. Therefore, if they are to be targeted by those concerned with the extension work, flexibility is required, that is by working over weekends and any at other times that their audience is available.

Most of the respondents are males, but the levels of involvement in animal-keeping and husbandry by women need to be investigated and extension programmes adapted and made gender sensitive. At this stage, a speculative explanation is offered for the preponderantly male response. Anecdotal evidence indicates that Setswana males are traditionally regarded as being owners of, or having decision-making power over animal and agriculturally related matters. They were therefore specifically selected to respond to the questions. Further investigation is also necessary into this matter. The socioeconomic level is low in the area and therefore extension delivery must be appropriate for those circumstances, which include limitations in terms of infrastructure, and the physical and psychological limitations that poverty impose.

Cattle- and poultry-keeping are the main activities and should be the focus of veterinary extension delivery in the area. Zoonotic diseases in the area could be a

nary clinic's name at all. This low response can also be attributed to interviewees not visiting one of the clinics since their importance is not well understood.

Most of the respondents stated that they are prepared to pay when services are rendered. They complain about high prices of remedies and services. It is apparent that people still depend on the government for free remedies and services, which are offered when there are outbreaks of diseases such as rabies. Obviously, many have limited financial resources and this influences which services and/or remedies they can afford. During outbreaks of certain diseases, vaccination campaigns are undertaken by the government.

When opinions were asked about a veterinary clinic (which could have been OMC or Agricor) the following concerns were raised:

- the clinic should be closer to the residential area/more clinics are required;
- irregular scheduled visits; people do not know when the mobile clinic visits their area;
- not enough remedies are stocked, and
- more state veterinarians and animal health officers are required.

Most feel they can recommend the clinic to relatives and friends since they perceive a veterinary clinic as being helpful.

This, however, contradicts the opinion of 1.5 % of respondents (Table 3). It is possible that this difference is related to the method of presentation of questions or in interviewer technique, or is a result of a total absence of veterinary clinics/services in their area and is therefore due to an unawareness of any veterinary clinic.

## Extension delivery needs

*Lack of information:* people want to learn more about principles of sustainable farming and the basic and important issues in farming, such as animal health, animal feeding requirements and economic principles with reference to

marketing for profit-making. They expressed the desire for training in these areas to enable them to improve production techniques and to recognise animal conditions and diseases.

*Grazing land:* the communal grazing system is used. There is therefore no control or proper use of the available land which appears to be overstocked and harbours an improper ratio of browsers to grazers with the result that there is an encroachment of unwanted species of grasses and the trampling of what pasture is available. The veld is also adversely affected by injudicious burning during winter.

*Finance for livestock improvement:* a considerable number of respondents indicated their need to expand their farming operation and improve their livestock status (*i.e.* numbers, production levels). Availability of credit is a stumbling-block, as the granting of funds by financial houses or other institutions depends on surety and properly designed production plans combined with scientifically proved business viability, and the majority of people interviewed cannot achieve these requirements. The costs of veterinary services must be kept as low as possible.

*Sufficient water:* livestock farmers are concerned about the availability of water, not only for their animals, but also for themselves. Water is a scarce resource. This need appears to be one of the most urgent noted.

*Security for animals against theft:* stock theft is a problem raised by many interviewees. This is due to the vulnerability of the animals in this community. Since their grazing land is communal, animals are not grazed optimally, or because of limited resources (*i.e.* fencing), security and safety measures are not adequate. Kraals are of poor design and not adequate to secure stock during the night.

*Animal health and state veterinary services:* most interviewees were not fully aware of the importance of these services. This is underlined by their unwillingness to pay

problem, but lack of available data restricts specific recommendations. When a zoonosis does become apparent, appropriate action should be taken immediately by both the extension workers/animal health workers and veterinarians in consultation with health workers and available medical staff.

Extension cannot be effective alone and needs to be practised within the framework of the existing conditions. In this regard the lack of 1) available water, both for animal and human consumption, 2) security for animals, 3) security of tenure and 4) credit and financing infrastructures, will react negatively on extension outcomes. Therefore an integrated approach involving all agricultural development role-players in the Moretele 1 area is essential. The services should be flexible in the sense that there must be close cooperation between the different institutions and organisations that are involved in developing the area. Agricorn has played a significant role in the area, but has since become dysfunctional. This role has been taken up by a new role-player. In cases where the state cannot service a community with veterinary extension delivery, contracting-out of the needed services may be a viable alterna-

tive. However, partnerships between the state and private enterprise are essential to enhance the effectiveness of veterinary service delivery to the Moretele 1 area. In this regard, the involvement of salesmen and others is important in the extension effort.

The OMC, in terms of scheduling and staff services, is considered very helpful in many regards, but the services need to be upgraded and extended to undertake the required clinical veterinary work and to support the animal health officers in their veterinary-related extension activities. In cases where private veterinary services are available to the community at reasonable costs, the clinic and animal health officers could play a coordinating and supportive role in terms of clinical work and the private and state veterinarian should be encouraged to support the extension function.

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