Mdukatshani Rural Development Trust

# BASELINE STUDY OF GOAT PRODUCTION IN MSINGA

**Study undertaken by Mdukatshani Rural Development Trust, with support from the National Development Agency**

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**TABLE OF CONTENTS**

# 1 Introduction

Mdukatshani Rural Development Trust has embarked on a goat research programme to support their livestock development programme. The research encompasses three levels. Initially livestock counts have been undertaken at three areas in an effort to understand livestock ownership at a bad level within the area. The research has then focused on goat ownership, management and utilisation at a household level, using individual interviews. The next phase, which is not covered in this report, will be to track goat management and productivity over a period of time with a selected number of households. It will focus on goat owners in Mathinta, Ncunjane, Jolwayo and Kuhleqele.

This report captures the outcomes of the livestock counts and the individual interviews and provides a basis for deciding on which aspects need to be investigated during the next phase of the research.

# 2 Livestock counts

## 2.1 Methodology

Three diptanks within Msinga were selected for the purpose of obtaining some understanding of household livestock ownership. It is intended to later broaden the study to include to areas outside of Msinga to understand how livestock ownership varies across the province.

Meetings were held with the livestock farmers associated with each of the dip tanks to introduce the study and to establish an understanding of the purpose of the livestock counts. It was made clear that government policy is based on the government's understanding of the area and that in order for sufficient attention to be given to goats, it is necessary to have an understanding of the number of households that own goats, as well as the total number of goats that people own.

At each of the selected sites, the extent of the area feeding in to the dip tank was determined by obtaining coordinates for households on the edge of this area. The extent of this total area was determined. All households falling within the designated area were then visited by volunteers appointed by MRDT and estimates of numbers of cattle, sheep, goats and chickens were collected from household members. The numbers of households owning no livestock were also estimated.

The three areas where this study was conducted were:

- Mathinta
- Nodada
- Mhlangane.


**Figure 1: Aerial photograph showing area feeding into the Mathinta Dip tank (780 ha in size).**


**Figure 2: Aerial photograph showing area feeding into the Nodada Diptank (510ha in size).**

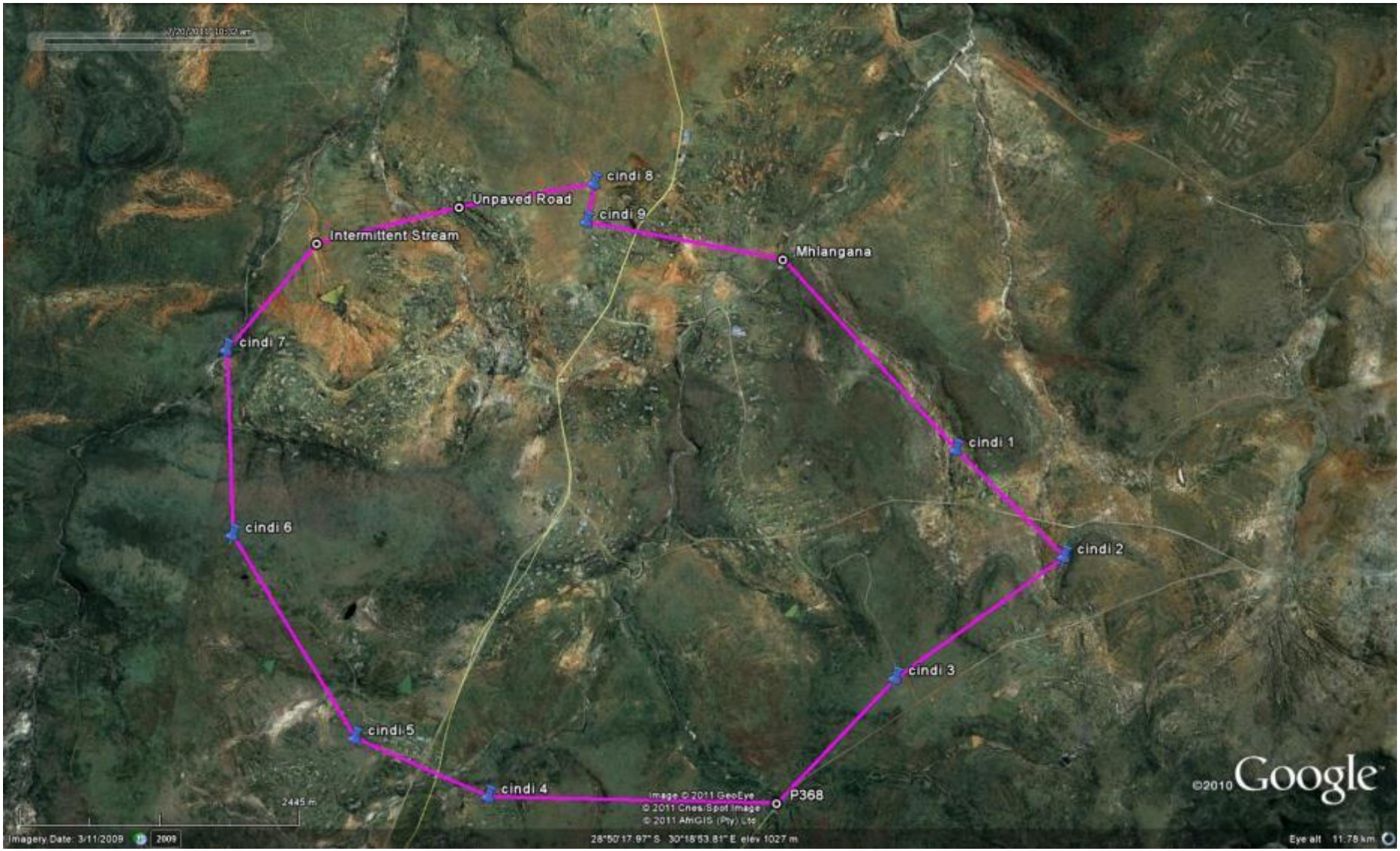



**Figure 3: Aerial photograph showing the area feeding into the Mhlangane Diptank (2850ha).**

**Table 1: Summary of information pertaining to the three sites where livestock counts were conducted**

| Study site | Area (ha) | Total number of households | No. owning cattle | % of households owning cattle | No. of cattle | Average herd size | No. owning goats | % of households owning goats | No. of goats | Avg flock size | No. owning chickens | % of households owning chickens | No. of chickens | Avg flock size | Ratio of goats: cattle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mathinta | 780 | 178 | 40 | 22.47 | 409 | 10.23 | 121 | 67.98 | 1673 | 13.83 | 168 | 94.38 | 4030 | 23.99 | 4.09 |
| Nodada | 510 | 159 | 48 | 30.19 | 353 | 7.35 | 130 | 81.76 | 2004 | 15.42 | 143 | 89.94 | 2846 | 19.90 | 5.68 |
| Mhlangane | 2850 | 579 | 234 | 40.41 | 2318 | 9.91 | 421 | 72.71 | 6067 | 14.41 | 534 | 92.23 | 11574 | 21.67 | 2.62 |

**Table 2: Overall summaries from three diptank areas used to estimate livestock ownership within Msinga**

| **LIVESTOCK TYPE** | **No. or %** |
|---|---|
| **CATTLE** | |
| Total households | 322 |
| % of total households | 35.15 |
| Total cattle | 3080 |
| Avg cattle | 9.57 |
| | |
| **GOATS** | |
| Total households | 672 |
| % of total households | 73.36 |
| Total goats | 9744 |
| Avg goats | 14.50 |
| | |
| **CHICKENS** | |
| Total households | 845 |
| % of total households | 92.25 |
| Total chickens | 18450 |
| Avg chickens | 21.83 |
| | |
| **Total households** | 916 |

## 2.2 Outcomes and discussion

While average herd and flock sizes are fairly similar across the three sites, it can be noted that cattle herds are smaller in Nododa and the ration of goats to cattle is also higher. This could be reflective of the more degraded nature of the area compared with the other two sites (See Figure 1-3 above).

***It should be noted that the areas described relate to the area covered by the homesteads and do not include the grazing areas accessed by the livestock. It would thus not be correct to use the livestock figures to determine stocking rate.***

It is however, possible to use these figures to estimate the number of livestock in Msinga based on the total number of households. According to the Integrated Development plan (IDP) Review 2009/10 for Msinga Municipality, the total number of households in Msinga was 32,592 in 2007.

Based on average herd and flock sizes as well as percentages of households owning different livestock types, it can be estimated that the total number of households owning goats is 23,910 and they collectively own approximately 346,699 goats. In the same area, it can be estimated that there are approximately 109,589 cattle and 656,466 chickens. It should also be noted that these figures do not include donkey numbers, which are also important as they compete for scarce feed resources.

# 3 Individual household interviews

## 3.1 Methodology

A questionnaire was developed and translated into Zulu for individual interviews with members of households owning goats. In addition, a tool was developed that was used for holding focus group discussions (FGDs). Three FGDs were facilitated. They took place in Mathinta, Nodada and Kuhleqele.

In total, volunteers and MRDT staff conducted 35 individual interviews. At the two sites where the livestock counts had been conducted (Mathinta and Jolwayo / Nodada), the households to be interviewed were selected randomly but so as to reflect the range of flock sizes. At Ncunjane and Kuhleqele, lists of household names were compiled and these were used to randomly select households to interview. In addition to the randomly selected households, those that MRDT has been tracking over time were also included in the sample.

## 3.2 Locality

The study was conducted across a number of wards in Msinga where MRDT is currently working with livestock owners (See **Table 3** for more detail).

**Table 3: Summary of sites where individual interviews were conducted**

| Area | No. of interviews | Vegetation | Household density | Tribe | Existence of communal fields |
|---|---|---|---|---|---|
| Mathinta | 7 | Some acacia, but not so dense | Close | Mchunu | Communal fields |
| Jolwayo / Mbabane | 11 | Very little grass and trees – heavily grazed | Very close | Mthembu | Irrigation scheme |
| Ncunjane | 8 | Very dense | Scattered | Mchunu | Individual fields |
| Khonliva / Mashunka | 2 | Dense acacia | Very close | Mthembu | None |
| Kudleqele | 6 | Long grass and short trees | Scattered | Mthembu | Protected communal fields |
| Mahlabathini | 1 | Very dense | Scattered | Mthembu | Communal fields |

Note: See Figures 4 to 9 for aerial photographs of the different areas where the interviews were conducted.

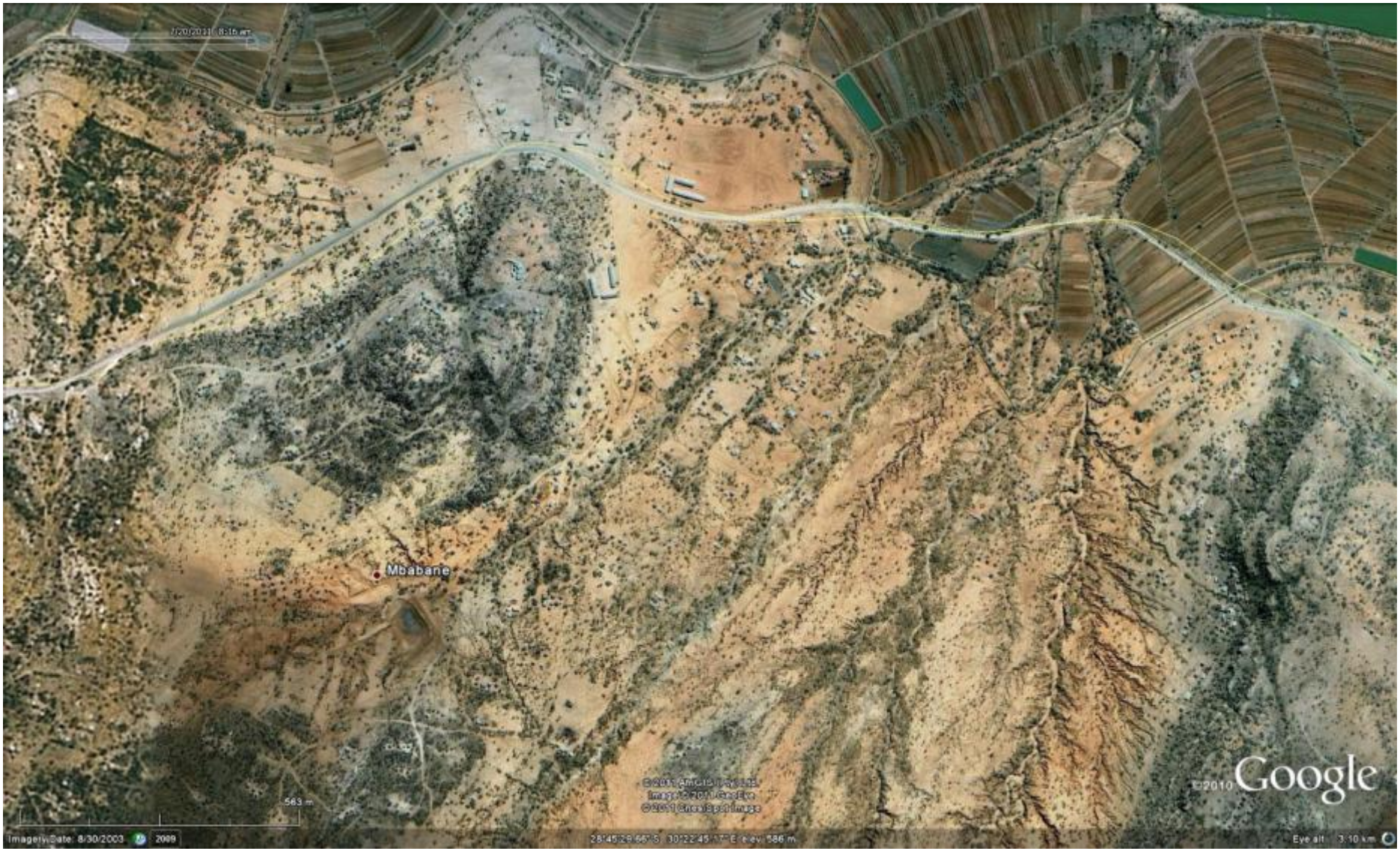



**Figure 4: Aerial photograph of Mbabane / Jolwayo.**


**Figure 5: Aerial photograph of Mathinta.**


**Figure 6: Aerial photograph of Kudleqele.**


**Figure 7: Aerial photograph of Khonliva.**

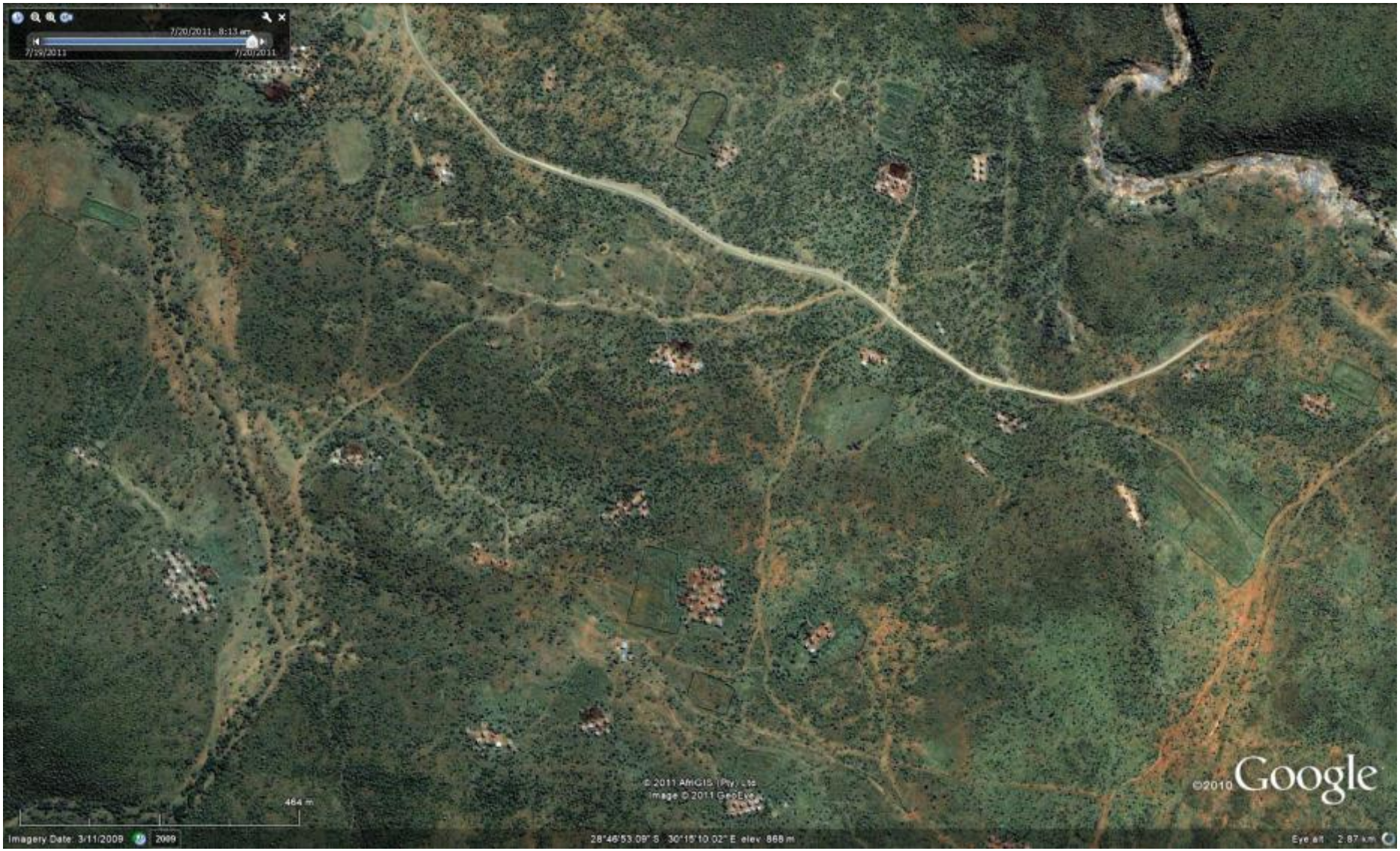



**Figure 8: Aerial photograph of Ncunjane.**


**Figure 9: Aerial photograph of Mahlabathini.**

## 3.3 Outcomes and discussion

### 3.3.1 General information

**Types of goats and some management practices related to breeding and selection**

According to the FGDs, all households in the study area own local 'Zulu' goats. Rams to be kept for breeding purposes and not castrated are selected at approximately three months of age. Rams are replaced after they have produced three batches of kids (after approximately 2.5 years).

**Ownership**

Of the 35 households owning goats, woman had some level of ownership in 13 households (37%). This was mainly in households where the male heads were deceased and ownership thus lay with their wives who are no the heads of the household. This can be compared with cattle – where of the 19 households having cattle, woman only had some ownership in 4 of the households (21%) – with ownership moving to the sons of the deceased male heads. With chickens, some or all ownership lay with women in 31 households (88.5%).

There are a fair number of cases where goats in a kraal belong to different family members (31%). They may belong to head (woman), her son and his wife for example. Ownership lying solely with men was found in 19 homesteads (54%).

**Outcomes from FGDs about ownership of goats**

According to the FGD at Mathinta, goats generally belong to the female head of the home if her husband has died. One participant said that the person who stays at home (the wife) makes decisions and then she informs her son, if her son is staying away and the husband is dead. When asked what happens if the husband is alive, but working away from home, the response was that in such a situation, the wife would identify an animal to sell but would first discuss it with her husband. The difficulties associated with women-headed households owning goats were discussed. It was said that it is difficult for these women as they have no source of income and are also left with children to care for. Sometimes they are not old enough to receive state pensions with makes it even more difficult. Households that have no men often have to ask male neighbours to assist them. The participants said that it is easier for men to go and buy inputs. It appears that the problem is related to a lack of access to money rather than a lack of access to knowledge.

There was discussion about ownership of goats as a result of goats coming into the home for payment for a daughter (lobola). The goats that come into the homestead through the daughter of one wide cannot be used for ceremonies related to another wife. The ownership of these goats is shared between the mother and father but the final decision is taken by the woman. It was added that the care of these goats is also the responsibility of the woman who owns the goats.

At the Nodada FGD, three of the women head up their households. It was highlighted that where women and men both exist, goats are said to belong to the husband. If goats come into the house through lobola, they belong to the mother of the girl but she must still ask him if she wishes to slaughter that goat. When asked about decision-making while husbands are absent, it was said that the wife could take a decision to treat a sick animal but would phone her husband if the goat is not recovering. Many of the women ask their neighbours for assistance with treating animals, but one of the female FGD participants said that she injects her goats herself.

At Kuhleqele, there was much discussion about the transfer of ownership on the death of the male head of the household. There was a feeling amongst this FGD that ownership transfers to the sons and not to the wife. This was not in line with discussions at the other two sited.

## Decision-making

Women have some ownership in 13 households (37%), they have some level of decision-making in 12 households (34%) about day to day matters and decisions about selling /slaughter in 15 households (42%). In 19 households, decisions to sell or slaughter are taken totally by men (54%).

## Goat numbers

According to people's recollection, the 35 households interviewed had a total of 865 goats, with an average flock size of 24.71 goats. The flock sizes ranged from 3 to 87. When asked to estimate the number of goats that they had in June 2010, a year earlier, a total number of approximately 985 goats was estimated.

**Table 4: Summary of the breakdown of the collective flock according to age and gender as of June/July 2011**

| Category | Number | Percentage |
|---|---|---|
| Rams (Impongo) | 39 | 4.59 |
| Adult females (Imbuzikazi) | 345 | 40.64 |
| Young females | 139 | 16.37 |
| Castrates | 100 | 11.78 |
| Separated kids (young) | 201 | 23.67 |
| Bigger kids (no longer separated) | 41 | 4.83 |

**Outcomes from FGDs about ram management**

At Mathinta FGD, the participants highlighted that many households do not like to have rams because they wander in search of females and often become lost because they do not return home. None of the people at the FGD had their own rams and all relied on rams belonging to other people. The only male participant at the FGD said that even men do not keep rams and he is only aware of two rams in the area. He said that they are difficult to herd and also difficult to sell.

At Nodada, the participants said that rams are born within the kraal rather than purchased and are replaced once they start to look old, at about 5 years of age. Three of the seven participants owned rams. They also highlighted that rams become lost easily, adding that with no-one to herd them this is a particular problem as they need to be collected.

## Marking practices

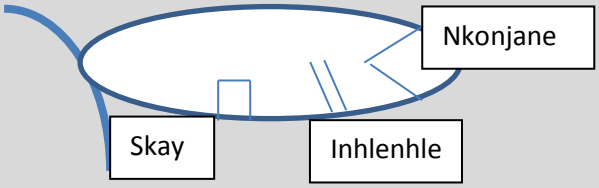
The process of marking goats was covered only during the FGDs and not within the individual interviews.

**FGDs about methods of identification**

Goats are marked with ear notches which denote the owner rather than the individual animal. Goats in one kraal but belonging to different people will have slightly different notches. E.g. In one house,

the goats have 2 cuts in their ears but the mother in law said they should add another cut to show that they belong to the son.

At Nodada, the participants gave more information about the ear notching procedure, giving names to the different types of cuts.




## Kraaling practices

Of the 35 households interviewed, 26 said that their goats are always kraaled at night, while 2 said that their goats are not kraaled at night (they do not sleep at home) and 7 said that their goats sometimes come home (two said that only those goats with young kids come back, while another said that the goats do not come back in winter).

**FGDs about kraaling practices**

According to the FGD at Mathinta, goats sleep in the kraal at night but they added that there are often a few goats missing and sometimes none of the goats come back at all. They are not herded but come back on their own. In winter, because it gets dark early, they have to go and fetch them as they travel far looking for food. Some goats come home but do not actually like to sleep in the kraal.

At Nodada, the participants discussed the time at which goats go and out and come back. They said that they let the goats out earlier in summer because it is very hot. They come back at about 11am in summer and graze around the house, but come back later in winter (14h00 to 15h00). They are shut in the kraal at sunset.

At Kuhleqele, the participants said that at many households the goats come home at night but are not kraaled at night. They said that this is because they inherited a fear that they can be easily bewitched if they sleep inside and are thus safer sleeping outside the kraal.

The hours that the goats are confined to their kraals was also investigated. Generally, goats are let out in the morning, come back sometime during the day to feed kids, drink water, etc and then either go back to graze further afield or graze in the vicinity of the homestead. Many households keep their goats in until the dew has dried which means that they go out later in summer than in winter. The time that they are let out in summer ranges from 7am to 10am, with 5 people saying that they only let them out once the dew has dried. The time most frequently mentioned was 7am (mentioned by 10 interviewees) and 8am (mentioned by 9). Some indicated that they let the goats out early because of the high temperatures in summer. Return times in summer are even more variable, ranging from 9am to 18h00. It should be noted that this is not the time when the goats are shut up in the kraal for the night. In winter, times for letting the goats out ranged from 6.30am to 10am, with most commonly mentioned time being 8am (mentioned by 14).

## Separation of goat kids

The separation of young goats from their mothers was discussed. This is a mechanism to reduce kid losses. Generally, kids are kept at home until their horns start growing ("emerge") and they have been marked. Some interviewees said that they need to be strong enough to deal with jackals on the mountains. Other factors that are considered are whether they are old enough to eat by themselves, old enough not to fall into the irrigation canals. One person indicated that they do not separate the kids because their goats graze close to the homestead. Another said that they only keep them locked up for two weeks as there is no-one at home to open the gate to let them nurse when their mothers return. Another said that they have to let the kids join the flock when a month old because the mothers do not come back to feed them. Ages given at which kids are allowed to join the main flock ranged from 2 weeks to 6 months. Another comment made was that kids are kept separate until their mothers have mated again.

## Hierarchical behaviour in goats

**Outcomes of FGDs about hierarchical behaviour**

The issue of hierarchical behaviour in goat flocks was discussed at the FGDs. At Mathinta, they said that adult female goats and castrates exhibit this behaviour. At Nodada, the participants said that oldest goats are the ones that 'know everything' and so become dominant. They added that their behaviour depends on what goats are around them. They also said that this sort of behaviour only occurs within the kraal. This includes bullying when cut branches are offered to the goats.

## Kraal facilities

The size of the kraal was broadly estimated together with the size of the roofed area if it existed. All households reported that they have kraals although three indicated that the goats never sleep in them. They either remain on the mountain, in the case of two interviewees or they just sleep in the yard and are not confined to the kraal. The areas of the kraals ranged from 22.5m$^2$ (5mx4.5m) to 330m$^2$ (22mx15m). The density of goats in the kraals ranges from 0.91m$^2$/goat to 60m$^2$/goat (the case of a large kraal with only 3 goats currently), with an average of 7.15m$^2$/goat.

Only 10 of the kraals (28.6%) had roofed areas that can provide protection against bad weather, but one indicated that young kids were locked in a building at night and another had drums in the kraal that provided some shelter. The roofed areas ranged from 6 to 50m$^2$ in area. An average of 17.38% of the kraaled is covered, which amounts to an area of 27.5m$^2$. *Interestingly, given that the average of number goats in these kraals is 27, while the average area of the roofed portion is 27.5, there is on average 1m$^2$ per goat under cover*.

*It was the intention to consider whether the density of goats/are of kraal shows any relationship with the mortality rate. This is difficult to investigate because the low current density may simply reflect a high loss of goats some time previously.*

## Herding

None of the households interviewed herd their goats, although it is fairly common to fetch goats in the afternoon if they do not come back on their own (mentioned by 10), while one said that they only check the goats if there is a problem.

### 3.3.2 Changes in flock size

The changes in flock size are a result of animals moving into and out of the flock. While it was not possible to estimate the number of births with any level of accuracy, other movements in and out of the flock are summarised in the table below and then discussed in a bit more detail.

**Table 5: Summary of movements out of the flock between June 2010 and June/July 2011**

| Type of movement | Number | Percentage of estimate of total number of goats in June 2010 |
|---|---|---|
| **Goats moving out** | | |
| Mortalities | 201 | 20.41 % |
| Sales | 41 | 4.16 % |
| Slaughter | 73 | 7.41 % |
| Payments | 47 | 4.77 % |
| Theft | 59 | 5.99 % |
| **Goats moving in** | | |
| Purchases | 35 | 3.55 % |
| Swapping | 4 | 0.41 % |
| Lobola | 8 | 0.81 % |
| Donation | 1 | 0.10 % |

**Mortalities**

Approximately 201 deaths (20.41% of the collective flock in June 2010) were recorded between June 2010 and July 2010 by a total of 32 households interviewed. Causes of death included:

- Hunger (mentioned by 11)
- Lung-related illness (7)
- Diarrhoea (5)
- Heartwater / twisted neck (4)
- Sickness, 'water on the brain (*impethu*)' (each mentioned 3 times)
- Accidental deaths (drowning in canal, hit by vehicle, hit by child) mentioned one each
- Other reasons (each mentioned once) included snake, burst gall (*qomenyongo*), limping, giving birth, nasal discharge, dogs and mange.

**Sales**

Of the 35 households interviewed, 17 had sold goats since June 2010 (48.5%), which amounted to approximately 41 goats (4.16% of the collective flock as of June 2010). This included males (entire and castrated) and females.

When the sale of goats was investigated further on a broader scale, it was found that excluding two interviewees who did not know when/if a goat had been last sold, 17 households (51.5%) had never sold a goat. Eight (8) had had a sale during 2011 (24.2%) and 6 during 2010 (18.2%). Sales had taken place both within the local community and further afield, to other surrounding communities. A number of the outsider sales were to family members living elsewhere.

The ease of selling was also investigated. Of those that had previously sold a goat, 10 said that it is not difficult as people come looking for goats to buy, or one needs to announce it within the

community that one has a goat for sale. Four interviewees indicated that it is not easy because one has to announce it and because people do not always have money available when you need to sell an animal. It was also highlighted that during high demand periods (Christmas and Easter) it is easier to sell goats.

**Outcomes of FGDs about sale of goats**

The Mathinta FGD participants confirmed that the demand for males and females is similar. When asked whether they ever receive any complaints they only mentioned complaints about price. They also highlighted that men often set a higher price initially and can then be negotiated down while women just state the price that they want.

The Nodada participants highlighted that selling goats takes times as one must inform people, so one cannot wait until 'the maize meal is finished'. They also said that its easier at certain times of year. When asked whether they ever receive complaints about their goats, one woman said that she had purchased a Boer goat and had found it to be tasteless.

At Kuhleqele, it was said that goats are sold if someone comes looking desperately but their goats are not a business for them. People who specifically need to sell a goat announce this at meetings or gatherings within the community. For example, they might have a meeting to discuss issues related to their livestock or their fields and this would provide such an opportunity.

## Slaughter

Approximately 73 animals (7.41% of the collective flock as of June 2010) were slaughtered by a total of 27 households (77% of interviewed households) since June 2010. While reasons were not provided in all cases, those mentioned were slaughter for funerals (21 goats), slaughter for communicating with the ancestors and other traditional ceremonies (16 goats), 1 was given as a gift, 2 were used for cleansing and 5 for warding off ill health of children (*amandiki)*. Only two were slaughtered for meat and 1 was slaughtered because it had a broken leg.

**Outcomes of FGDs about goat slaughter practices**

The FGD at Nodada revealed that where people do not have big flocks they will only slaughter for '*umsebenzi*' and not just for meat.

At Kuhleqele, it was said that goats are slaughtered when people need to urgently communicate with their ancestors.

## Other movements out of the flock

A total of approximately 106 goats left flocks during the period June 2010 to July 2011. This was largely due to theft, which affected 11 households (31%) and resulted in the loss of 59 goats (5.99% of the collective flock as of June 2010) while out grazing.

Traditional payments (lobola and payment of damages) affected 7 households and resulted in the removal of 47 goats (4.77% of the collective flock as of June 2010). Of the latter, one person mentioned swapping 5 goats for a cow to use for traditional purposes.

**The use of goats for traditional purposes**

There are certain occasions when goats rather than cattle are used. Some examples of such circumstances are mentioned below:

- A goat is often paid to the person who is negotiating damages on behalf of some other family.
- A goat is slaughtered when a child is born and introduced to the ancestors (*imbeleko*).
- At a funeral, a goat is slaughtered two days before the funeral when the family starts arriving to 'stir' the ancestors. After the funeral, when the family is ready to leave, a goat is slaughtered to allow them to wash their hands (*sulisandla*) and 'rid them of death'
- A goat can be slaughtered to welcome a daughter's husband to eat at the house.
- At a 21st birthday (*umemulo*), a goat is slaughtered at the start to inform the ancestors that the person will be turning 21. Another goat is slaughtered at the *umemulo* when the girl puts the traditional leather skirt (*isidwaba*) before a cow is slaughtered. At the end, another goat is slaughtered which allows the girl to remove the *isidwaba* again.
- When a woman's husband dies, a goat is slaughtered when she puts on the mourning clothes. A goat is again slaughtered when she is to remove them again.

**Movements into flocks**

Other than from births, were mainly due to purchases – these were largely for slaughter purposes. A total of 50 goats moved into flocks of people interviewed. A total of 8 households purchased goats (35 goats in total). Goats also came in through swapping with cattle (mentioned by 1 household and 1 cow was swapped for 4 goats). Two households received goats for lobola (8 goats in total), but one of those households lost all goats due to illness (probably brought from an area where no Heartwater). One household received a goat from an NGO as part of a project and 1 person received a goat as payment for transporting goods.

**Swapping**

Apart from the two cases mentioned above, where goats were swapped for cattle, one household also swapped 2 castrates for 2 female goats.

**Outcomes from FGDs about swapping**

According to the Mathinta FGD participants, four goats are equivalent to one cow for *lobola* purposes but if one is swapping goats for cattle, then generally one swaps five goats for one cow.

### 3.3.3 Investment in goat flocks

**Purchase of feed**

A total of 14 households (40%) interviewed spend money on feed – this included one person who purchased water for goats. This ranged from a total of R120 to R4000 per household. It included mainly the purchase of maize (by 9 households), though 1 household purchased commercial livestock feed and 3 purchased bales.

In addition, some interviewees mentioned other interventions they practice to supplement their goats. This included the supply of sweet potato vines and bean residue from the irrigations scheme

by three households, feeding of cabbage leaves and imifino by another household, cutting of branches by one household and knocking of acacia trees so that they drop their seed pods.

**Outcomes from FGDs about purchase of inputs**

According to the FGD at Mathinta, people generally do not buy feed and rely on the natural vegetation, even in winter. They highlighted that during periods of feed shortage, goats go far looking for feed and they kid in the field and they are also stolen.

At Nodada, the participants of the FGD said that during drought periods they seek alternatives such as bean residue from the irrigation scheme. They mainly feed pregnant and lactating animals. The practice of knocking seed pods out of trees is sad to be limited to very dry years and the owners generally follow their goats while they are browsing and knock trees so that pods drop to the ground.

The issue of water availability was discussed at Mathinta. They said that water is short in winter and goats must walk long distances to get water so households therefore have to provide water once a day. Some households even supply water in summer. In winter they provide less water as it is very scarce (e.g. 5litres/day for 5 goats or 20l/day for 15 goats). Fetching water for goats is additional work for the women.

At Nodada, access to water is also difficult. Small dams are constructed near the communal taps so that waste water collects there and can be used by livestock. In good years, there are sometimes small pools remaining in the dry river beds that goats can access. In bad years when these pools dry up, the goats go down to the irrigation scheme to get water, which is a problem as they then take in pesticides. At Kuhleqele, the FGD participants said that during dry years the goats have to travel to the Tukela River to drink and this is especially problematic when they are already weak because they just fall down.

## Purchase of medicines and health remedies

Of the 35 households interviewed, 32 (91.4%) indicated that they had spent money on inputs during 2010. This ranged from R5/animal when asking a neighbour to inject it, to approximations of R500. Items mentioned included Terramycin and Hi-Tet frequently, as well as Valbazen, Gardal, Ivomec, Terramycin eye powder and Ektoban. Other items purchased included Jeye's fluid, traditional mixtures and 'Magnesium' from the chemist.

A total of 22 households (62.9%) make use of traditional remedies that they prepare themselves or purchase from other people. Some of those mentioned were: *Umphunzisane / umphunziso* (for diarrhoea), *Umnquma* (for diarrhoea), *Mhlabelo* (to heal broken bones), *Undunjana / Nohalagwane* (for Heartwater), *Umqhaqongo* (for diarrhoea), *Inkalane, Mqandane* (for diarrhoea*), Mavumbhuka & sangwana* (for diarrhoea and Heartwater), *Iqwaninga* (for Heartwater).

**Outcomes from FGDs about use of different medicines and traditional remedies**

Households commonly buy Terramycin, which is used for preventing Heartwater. This practice of blocking Heartwater is known locally as *ukugoma* ('vaccinate'). Some people buy dip that one mixes with water. Some people buy licks (described as feed that makes them drink a lot of water) and m any of them buy yellow maize. This is used mainly to encourage the goats to come home in the

evening so that they do not have to be fetched.

The use of traditional remedies was discussed. The women said that they only use *Umqhaqongo* because their husbands died earlier and hadn't shown them how to prepare other remedies.

**Access to crop residues**

The role that fields and gardens play in providing feed for goats was also explored. Of the 35 households interviewed, 15 have no fields/gardens, while 3 have irrigated fields at Mtateni, 6 have fields (*insimu*) and 8 have gardens (*isivanda*). One person indicated that they have no crop fields / garden but have a camp for separated kids. Two people indicated that they have fields but are not currently using them.

While information as not conclusive, a number of interviewees indicated that the garden / field only provides feed for a week or two. People grow a range of crops including maize, sorghum, cowpeas (*endumba*), white beans (*umbhecane*), pumpkin (leaves), sunflower (*bhekilanga*), sweet sorghum (*imfe*) and *imifino* (leafy vegetables and plants). Some of the people with gardens cut the stover and remove it to feed, which is the same as the situation at the irrigation scheme.

Factors limiting production in fields and gardens includes poor fencing, which allows animals to enter and damage the crop, hot dry conditions that burn the crops, pests that eat *imifino*, lack of access to tractors and water for irrigation. Another point raised by a number of interviewees was that livestock graze the fields after harvest. This means that the animals will not have access to this source of feed later in winter when shortages are more severe.

### 3.3.4 Health status and management

**Common signs of illness**

Many of the signs mentioned are general symptoms, though some can be directly related to particular diseases. Signs of ill health that were regularly mentioned were listlessness, dull coat, spending a lot of time lying down, poor condition (thin), trailing behind the flock, not eating, tail hanging down, not going far to graze, not waking / getting up, coughing, sharp pains accompanied by noises, not ruminating and/or head hanging.

More specific signs of illness mentioned included limping, diarrhoea, water in the brain, head twisting back *so that they are looking upwards* (Heartwater), water in the lungs and foam on the nose.

Frequency of mention is shown below:

- Listlessness (25)
- Diarrhoea (21)
- Lying down / Head hanging / tail down / dull coat / not ruminating / Not eating (11)
- Walk behind the flock / don't go far / stand around (8)
- Limping (7)
- Coughing (4)
- Thin (3)

- Twisted neck (2)
- Water on the brain (2)
- Sharp pains (1)
- Foam on nose (1)

**Deworming practices**

Generally people deworm their goats when they see signs of infestations such as poor condition, dull hair, worms in the droppings or kids with a big stomach. Of the 35 households, 29 dose their goats for worms, making use of a range of traditional and western remedies (9 use traditional remedies, 14 use western remedies and 6 use a combination).

**Tick control**

Of the 35 households interviewed, 20 practice some form of tick control. In the case of 5 of these, this was limited to the use of Jeye's fluid (sheep wash), while another made use of Blue Death. More conventional methods included the use of the community cattle plunge dip by 5 households, use of a bath to dip goats by a further 5 households and 2 people making use of a spray to apply dip such as Ektoban.

In terms of frequency of dipping, a number indicated that they only treat goats when they see ticks. Others indicated that they dip every week or two weeks in summer. Dipping is seen as an intervention to control mainly ticks. But mention was also made of treating mange and lice. Two interviewees indicated that they had dipped in the past but were no longer doing so.

**Unusual parasites encountered**

One of the interviewees mentioned an unusual case of certain organism (possibly bed bugs) that parasitized his goats. The parasites hid under the goats armpits where it is warm. He said that they also hid in cracks in the poles of the kraal which forced them to build another kraal and burn the old one. This was effective in killing the parasites.

**Figure 10: Bed bug** (http://en.wikipedia.org/wiki/File:Bed_bug,_Cimex_lectularius.jpg)

### 3.3.5 Challenges facing goat owners

**Perceptions of flock growth**

The interviewees were asked whether their goat flocks were increasing and what the most serious constraints were that they were facing. While two interviewees could not answer the question, of the remainder, 12 said that their flocks were increasing (though some said they were increasing slowly), while 21 said that their flocks were not increasing (they were either decreasing or staying the same. Sixteen (16) mentioned death of animals from a range of causes (worms, hunger, heartwater, eating plastic) as the main reasons why flocks are not increasing. Other causes

mentioned included theft (mentioned by 2), goats going missing (mentioned by 5), sale and slaughter of animals (mentioned by 3) and predation by snakes mentioned by one.

## Theft of goats

Theft of goats was also investigated to try and quantify the extent of the problem and the extent that the community is able to react to it.

Of the 35 households, 9 indicated that they had never experienced theft. In terms of the most recent losses of goats, 17.1% had lost goats in 2011, 34% had lost a goat in 2010 and 22.9% had lost goats prior to 2009. Most goats were stolen while out grazing, though one household had goats stolen at night from the kraal.

## Most serious challenges

A range of challenges were listed by interviewees, which can be summarised as follows:

- Heartwater (Especially in kids and causing losses) – mentioned by 11
- Hunger (Especially in kids and leading to death) - mentioned by 9
- Different sicknesses 15 (including pneumonia, water on brain, worms, diarrhoea, eye infections, coughing, limping, mange)
- Theft – mentioned by 4
- Predators and dogs – mentioned by 3
- Kid mortalities and birth of make kids – mentioned by 2
- Usage of goats (Sale and slaughter) – mentioned by 2
- Abortions – mentioned by 2
- Goats go missing (kids from mountain, rams) – mentioned by 3
- Poisonous plants – mentioned once
- Lack of people to take care of the goats – mentioned once.

**Outcomes of FGDs about challenges**

At Mathinta, the following problems were raised as challenges: hair becoming dull and fluffy; nasal discharge, sneezing and coughing; diarrhoea in adults and kids (due to change of season and other causes); eye problems (weeping and milky); Heartwater and Mange.

The following were also acknowledged after prompting: thieves; abortions (lots last year in July – even mature goats, and again this year in June); jackals (*amakhanka*).

They then went on to use small stones (each given a total of 3 stones) to prioritise their problems and came to the following order:

- *Umqhaqhazela* / Heartwater (8)
- *Utwayi* / Mange (7)
- Coughing and sneezing (6)
- Abortions; Hunger in kids (Mothers prevent kids suckling - *Indlala zeqe amazinya*) (3)
- *Uboya buya vokumola* / fluffy coat (2)
- *Uhudo* / diarrhoea in spring; *Amehlo* / eye problems (1)
- *Amakhanka* / Jackal; *Amasela* / thieves; *Amazinyane ayahudo* / diarrhoea in kids (0).

At Nodada, challenges mentioned by the participants included Heartwater, lice (*intwala*), mange,

worms, lung disease, swollen gall and ticks. They also said that the goats' soles are sometimes damaged by thorns and stones. Theft was said to be a big problem as thieves will even come with a vehicle (and guns) to your home at night and clean out the kraal completely. Jackals are said to attack goats on the mountains. Dogs are seemingly less of a problem as dogs that develop the habit of killing goats are generally destroyed by the owner. Another challenge raised was the length of time it takes before female goats kid again - they said that goats can produce kids at 12 month intervals. They added that sometimes the goats seem pregnant and then it just seems to go away.

At Kuhleqele, challenges that were mentioned were pneumonia, walking in circles (water on the brain), worms, worms that cause bloodiness on the outside of the goat, fleas in winter and ticks between the hooves.

The matter of kidding rates was discussed. They said that if goats mate quickly after giving birth this results in kids dying because their mothers do not feed them properly. They said that this is particularly problematic for the goats that kid in April. Age at first kidding was also discussed. They said that young goats born in April mate when they are 13 months of age and then kid 5 months later. They went on to say that theft is an enormous problem and that they disappear from everywhere but that it is worst if they are kraaled as they can then all be taken whereas in the veld some might escape from thieves.

### 3.3.6 Additional information

The purpose of the final question in the questionnaire was not well understood and interviewees interpreted it as an opportunity to highlight their needs / suggestions for improving their production. The following matters were raised:

- Assistance with treating / preventing sickness and controlling ticks was mentioned by 15 of the interviewees.
- Others mentioned the need for assistance with feed, especially drought (3)
- One woman highlighted that she needs her own goats (as they are owned by other family members)
- Two people mentioned the need for better fencing for their fields to allow them to produce more crop residue for their goats
- One person said that he relies on his neighbours for assistance with treating sick animals but does not know how to use the remedies himself
- One person highlighted the need for having a portion of the kraal covered.

# 4 Estimation of distances covered while grazing

## 4.1 Methodology

In an effort to obtain some preliminary understanding of the distances that goats cover while grazing, two flocks were followed. It should be noted that goats are not herded and therefore owners do not have a clear understanding of the paths that they follow when out grazing. MRDT staff followed the flocks and tracked their movements using a GPS.

## 4.2 Outcomes and discussion

It was found that the goats graze while moving until they reach a certain point before they turn around and return make to their kraal. The first group spent time grazing at the end point before returning home because there was abundant fodder available.

**Table 6: Summary of distances covered while grazing**

| Area | Distance covered | Availability of fodder | Additional comments |
|---|---|---|---|
| Ncunjane **See Fig. 8** | 1.57 km each way (3.14 km round trip) | Fodder relatively abundant | The flock split up into smaller groupings of animals. The group tracked was a small group that followed a very different path to the rest of the flock and spent a substantial time browsing once they reached the end point. |
| Kuhleqele **See Fig. 6** | 2.3 km each way (4.6 km round trip | Fodder very scarce | Animals made their way to old lands to graze. |

# 5 Conclusion

This report summarises the key findings of the baseline study of goat production in Msinga. It will form the basis for identifying research questions to be addressed through the next phase of the research. The purpose of the goat research is to inform the interventions implemented by MRDT as part of their development programme. MRDT aims to improve the efficiency of livestock owners' production systems. From this study, it can be seen that there is a real investment in maintaining the health of the goat flocks and yet the offtake is fairly low while flocks do not seem to be increasing adequately.