Chapter 5

DISCUSSION

Due to the complex nature of the way in which the results from the different methods relate to each other, this discussion will follow the structure of the Maasai components in the data capture techniques model (Figure 5.1). The discussion will begin by exploring those current and possible problems raised by the Maasai through the PPPM data and the partial census data. It will then address what resources are actually available in the region and discuss the shortcomings of those resources as mentioned by the Maasai. The different livelihood strategies of the Maasai and the implications of the results regarding the ways in which society is structured around these strategies are then explored. The land use of the main livelihood strategies is then discussed, drawing in results from all of the different techniques used in the methodology and the forms of "other income" are discussed. Finally, there is a summary of the linking relationships between all of these components. Within this context the future of the Maasai in terms of changing resource priorities is discussed and there is an overview of the usefulness of the combination of the techniques employed in this thesis.

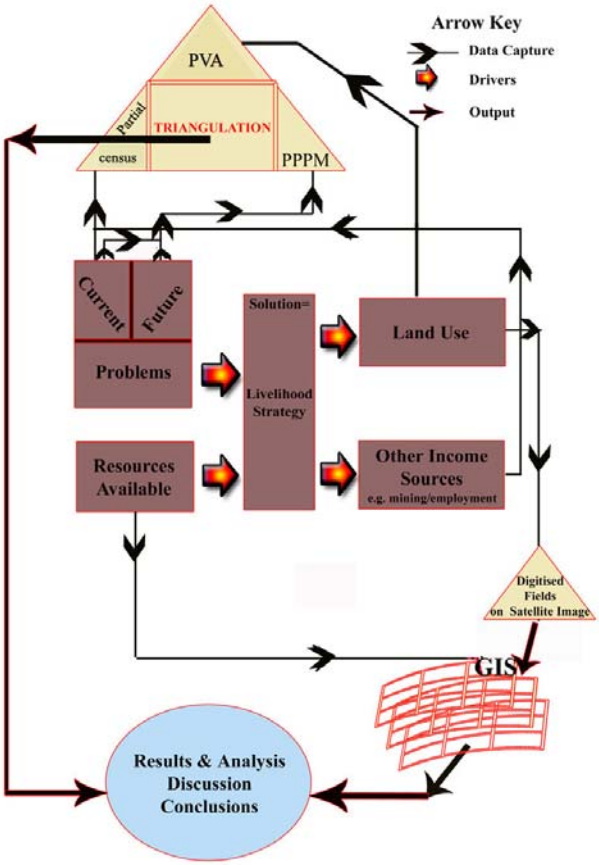

Figure 5.1 A model of the data capture techniques used in this project.

5.1 Current and future problems

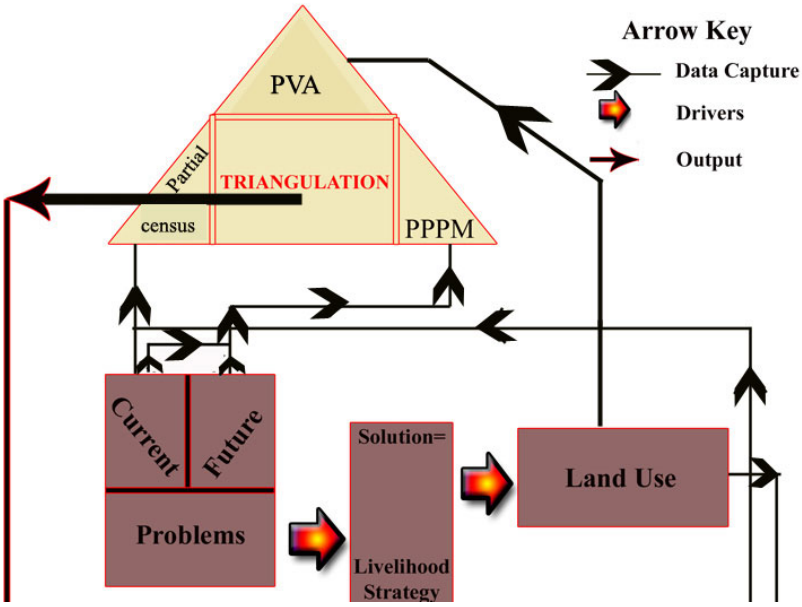

Figure 5.2 Problems component of the data capture techniques model

Although the question asked was : "*Have there been any constraints on your production abilities since the rainy season last year?*", and guidance was only given if a participant needed further prompting (which rarely occurred), the problems listed by the residents of Arkaria in the partial census were split between the two main livelihood strategies: crop production and livestock rearing. It was apparent that the problems mentioned by these individuals were focused on problems related to uncertainty, problems they would not necessarily expect to have to deal with on a daily basis or 'out of the ordinary' problems. Those brought up included wild animals, both in the form of browsers destroying crops and in the form of predators attacking livestock. Lack of water for livestock was identified, though only by 34% of the bomas (as opposed to all of the PPPM groups) whereas, drought (lack of water for crops) was brought up by the majority. This difference in identifying water as a problem for crop production but not so much for cattle reflects the traditional lifestyle of the Maasai. It is 'normal' to face problems in finding water for cattle –that is partly why they practised transhumance (and still do move the cattle to dry-season pastures) whereas, the problem of drought and the consequential failure of rainfed cultivation is a relatively new problem for which they have no remedial strategy. The success of their crop is nearly wholly reliant on whether they receive enough rainfall. When the partial census was carried out, it was evident that many crops of maize and beans had failed already. Therefore, it is likely that their consequent concern for the period during the heart of

the dry season (with little or no source of their own grain) was reflected in their response to this question.

Other problems mentioned include pests destroying crops. Surprisingly, a few respondents mentioned that domestic animals, including dogs, were becoming a problem in this respect. This is an interesting demonstration of adaptational behaviour on behalf of the dogs, which are often not fed adequately and so have to look elsewhere for food. The remaining problems were mostly indirectly related to lack of money: Agri-inputs were specifically mentioned in the context of inability to afford seeds, tools and pesticides. Veterinary services were mentioned in terms of problems of distance and/or money. Finally, lack of pasture was mentioned by 8% of the bomas questioned. This was also discussed in the male group meeting, with the Chairman of Arkaria expressing concern over the future of the village as population pressure was gradually causing the land set aside for pasture to become smaller. This, of course, has long term consequences not just for the residents of Arkaria, but also for the other villages in the region as pasture land in Maasailand is a common pool resource for (very much regulated) use by everyone.

These results are interesting when compared with the types of problems mentioned in a study carried out last year by a former ICL MSc student (Table 16). Ryan Tinggal

Table 16 Problems relating to livelihoods of the Maasai in Arkaria in 2004 and 2005

		Arkaria	% of participants in Tinggal's thesis (2004) that identified the problem	% of participants in this thesis (2005) that identified the problem
Physical	**Water**	24	72%	44%
	land	3	9%	8%
	Forest		0%	0
	Weather	3	9%	62%
	Pests (for livestock and agriculture)		0%	61%
	Livestock Disease and Veterinary Services	15	45%	7%
Financial	**Agri-Inputs**	2	6%	11%
	Finance	2	6%	0%
	Income	4	12%	0%

(2004) interviewed 70 households across 3 of the villages within this project area (Arkaria, Lepurko and Mti Mmoja). As can be seen from above Tinggal's results show noticeably higher percentages for water livestock problems. The issues surrounding identification of water as a problem have already been discussed and most likely account for the discrepancy. The large difference in participants identifying livestock problems is likely to be a result of the way in which the semi-structured questionnaire

is organised as, prior to this question, there is a detailed question as to whether their livestock had suffered disease this year. Often respondents did not, therefore, re-identify livestock diseases/access to/affordability of veterinary services when asked to identify problems with their key livelihood strategies. The percentages were similar for those participants identifying agri-inputs and land as problems during both 2004 and 2005 indicating these particular problems have not deteriorated but neither have they improved.

The PPPM data addressed both current and future problems as both the groups and individuals were asked to identify the problems they face when trying to provide for themselves and their families both those problems they are facing at the moment and possibly also those problems they might not be experiencing currently but could face at some other point in the year.

When compared to the risk map results from Smith *et al.* (2000) and Quinn *et al.* (2003) the different problem perceptions resulting from different lifestyles and livelihoods as previously discussed become apparent. Quinn *et al*'s research incorporated participants with different livelihoods (Pastoralists, agro-pastoralists and agriculturalists) whereas Smith *et al*'s research focused only on pastoralists. It is therefore very appropriate that of the two risk maps, the problem maps produced from the results of this thesis have a similar distribution to Smith *et al*'s. Whilst the Maasai are now agro - pastoralists their perceptions still very much reflect those of pure pastoralists.

The Chi^2 test proves that there is a strong correlation between the individual average PI values and the group PI values. Therefore the hypothesis that the group PI values are truly representative of the population in general can be accepted.

The group PI values indicated that water is the most important problem in the project area. It was given consistently high rankings by both genders. Other problems that were consistently perceived and identified by the Maasai to be of major importance now and in the future were: education, weather, healthcare and livestock diseases. These show a strong focus towards problems within the natural and social assets categories. Problems identified, but given the lowest PI values, often tended to be a mixture of gender-specific problems related to financial, human and social capital assets. The spatial variation of the top six problems is also very interesting. From the map annotated with the bar charts of problems identified and their frequencies of

occurrence (Figure 4.18), it was possible to see that poverty replaced livestock disease in both Arkaria and Nanja Sub Villages and that Lendikinya identified "money" as being a more important problem than that of healthcare. Whilst Arkatan did not mention financial related issues in its top 6 problems, it was noticeable during group discussion that participants were worried about unemployment. This was the only village that actually talked about "unemployment" it is also the closest village to the main town of Arusha and the rapidly increasing urban sprawl surrounding it.

Mti Mmoja ranked disease and forest instead of healthcare and weather in its top 6 important problems because, as the chairman showed me, by waving a hand and disturbing about 50 flies, the community have serious problems with eye disease. The process of deforestation in the area is of major concern for them because non-Maasai are apparently taking down trees at an alarming rate. This not only increases the journey time Maasai women to have to travel to collect firewood but also the trees being removed are often those that are used in the treatment of eye disease. Although both the women's and men's groups discussed the possibility of replanting trees, they said that there was no point until they had a regular water supply. This is but one example of how many of the problems identified are interlinked and how, for instance, by solving or at least alleviating the human water problem by extending the supply of piped water to the villages, many other problems could be dramatically reduced in severity.

As the lifestyle of the Maasai is very much centred around adapting to the environment in which they live and in creating coping strategies, it would be expected that the problems they identify would reflect their lifestyle and in turn, as governing bodies would have people believe, their lack of interest in financial and social assets. In part, the results do substantiate part of this hypothesis. The majority of "natural asset" problems identified were found within the 10 most important risks. According to the common perception of Tanzanian government agencies, the Maasai do not want to be part of Tanzania's development process. Yet, the results show that amongst the natural asset problems were also key "social assets" such as education and healthcare and that within the top 15 problems, problems relating to "financial assets" and "development support" are identified. This indicates that, possibly, it is not that the Maasai don't want to be a part of the development process but rather they have not been given or shown the mechanisms by which they can become involved.

This was further illustrated during the feedback meeting when we discussed the reasons why education was the most important problem in the project area after water. The Maasai present agreed that one of the main reasons was a lack of a secondary school in the area (the nearest ones being very far away e.g. Monduli where their children have to board –hard both in financial and social terms). The Project Director of CHCWP, who was also present, said that he had heard that there were plans for a government secondary school in the area but that its future location was, as yet, undecided. It was apparent that the Maasai, whose children the school would educate, and the people likely to be most affected by its positioning, had no knowledge at all of this plan. This is characteristic of the lack of communication between different governing bodies, NGOs and the communities themselves. If all the stakeholders in the land in this area are to work together and manage this land in a sustainable way, then the channels of communication must be improved.

Whilst the Maasai lifestyle is still very much centred around cattle, this in no way is an indication that they are averse to social change. Education is a good example, reflected in its important position in the PI for the project area, of how the Maasai have changed their attitude in favour of a Tanzanian socialist development policy is that of education. When the Maasai first came across the notion of education and schools, during the colonial period, many Maasai parents feared it would alienate their children from their family and their culture and despised the notion of it (Hodgson, 2001). Yet, recently, there has been a complete change in the Maasai attitude towards education. All female respondents questioned in both the PPPM interviews and the Arkaria partial census were in favour of education. Only a few men were not totally supportive of it, stipulating that girls should only attend school up to Standard 4, before marriage, in order that they could read and write for their future husbands. One man in Arkaria refused to let his children go to school, believing it would be of no benefit to them. He was adamant that his children, as he had in his time, would go to school and get beaten and there would be no one at home to look after the livestock. However, such negative respondents are in the minority. The vast majority of respondents believed that, through education, their children could understand the modern world and come back to help their parents and secure a future in the modern world for the Maasai by becoming leaders. As many pointed out, a current major problem experienced by the Maasai is lack of money to afford key social services such as medical care and veterinary care. If their children are educated, the Maasai believe that they will not only bring money back home to help the running of the boma but

also that some will become veterinary surgeons and doctors and return home to help alleviate suffering. Although this is very much a parental view, the majority of participants being parents or grandparents, one younger respondent who had just finished primary school in Mti Mmoja remarked that he preferred school to herding livestock as "when you see the goats or sheep or the cows, they die all the time. Education will die only when you die"".

5.2 Resources available in the project area

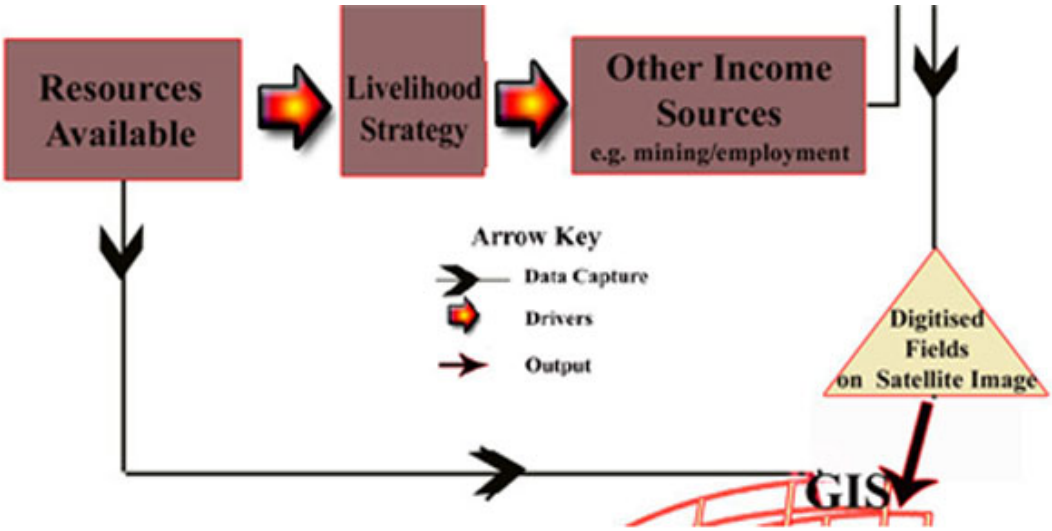

Figure 5.3 Resources available section of the data capture model

A complete data set of resource locations for the GIS was not available as had been anticipated. It was only possible to gain a few layers of locational data for social resources such as village boundaries, locations of schools and dispensaries. For Arkaria, the resource profile was updated and improved using the outputs of the participatory mapping to establish locations of waterpoints. Through the use of the GIS of resources combined with discussions from the PPPM group, it has been possible to come up with the following synopsis for the area.

Important social resources within the project area have been identified from the PPPM as: medical facilities, hospitals (there are currently none) and dispensaries (currently 2), educational facilities: found lacking are kindergarten facilities and secondary schools (there are none in the area) and veterinary services (there's a demand for a closer medicine dispensary and dips). Transport networks remain poorly developed, the roads often only maintained in the upcoming months of an election.

Key natural resources such as water, land, forests and wildlife are for the most part in decline. At the time of the field work undertaken for this thesis, the small dams dug by groups of Maasai still retained water in from the rainy season (plate 6) However, once these dry up the population of the area rely on comparatively small numbers of water points. When questioned where they got water from, participants named some of the larger dams in the area (in this context dams are dug out holes, not blocked rivers) including Soiminen (a 4 hour journey for many from Arkaria), Lengibure (20km from Mti Mmoja), Meserani, Enjoroee, Lenkibure, Tanzanian Military Academy, Emainete (Monduli Juu) and Hilala.

The land itself is facing increasing population pressure. A new theory not yet validated is that once people adapt to semi-sedentary cultivation, a population trap will have been 'srpung' (Holmes, 2005). As the Maasai population fills the landscape, they will have to work harder to grow food, increasing their vulnerability to crop failure and famine but yet so immersing themselves in the cultivation and its economy (Figure 5.4) that before long, even if they wanted to return to pastoralism they couldn't.

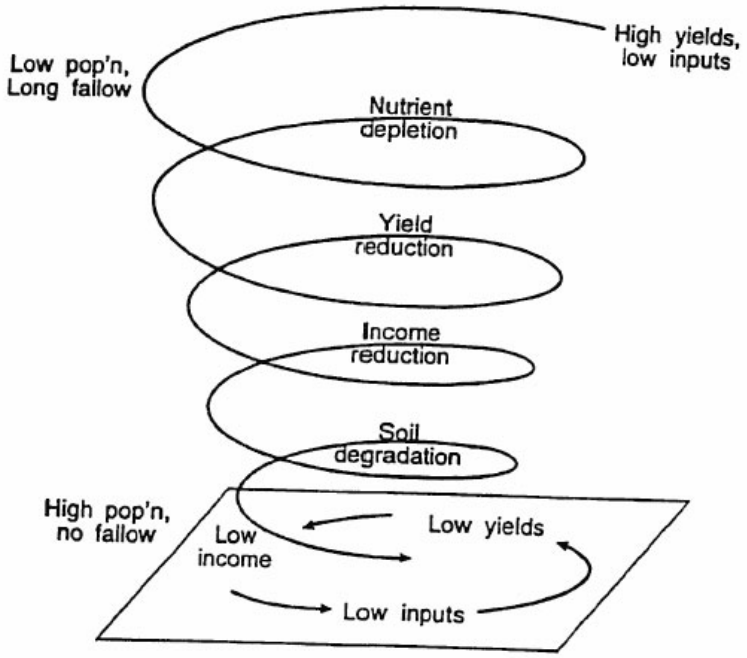

Figure 5.4 The poverty trap or spiral of environmental degradation (McCown *et al.* 1994)

Population pressure and agricultural expansion (as demonstrated previously in Chapter 4, Table 4) are not the only pressures on Maasailand. Further encroachment from

national parks and the Tanzanian army as well as an increasingly arid climate as global warming intensifies are also possibilities. Deforestation is still occurring as was voiced by the Mti Mmoja PPPM groups. All of this habitat destruction, increasing human presence and the blockage of wildlife corridors by agriculture is impacting on the ecology of the area. This further reduces the natural resources available to the Maasai because one of the most potentially lucrative sources of income, wildlife, is being marginalized.

5.3 Livelihood strategies

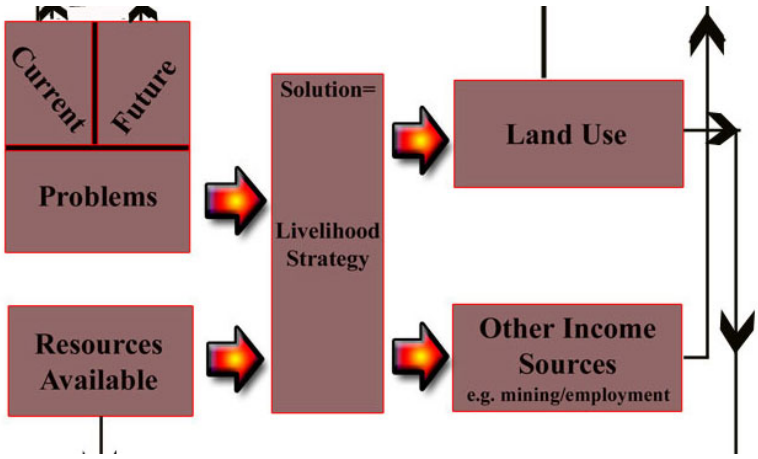

Figure 5.5 Livelihood strategy section of the data capture model.

The partial census results show that there are two main livelihood strategies pursued by the Maasai in on their land. These are livestock husbandry and rainfed smallholder cultivation. The livelihood strategy for the younger generation has been increasingly to seek an external source of income. This usually means moving away from their home area. Commonly, the young Korriangas (warriors) work as night watchmen or in the tanzanite mines. Some, through Government sponsorship, attend further education colleges and universities in Tanzania and Kenya. Many seek waged employment in town.

From the partial census it is apparent that all but one of the bomas questioned were engaged in cultivation (one man who was awaiting plot allocation). Cultivation is therefore no longer a temporary expedient as it has been in the past (Hodgson, 2001). Furthermore, not only has the increasing need for grain trapped the Maasai into a sedentary lifestyle, but it has also tied them into the national economy in a very different way from their previous primary livelihood, pastoralism. This change in

primary livelihood towards agro-pastoralism along with sedentarisation creates the need for services and permanent resource sources. Whereas, in the past, the transhumance lifestyle enabled the Maasai to walk away from disease, this is no longer an option. For instance, in the past, when nomadic the usual Maasai practice if someone died, whatever the cause, would be to immediately leave the body out for the wild animals and to abandon the boma forever (source: participant observation). In the past, harsh environmental conditions such as drought did not have such immediate and disastrous effects as they do now. The Maasai simply walked away from them. This strategy ensured that they could exploit different sources of water and better grazing land (Homewood and Rogers, 1991). In the past, pastures were left fallow for longer, allowing more permanent regeneration to take place.

Being tied to the economy of the country has inevitably also entailed becoming tied socially. Having recently realised the benefits that education has to offer in terms of becoming integrated into other societies and gaining access to better services, it is nearly every parent's wish in Maasailand that their children be educated to at least primary level. Reasons for this are outlined in APPENDIX H but specifically included the phrase 'bring back development to Maasailand'. This highlights an underlying need for more development support in the area. Increased educational opportunities have produced the disadvantage of an increased workload for Maasai women because, traditionally, young children were formerly used to graze and protect the small livestock. However, once this source of labour is removed (as the children are in school) it falls more often than not on the women to look after the small livestock as well as having to complete all of their other household duties. This was specifically brought up in the PPPM exercises and appears as 'workload' on the graph.

The results show a distinct stratification between the 'majority' of participants and the 'wealthy'. In Arkaria, the wealthy members of the population questioned (16%) own 62% of Arkaria's total cattle holdings (assuming that the livestock data in the CORDS 2005 profile is correct). This small proportion of the community also owns a total of 57% of the small livestock holdings of the village. This economic differentiation has been noted by many academics and has been described by Arhem (1985) on his book on the Maasai of the Ngorogoro. This phenomenon has also been noted by the anthropologist, Dorothy Hodgson (2001), who is quick to warn that whilst many may have romantic notions that the Maasai traditionally practiced homogeneity and communal sharing of wealth, these notion are wrong. She says in her book that

records their history, that the Maasai society has always been to some extent stratified. What is worrying is the increasing differentiation between rich and poor. Dorothy even goes so far as to assert that pure pastoralism *"is now solely the provenance of the very rich and the destitute"*(2001 p173). Ndagala (1996) noted that during the early 1960s, the Maasai had 13 cattle per capita. By the mid 1980s the Ngorongoro Maasai were though to have just 8 cattle per capita. The data from this thesis indicates the current per capita figure for the Arkaria Maasai is 4. Furthermore, it is estimated that a family the equivalent of 6.5 adults needs 21kg milk a day, which requires at least 35 to 40 head of cattle (Mwalyosi, 1998). The partial census results indicate that the average boma size is 15 people in Arkaria and consequently each boma requires approximately 81-92 head of cattle to provide a traditional style of life. Yet, the average boma in Arkaria has approximately half that herd size of cattle.

Many cite disease and alienation of important dry-season grazing grounds and permanent water sources as the factors driving pastoralism to becoming economically un -sustainable (Hodgson 2001; Mwalyosi, 1998; Homewood and Rogers 1991). Other means of income are needed, hence the livelihood strategy of adaptation to cultivation as these results show. It is the only other means of production, at the time, that the Maasai had come into close contact with (Nelson, 2000). That the decade most people in Arkaria commenced cultivation is the 1980s lends even more validity to the hypothesis that, despite what reasons the Maasai might give, ultimately they were forced to take up cultivation by the socio-economic climate at the time which was reflected in the better price of grain against cattle (Ndagala, 1996). It is also interesting to note that Dorothy Hodgson (2001), who worked in the same area as this thesis is based, says that the main reasons given to her for the uptake of cultivation were either that the cattle had died, or that the people were hungry and that the way in which they were taught how to farm was from the Il-Arusa. The findings are very similar in nature to the results gained from the partial census.

Furthermore, the results showed that there was a relationship between wealth (measured in terms of stock ownership) and cultivated acreage, indicating that cultivation had become nearly as much a part of the pastoral economy as cattle are. From their answers, it was evident that for many families, selling their harvest is the only cash income that they have. By using a proportion of the harvest for household consumption, they do not have to sell their cows for food. Also, any income can be used to cover veterinary expenses for the cattle.

The economic sustainability of pastoralism as a livelihood, having been brought into question in the 1980s, was then pushed over the brink of sustainability by a combination of very bad droughts and a notable increase in the population of the Maasai, due to reduced human mortality (Nelson, 2000). When viewed in this context, a new light can be shed on some of the reasons given by the Maasai in this project for starting cultivation. For instance, some of them cited reduction in herd size due to disease. During the 1980s the government removed their veterinary extension services due to the economic climate (Homewood and Rogers, 1996) leaving herds adapted to dips and vaccinations with little protection against very harsh environmental conditions. Many cattle also died from starvation as did people, corresponding with the reasons of drought cited by a large majority of Arkaria's inhabitants.

The problems encountered by people pursuing these different livelihood strategies in Arkaria vary but not greatly. However, their spatial pattern of variance is very interesting. It becomes apparent that the sub village of Ormaroroy is a hot spot for wild life activity both in terms of crop destruction and livestock predation.

The uniting factor between both of these strategies (pastoralism and cultivation) is that they are both vulnerable to drought. There are murmurings from the women of setting up cooperatives to sell jewellery (some already do) and to set up a market for excess milk in the rainy season. Many of the women's groups and individuals said that they want access to development support services, to be taught how to run a business so that they can provide for their family in the dry season. This is a remarkable move away from traditional risk reduction strategies of the Maa group and a tremendous step towards what must appear to them to be a very commercialized world.

5.4 Land use

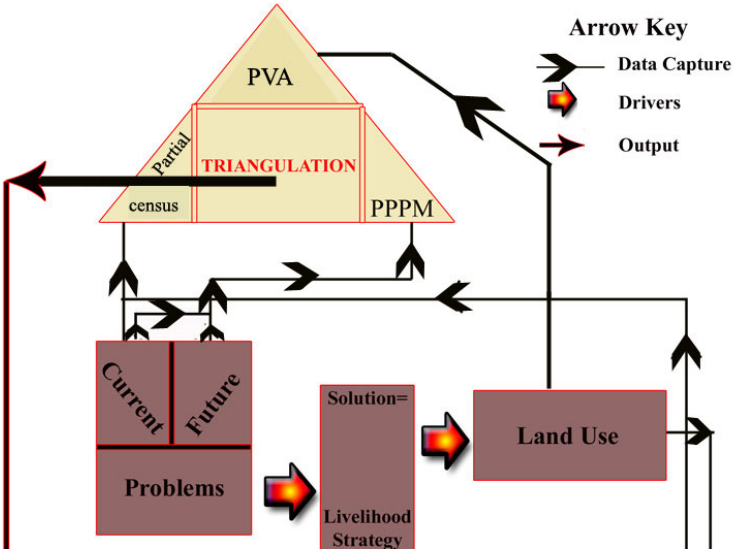

Figure 5.6 Land use section of the data capture model

Excluding Lepurko from the land area data, both the map and the data show significant net agricultural expansion during the period 1987-2005. However, there is additional data available; Dorothy Hodgson (2001) notes that an area of 505.75 acres was farmed in Mti Mmoja in 1992. Incorporating this additional data, Mti Mmoja appears to have had 1.12km^2 under cultivation in 1987, 2.04km^2 by 1992, 3.84km^2 by 2000 and 4.37km^{2}by 2005. This shows a slight decrease in the averaged annual rate of increase during the period 2000-2005. Looking at the area spatially on the GIS, the road and the escarpment inhibit further expansion.

According from the individual background data from the PPPM exercise, the average acreage was 24.3 acres per boma. However, there was differentiation apparent between those owning less than 10 acres and those owning greater than 50 acres. Hodgson has data for 1992 indicating that on average, a boma in Mti Mmoja farmed 4.4 acres per household. Even though the data I collected is too small a sample size to be used as an exact match, the average from Arkaria, 17 acres can be used and gives a more conservative estimate. This expansion of cultivation at the individual level is phenomenal for a people who in the past have only used cultivation as a temporary livelihood strategy when their cattle numbers were severely decreased (Arhem, 1985)

The use of machinery by a large proportion of the population as a cultivation technique indicates that the cultivation is no longer just a means of subsistence. For

the wealthy it is another form of income. Yet to date, the Maasai still seem very reluctant to put any inputs into the land. Many do use cow dung collected from the kraal (where the cattle are kept at night) but other than that there was little or no knowledge of pesticides or fertilizers, or indeed much about how different techniques could produce different yields. Many of the groups questioned specified in their suggested solutions that they wanted to know how to make a 3 acre plot produce the yield of a 10 acre plot, that they had heard it was possible. It is not that the Maasai won't consider other methods of cultivaiton, merely they have not been taught anything different. It was apparent from participant observation that to many, the land they cultivate puts a thin barrier between them and starvation. Whilst a reduction in the area farmed does not look too feasible, teaching the Maasai the most suitable techniques for the sustainable cultivation of the area might at least reduce the damage to the land.

In the past, in the era of Soikoine (Prime Minister of Tanzania 1977-1981), the valley of Arkaria was not allowed to be cultivated. It is thought by many of the other villages that Nancha Dam, which dried up during the 1990s after the El Nino rains had passed, silted up because of run-off from the fields in Arkaria. That is except for Mti Mmoja who believe Nanja dried up because their god was angry with them for having built a Manyetta on the bank.

5.5 Cultivation and environmental degradation

Currently in Maasailand, cultivation techniques are being adopted with little regard for their long term sustainability. Little is done (mostly due to the lack of knowledge) in the way of soil conservation.

Part of the problem with the current cultivation livelihood strategy is that the Maasai are caught in a 'catch 22' situation, an ecologically destructive situation. They have adopted agricultural practices that require minimal labour requirements (as a large amount of their time is still spent tending to livestock). The success of the harvest is largely dependent on whether enough rain falls in the area. The Maasai are not inclined to invest in improvement of the land because if there is no rain they risk getting no return on their investment. Yet, by not investing much in the land (e.g. weeds, fertilizers, pesticides, rotational cropping to restore nutrients to the soil) and utilising it for cultivation they are causing permanent destruction of it. Not only is the

minimal soil quality reduced, but the tilling of the land lays the ground vulnerable to sheet rain erosion in the rainy season which can not only can cause the gullies seen in Plates 3 and 7 but also washes away what few nutrients there are in the soil. Should the opposite scenario happen, and the harvest be successful, then the Maasai will invest their returns in cattle (many said this on being questioned as to the usage of their harvest). Increasing numbers of cattle need increasing numbers of herders. However, the children are in school. Do the Maasai end up with a development problem because the children have to stay at home to help take care of the livestock or do the children carry on their education and the burden fall upon the Maasai women who already have many other demands on their time? If the chore does fall on the Maasai women, they will be less inclined to put work into the fields and so will minimize the labour put in. And so the cycle begins again (see Figure 5.7).

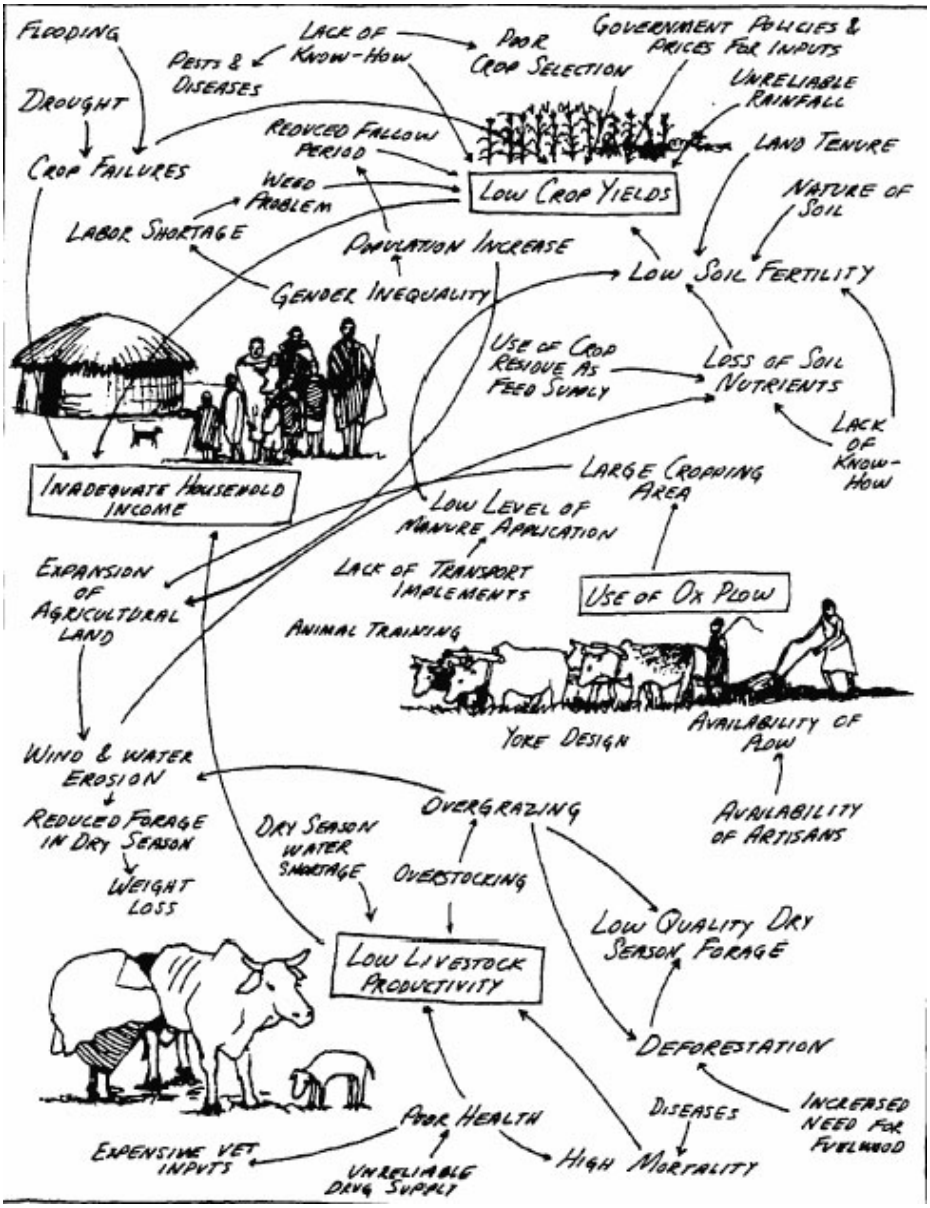

Figure 5.7 The Monduli Maasai Agricultural Systems Diagram (source: Conroy, 2001)

The Maasai are traditionally used to moving away from problems. Now sedentarised, they cannot just move away and let the environment recover. If they want the land to still be giving them pasture for their cattle in a decades time then they not only have to halt the spread of cultivation (otherwise there will be no pasture land left) but they also have to start cultivating responsibly, investing something into the land so that in the future they can still use it. If they do not start to care for the land they are cultivating then a realistic vision in 10 years time will be Plates 3 and 7 not just in pocketed areas as is the case at the moment, but everywhere. In short, their land will become one of the world's 'badlands'.

5.6 Future

As private ownership becomes a day to day reality for the Maasai, it is likely their land will be gradually sold off, so that, in time, the big pasturelands will no longer exist and transhumance livestock husbandry will be but words in a history book. This rather bleak snapshot of the future is based on the reasoning that unless the Maasai continue to retain centralised control of their land, bit by bit, individuals will sell out (there is normally a story in each village of a husband who has drunk away his cows and land). Currently, every participant when asked if they owned the land said "yes". When asked if they had the right to sell said "no" and appeared quite shocked at the suggestion, explaining that they have to get permission from the village council in order to sell their land or to transfer it to someone else. Currently also, if a family wants a plot of land, they have to first show the village council the plot they would like and await the village council's affirmation. So the present situation is ideal for managing agricultural expansion. The village authority controls the location and the proportions of land cultivated (apart from south of the tar road, where the army acts as an authority restricting cultivation). The village authorities need to meet and discuss with agricultural experts how to increase yield without increasing the land area cultivated and how to do so without compromising the future sustainability of their land.

Resource problems identified in the area do not have such an obvious solution. What is more, as they are based on the perceptions of the Maasai, they could change unpredictably. A possible change in perceptions of resource problems could occur if the AIDS epidemic was to hit the Maasai. They have all the ideal exposure features – many Maasai men work in the Tanzanite mines, mines being notorious for the spread of sexually transmitted diseases and HIV (Rugalema, 2004). Most Maasai men

(excluding many educated young Maasai men) and Maasai women have heard the story that a Maasai man put a condom in the sun and watched the AIDs virus swim around (this is actually a basic convection current of the lubricant) and are convinced condoms are sent by the Americans, impregnated with the AIDs virus, to wipe out the Maasai. Nothing of course could be further from the truth and in fact this belief will be the ultimate vector of the AIDS epidemic into the Maasai. They have so far escaped an epidemic partly it is thought because all the men are circumcised and this reduces spread of STDs and HIV (New Scientist, 2005) and partly because, until recently (the past 5 years in which there has been a marked increase in the number of family members leaving home to work in town/the mines), they have had little sexual exposure to other cultures. However, TB is rife still in Maasailand and, as TB is normally a good indication of the epidemic outbreak, TB cases will disguise the first wave. It could be that the virus has already infected many people. There is of course a three year lag period normally between infection of HIV and signs of AIDS. This will affect perceptions of resource problems in two ways. Firstly, in the longer term, instead of looking at problems resulting from the problem of population pressure, the Maasai will instead face those problems brought on by large numbers of deaths in one section of the population pyramid. The other immediate change is likely to be the rising in priority of healthcare services. Therefore, if used regularly, PPPM might be able to show the changing prioritising of problems before the health problem is acknowledged.

5.7 Validation of the methodology

It was useful to carry out the PVA techniques because the information elicited from them confirmed the findings already gained from the partial census on livelihood strategies in the area. This triangulation is all the more valuable because not only does it reinforce the knowledge gained from the partial census and PPPM exercises, but it also verifies that these methods used, although guided and not totally open exercises, managed to elicit participants' true perceptions.