FOOD SYSTEMS UNDER STRESS (FSUS) PROJECT

FSUS/PRA WORKSHOP - TANZANIA

MAGINDU VILLAGE, KIBAHA DISTRICT, 23-25 AUGUST 1993

REPORT BY

A.K. Kauzeni, Hilda Kiwasila, Faustin Mabanga,
James Ngana, Johan Pottier and Patrick Sikana

April 1994

THE FSUS/PRA TEAM

- Professor A.K. Kauzeni
  Agricultural Scientist
  Institute of Resource Assessment (IRA), University of Dar-Es-Salaam

- Ms Hilda Kiwasila
  Sociologist
  Institute of Resource Assessment (IRA), University of Dar-Es-Salaam

- Mr Faustin Mabanga
  Sociologist
  Institute of Resource Assessment (IRA), University of Dar-Es-Salaam

- Dr James Ngana
  Hydrologist
  Institute of Resource Assessment (IRA), University of Dar-Es-Salaam

- Dr Johan Pottier
  Social Anthropologist
  School of Oriental and African Studies, London University
  Programme Director, FSUS

- Mr Patrick Sikana
  Rural Sociologist
  Adaptive Rural Planning Team (ARPT), Northern Province, Zambia

INTRODUCTION TO MAGINDU

Magindu village lies within the Coastal Region and is situated 25 km south of Chalinze (about 45 minutes by car along a sandy track) just beyond the intersection with the Central Railway Line. The village is inhabited by Wakwere and Kutu cultivators (90)%) and Maasai cattle keepers (10%).

Magindu's history can be summed up as one of consecutive droughts and people moving in and out of the area. Although drought occurs periodically, rainfall is not necessarily a limiting factor, and can go up to 800 mm a year. The soils, however, are not very deep. (Dodoma is much drier, but a lot of aid and research is already focused on that region).

In 1990-1991 Magindu suffered terribly in the drought, which was so severe that it put Magindu on the political map. Ministers visited the area.

This report is a chronological account of the Magindu Workshop, based mainly on the teams deliberations at the end of each day.

A CHRONOLOGICAL ACCOUNT OF FSUS WORKSHOP ACTIVITIES AND FINDINGS

DAY ONE

Before arriving at Magindu, the FSUS team visited the Kibaha District headquarters and met with the District Agricultural Officer (DAO) and the District Community Development Officer (DCDO). Both officers accompanied the team to Magindu.

Arrival at Magindu

The FSUS team were welcomed by the Ward Chairman at the CCM office. He introduced all who had been selected to attend the workshop. Participants included the Deputy Ward Chairman, the Ward Secretary, the Ward Education Coordinator (who is also the Ward Executive), the Ward Agricultural Officer, the Ward Councillor, the Ward Health Officer, one health worker (woman), Mama Bota (representing the women of the area), one (man) elder, one shopkeeper, two Maasai livestock keepers (men) and four men representing their respective village settlements within Magindu.

The relative absence of women was noted by the team. Following the team's request for better gender representation two extra women joined.

The FSUS team and the two District officials introduced themselves.

Professor Kauzeni, as team leader, explained the objectives of the visit and the PRA approach to information gathering. Then he introduced the topic of food security in its various aspects and explained the presence of the DAO and DCDO.

The Magindu participants asked questions regarding the link of their village Magindu with such faraway places like Kasama,

Zambia (Sikana) and London, England (Pottier). What was the nature of these links? How did it all come about? Prof. Kauzeni gave the background to the project and its phases. He emphasized that the workshop was a pilot scheme which was intended to result in the drafting of recommendations for research (see further down).

Participants also raised the issue of 'what next?', saying 'Magindu was chosen by the District officials, but suppose they are transferred, will this village still take part in the project's research phase?' They were reassured that the interest in Magindu did not depend on the interest of specific officers, but would continue regardless of personnel changes in the political cadres.

Professor Kauzeni then introduced the programme itself, before moving on to the first activity of the day - resource mapping.

Resource Mapping

The first activity was the drawing of a collective map. This was expertly done by the Ward Education Coordinator on a large piece of paper. (This map later turned out to be highly accurate.)

Following a short discussion amongst the team about how the groups could be formed in such a way that each group had a range of representatives, three lists were drawn up. The 3 groups remained the same during the entire workshop, and worked separately. (There was no reporting back to the other groups. Only for the final plenary did all workshop participants reconvene as a group.)

Each group -- Natural Resources (Ngana, Mabanga); Farming Systems (Kauzeni, Sikana); Socio-Economic Issues (Kiwasila, Pottier) -- then went off on a 1-hour transect walk, each taking a different route. This proved most rewarding. The walk was followed by a late lunch and the team left for Chalinze just before 5pm.

First Impressions

The team exchanged views in the evening, recalling general issues and reflecting on what they had observed and been told during the walks. Here we present a summary of topics and what was learned.

Prof. Kauzeni recalled how, he had told participants, during the introduction, that the workshop was a pilot phase. In order to reduce the danger that expectations would be raised too high. To the question: 'how will the village be connected with the IRA, London University and ARPT Zambia, and our members from Kibaha District?', he had answered that there would be joint collaboration in an effort to come up with solutions to the problems to be studied in the workshop.

Still, high expectations were present, as Faustin Mabanga recalled. For instance, during the transect walk with his group, repeated reference had been made to the need for fertilizer and

pesticides, and medicine for cattle. Help was needed -- and now expected.

Johan Pottier commented on the selection process: participants seemed handpicked, nearly all were men, and many had 'official' positions. James Ngana clarified he had discussed representation with the headmaster of Magindu during a pre-workshop visit. The matter had been left with the headmaster, who subsequently contacted the Ward Secretary. Prof. Kauzeni recalled that two more women would join the workshop on Day 2. He added that there were more women in the workshop, but that they were performing other functions - ie cooking for the group! (Some team members felt uncomfortable with this news.)

Regarding representation, Patrick Sikana wondered about the socio-economic status of the two Maasai men. 'They did not look typically Maasai', but seemed rather modern. Might the selection process have been biased against the resource-poor in the community? Prof. Kauzeni commented, 'this may be the impression we get, but we should not judge the Maasai men because of their modern attire, which they probably shed as soon as they get home following the meeting. One senses that they do speak for the Masai community.'

The DAO intervened, mentioning that the two Maasai live near the CCM building, and so were obvious choices for the Ward Secretary. He stressed that the men were brothers, personally known to him, and that Kasungu, the older brother, always represents the Maasai at official functions. Patrick, though, expressed concern that the Maasai people, who make up about 10 per cent of Magindu, might still be under represented.

The transect walks in the afternoon, each group taking a different route, had drawn attention to aspects of agriculturalist - Herder (Wakwere - Maasai) interaction, and it was clear that this issue would be on everyone's mind throughout the workshop. During the walk of the Natural Resources group, the Wakwere cultivators had accused the Maasai of being rich and corrupt, and not caring about the cultivators' gardens. Hearing the accusation, the Maasai men had simply laughed.

Because the team were uncertain about whether more Maasai should/could be invited, the DAO suggested the FSUS team might want to meet some of the Maasai leaders. The team were keen on the idea of sending a delegation (but this never happened in reality).

The team moved on to short discussions about what each had learned from the walks.

"Natural Resources" Group Walk

The Natural Resources group had walked from the CCM building, where the workshop was held, to the Magindu dam (reservoir), just under 1 km away. The seasons were explained during the walk. The short rains are from October to December, then there is a dry

break in January, before the heavy rains from February to May. June - September is the dry season, when water is scarce, especially should the rains be late. The dam was built in 1957. Down from the dam there is a deep well, built by an Indian charity (which, we learned later, has trade links with the village). The well lies along the same river bed as the dam. The water from the dam and the well is used for household use, but the well water is clearer and tastes better. These two sources - in addition to the recently built structures for rainwater harvesting (at the school and the dispensary) are an absolute lifeline.

But water levels within the dam are a constant topic of bitter debate. The DAO commented that every Maasai man owns his own well, just below from where the dam is. This means that the wells are fed with water that seeps from the dam. And this, the cultivators say, lowers the level of the water in <u>their</u> dam.

The DAO voiced the opinion that 'the depletion of water should not be an issue. Had there been no wells the Maasai would have used the dam itself, which would have caused even more problems. The Maasai have every right to use that water. The real issue is whether seepage may destroy the banks of the dam. Still, during the walk this seepage issue had caused some emotional outbursts by cultivators.

It was difficult to put together a coherent picture of Wakwere - Maasai relationships, because the issue is a complex one. Not surprisingly, there was evidence of tensions and of mutual benefits. Generally, though, the agriculturalists had been scathing about the idea of symbiosis and benefits. Professor Kauzeni summed up the overall feelings expressed by the Wakwere participants.

> 'We asked the agriculturalists whether they benefitted from the Maasai and they said, 'no, we do not even get meat from them. The Maasai only slaughter the animal that is almost dying, the one that is dropping its legs. Second, when cattle graze in the fields they destroy the soil structure, they eat the plant remains and then these animals go shit somewhere else!' (They don't even get the manure.) In fact, the cultivators showed much bitterness over the way the Maasai treat them.'

James Ngana added how cultivators in his group had pointed out that when cattle browse in fields (eg on the stubble), this increases milk production in cows. The cultivators themselves, they claimed, do not benefit from this.

Johan Pottier commented how participants on his walk had mentioned that the Maasai sometimes pay money to Wakwere for letting their cattle browse. [Comment: Later, on Day 3, we learned that there is little grazing or browsing without prior consent, even though money does not necessarily pass hands.]

The Natural Resources group had also observed soils and talked about soil types. Soils in and around Lukalasi are red and sandy, whereas the soil in Mwelengala (in the west, see map) is black clay cotton soil, fairly sticky. Soils may vary over very short distances. But land is a limiting factor, and three years is the normal maximum period one can cultivate a particular field. After that, a new farm must be started, even though simsim (ie sesame) can grow on abandoned plots.

The workshop facilitators in this group had been disturbed by the sight of many logs of freshly cut ebony wood. In fact, the last of the ebony wood had just been felled. What added insult to injury was that nobody seemed to have any idea how much (if anything) the village would get from the sale. The DAO explained that while the forestry department must have licensed the loggers, it did not need to consult the villagers themselves. The only requirement is that the logging company must pay its dues to the village. [Comment: more about compensation was learned later on.]

Farming Systems Group Walk

Prof. Kauzeni now summarized the "Farming Systems" walk. 'We were interested in what types of crops are grown in the area, which we deduced from the remains of crops we saw in the fields, eg maize, sorghum, simsim, pigeon peas... These were either intercropped or grown pure stand. We also discussed soils. Red soil (rich in iron) was seen near the CCM office; farther away we came across the black cotton soils and we even captured the local names; farther still we came across sandy soils. Participants remarked that the black soils are best for farming.'

Farmers explained they practise shifting cultivation, because plots are depleted after about 3 years. 'We inquired about crop rotations (eg maize this year, simsim next year and sorghum in year 3), but the answer was negative. This was obvious as there is still a lot of land available, which means people can cultivate and move around when it becomes necessary.'

The group observed that the catchment area for the dam is being destroyed by forest fires and trampling by cattle. There is a clear danger of siltation and the dam could silt up completely in a matter of some three years.

The group also watched cattle move from one field to another. Farmers said this is precisely what they do not want: the cattle are destroying the fields and even eating the remains of the crops which are now being lost for crop fertility. Prof Kauzeni added, 'the Maasai representative did not seem to care, it was just normal. When we reached the dam, the argument of water seepage from the dam came back. Farmers said the Maasai were deliberately draining water from the dam towards their wells where animals are watered. One of the farmers got very emotional telling us that the government should do something to punish Maasai who are causing havoc in the area.'

Patrick Sikana asked for more information about the government line on intercropping. The issue had preoccupied the workshop facilitators.

> Prof Kauzeni: 'We asked them a question. "We know that two years ago there was a serious famine in this area. What were the possible causes for this?" They said it was due to rainfall shortages, which is something that repeats itself every three years. But the agriculturalist were smart enough to say there were other causes. When we probed, they said they had very poor tools for farming, referring especially to the hand hoe, with which you can do little. Someone else suggested another cause: the depleted soils, because of which people need to shift and this a contributing factor to the famine conditions. The Bwana Shamba here explained that in this country we have divided the regions in specific agro-ecological zones and that each zone has been allocated specific crops that are suited to it. Since this area does not receive enough rain for many crops, the Ministry of Agriculture recommends that drought-resistant crops should be grown, especially sorghum and cassava.
>
> 'However, in this area people do not want to grow sorghum or cassava. Sorghum has no taste, so people much prefer maize. But this crop fails from year to year. With the most recent drought, the area here was badly hit because they (the people) did not grow the recommended crops; they grew something else, citus [?] maize and so on. In contrast, a neighbouring village, Lukenge, never experienced any famine at all. People there grew cassava and sorghum, as required.'

The lack of interest in prescribed intercropping, Professor Kauzeni explained further, became visible when the group came across a field where cassava and sorghum were intercropped.

> 'The cassava looked very miserable. It was thin and the leaves were yellow, a sign of lack of chlorophyll, and so we asked what had happened. People said they had planted sorghum (on its own perhaps), after which they had discovered that the government wanted them to grow two drought-tolerant crops intercropped. So the cassava grew up in the shade of the sorghum and never matured.'

Following Prof Kauzeni's presentation, the team returned to the interaction between cattle keepers and farmers, feeling puzzled by the allegation that the Maasai just push their cattle into fields without bothering about the destruction. So, we agreed to make the issue of interaction a topic for the following day. The positive aspects of interaction might then also emerge.

The DAO explained that the government was aware of the tensions, but that it was failing to resolve the issue because of financial constraints. 'You see, moving the Maasai away from near the agriculturalists would entail building a school for the children,

constructing water dams for their cattle, maybe a dispensary, new roads and so on.' The DAO did not mention the failed cattle project in Lukalasi!... which became 'the big story' on Day 2, when the start and subsequent collapse of the Lukalasi resettlement project would become the focus of much discussion, and a site visit.

"Socio-Economic Issues" Group Walk

Hilda Kiwasila reported on the third transect walk.

> 'Near the CCM building we visited the small shopping centre and some bars. Most of the shopping is for groceries and other food items. There are also mamas who sell bread and buns there in the morning. The bars offer banana wine, beer from yeast (made with yeast and sugar, then fermented), they also make beer from sorghum. Some prices: local beer is 50/= for half a litre; a 20-litre container costs 1000/=; and a drum 12000/=. The latter could mean a profit of 6000/=. ... We continued towards the Court house and the dispensary, where patients are seen to every day, but especially in the morning. They do not admit patients but have a labour ward. The dispensary receives a medical kit once a month. Its catchment area is from five villages, including Magindu. Magindu village does not have a health worker, but two are being trained. Malaria is highly prevalent, as are worms.
>
> 'We proceeded to the school, where simsim is grown as a cash crop, and also sorghum. The latter is used for ubuqali (porridge) and pombe (beer). At both the dispensary and the school we looked at cemented tanks for water harvesting. We carried on to the Mizuguni settlement, where most of houses looked neglected and several were being built. We learned that during the cultivation season people move to where their farms are, taking their property and children. The distance is long. People leave in March for their field houses and return in July after the firsts harvests, when repairs begin or new structures are erected. [The distant fields, 6km north of the village cluster, are still within the village boundary.] We saw several such skeleton houses. One serious problem with this is the lack of water for plastering. Some new houses have walls that consist of lumps of earth that are not 'cemented' together. Pit latrines are also being dug, but the soil is very hard. We saw several children with swollen tummies. Worms, we were told, are a problem and there is no microscope.'

Regarding this seasonal migration between village centre and fields, we also learned that the younger generation often move away from the village centre (eg along the railway line), and asking parents to join them. The latter usually refuse this request.

Confirming the suspected obsession with growing maize (as opposed to drought resistant crops), the DAO commented that 'the main

crops -- simsim, maize and some sorghum and cassava -- are grown in fields away from the village centre. Within the village, however, a full range of foods is grown. Hilda stepped in: 'Yes, but cassava is mainly grown away from the centre. People said that those away gardens are really fertile, the problem however is drought. The village cluster area is fairly exhausted in terms of its soil.'

As an afterthought, it is striking that the DAO did not mention "bloc farming". We learned about this later in the workshop, but never gauged its significance in terms of how people sort out their crop preferences. [This will be a topic for further research.]

Professor Kauzeni, however, offered some background information on the topic:

> 'Early in the villagisation programme it was decided to have three modes of farming: homestead gardens, collective gardens (where people helped each other with field preparation, with some collective services, but where individuals harvested), and the communal type of farm which has now died away. However, collective farming is still practised in the remote fields where people construct their temporary homes.'
>
> 'Vijiji, which means villagization, is the origin of the Mizuguni cluster, established in 1974. Later, Nyerere realized people might need more space and so relaxed the policy of creating tight clusters. When that happened it was the wealthier farmers who moved away from the centre, but it was not really commercial farming. Some people used that opportunity to return to where they lived before 1974. Others moved away from the centre to Mwelengala, which has fertile black cotton soils.'

DAY TWO

At the end of Day 2, the FSUS team reviewed its activities and findings and planned for the final day of the workshop.

"Farming Systems" Group

Patrick Sikana reported on the work of the "Farming Systems" group.

> 'For starters, workshop participants brought us samples of crops they are growing. So we were shown sorghum, sour tomatoes, cassava, pigeon peas, simsim, ochra, pumpkin seeds, cucumber, cassava, green gram and groundnuts. Two types of maize were brought: the local maize variety (called kimekere) and mandawe [meaning?]. There were some improved maize varieties too - katumani, staha and TV1 - but no examples were brought. Fruits included oranges, mangoes, pawpaw and bananas. People brought cashew nuts and supplementary crops such as sweet potatoes, which are

usually taken as a snack. Main legumes were cowpeas (kunde) and green gram (chiloko). Cotton is grown on a very small scale and there is some rice. So the major food crops are sorghum, maize, cassava, rice (to some extent) and sweet potatoes as a snack. Some food items are consumed but not grown, eg beans and groundnuts and maizemeal (especially during famine) and nearly all of the rice. Major relish crops are cowpeas, green gram, pigeon peas, ochra, tomatoes and sour tomatoes.

'The main cash crop is simsim, followed by sorghum (also a food crop), then cotton and cashew nuts (both to a small extent). Fruit cash crops are bananas, mangoes, oranges, lemons and wild fruits (eg siqa and sama).

'Crops that have disappeared include fuwi, legumes, groundnuts and bambara nuts. Cotton, too, has much declined because of the absence of a market. Bambara nuts have disappeared because they were first introduced by the [colonial] government and thus grown under duress. When the government ceased to enforce the cultivation of bambara nuts, the crop faded away.'

Professor Kauzeni confirmed that the cooperative societies for cotton are no longer functioning.

Then, Patrick Sikana made the all important observation that

'Sorghum is eaten on a daily basis, and so is maize, but maize is only grown on small scale. Cassava is eaten only when nothing else is available. Rice, not important, is eaten mainly on festival days.'

This important statement, which contradicted the consensus about sorghum neglect reached the previous day, has to be seen in the context of intercropping practices.

Patrick: 'We learned that the intercropping regimes practised in Magindu include the following combinations: sorghum with cassava (preferred by government), pigeon peas with sorghum; green gram with maize; ochra with sorghum or maize. And simsim with sorghum. The rationales for these strategies are as follows: cassava with sorghum reduces the risk of crop failure; the other combinations are labour-saving strategies.

'We also learned about crop-soil associations. Local soils are: kiquzi; nyacibu; kisanqa and kilonqo. Kiquzi soil (reddish) is good for cassava, sorghum, pigeon peas, cowpeas and cotton. Nyacibu (dark black soil) is good for maize, simsim and sorghum. Kisanqa (sandy) is good for cassava, pigeon peas and cowpeas; kilonqo soil (???) is good for rice and sorghum. This means that sorghum is the most versatile crops in terms of its adaptability to the various soil types. Cassava is restricted to the sandy and reddish soils. Most fertile is the clay soil. The most

plentiful, it was suggested, is kiquzi, followed by kilongo, then nyacibu and kisanga.'

To learn about **Seasonal Food Availability**, the "Farming Systems" group had plotted the major food items against the main seasons of the year. Here is the calendar the group put together.

- time of cultivation (jan - march),	sorghum declining; little maize
- time of planting (march - april),	
- time of weeding (april - may),	
- time of moving to the temporary residences (may - june),	sorghum depleted; cassava much eaten
- time of harvesting (july - august),	sorghum; plenty maize available; rice available; sweet potato snacking
- time of land clearing (sept - dec).	sorghum plenty; maize available; rice available

Importantly, this calendar brings out that sorghum is not a crop which comes second to maize. And since maizemeal is bought during the dry season, we have a further reason for suspecting that on Day 1, our team underrated the extent to which sorghum is locally cultivated.

This is not deny the existence of severe (and understudied) stress points in the food systems as it is experienced through the year. Patrick:

> 'In terms of food stress, we deduced that the time of shifting to the temporary residences is a particularly critical period. It is then that people rely on cassava, the hunger crop. It was said that most households have access to cassava during the hunger time, but this needs investigating in longer-term research.
>
> 'Poorer households that do not have their own cassava have a number of coping strategies open to them: eg, buying maize flour (which they turn into ubugali); charcoal burning to raise cash; working for others (for food or cash); even gifts from relatives (especially in the case of women-headed households); and brewing (also women-headed households). The beer is made from yeast and does not require much cereals. Also, at this time of hunger, unmarried women and youngsters migrate to town seasonally to look for employment. When they do this, they tend to come back during the harvest period when the crops are ready. Although most are welcome back (and bring clothing,

sugar, cash, improved seeds), others, we were told by an old Mzee, 'come back only with babies'. This adds pressure to the food supplies. Youngsters who return to become a burden are not so very welcome.'

The "Farming Systems" group also carried out a **Crop Preference Matrix**, using the following criteria: palatability, labour demand, ease of storage, ease of processing, resistance to drought, resistance to diseases and pests, profitability. The ranking, done for sorghum, maize, cassava, simsim and cowpeas, indicated that the most preferred crop in terms of palatability is maize (grown in small quantities), followed by sorghum. The group noted the interesting point that maize is in short supply even though it is also the most preferred food. About labour demands the group established that the easiest crop to grow is simsim, followed by cowpeas, maize, sorghum and lastly cassava. The low preference position of cassava relates to the processing involved. Regarding storage, the one with the least problems is simsim, followed by cassava, sorghum, cowpeas and finally (!) maize. The most profitable crop was simsim followed by cowpeas, sorghum, maize and lastly cassava. Cassava scored highest, however, in terms of drought resistance, followed by sorghum, cowpeas, simsim and then maize. Regarding disease/pest resistance, the more resistant crop was sorghum, followed by cassava, simsim, cowpeas and then maize.

Easiest to process was simsim, followed by cowpeas, maize, sorghum and finally cassava. Cassava is very labour-demanding as it needs to be peeled, soaked, dried and pounded. Cheapest to produce was simsim followed by cowpeas, sorghum, cassava and then maize. For maize there are some heavy labour inputs, eg during weeding.

James Ngana explained that cassava is grown on flat fields, around which trenches are dug, to keep wild pigs at bay.

Following the Seasonal Food Availability calendar and the Crop Preference Matrix, the group drew up a **Cropping Calendar** for three crops: maize, cassava and simsim. (Note that the profile for sorghum is similar to that of maize.)

- Maize

Maize is cultivated between January and March, using hand-held hoes. Both men and women take part. Poor implements, working on poor soils and seasonal food shortages make the work difficult. March-April (onset of the rainy season) is planting time, and for this digging sticks are used. Men and women take part. Again there is a food constraint and the work is very demanding in terms of labour. Weeding (April - May) is done by both sexes, participants said. But heavy rains may prevent you from going into the fields and they encourage further growth of the weeds. Vermin is controlled between May and July (time of shifting residence). Main vermin are wild animals, eg elephants and pigs, as the area is close to a national park. Some hunting takes place, in which arrows, guns and dogs are used. Both men and

women take part in vermin control. Main problems are a variety of risks - eg risks related to living in temporary shelters, risks of theft and damage to property at home in the village cluster, risks during hunts. Harvesting (June-August) is done using machetes and knives, while gunny bags are used to haul the produce from the field. Both sexes take part. The labour is demanding and there is much risk of injury. Field preparation (September-December) is carried out with the use of machetes and axes. Opening up new land and seedbed preparation is done by men. Risk of injury and poor tools are major problems.

Comment: On a methodological note, it has to be said that the information on the gender division of labour, which suggests harmonious cooperation between women and men, might be quite biased, since women were heavily outnumbered by men in this group/workshop. A similar bias may well exist in the information simsim and cassava.

Maize processing can be done anytime, but women do the work. It is very tedious. Maize is stored by men inside the house on elevated structures. Same with other produce, with the exception of cassava which remains in the ground. Rats and insect pests are a problem.

Some family heads (men) apparently sell maize in order to drink pombe. This adds pressure on the household supplies.

- Sesame (simsim)

Land cultivation is from January until March. Both men and women are involved, but implements are poor and soils hard. Planting is by broadcasting the seed in February-March. After broadcasting farmers take their hoes and cover up. This is done by both men and women. One problem is the unevenness of the seed distribution, which causes problems at weeding time. Weeding is in March-April and done by handhoe or uprooting by hand. Both men and women take part. Vermin do not attack too much as simsim is mainly grown near homesteads. Harvesting is in June-July, using machetes and knives. Both men and women take part. There is risk of injury. In July and August the simsim is threshed, winnowed and bagged. Men and women help. There is a problem of wastage, though, due to the small seeds that fly away. Storage (July-August) is in gunny bags on platforms. Men and women prepare simsim for storage. The stored crop is prone to attacks by rats. Another problem: since moisture content becomes less with storage, farmers like selling early. Selling is done mostly between July and September. Simsim used to be sold to the cooperative societies, but is nowadays sold to private buyers. Since 1993 the market has been opened up to all types of traders, but it remains very unpredictable.

- Cassava (a problematic crop)

Land can be prepared in October-November or from January to March. Men and women use handhoes on the hard soils. Planting is also done twice, first in November-December, then in February-

March. Cuttings are simply pushed into the soil. Both men and women take part. Following the 1990-91 famine, which was really severe, cassava cuttings have had to be purchased from outside the area. Termites also attack the cuttings, which was another problem. Some varieties are sweet and others bitter. There is no period for keeping away vermin, but trenches are dug around the cassava fields. This is mainly men's work. Another problem is related to storage in the ground. Since cassava stays long in the ground, it needs to be watched regularly. Harvesting is between 6 months and 2 years, depending on the variety. Both men and women harvest. Soils are hard and uprooting can be difficult.

Timing also matters, as roots tend to rot easily and tubers may become woody or turn spongy. There are two ways for processing, depending on the variety. Sweet varieties are uprooted, peeled, dried, bagged or pounded. Bitter varieties are uprooted, peeled, soaked, dried, bagged or pounded. At the time of harvesting the women chew every tuber to determine whether it is sweet or bitter. Only the bitter variety is soaked. This is mainly women's work, even though some men claimed to take a part in this activity. Chief problems are: cassava drying is very difficult in the rainy season as mould occurs easily. Also, when there is inadequate water, the soaking stage for bitter varieties is skipped and the ubugali then becomes even more bitter. This problem highlights another reason why cassava is not a preferred crop! (See also the report on Zambia; Sikana and Simpungwe 1994).

Bitterness may also develop when part of the tubers of a given plant stay in the ground after the rest have been uprooted. In addition, when the plant sheds its leaves and it is harvested, the tubers may have become bitter. Thirdly, when the tender leaves are picked regularly for relish, the roots become bitter.

The Maasai, too, have fields of their own but they are tended by Wakwere or Kutu cultivators. Food cropping in Maasai fields is on a small scale. Usually it is older Maasai men who have some crops, the DAO said, but they hire in labourers as they themselves look down on cultivation.

- Farm Inputs

Improved seeds of maize and sorghum can be bought from cooperative unions, but cassava mostly needs to be acquired from outside the area. This has been the situation since the severe drought of 1990-91.

With maize and sorghum improved seeds, the constraints are financial cost, timely delivery and poor germination (which is often below the percentage indicated on the package, due perhaps to overlong storage). At times supplies are inadequate.

Tools (eg machetes, handhoes) also need to be purchased. There is no local blacksmith, but there is a carpenters' workshop. Money is a problem.

Fertiliser (on maize) and pesticides (on cashew trees) can be bought from RTC [?] and the Tanzania Farmers Association, but less than 5% of the farmers in Magindu have the means to purchase.

A discussion on the social composition of the village revealed that farmers are considered to be either "big" farmers (roughly 25%), medium farmers (50%) and or poor farmers (25%). The big farmer hires labour extensively and he/she pays in cash or food. Field size is an important indicator of relative wealth. Big farmers have client households upon whose labour they can draw. Big farmers can be found everywhere, but most are concentrated above the railway line in Mwelengala.

Socio-Economic Group (Hilda Kiwasila reports)

The group started with a historical sketch of Magindu, beginning with the German period. The discussion was led by Mzee Kisebenge. During the First World War there was a lack of food, so some people from here went to Morogoro to obtain food. At the time crops used for exchange included: green grams (choroko), wild meat, sweet potatoes, cassava, green legumes. Some of these have since ceased to be used in exchange. Exchange was based on barter and use value.

In the earlier part of the century the main strategy for food security during hard times was migration in search of food, eg to Morogoro and Kisarawa, sometimes, going as far as Zaramu.

Magindu's more recent history was portrayed as a string of droughts, famines and migrations. During the 1975-76 famine many people moved to Mbwawa, in Ruvu (towards Bagamoyo). After a year of good rainfall, good harvests and farms expansions, the 1977-79 drought brought serious food problems. People migrated again. Mzee Kisebenge, a businessman, was instructed by the DC to make sure no one in this area starved. He distributed food to Magindu and other villages. The destitute were given food free of charge. 'God paid for them,' Mzee said. The others paid for their food. Rations were 3 kg per adult (1kg maize flour cost 25/=) and 1.5 kg for children. Although Mzee was assigned to food deficient villages by the DC, his task was to engage in private trade with those who could pay and provide personal relief, not government relief) for the really destitute.

The 1977-79 famine was considered severe. Some agriculturalists left for work in Morogoro or in the sisal estates. Coping strategies for livestock keepers and cattle involved moving people and stock to the Ngerengere river and other places near dams and rivers. Communal work schemes also existed. (Food-for-Work had started back in 1945, when the Magindu primary school was first built.)

Another important year was 1973 when the Magindu dam, built 1945-48, dried up because of siltation. A bulldozer was used to rehabilitate it.

During the 1984-85 drought, many people moved to Chalinze and Dar Es Salaam. Some came back, but not all. There was rainfall in 1985, but the (collective) village farm totally collapsed. In 1990-91 the crisis was again severe. Many people left, only the elderly stayed behind. The cattle herds, too, were moved out of the area to Morogoro. A lot of cattle have not returned since. One of the Maasai men attending the workshop said he only had 40 animals here in Magindu, whereas he owned 200 head. The rest had remained in Morogoro.

During the 1990-91 drought the village got free food aid, both from the Red Cross and private individuals, and from the Indian trader who had good links with the village. (The same trader visited during the workshop and bought simsim.) There was also government aid via the District Council. Food and clothes and medicine were also distributed free of charge. Since then, 1992 has brought plenty of rain. In 1993 the rains were good but late, and sorghum, maize and simsim all failed as a consequence. The group was hopeful about future village developments. Referring to the dispensary, the school which is expanding and the tanks for water harvesting, the group thought that these were signs that development is coming slowly but surely.

Seasonal activities were plotted and illustrated in a **Seasonal Calendar**. The information is compatible with that provided by the Farming Systems group, but there was additional information on diseases. Here are the calendar's essential features.

Jan- March	Lots of sun. Farmers prepare with hoes. There are still celebrations and traditional dancing. There are problems with obtaining relish and vegetables, but there is a lot of merrymaking. Animal feed for livestock keepers, however, is very scarce.
April-May	Masika (rainy season). People move to their farms, where they weed and keep vermin at bay. Grazing is a major activity. Problems: malaria and tsetse flies, coughing, diarrhoea, skin diseases, kashiorkor, anemia, eye disease. Food supplies very low.
June- Sept	Mavuno (harvesting season). Harvested food crops are ferried home, which causes a high labour demand. There is plenty of grass for the animals. People suffer from worms, cut wounds (because of sorghum stalks) and headaches.
Sept-Dec	Plenty of food on people's plates, drumming and beer. A good time for traditional healing business and spiritual ceremonies. Houses are reconstructed. There are good markets. But diseases include: venereal

diseases, malaria, skin diseases, sleeping sickness, and various livestock diseases.

Then the group moved on to **Problem Ranking** according to people's own criteria. Here the group divided in two. This is how the scoring went -- the first problem mentioned being the more severe.

Group 1: Transport; water scarcity; food scarcity; lack of medicine; lack of animal medicines; lack of implements; crop destruction by livestock ; inadequate dispensary; poor roads; no grinding machine and inadequate housing for government workers living in the village.

Group 2: Water scarcity; transport problems; food shortages; diseases; not enough literacy; insufficient farm implements and inputs; lack of hospital medicines; poor housing; poor or no latrines.

After a general discussion involving both groups, it was agreed that water was the major problem in the area. Transport came second, followed by food scarcity, lack of medicines; low awareness of health issues; lack of drugs (for people and animals); crop destruction by Maasai animals; poorly equipped dispensary; poor houses; lack of milling machine; lack of latrines.

The group then considered two problems in detail. First food. What causes shortages? What solutions (other than migration) could people think of? The causes mentioned included: lack of rainfall; poor farming implements and small farms; elderly people needing to work very hard because the youth are running to the cities; destruction of crops by cattle; post-harvest losses because of insect attacks and people using too much grain for brewing <u>pombe</u>; alcoholism (heads of household sell maize or sorghum for cash and spend it on beer); insects (<u>sondo</u>) during the planting period and a type of worm that attacks during plant growth (plus: there are monkeys, guinea fowl and rats feeding on young shoots); fires and bushfires; and neglect of good preparation techniques (eg for drying).

[Comment: no reference was made to market related constraints, a cause dominating workshop discussions in Uganda, Zimbabwe and Zambia].

At this point in the discussion Professor Kauzeni returned to the question of maize and the verdict reached at the end of the first day of the workshop. 'Was anything said about the poor selection of crops?' When given a negative answer, he clarified why he asked this question:

> 'I mention this because people here are trying their very best to hide the fact that the country is divided up in various agro-ecological zones and that there are sound government rules and advice about what should be grown in terms of specific crops. This area has to grow drought-

resistant crops. And that is what they do not do. And they did not want to mention that!...'

Hilda Kiwasila then returned to the question of how people perceived possible solutions to the food crisis.

> 'We asked if the causes of food shortage could be solved? People said bush fires was something they could control better. "What we need is bylaws." The danger of fires is linked to people moving in the bush (eg when hunting) and being careless... They easily let fires spread. People also thought that more trees should be planted, but for this they need saplings and water [This solution came from the teachers and the government workers, who said that planting trees would reduce the problem of lack of rainfall]. Participants also stressed there should be stricter control of illegal charcoal burning. They would like to have a tractor to solve the problem of small farms. But it would need to be owned by a private person from whom they could hire. On the problem of youth migration, they said the village government should deal with youth who refuse to farm and only live in (return to) the village after a good harvest.
>
> 'On the misuse of food, such as using grain for brewing, the proposed solution is that whoever is in charge of educating people regarding good practices should instruct properly. Equally, to reduce alcohol abuse, more health education is needed. To reduce the destruction of crops by insect... insecticides are needed. But some people also said they would need to take more care to plant on time. It sounded as if there is a tendency to plant too early which increases the risk of attacks by insects and other vermin. To reduce bush fires bylaws and punishments should be worked out.'

On hearing these 'solutions', the non-Tanzanian facilitators (Sikana Pottier) reminded that the composition of the workshop participants had favoured the inclusion of local government workers and that "their voices" (the government voice) appeared to have come through stronger than would otherwise have been the case. In other words, their concern was that the workshop might have failed to distinguish between what the extension workers and other local government staff 'knew' to be 'good practice' (or suggested as their own interpretation) and the views and thoughts of other (so-called ordinary) villagers.

Hilda Kiwasila then turned to the problem of grazing land.

> 'We asked the Maasai, who were more numerous now, why they needed to graze on other people's land. They explained about the lack of pasture, which is particularly severe between August and December. Another problem is the close proximity between their homes and those of the cultivators, which is the outcome of the 1974 policy of villagization. And finally, there is lack of water for watering animals.'

resistant crops. And that is what they do not do. And they did not want to mention that!...'

Hilda Kiwasila then returned to the question of how people perceived possible solutions to the food crisis.

> 'We asked if the causes of food shortage could be solved? People said bush fires was something they could control better. "What we need is bylaws." The danger of fires is linked to people moving in the bush (eg when hunting) and being careless... They easily let fires spread. People also thought that more trees should be planted, but for this they need saplings and water [This solution came from the teachers and the government workers, who said that planting trees would reduce the problem of lack of rainfall]. Participants also stressed there should be stricter control of illegal charcoal burning. They would like to have a tractor to solve the problem of small farms. But it would need to be owned by a private person from whom they could hire. On the problem of youth migration, they said the village government should deal with youth who refuse to farm and only live in (return to) the village after a good harvest.
>
> 'On the misuse of food, such as using grain for brewing, the proposed solution is that whoever is in charge of educating people regarding good practices should instruct properly. Equally, to reduce alcohol abuse, more health education is needed. To reduce the destruction of crops by insect... insecticides are needed. But some people also said they would need to take more care to plant on time. It sounded as if there is a tendency to plant too early which increases the risk of attacks by insects and other vermin. To reduce bush fires bylaws and punishments should be worked out.'

On hearing these 'solutions', the non-Tanzanian facilitators (Sikana Pottier) reminded that the composition of the workshop participants had favoured the inclusion of local government workers and that "their voices" (the government voice) appeared to have come through stronger than would otherwise have been the case. In other words, their concern was that the workshop might have failed to distinguish between what the extension workers and other local government staff 'knew' to be 'good practice' (or suggested as their own interpretation) and the views and thoughts of other (so-called ordinary) villagers.

Hilda Kiwasila then turned to the problem of grazing land.

> 'We asked the Maasai, who were more numerous now, why they needed to graze on other people's land. They explained about the lack of pasture, which is particularly severe between August and December. Another problem is the close proximity between their homes and those of the cultivators, which is the outcome of the 1974 policy of villagization. And finally, there is lack of water for watering animals.'

'The cultivators answered to this that the proximity of homesteads is indeed a problem. Also, they said, the Maasai are hostile and use big knives and sticks. The Wakwere (and Kutu) are scared and the Maasai take advantage. They do not care about the farmers. The farmers also complained that the Maasai used young boys to take care of large herds and so they get out of hand. Farmers said: "we have very different economies and each side fails to understand the needs and workload of the other."'

Patrick Sikana wondered whether grazing land is decreasing , eg as a result of land pressure.

Hilda: 'No, the major problem is not grazing land but the absence of wells for watering. This is why the Maasai stay near the cultivators' dam [where Wakwere women go to draw water for household use]. The Maasai agreed with this. Grazing land is not scarce, but water is the constraining factor.

Hilda: 'We then plotted causal factors. The chief ones were lack of dry-season grazing land, medicines for livestock, water and education. These factors lower the number of cattle, which means less money, which means poverty among the Maasai.'

Comment: Again, as happened earlier on, some members of the FSUS team queried whether this quick analysis of causal factors would really correspond with a Maasai view of the problem. Also, with the majority of their cattle away, how can we be so certain we are dealing with poverty?

Hilda continued: 'Then we decided to reach a consensus to solve this problem of conflict. The Maasai, Wakwere and Kutu decided that first of all they must work on their good relations with each other. We asked how this could be resolved? The Maasai suggested there should be more than, one Maasai sitting on the village government (at least one more representative, or even two) and they also need to be represented better on the Ward committees (eg on the Education, Culture and Social Welfare committee.) Second, the resettlement project at Lukalasi, started but now abandoned, should be completed. [That same afternoon, the Natural Resources group visited the Lukalasi project site.] More veterinary facilities are needed. The Maasai are willing to move far away from the farmers, provided they have water and pastures and other facilities. The project, had it been implemented, would have meant that they could remain at Lukalasi throughout the year.

At this point in our discussion, the DAO questioned the accuracy of the info/interpretation the Maasai had provided. Hilda confirmed that the above analysis was that of both Maasai and Wakwere. She, also explained that 'the one Maasai who sits on the village council (1 out of 15) was the one who was in her group and that both Maasai and Wakwere agreed that the only time they formally meet to discuss problems is during committees and village government meetings.' (But each group also has its own

council meetings, especially the Maasai.) Both agreed that there is need for more formal consultations. The DAO insisted he was sceptical about the joint request for more consultations. In his opinion, participants had declared this interest purely to please us the visitors!

COMMENT: The DAO may have a point when he claims that the two groups were presenting a common front because they were being faced with outsiders. That, however, is not the main issue. The more fundamental point was that a 3-day PRA workshop (first time ever in Magindu) may have resulted in appearances (eg 'Oh yes, let us resolve our conflicts...'), an exaggerated positive picture of amical relationships. Not everything can be learned in three days and facilitators must be aware of their limitations.

Ways of earning income were also discussed. Maasai sell livestock and milk, the Wakwere sell their agricultural labour or engage in petty trading in the small shops near the CCM. Charcoal making, selling timber, selling food and vegetables and beer (women mainly) are other ways of making money. Illegal hunting and handicraft (pottery) are possibilities, too.

Health issues were also tackled in some detail.

'We detailed diseases and their occurrences according to the seasonal calendar. Participants reported that the following were common: malaria, whooping cough, diarrhoea, anemia, eye diseases, worms, malnutrition, sexually transmitted diseases, and complications related to pregnancy and childbirth. Several of these are water related (diarrhoea, worms, skin diseases and malnutrition) and their occurrence shows lack of health awareness and poor hygiene. We agreed to deal with health awareness the following day, and to visit the dispensary and some income-earning activities (ie the carpenters' workshop for disabled men).'

The group also did some **circle (Venn) diagramming**. 'First of all we listed institutions and extension staff. We asked about their services. How close are they to the community? The number of extension staff were noted.'

Some circles overlapped slightly. 'The health service was large and in the centre of the community circle - really close to the people. The forestry department was very distant, because the forester is failing to do something about the bush fires. Interestingly, [as had happened in the Uganda workshop,] the forester also appeared on the scene saying he is doing very important work trying to sensitize people to the dangers of cutting down valuable trees [which seemed ironic when you think of the ebony logging for which concessions had been given by the district authorities]. The Ward Executive Secretary was said to be very close to the people, and the Maasai supported this view. But the Maasai placed the livestock department very far out. They have all kinds of problems with dipping and the use of medicines. All participants agreed. [Hilda stressed:] It was their decision,

not ours. The Maasai felt they needed to be given more guidance about where to purchase the best medicines, whether from Morogoro or Dar Es Salaam. The Maasai also said they have 300.000/= in the bank and are ready to contribute to the dam project in Lukalasi. The money has been in the bank since 1988.'

On this last point the DAO said that when the Prime Minister (PM) had visited the village last February (1993), the Maasai had raised the same issue. The PM told them they should drop the idea that assistance can be given free of charge; the government has stopped subsidizing initiatives. The DAO added that the Chalinze veterinary centre is well stocked with drugs. Hilda replied: 'OK, but their problem is that they require guidance with these purchases - they do have money in the bank. They should get one Maasai trained to be a village livestock helper. He could then liaise with the centre. DAO: 'Maasai from Magindu village come to my office almost every week; they come for drugs. I show them and I show them the prices. Then they start arguing over the prices, saying that they have gone up too much. "Why?" they ask. Then they go way, they quit.'

The Natural Resources group (James Ngana reports)

Dr Ngana's report highlighted issues not touched upon by the other reports.

The group worked out that the Magindu area is about 429 square kilometres or around 100,000 acres, and that less than 2000 acres is being farmed. This means that there is still plenty of land available for expansion, either for farming or for livestock. The main farming area is Mwelengala in the west, while the area towards Lukalasi and Msua is essentially dry and suitable only for livestock.

Regarding the soils, there are three dominant categories: red, sandy (mainly in Lukalasi) and then soil that is black clay and prevails in the western part of Magindu. The latter type carries more nutrients. The crops suitable for each soil type correspond to what has already been reported. Participants also discussed on rainfall, pointing out that inadequate rainfall occurs in about three years out of ten. There is also a problem with uneven distribution. This year, for example, the rains were erratic: they came in high concentration very early on in the season, but were inadequate during the long/heavy rainy season.

The group collected some population statistics. What participants said about demography corresponded with the statistical information received from the district authorities. The statistics are as follows:

0 - 15 yrs	857
15 - 54 yrs (active pop)	800+
54 yrs -	147

The discussion led to comments on Wakwere-Maasai relations and intermarriage. There was consensus that Wakwere and Kutu form 90%

of the population and Maasai account for 10 percent. People laughed at the idea of intermarriage, but casual relations between Maasai youths and Wakwere women are condoned. These may even result in children. Maasai women/girls, however, would never dream of having Wakwere boyfriends, since Maasai look down on the cultivators.

On the topic of in-migration, we learned that some 20 Wakwere households from Seregete (just to the south-west of Magindu) have recently settled in Miyombo. Otherwise, the population must be regarded as fairly stable. The reason for this in-migration, the DAO explained, is that government aid reached Magindu during the 1990-91 drought. This aid attracted people. In fact, at the time a much larger number of Wakwere from all over Morogoro descended upon Magindu to receive aid. [Comment: This is somewhat in contrast to the tendency noted in other droughts when both Wakwere and Maasai would move away from Magindu towards Morogoro. The very severe, 90-91 drought reversed the trend.]

Before turning to the main issue, the failed resettlement scheme at Lukalasi, the group discussed forestry. There are no planted forests in Magindu, only natural forests or whatever remains of them. Now that the last of the ebony trees have been logged, replanting will need to be considered seriously. The logging company pays the village 30/= for each three they fell. There is also a licensing fee to be paid to the district. To set the compensation to the village in perspective, we note that villagers who cut trees for local timber consumption pay 50/= direct to the village. When trees are cut for charcoal burning they pay 25/= for each bag of charcoal, but many evade the levy. There is a forestry officer who advises villagers on the prevention of accidental fires (which also destroy the natural forests) or on killing animals without a licence. He tries to persuade people they should restrict charcoal burning to places where village agriculture will be expanded. Recently, about 1990-91, the villagers have also been clearing bushes to rid the area of tse-tse fly.

The main topic for discussion was Magindu's water problem. There were two aspects to this debate: problems relating to the existing dam, and the aborted Lukalasi resettlement project. James Ngana reported extensively on both.

> 'The Magindu dam was built in 1958 by the colonial government. Today, below the dam, there are some 40 private watering places (well constructed mud troughs) for Maasai cattle. These are fed through seepage from under the dam embankment. Our Maasai guide told us there was no shortage of water during the rainy season, as wells spring up in other places too, but from July until February there is insufficient water so the Maasai take their cattle away to Ngerengere and beyond. The dam runs completely dry by mid-October. Right now, most of our guide's cattle (200-300 heads in all) have been taken there, and are looked after by youngsters. He only retains milking cows here in Magindu. These youths build temporary houses in Ngerengere

and are sent food from Magindu. Following the severe 1990-91 drought, many animals have not returned. They remain in Ngerengere. The outcome is that Magindu's cattle population of about 16,000 (1988 figures) has now dropped to about 10,000 during the wet season.

'Wakwere say that the problem with the dam is twofold: there is siltation and there is an encroachment of vegetation. We observed that this problem is serious. Importantly, the Wakwere blame siltation on the of Maasai cattle tracks that run very near the dam. The trampling, they claim, causes siltation -- a view which seems totally plausible. The tracks are there because the Maasai wells are located just below the dam, to its south. There are no plans for regulating conservation -- which the Wakwere consider a most serious issue.

'During very dry years the Wakwere go to the railway station where they obtain (i.e. beg for) water carried by passing trains. It does not always work. During such critical times women may still locate springs near the dam. Women and girls will sit there and wait to collect even the tiniest trickle of water. They show extreme patience, sometimes taking a full day or night to fill one bucket. Or they sit by the cemented, hand-pumped well, built by the Indian charity, Nasheree, and pump and pump, collecting, trickle after trickle.

'What we saw at Lukalasi - which we visited this afternoon - is very discouraging. In 1979 the Government realized the livestock problem in Magindu was serious and started plans for the resettlement of the Maasai. The Government identified two major valleys, one big and one small, close to each other. Experts chose the location for a reservoir in the small stream. A canal was then dug to bring water from the large stream into the reservoir. Unfortunately, due to poor surveying, it was later found that the soil was too rocky for the Caterpillar to do a good job. The result was that the canal now slopes upwards to the dam instead of downwards!! And yet, several impressive-looking cemented structures have been installed. For instance, we saw five watering points made with excellent concrete. The date 1979 appeared on one of them. We also saw two big dips and a nice area for rinderpest inoculation (with galvanised pipes sticking out). Lukalasi, participants said, is a national project approved by parliament. Now the project is abandoned and the Caterpillar bulldozer, British made, "a gift from Mama Elizabeth from Britain!" just sits there, rusting.

'When we visited the Lukalasi dam, which contained more water than the Magindu one, it was clear from the droppings and hoof prints that it is being used by both livestock (a small number) and by humans who come there to draw water. One local farmer actually arrived to draw water when we were there. So this huge project seems to be getting

nowhere. Another date in the cement was 1987, marked on a small concrete block which indicated a spot where ground water could be reached and a well sunk. The idea had been to have it operated with wind power.

'We also noted that a lot of the pipes used for the structures had since been removed, stolen and taken to town. [Here the DAO clarified: 'yes, but they have been recovered and are now in my office.']

'The Maasai said they have been told they need to raise some 3,000,000/= and should start another project! This project would be near Miyombo, in the west of Magindu, where there is a good catchment area for water (see map). We were asked to investigate why the Lukalasi resettlement project had been ditched, and what can be done next.

'There is also the problem of how to clean out the Magindu dam. Using manual labour would be a gigantic task, so people need help.'

Hilda Kiwasila reflected that the dam is used by cultivators from more than one village. If they organized themselves and took care, they could achieve something. As things stand, there is a lack of proper management for mobilization. There was some agreement among the team members that there is indeed a need to mobilize for maintenance and that a dependency attitude should not be fostered. One important unresolved issue, however, is how the Maasai will contribute (with money? through labour?) to the maintenance of a dam from which they benefit only indirectly. On the other hand, Dr Ngana pointed out that the task of cleaning the dam must not be underrated. 'To clean out all the mud you need more than human labour power, good will and good management.'

James Ngana continued:

'An explanation as to why the project was abandoned (and some drawings) might be obtained from the Regional Engineers Office. The real problem has been bad surveying, which resulted in the canal sloping the wrong way. They could have tried dynamite. The Maasai told us that they themselves have now started to contribute towards funding the new project in the west of Magindu village.'

At this point, the DAO expressed doubt that this (self-help?) project would succeed. He confirmed that the Maasai have some 300.000/= in the bank (originally meant as a contribution to Lukalasi), but he doubted they would raise much more. He added that the Maasai would first need to raise some 1.5 million shillings before they could qualify for a government subsidy.

At the end of this long day, the team scheduled its activities for the final workshop day.

DAY THREE

The meeting during which the team recalled the various activities of Day 3 and reflected on the workshop methodology and sifted through possible topics for research, took place at the Institute of Resource Assessment (IRA), University of Dar Es Salaam, at 11 am the following day.

While all three groups had spent part of the morning on the final day summarizing their main findings in preparation for the plenary session, some (especially the Farming Systems group) had also tackled some unfinished business.

The Farming Systems group gave the first report. Their "unfinished business" related to herder-cultivator interactions.

Farming Systems Group (report by Patrick Sikana and Professor Kauzeni)

In discussing the issue of herder-farmer interaction the group had tried to shift the focus away from conflict and learn more about the complementarity that exists between the two sections of the community and their food systems. This included collecting some basic data.

The main ingredients of the pastoral food system had been identified as uqali, milk, meat and tea. Uqali is often taken with milk. But the diet has changed because, thirty years ago it was based on milk and boiled maize. The change came about because of declining milk yields. Several reasons were mentioned to account for the decline in milk production. First, grass is not so abundant as it used to be, and the pasture area itself has been reduced. The drop in the carrying capacity of the range has come about because of villagization (1974) and the impact this policy has had on areas surrounding the village. The Maasai used to live much more dispersed. With villagization, herds had started to compete for the same pasture. Cattle numbers have been going down ever since, which in turn has caused a decline in milk productivity. Second, consecutive droughts, with their severe shortages of water (esp. in 1990-91) have further reduced the number of animals and the availability of milk. [Comment: whether the Maasai human population has shrunk in parallel to the reduction in the size of the animal population is an issue the group did not look into. But there is apparently an increase in family size, because couples are increasingly 'trying for girls'; girls bring in bridewealth. Such a statement, though, must not be taken at face value.]

One aspect of dietary change is that milk is no longer just for subsistence, but has become a commodity. This has allegedly reduced the availability of milk for consumption within households. Dietary change has been accelerated because of villagization has heightened the frequency of interactions with the agriculturalists. Because of the more frequent interaction the agriculturalists' diet is being copied.

Ugali is now purchased from the market, as is tea. However, some Maasai (esp. the older men, roughly 25% of the Maasai population) now have small sorghum and maize farms. They get Wakwere labourers to do the work.

The group did not do a seasonal dietary calendar due to the time constraint, but learned that milk is most abundant from October to May, and while meat is mostly eaten from August up to October when milk levels are low. So milk and meat complement each other as a kind of coping strategy. In the past, during times of scarcity, meat was consumed together with the blood of animals. Cattle bleeding is not practised any more because of the recourse to ugali. Slaughtered cattle are not so much sold as dried and kept for ceremonial feasting.

In terms of the trade with the agriculturalists, the group learned that milk is the most important trade item. Milk is sold during the time of plenty (October-May). Meat, however, is sold very rarely, ie only when several animals might have to be disposed off at the same time, for instance as a result of injuries. Injuries do happen during the rainy season when animals get stuck in the mud and break their legs.

On the subject of grazing and especially the thought that Maasai pay agriculturalists for the right to graze on stubble (see Day One), there was consensus that no cash transactions are involved. The common practice is to ask the cultivator for permission. Quarrels seem to have more to do with herds that go out of control (or when there is deliberate grazing to settle a score), in which case the pastoralist will (or should) be fined. Similarly, agriculturalists may ask Maasai for permission to cultivate a plot where animals have frequently grazed and which is enriched with manure. Failure to do so, again, may lead to fines being imposed - or fights. Still, the potential for complementary economic relations exists and the impression was that such relations exist on personal, long-lasting terms. [Research would be useful here. This could throw light on how the two communities might cooperate to improve/maintain water levels in the dam.]

In an attempt to cross-check on other evidence regarding conflict, the group reflected on ways in which livestock might impose a constraint on crop production. The main ways were: 1) crop destruction by animals; and 2) the tricky problem of allowing animals to graze on the stubble of crops that have been intercropped. Certain crops may still be in the field, e.g. sour tomatoes. There is reason, though, to believe that destruction by animals has increased of late since herding is increasingly done by youngsters rather than by adult men. Maasai adults, according to one Kwere elder, are just merrymaking. The Maasai smiled at this remark.

The pastoralists countered that the argument by the agriculturalists (that cattle are just a destructive force) does not hold. Their claim was that yields on these small shambas are poor anyway! This argument goes as follows destruction of crops

by animals is minimal when you consider that agricultural practices are so poorly developed. Implements are poor, so yields must be poor, so Wakwere should not cultivate in areas where animals might find good grazing land.

The group also reflected on the same issue by turning the question the other way round. That is, by asking how does cultivation of crops hamper the development of the Maasai economy? On this, pastoralists claimed that agriculturalists do not recognize specific areas in which to grow crops. They repeated their basic view already stated, which is that good grazing land should not be used for poor farming.

Having aired grievances and views, the group asked what the solution should be to the conflict. The agriculturalists agreed that the best solution would be to separate the two groups / economies in the manner suggested by the Lukalasi project. The Maasai representatives endorsed this with some passion, arguing: 'there is nothing wrong with separating, but... how can the Maasai community be expected to move away from the agricultural community to an area totally lacking in facilities such as water and schools for the children?' Maasai people need these facilities and regard it the duty of government to make them available. Spatial separation without a new infrastructure is not acceptable.

The agriculturalists countered that Government in the past had received very little cooperation from the Maasai themselves. For instance only the Maasai who live far away from agricultural communities have in the past shown they are prepared to contribute (to Lukalasi), whereas those living in and around Magindu had been loath to do so. When asked whether the Maasai of Magindu actually contributed to the facilities that existed in the village, One Kwere elder confirmed that the Maasai had not contributed financially to the construction of the Magindu dam, nor had they contributed to the Primary School. Only the agriculturalists had done so, so it was unlikely that the Maasai would contribute to the creation of new facilities for pastoralists only. Accusing the Maasai of not taking responsibilities (through money or labour), the Wakwere made it clear that they themselves would certainly not be prepared to contribute to the Lukalasi scheme should it be revived. At this point the group reached deadlock.

Professor Kauzeni reiterated that the mentioned Maasai money in the bank had come from communities that live farther away. This money had not been raised by the Magindu Maasai!

Johan Pottier commented: 'These statements suggest there could be important divisions within the Maasai community. Hilda Kiwasila agreed: 'Yes. These internal conflicts could be related to their constantly being on the move.'

The Farming Systems group ended with a summary of its discussions over the past three days. Prof. Kauzeni reported:

'One of the observations this PRA workshop has made, was that there has been significant decline in cotton production. This is a serious issue as there are only two cash crops. The decline in cotton, we were told, was due to the lack of a market. When the cooperative societies were in operation (and also the ginneries) things were all right. But with time, these cooperatives fell apart. Also, inputs for cotton (fertilizer and pesticides) have been cheap in the past, or even free. Now they are extremely expensive. And even when the Government extends credit, the experience following the harvest is that the deductions are so high that the whole effort has been a waste of time and energy. Moreover, cotton is labour intensive -- and as we know, people here in Magindu are not all that interested in hard work.

'The Wakwere agriculturalists said they were interested in reviving the cotton cash crop provided that past conditions could be brought back. Credit packages will need to be improved on a vast scale. I admitted that I did not know what exactly the current Government position was on this.

'What we also probed further was that maize ranks so high as the favoured food. I challenged the Wakwere on the rationality of their preference, since the government recommendation for the area is the production of drought-resistant crops (sorghum, cassava). I was disappointed with the replies I received as they did not contain any reliable information on why the government line was not followed.'

At this point Patrick Sikana made an important intervention by pointing out that there could have been a link between "bloc farming" and the poor interest (and yields) in sorghum production.

Patrick: 'Well, cultivators did point out that they are required to grow these drought-prone crops in bloc farms, that is, in areas especially demarcated by the Bwana Shamba. The Wakwere said they did not like the idea, because (in their own words) 'people have magic', ie they have the magic to steal produce from other plots on the farm.'

COMMENT: Whether there is objection to the idea of bloc farming, and whether there is a link between bloc farming politics and sorghum production, are issues to be investigated in future research.

When Johan Pottier asked whether anyone on the team knew where these farms were located, the negative answer he got suggested that an important aspect of the farming system had not been looked into. Interestingly, "bloc farming" (not mapped on Day 1!) had only arisen as an issue at the very end of the workshop.

Whether the presence of the Bwana Shamba was responsible for this omission we could not tell. However, at some point that morning

the Bwana Shamba had told the "Farming Systems" groups "... you people are free to locate the bloc farm wherever you want! If the village government decides it wants to move the bloc somewhere else where the soil is more fertile, feel free to do so'. [He implied he would not report anyone and also made it clear that the fear of witchcraft was a load of nonsense.' The potentially important issue of bloc farming should be addressed in longer-term research.]

Prof. Kauzeni continued his presentation: 'Another major observation we made is that the time for planting, weeding and harvesting coincides with the migration of youth. This is also the time when food is in short supply. So we asked, what exactly was the cause of migration? And what are the solutions? [PS: our workshop took place at the time when youth were away!]. The cause of migration, we were told, is that the youth are avoiding the drudgery of working in the fields. [Comment: This could be parents' talk. Since no youth were present at the workshop, there is likely to have been bias in the view expressed by the youth representative.]

Regarding a possible solution, the participants said the Government should round up the youth who leave for the towns and force them to come back to the village. (Something we know is not all that easy.) However, some participants admitted that parents have a responsibility here and that they too should try and discourage young people from migrating.

Field crops other than cotton had also featured in the summary. Simsim, for instance, 'scored very high in terms of cash earning and processing. So we asked whether this crop should be promoted to a much larger extent since it appears to have all the required characteristics? Unfortunately, we could not get an explanation that was satisfactory to make us believe that the people in Magindu are convinced that simsim <u>is</u> the crop to be promoted.'

Patrick Sikana, however, recalled that market liberalization had been mentioned in the sense that Tanzania's new "structural adjustment" policy had led to the experience that today's middlemen are not reliable, but cheats. Second, the cooperatives would in the past have deducted from the farmers' earnings some money towards community assistance. With the liberalized market all this has gone.

> Professor Kauzeni continued 'We also discussed maize -- that crop so susceptible to drought, but which almost everybody tries to grow, and yet it fails. Why this insistence on maize when there is cassava and sorghum? We could not get beyond the explanation that maize has a good flavour, that maize porridge is much better than sorghum or cassava porridge. Participants tried to explain that within the maize seed there are certain chemicals needed for making <u>bambiko</u> (maize porridge). They eat it with cassava leaves or quinine on top of it. Corn husk is dried and pounded, fermented, then made into <u>bambiko</u>. They can mix it with simsim.

'Regarding cassava, this crop is said to be extremely unpalatable, which is why people do not like it. We asked: "what is the solution?" Someone said. "Government should use force to make us grow it." We said: "are you really sincere? They said, "we can swear, after years of famine we are prepared to face force, we will adopt the recommendation for growing."

Workshop Methodology: towards end reflections

Patrick Sikana took the opportunity to voice a particularly important methodological concern:

'Whenever we asked for solutions, the people stressed government interventions; even about returning the migrant youth! I am suspicious about this. Perhaps we should look at this reaction critically, perhaps the people associated us with Government policy.'

Hilda Kiwasila replied: 'No, not as such. If people called for government interventions it is because Tanzania has a history of such interventions. In the past interventions were favoured instead of animation and mobilization. People are used to the DC turning up and telling them, forcing them, to do this or that.' To strengthen her point, Hilda mentioned that the Community Development Department had been asked [when?] to resign from the Party to allow the Party to take over the role of community mobilizer. 'So people are used now to being ordered about and they have forgotten about community development by their own efforts. This has created a passive attitude towards development, which is thought of as being "brought" to the people by a donor.'

These reflections by Patrick and Hilda are valuable because they situate the researcher within the political culture of development and development research. Researchers everywhere must situate themselves within the political-intellectual universe in which they work, and be aware of the implications for quality control data. This is a challenge awaiting all future researchers (see Wilson 1993) and one that FSUS researchers need to take seriously.

Farming Systems Group (continued)

The last issue the Farming Systems group discussed was the decline in pastoral production. Here the Maasai suggested that - again - Government should step in to control (thus reducing the sale of animals). Animal health care should also be improved by the Government and pasture control should be instituted.

Professor Kauzeni ended by pointing out that a number of problems related to crops and specific activities had been mentioned over the three days, but that there had been insufficient time to summarize them.

Socio-Economic Issues Group (Hilda Kiwasila reports)

Following a 'telephone' starter activity, from which something was learned about the importance of good communication, the group discussed 'problems that halt development in the village' and looked into the reasons why such problems occur.

Hilda Kiwasila recalled that 'the problems that halt development' had been expressed as a series of factors that lead to ill-health. She said:

> 'People mentioned taboos, for instance, that some children (2-5) and adults (15+) do not consume rice. Other taboos include meat (wild meat and beef), chicken, even milk in some households. Too often people feed on vegetables, especially the quinine plant which is a common relish, and beans. The Maasai, for their part, do not eat fish, vegetables, wild meat, chicken or eggs. In Magindu, food taboos contribute a lot to poor health.
>
> 'Then people discussed bad behaviour leading to ill-health, Such as lack of washing, lack of latrines, not cleaning the houses. We asked for proper statistics on the use of latrines and found that 80% of the villagers do not have sanitary facilities. This is 100% in the case of the Maasai. Uncooked meals and unboiled milk (especially among Maasai) and unboiled water were mentioned as problematic, followed by frequent births, that is, the lack of family planning. Only 35% of males practise family planning. When we asked about solutions, participants listed health education, especially on nutrition, family planning, latrines and, immunization.

The reasons why such factors emerge were also discussed. The first reason was "neglect" (zarao). For instance, not caring about cotton or the construction of toilets or collapsed projects.

Johan Pottier intervened to ask how spontaneous the formulation of this first reason had been.

Hilda: 'Very spontaneous. I asked the two ladies and they both said zarao.' Prof Kauzeni supported Hilda. The word zarao had been very frequent also in his group, and used in the same context. Hilda then mentioned that the other reasons (in ranked order) had been: lack of self-initiative (ihuma), poor leadership, belief in witchcraft, the lack of bylaws to enforce government recommendations and, finally, dependency and a desire to be paid for everything one does.'

After this discussion of health matters, the group visited the workshop of the disabled carpenters, whose tools have been provided by the Ministry of Welfare. The full group is 25 strong and they work in shifts. Workers share the profits at the end of the month, but do not keep records. They can make up to two beds a week, each one fetching about 600/=. The Socio-Economic Issues

group then visited the dispensary problems were serial noted. The roof needs repairing, there is bad infestation, there is no toilet, it is noisy, there is no privacy in the injection room and the delivery room is poorly equipped.

Natural Resources Group (Faustin Mabanga reports)

> Faustin: 'In the morning we agreed on what we had discussed the previous day. We concentrated on three key issues: water, land and forests.
>
> 'We agreed that water in the village was inadequate, either for drinking or for livestock. Also, that this water was not safe to drink. Participants told us they knew that cases of diarrhoea increase as the water level in the dam drops. They listed several problems regarding water: one, the Magindu dam is too small; two, silt and grasses are encroaching and filling the dam; three, the village leadership has failed to prevent grazing (the presence of animals) near the dam catchment area; four, livestock owners do not have a proper place to water their animals, because of the failure to complete the Lukalasi dam project.

Suggested solutions included: one, the revival and completion of the Lukalasi dam project; two, the expansion of the Magindu dam; three, bylaws to protect the catchment area. Apparently, the village government has already sent to the District Headquarters a proposal for such bylaws and the expectation is that they will be passed.

Forest related problems were also discussed: one, the loggers have depleted all mature ebony trees; two, uncontrolled charcoal burning is fastly depleting the forest generally; third, uncontrolled bush fires are causing serious destruction of the forest resource base. Individuals exploiting the forest products are supposed to pay a fee to the village government (eg 25/= for each bag of charcoal produced; 30/= for a log of ebony; 5/= for a piece of timber).

The solutions suggested were: one, the Tanzania Government should be advised to reconsider the granting of licences to cut ebony. The village had no control over this whatsoever. Two, the village government must strengthen its position to better control charcoal burning. Hardwoods are the target here. Three, bush fires are not just accidents, are often caused by careless honey collectors.

There is still enough land for arable agriculture, but there are different soil types on which different crops do well. It was noted, though, that differences in soil fertility and carrying capacity force the villagers to practise shifting cultivation. The major problem now is that the main gardens (where the soil is still somewhat fertile) are at quite some distance from the village centre. The solution proposed was that villagers should be assisted with the use of fertilizer <u>in the village</u>. They did

not say that they should receive it for free, but it should be available for them to buy.

> 'We ended with asking for comments on the way in which we had conducted our research. Participants noted that our methodology had differed from the approach used by previous researchers. They much appreciated the opportunity for sharing experiences, and the fact that participants became involved in a big way. Even the fact that we were eating together, something completely new to them, was much praised.
>
> 'Participants also pointed out that the Lukalasi dam would have benefitted if the villagers had been involved in its planning. Had this happened, the canal (they thought) would not have been dug to make the water flow up-hill. Also, they praised the fact that the coastal region, and Magindu especially, had been selected for the site of our research. There is too much emphasis on the northern regions and so the coastal region is neglected. One participant said: "only the 1990-91 famine brought major national politicians here, including Ministers." And finally, participants stressed there was need for serious research into the causes of the failure of the Lukalasi project.'

Faustin Mabanga's presentation was followed by a few comments on deforestation.

Prof. Kauzeni: 'Resources must be exploited in a sustainable way. One problem with licensing is that licences are issued at the top [the District Level] without consultation with the village governments. In fact, there are Acts (1975, 1982) that stipulate that anything within a village boundary (which is a loose concept!) is the property of that village, with the exception of the national parks. This means that those seeking concessions for logging should first consult with the village government and seek its approval. (They could then come to an agreement regarding compensation.) So it is clear that actual practices do not follow what is stipulated in the Acts.

Hilda Kiwasila made an apposite further comment: 'The problem is that forests (are said to) fall under the jurisdiction of the District council. Villagers do not have the power to make the Councils comply with the Acts.'

Prof Kauzeni agreed with this: 'Indeed, it is only designated game reserves and forest reserves. This should not include village woodlands.'

Hilda: 'This malpractice is possible because village governments do not have forms they can issue to authorize cutting. Such forms exist only at the Regional and District levels.'

Plenary Session

The plenary session at the end of the workshop was a mixture of heartening "Thank You" speeches and practical suggestions for the research programme. A brief summary of the research topics is listed at the end of this document.

A further note on Methodology

Having already discussed the professional/personal constraints that all field workers are up against, the team now discussed to what extent people's perceptions of the FSUS team (and anticipations about the workshop) had coloured their responses.

Patrick Sikana began by reflecting on the issue of self-blame.

Patrick: 'From various presentations one notes a recurring tendency, which is that participants blamed themselves for the everyday problems they have. We seem to have aided them in heaping up this blame upon themselves. We seem to have suggested that they are not responsible; they don't build toilets, they get pregnant frequently and ignore the rules about growing drought-resistant crops. So I really wonder what the cause of all this is. We must address this, also in our report.'

Prof. Kauzeni agreed and suggested: 'We should go further even and make sure that the issue Patrick has raised is included in our plans for long-term research.'

Johan Pottier: 'Yes, we should be aware of the fact that our own presence and how we were perceived may have influenced certain responses we got. There is also an intriguing link, it seems, between these self-accusations and the proposed solutions which usually amounted to the statement "let the government do something"! This is most understanding. The village has this year been visited by a Minister, following the attention it received with the 1990-91 drought, and now has been selected by the DC for this workshop. Obviously, the people here are getting official attention, so why would they not declare their weaknesses and ask for government intervention? This too is part of the political culture of research, whether in Tanzania or elsewhere.'

Patrick Sikana: 'It also feels that if they can persuade Government to do something, this would cleanse them of their own responsibilities.'

After providing evidence of various failed projects in the village (eg the VMTP house which stands empty), Hilda Iwakila offered a different perspective.

Hilda 'We should not have the impression that people really feel they must take all the blame. They know fully well that the extension workers are also responsible for a good deal of inactivity. In this country we do not do actual mobilization and education. So we, as future researchers, should now sit together with the

village leaders and do some sort of animation about how they can be good leaders, how they can assess problems, we must work with them in an action-oriented way, eg by instructing them how to do simple accounting and we should do the same with the extension staff and with the villagers. Self-help, self-initiative, group dynamics, using methods for problem solving that include their own perceptions of what problems they face.'

Johan Pottier reacted: 'Fine, but this action-plan leaves unresolved the question of how much we have actually learned about how people here really perceive these problems.'

Patrick took this a step further, saying: 'Moreover, as with this question of multiple births, we should help people become aware of the material causes of their problems. For instance, why do we blame the youths who run away to the towns? Or their parents? While we put the blame on the leniency of the parents, there are deeper underlying causes that also need to be addressed -- and that we should have addressed in the presence of the participants. We should enable them to be more reflective.'

This intervention took us back to the selection of Magindu as the venue for the research programme.

Professor Kauzeni closed the meeting with an important reflection: 'There is need for some kind of assistance. In fact, we had a similar comment from the Regional Development Director, which was why he directed us towards Magindu. He said "they are willing to cooperate with whoever is willing to assist them."' In other words, research will be welcomed provided a tangible something is attached to the research.

After thought (by Johan Pottier)

The frankness of our discussions on methodology is something we should value greatly. Critical reflection is much needed in field-based research. But readers of this report should also know that the team at times acted very swiftly to make the necessary methodological corrections. For instance, we could easily have ended up with a workshop in which the cultivators dominated and the Maasai herders (and their problems) were entirely overlooked. The need to balance the two "voices" was picked up by the team at the end of the first workshop day and had a dramatic effect on the choice of topics and discussions on the second day. The FSUS team had really moved effectively to increase the range of "voices" that became articulated. Which I rate a significant achievement.

0 0 0 0 0

BIBLIOGRAPHY

Pottier, Johan (1994) 'Understanding Food Stress at Local Levels.' Paper presented at the international conference on "Food Systems Under Stress in Africa", Ottawa, December 1993. To be published by the International Development Research Centre, IDRC, Canada. Forthcoming.

Sikana, Patrick and Eliab Simpungwe (1994) Food Security and Vulnerability in Kapatu Area (ARPT Research Zone 2). Report on the "Food Systems Under Stress" workshop in Kapatu, Northern Province, Zambia. Presented at the "Understanding Food Stress at Local Levels" workshop, Gaborone, NIR, University of Botswana, 25-28 April 1994.

Wilson, Ken (1993) 'Thinking about the ethics of fieldwork', in Stephen Devereux and John Hoddinott (eds) Fieldwork in Developing Countries. Hemel Hempstead: Harvester Wheatsheaf. pp. 179-199.

RESEARCH TOPICS FOR FURTHER INVESTIGATION

(summary)

1. In-depth study of both the Maasai and the Wakwere/Kutu food systems. With special reference to crop preferences and soil types.

2. Household food security and gender relations.

3. A detailed study of herder-cultivator interactions, looking both at symbiosis and at conflict. With special reference to labour mobilization.

4. The failed Lukalasi project and the alternative Miyombo project. Reasons for the failure and prospects for the new project will be investigated. Including the nature of contributions by Maasai groups.

5. A detailed study of (the politics of) resource management. With reference to agricultural land, woodland, grazing land, and water availability. And with a focus on the changing trends in official agricultural policy.

6. Migration patterns. With special reference to Youth and their contribution / links to the village economy.