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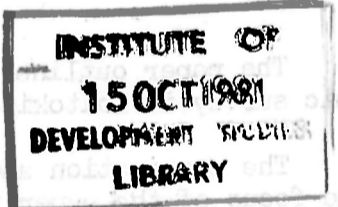
RESEXUE (832)

SURVEY OF LAND USE PROBLEMS IN
KAJIADO DISTRICT
A REVIEW OF METHODOLOGY
by

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ABSTRACT

The paper outlines the methodology used in a land use and socio-economic survey in Loitokitok and Ngong Divisions of Kajiado District.

The preparation and implementation of the survey is described and the focus of the paper is on a discussion of field seminars as a method for reporting the results of the survey to the residents of the areas where the survey was conducted.

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I. INTRODUCTION

The purpose of this paper is to present the methodology used in a survey of farmers and pastoralists in Kajiado District which took place in March and April 1977. The survey was designed to examine the impact on land use and society of increasing migration of farmers into areas where pastoralism is traditionally the predominant economic activity (Campbell 1977).

Two areas of Kajiado District where such migration is taking place were chosen for study - Ngong Hills and Loitokitok. In Ngong the settlement of farmers in areas where rainfall and soil conditions favour agriculture has been taking place since the beginning of the century. The number of farmers has increased to such an extent that today only the western slopes of the hills remain uncultivated, though only government action is preventing settlement there. In Loitokitok the slopes of Mt. Kilimanjaro have been cleared for cultivation over the past 20 years. Today most of the land of higher potential is under crops and farmers are extending their activities onto the drier, lower slopes of the mountains and along the rivers and swamps of the area.

The areas into which the farmers have moved are those with the most favourable rainfall and soil conditions. Prior to their being used for agriculture they formed part of the dry season grazing and watering areas of the pastoralists. The expansion of agriculture over wide areas has reduced the area available to the pastoralists for dry season grazing and increased the grazing pressure upon the remaining resources. The problem has been compounded in Kajiado District by the creation of National Parks which have enclosed wide areas traditionally used by pastoralists in the dry season e.g. Chyulu Hills, Amboseli.

As the agricultural and pastoral populations continue to increase so will the demand from each for access to the better-watered areas. Competition over available resources from economic activities which are incompatible (at least in Kenya) is taking place and is demonstrated by reorganisation of land use at the wetter margins of the rangelands around Loitokitok and the Ngong Hills.

II. SURVEY DESIGN

IA. TIMING. The survey was designed to assess the extent of land use conflict between the three major land uses in the Ngong and Loitokitok areas - pastoralism, wildlife and agriculture - and the impact of change in land use upon the people of the area. It was hypothesised that the degree

of conflict between these land uses would be greatest during a period of drought when water and grazing resources are scarce and the impact of each land use upon the others would be most evident. At the time the survey was proposed - February 1977- Kajiado District was in the grip of a drought which had begun in 1972, though favourable short rains in the Loitokitok area in 1976 had alleviated the situation to some extent. In order to clearly address the problem, therefore, the survey was carried out in March and early April 1977 prior to the anticipated long rains, which in the event were torrential.

IIB. INTERVIEW LOCATION. In order to examine some of the spatial aspects of land use competition the survey was designed to measure the degree of competition along a gradient from higher rainfall to lower rainfall. Transects were selected which ran from the exclusively cultivated areas on the higher slopes, through areas of mixed agricultural and pastoral activity to areas used exclusively for pastoralism (Figure 1). The transects generally followed roads in order to facilitate the movement of enumerators from one area to another.

IIC. THE QUESTIONNAIRE. In view of the different economies under study it was decided to prepare one questionnaire for farmers and a second for pastoralists¹. They were prepared with the assistance of three groups already working in the area - the FAO/Ministry of Wildlife and Tourism Wildlife Management Project², the FAO/UNDP Programme for Better Family Living (PBFL)³

1. An outline of the questionnaire used is attached as Appendix 1.

2. We are indebted to Dr. Georg von der Goltz, Dr. Harvey Croze and Mr. Philip Thresher for their assistance and encouragement in the formulation and execution of this survey.

3. Ms. Jennifer Berger and Mr. John Kirono of PBFL have assisted us greatly in the preparation of this study and we are most grateful to them.

and the Loitokitok Adult Literacy Team (ALT).⁴

The initial questionnaire was reviewed by these three groups prior to pretesting with the enumerators. Unfortunately the proximity of the anticipated long rains precluded an exhaustive pretesting and a number of inadequacies remained in the questionnaires.

4. The survey would not have been possible without the participation of the ALT and we are very grateful to Fr. Piet Payens, Mr. Peter Kisopia, Mr. Kenny Matampash, Mr. Daniel Mayani and Mr. Tony Mepukori for their assistance.

This Team is composed of 4 local school teachers who work in conjunction with the Loitokitok Roman Catholic Mission. The objectives of the Team are to encourage literacy among adults in the area and they utilize the approach developed by Paulo Freire. As much of the content for adult literacy classes is derived from the experience of the participants, the classes provide an excellent forum for the discussion of local development issues. The ALT saw in the survey an opportunity for discovering information regarding issues affecting the community. After discussion of the objectives of the survey as they related to the needs of both the researchers and the people of the area the ALT gave their total support. The ALT were instrumental in gaining acceptance of the survey in the Loitokitok area, they selected the enumerators and they edited the questionnaire such that the questions were correctly worded and such that questions likely to give offence were omitted.

It was also agreed that after preliminary analysis of the results of the survey "bush seminars" would be held in the areas where the survey was conducted. These seminars would be led by members of the ALT and would provide:

- i) for feedback between the research team and the respondents
- ii) an opportunity for the research team to understand how the respondents perceive the findings of the survey. This will enable interpretation of data to be less ethnocentric and more responsive to local news.
- iii) for clear indication that the research is not exclusively the domain of Nairobi but that the respondents are participating in a process of investigation which may contribute to the preparation of policies for the development of the area.

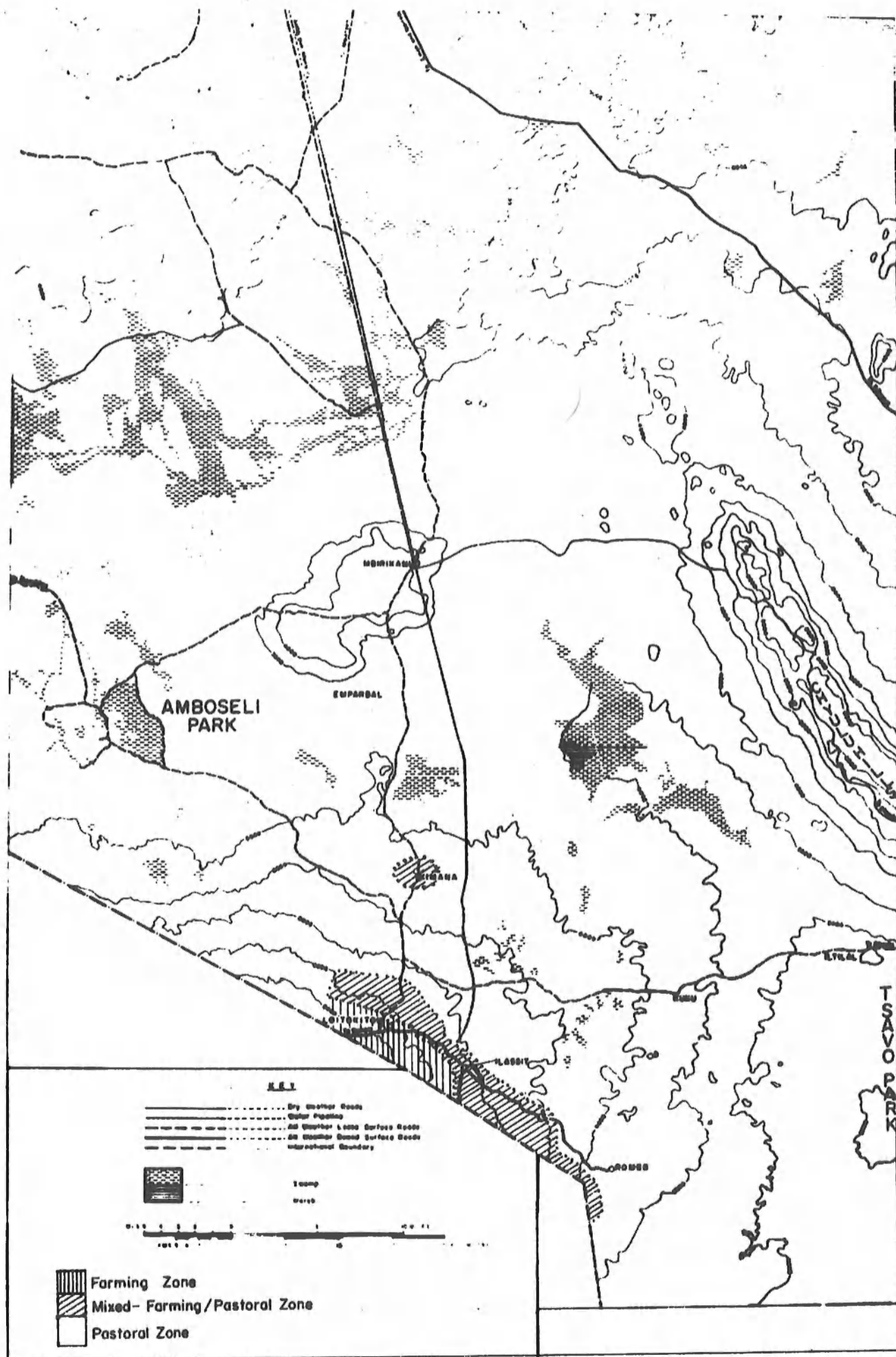


Figure 1. The Loitokitok Area



IID. CHOICE OF ENUMERATORS.⁵ The enumerators for the survey in the Loitokitok area were chosen in cooperation with the ALT. Six fourth-form school leavers were selected to work in pairs along three transects. In each pair was at least one person who spoke Kimaasai and one who spoke Kiswahili. All six spoke English. In Ngong assistance in the choice of enumerators came from Mr. W.K. Mopel of the Maasai Rural Development Centre at Olooseos and by Mrs. Lydia Mbarathi of IDS. Four enumerators were selected. One a Maasai, worked in the pastoral area to the south of Ngong Hills, a second, a Kikuyu, in the farming area around Ngong and Kiseran and the remaining two, who spoke both Kimaasai and Kiswahili, worked as a pair in the farming area north of Ngong and in the pastoral areas to the west of the Hills.

III. TRAINING OF ENUMERATORS. The enumerators met with the authors prior to the survey to discuss the purpose of the research and the nature of the interview task. A day was spent in practising with the questionnaire and discussing any problems which arose in its use.

For the first three days of the survey in Loitokitok and the first two in Ngong one of the authors was in the field to deal with any difficulties which were encountered. There were few initial problems; heavy rainfall in Loitokitok being the most difficulty one in the first few days there.

The enumerators met with the authors once a week over the remainder of the interview period. At these meetings problems were discussed and the enumerators were asked to read through questionnaires completed by each other. This provided an opportunity for them to critically examine their work and to check that questions were being presented in a similar fashion by the different enumerators. The completed questionnaires were collected and examined for errors e.g. omission of questions, incomprehensible responses etc.

5. In Loitokitok the enumerators were: Ms. Joyce Ntipilit; Mr. Joseph Kulale, Mr. Mark Kisopia, Mr. Peter Mburu, Mr. Francis Saigilu and Mr. Ablert Munyua and in Ngong: Mr. Augustine Mutahi, Mr. Noah Moipei, Mr. Peter Wakaba and Mr. Joseph Seki. It is clear that this research is founded upon the work of these 10 enumerators. We are profoundly grateful to them for their dedication to the task and perseverance in the face of difficulty.

The visits by the authors also provided an opportunity for enumerators to be transported to more inaccessible areas. The survey in Enkulo and towards Itilal were conducted on these occasions when all available enumerators worked in the areas visited. The authors were able to watch the enumerators at work in these areas and this provided a further check on the quality of enumeration.

IIF. SURVEY IMPLEMENTATION. The distribution of interview locations is shown on Figure 1 and 2. It is evident that the original intention to work along transects had to be modified due to local conditions of environment and accessibility and to meet the wishes of the enumerators.

In Loitokitok two groups did work along the original transects: Loitokitok - Kimana - Mbirikani and Loitokitok - Entarra - Rombo

where the third concentrated upon the densely populated farming area around Loitokitok (Figure 2). The third proposed transect from Loitokitok to Itilal via Kuku proved difficult to survey for two reasons. First there is no public transport along the road and thus the interviews could only be conducted when the authors were present. At these times all six enumerators worked on this transect. Secondly, the elders at Itilal refused permission for the survey to be conducted in their area because they had been surveyed in the past and had not been informed of the results of the surveys and so they could see no use for them. We agreed with them that when the questionnaires from other areas were analysed we would return to Itilal and discuss the results with them. (See section IV).

In Ngong the original intention to work in pairs of enumerators was abandoned in order to cover a wider area. One Maasai worked in the pastoral area, a Kikuyu worked among the farmers of Ngong and Kiserian and a pair of Maasai/Kikuyu speakers worked both to the north of Ngong and the pastoral area to the west of the Hills.

The transect approach was possible in the area where the individual enumerators worked as a rainfall gradient exists but the precipitous drop on the west of the Ngong Hills results in a sharp contrast between the well-watered area to the north of Ngong and the dry plains to the west of the Hills.



Figure 2. The Distribution of Enumeration Points in the Loitokitok Area

II. THE SAMPLE. Each pair of enumerators was expected to interview at least 100 people during the month of the survey. They were told to attempt to interview an equal number of people in each of the 'zones' in which they worked - the pastoral, the mixed agriculture - pastoral and the agricultural.

The head of household was the target of the interview but in the event of the head being absent then another member of the household was interviewed.

Enumerators were instructed not to select the nearest neighbour to the previous respondent and to interview only those who agreed to respond to the questionnaire. In the pastoral areas a maximum of THREE interviews per boma was permitted and the nearest neighbour boma was omitted from the survey.

Possible biases in sample.

- i) those living in more remote areas will be wider-represented
- ii) those under the age of twenty are under-represented particularly among the non-Maasai
- iii) Women are under-represented - though over 20% of respondents are women.

III. ANALYSIS

The data is being analysed using the SPSS Package available at the Central Bureau of Statistics (CBS). We are grateful to the Director of CBS, Mr. Parmet Singh for his assistance in this matter. Mr. Scott Wallace has mediated between the authors and IBM 370. His patience and advice on coding, analysis and on library facilities have been invaluable.

IV. FOLLOW-UP SEMINARS.

An important aspect of the survey has been the reporting of the results to the residents of the survey areas. At the time of the survey a number of potential respondents refused to answer questions. Among the reasons they gave for their refusal was that they never saw any outcome from such research. In order to rectify this situation and because the authors believe that it is important to report on results of fieldwork a number of field seminars have been conducted at which selected aspects of the results were discussed.

TABLE 1. CHARACTERISTICS OF THE SAMPLE POPULATION

1a) TOTAL INTERVIEWED		Survey Population			
	No. of Interviews				
FARMER	366	3273			
PASTORALIST	273	3506			
	<u>639</u>	<u>6773</u>			
1b) TRIBE OF ORIGIN					
	MAASAI	KIKUYU	KAMBA	OTHER	
FARMER	145	165	33	23	
PASTORALIST	273	0	0	0	
TOTAL	<u>418 - 65.4%</u>	<u>165 - 25.8%</u>	<u>33 - 5.2%</u>	<u>23 - 3.6%</u>	
1c) STATUS OF RESPONDENTS					
	No. Interviewed	Percent of total			
Head	432	67.6			
Wife	136	21.3			
Son	68	10.6			
Daughter	3	0.5			
1d) POPULATION OF SURVEY AREA					
LOCATIONS	1976(est)				
Ngong	19488				
Kitengela	2134				
Ilkeekonyokie	10137				
Ilkisongo	20275				
TOTAL	<u>52034</u>				
Survey Population	6779				
Survey Population as % of total	13.03%				
1e) TRIBE OF POPULATION IN SURVEY AREA					
	KAJIADO DISTRICT (1969 census)		SURVEY		
MAASAI	58961	64.64	1966	73.26	
KIKUYU	16258	18.93	1355	20.00	
KAMBA	4321	5.03	264	3.89	
OTHER	6363	7.41	194	2.86	

AGE OF RESPONDENTS

1f)

(by total and percent of total in each group)

Age	Maasai		Kikuyu		Kamba		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Under 20	12	3.02	0	0.0	0	0.0	1	4.55	13	2.13
20 - 30	70	17.63	20	12.58	10	31.25	1	4.55	101	16.56
31 - 40	50	12.59	46	28.93	6	18.75	7	31.82	109	17.87
41 - 50	109	27.46	53	33.33	10	31.25	6	27.27	178	29.18
51 - 60	76	19.14	23	14.47	5	15.63	4	18.18	108	17.70
61 - 70	58	14.61	13	8.18	1	3.13	3	13.64	75	12.30
70 +	22	5.54	4	2.52	0	0.0	0		26	4.26
TOTAL	397		159		32		22		610	
No. answer	21		6		1		1		29	

1g. THE SPATIAL DISTRIBUTION OF ENUMERATION POINTS

We have compared the density of enumeration points in the Loitokitok area with the density of houses obtained from aerial survey by the FAO/Kenya Wildlife Management Project. The distributions are similar (Spearman's correlation coefficient = 0.51; significant at the 0.01 level)

Visual comparison with the aerial survey data suggests that the IDS survey may have a tendency for over-representation in the pastoral zone and under-representation in the zone of cultivation.

No aerial survey data for the Ngong Hills area was available from the FAO/Kenya Wildlife Management Project.

IV a. PREPARATION OF SEMINARS

The seminars were prepared in cooperation with the ALT Loitokitok. Once the data had been analysed and the major issues identified, a series of meetings were held between the ALT and the authors to prepare discussion of these issues in the areas where the survey was conducted.

Locations where seminars were to be held were selected to cover all the areas where the survey was taken. Itilal, Kuku, Kimara, Loitokitok, Kikelelwa, Illasit, Entarrarra, and Rombo were chosen and a topic relevant to the problems of each area, as identified in the survey, selected for discussion. District officials were informed of the time and place of the meetings. The ALT is trained in the methods of teaching literacy formulated by Paulo Freire. An important aspect of this method is that the subject matter of the literacy lessons should be relevant to the felt needs of the participants. The topics identified in the survey met this requirement. The topic is introduced by a code. The code usually consists of a picture, or series of pictures, representing an aspect of the life of the participants. For the purposes of the discussion of the survey results in Kuku and Rombo, for example, a picture representing drought conditions - poor grass, dying animals, disconsolate herder - was selected. Codes relevant to each seminar location were chosen.

The chief, subchiefs and schoolteachers were asked to inform the people in each location of the date and time of the seminar.

IVb. THE SEMINARS

The seminars were usually organised at a school in the selected locations. Attendance at the seminars has varied from about 40 at Kimana to over 300 at Entarrarra. Most of the meetings included between 50 and 80 participants. The percentage of the participants in the seminar who had been interviewed during the survey ranged from about 50% at Rombo to about 10% at Entarrarra.

The format of the meetings was as follows:

- i. opening prayer by an elder who also gave news of community affairs
- ii. introduction of the ALT and IDS personnel by chief or subchief of the area. The chief explained the purpose of the meeting and stressed that it was not convened by the government but by the ALT.

- iii. Dr. Campbell introduced the subject for discussion. He reminded the participants of the survey and of the promise of the enumerators that the results would be discussed with the respondents. He then referred to the issues raised by the survey which were to be discussed at the meeting.
- iv. One of the ALT presented the code and asked the participants to identify what it represented. A discussion of the code and its meaning took place. During these discussions the participants both confirmed the findings of the survey and occasionally identified problems which had not been noted by respondents or the researcher. For example farmers at Kimana, where there is an irrigation scheme set in a predominantly pastoral area, emphasised the problem of predation on their livestock. Most farmer in the survey were not concerned with this issue as they own few animals but at Kimana it is a major problem as the farmer do own livestock as well as farm.
- v. The participants were divided into small groups in which they spent 10-30 minutes discussing the issues and solutions for the problems. A member of the ALT acted as facilitator in these groups which are important in that they provide an opportunity for less vocal people to express their views.
- vi. the groups reported their discussions to the whole meeting.
- vii. Dr. Campbell then reviewed these reports in relation to the results of the survey and asked for discussion.
- viii. After further discussion proposals were made for dealing with the problems which had been identified.
- ix. The chiefs and members of the IDS team made closing statements. At this point Mr. Mbugua took the opportunity to summarise what had taken place at the meeting and to emphasise that we had called the meeting not to tell people what to do but to report and discuss the findings of research. He encouraged the participants in their efforts to identify and solve their problems and expressed the hope that they would request the necessary help from government agencies in their development efforts. These statements were vital in clarifying the objectives of the meeting and in differentiating between the survey findings and government policy see Section iv c iii.

- x. An elder closed the meeting with a prayer.

It is important that the proceedings be recorded by a number of people to ensure accuracy. At each meeting we had at least two, and where possible three, people making notes. A record of the discussion held at Kimana is presented as Appendix B. (page 17).

IVC. REVIEW OF THE SEMINAR PROCESS

The notion of Field Seminars as a medium for reporting on the results of survey research needs to be assessed in relation to

- i) its input to the research and
- ii) its impact upon the local community.

IVC. i Input to Research :

A major contribution of such meetings to the research is that they provide an opportunity for presenting broad issues for discussion. These issues provide a context for detailed data analysis and thus the discussions enable the researcher to obtain a better understanding of the major issues with which he is dealing.

A second benefit from the meetings so that the research is presented to a wider population than that from which the sample was drawn. Any major discrepancy between the survey data and the views of the people of the survey areas may therefore be identified, or the general results can be confirmed.

The presentation of the results to the people of the survey area has been well received in most meetings. The participants have felt that the discussions were useful and they will probably continue to be ready to act as respondents for future surveys.

IVC. ii Impact on local Community

The IDS Team had two objectives, namely to educate people about the issues raised by the survey and to ensure that interaction between the survey team and the respondents included an element of direct feedback of information as opposed to the more indirect feedback via written papers etc.

In providing a forum for the discussion of issues raised by the survey the ALT hoped to demonstrate to people the interrelationships between development issues in the area. For example the problem of population growth, land shortage, food production and conflicting landuse are not unique problems

but are closely related to each other. The seminars were therefore intended to provide an opportunity for the participants to analyse the complex nature of the problems they faced and to propose means of tackling them.

The act of responding to a questionnaire involves a process of education by forcing the respondent to focus on specific issues but the seminar not only reaches a wider audience but also provides an opportunity for discussing a wide range of development problems.

The fact that the IDS team had initiated a process of feedback between the interviewers and the respondents was welcomed by most of the participants in the seminars many of whom expressed the hope that such a process would continue. Feedback not only serves to consolidate good relations between researchers and the researched but can act as a catalyst in decision-making at the local level. For example the group which met at Rombo decided to reconvene four days later to continue their discussion of ways of overcoming the problems of land shortage in that area.

IVC. iii. Problems encountered in the Seminar process

A number of difficulties arose during the course of the seminars. Some concerned organisation - e.g. insufficient notice being given of the time and place of the meetings, others arose because the nature of the meetings had not been carefully explained to the participants at the time the meeting was called, and they were not expecting to discuss the issues which we had planned to raise.

A difficulty underlying the whole process concerned the relationship between the ALT and the broader community. The ALT members are young men whose age group is not yet in a position of influence in the traditional society. Efforts by the ALT to promote development may be resented by those in power and this may partially explain the delays which occurred at a number of places in the spreading of information about the meetings and also the unwillingness of some people to attend them.

Where delays had occurred in the spreading of information about our meetings we visited the schools a few hours prior to the meeting time and requested the children to tell their parents about the meeting. On these occasions the presence of the chief of the area probably resulted in the parents believing that they were being called to a chief's meeting where they could discuss their grievances and request government assistance. When they discovered that we were to report on the results of the survey they anticipated that we would be providing solutions to the issues identified by the

survey. Hence there was some confusion and resentment when the nature of the meeting became apparent. It is essential therefore that more care be taken to ensure that people are given adequate notice of both the time and the purpose of such meetings.

There was one meeting, held at Entarrarra, where a number of limitations, other than those mentioned above, became apparent.

- a) the number of participants. The method used by the ALT to stimulate discussion works best where there are not too many people. The code has to be clearly visible by all participants and also discussion of the issues must be possible. At Entarrarra there were over 300 people present and thus conditions were not suitable for the ALT method.
- b) location. The meeting at Entarrarra had to be held indoors due to heavy rainfall. Thus 300 people met within one classroom - a situation not conducive to the type of discussion which we had hoped for. There was little interaction among the participants and the discussion was more of an exchange between the ALT and the more vocal people at the meeting. In other places meetings were held outdoors, under a tree and people sat in a circle, facing the code. This format was much more successful in encouraging participants in the discussion by those present.
- c) the topic under discussion. Entarrarra is one of the locations where shortage of land is a major problem and the situation will become more serious in the near future. The issue selected for discussion was that of the buying and selling of land. A number of difficulties arose first because the code which was used did not clearly display the issue. By the time that it had been explained a number of participants were of the opinion that rather than presenting issues raised by the survey, we were in fact telling the people to stop buying land. The discussion then moved away from the original point and thus we failed to present ourselves clearly. The nature of the exchanges did confirm the results of the survey which demonstrated that there is considerable concern in that area about the shortage of arable land and its implications for the future of the area.

- d) timing of the meeting. The meeting was called at mid-afternoon, and a number of the more vocal participants had spent much of the day in the town's hostels. Morning meetings would be preferable in the larger market centres.

Evaluation of the experience of the Field Seminars suggests that more careful preparation is needed to:-

- . ensure that sufficient advance warning of the meeting has been given
- . ensure that the nature of the meeting has been clearly explained.
- . discuss the most appropriate topic for presentation at each location
- . create a code which is appropriate for the topic and to prepare an alternative method of presentation should the meeting be too large or the location unsuitable for the use of the code format.
- . time the meetings such that people will be able to attend and participate. Mornings are probably the best time in market towns and afternoons in the more remote areas.

Field Seminars provide an unique opportunity for interaction between researchers and the community from which respondents were taken. There are clear benefits to both groups from such meetings but also danger of misunderstanding which can be minimised by careful advance preparation.

V. SUMMARY

This paper has presented the research methodology employed in an area with both pastoral and sedentary populations. The questionnaire technique proved successful with both groups as did the Field Seminars. We believe that the involvement of people in the survey area with the research at an early stage contributed to the success of the survey and that by choosing enumerators from the area we have encountered less resistance than would have been the case had the enumerators been recruited from outside the area.

REFERENCE

- Campbell, D.J. 1977. "Land Use Competition at the Margins of the Rangelands: a Proposal for Research in Kajiado District." I.D.S. Working Paper No. 299, Institute for Development Studies, University of Nairobi.

Appendix A.

The following represents the range of questions to which responses are required. As stated previously the most appropriate technique for eliciting responses to these questions may differ from one group to another. The questionnaires are available from the author who would appreciate comments from, those who may be particularly interested in the questionnaires themselves.

FARMERS

INTRODUCTION

1. Location of Interview - District, Location, sublocation
2. Demographic characteristics - members of family by age & sex
3. Land Tenure - Is title registered? If NOT the; not surveyed; surveyed only; in dispute; surveyed and demarcated; squatting; other (specify) _____.
4. Area of farm; area under different crops & fallow
5. Has proportion of area under different crops changed in the last 5 years?
6. Has the area under fallow changed over last 5 years?
7. What animals are owned? type and number (estimates if necessary)
8. Access to water - distance; type: well, standpipe, river etc.
9. What agricultural implements are owned?
10. What are the sources of cash income?
11. What are the major problems facing the farmer
 - land shortage, water scarcity, health, food supply etc.
 - how severe are these problems -
 - what is he doing to alleviate the major problems.
12. How long has respondent been in the area?
13. If he has moved in the last 10 years -
 - where from, for what reason did he move?
 - why did he choose the present location?
 - is the present location better than the one he moved from? Give reasons.
14. Will he consider moving from the present location?
 - If YES - for what reason?
 - where will he move to?

EFFECT OF DROUGHT IN PAST YEAR

15. Have the weather conditions in the past year caused problems for the farmer?
16. Were there any deaths in the family
 - if yes - what age? sex?
 - cause of death?
17. Was there a shortage of food? Was crop production affected?
18. Did any animals die? Which animals
 - when
19. How did you get food
 - used stored food
 - used food harvested
 - sold crops harvested
 - used cash savings
 - sold cattle for cash or food
 - obtained food from famine relief
 - obtained food from family or friends

RESPONSE TO DROUGHT:

20. Migration
 - to relatives, town to work to other area to work?
 - who moved, when, where to?
 - did the move succeed in helping the situation?
21. Cropping
 - Did you change the crops planted or the location of fields?
22. Did you pray for rain or pay a rainmaker?
23. Is hunger common in your family?
24. How many bad years do you remember in the past 20 - 10 - 5 years.
25. What was the impact of past droughts on crop production?
26. How severe was last year's drought in comparison with previous ones?
27. Did people react differently to the conditions during the most recent drought than they did in the past?
 - if YES specify.
28. Do you anticipate droughts in the future?
29. Do you anticipate famine in the future?
30. If Yes what are you doing to protect yourself against it?
31. Will you remain in this area?

CASH NEEDS IN PAST YEAR

32. Was any income earned by members of the family away from the farm last year?
 - if Yes what was the approximate amount?
 - What was the source of the income?
 - how often is farm income earned?
33. Estimate farm income last season from - livestock, food crops, cash crops etc.
34. Compare farm income last year with average.
35. Identify principal non-food expenditures last year?
 - seed, animals, clothing, school fees etc.

LAND USE CONFLICT

36. What is the respondent's opinion of the number of people in the - sublocation in comparison to the amount of land?
37. Have you had any problems with other farmers over the use of land in the past year?
 - If Yes specify
38. Have you had any problems with cattle herders during the past year
 - trampling grazing etc - how severe?
 - why did the problem arise?
 - what did you do about it?
 - is the frequency of conflict increasing?
 - do you see the situation getting
 - better/worse - during the next 5 years?
39. Have you had any problems with WILDLIFE in the past year?
 - what sort - trampling, grazing, predation
 - why did it arise
 - what did you do about it?
 - are problems with wildlife becoming more acute?
 - do you think things will get better over the next 5 years?

ALTERNATIVES TO AGRICULTURE

40. Have you ever worked at anything other than farming?
 - If YES specify.
41. Have you ever considered doing any other type of work?
42. Have you ever visited -
NAIROBI MOMBASA VOI NGONG MACHAKOS EMALI LOITOKITOK ect.
43. For what purpose have you visited towns?
 - Job, market, social, etc.
44. How frequently do you visit your nearest town?
45. How do you travel there? walk, bicycle, bus, matatu, others

- 46. Have you ever considered moving to a town?
 - to do what?
 - with/without rest of family?
- 47. What rate of pay would you expect from a job in town (K/- /week)
- 48. Do you send any children to school? specify.
- 49. What future do you see for those at school?
- 50. What future do you see for those not at school?

PASTORALISTS

INTRODUCTION

- 1. Location of Interview - DISTRICT LOCATION SUBLOCATION
- 2. Demographic characteristics - members of household by age and sex
- 3. Land Tenure - shareholder in group ranch: individual title, area not surveyed etc.
- 4. Does any member of your household do any farming?
 - who; where; what area in hectares; crop produced etc.
- 5. What animals do you own? - type, number. (estimates)
- 6. Access to water
 - which areas do you graze in during the wet season?
 - which are your principal sources of water in the wet season?
 - which area do you graze in during the dry season?
 - which are your main sources of water in the dry season?
 - are any areas which you used to graze in 5 year ago no longer available to you?
 - which ones; why?
 - has your access to water and grazing become more difficult in the last 10 years?
 - specify
- 7. Do you have access to - dips, veterinary services, cattle markets, schools, medical facilities, etc.
- 8. What are your main sources of cash income?
 - sale of cattle; sale of milk; sale of handicrafts; money earned by a member of the family away from home,
- 9. Do any member of your household work in occupations other than cattle herding?
 - If YES - who, what job, amount of income, amount of money sent to family, etc.

10. What are the major problems facing the herdsman?
 - lack of animals (specify)
 - lack of access to water and pasture
 - disease of animals
 - ill-health of family
 - lack of labour
 - lack of food
 11. What is the herdsman doing to overcome the more severe problems?
 12. How long have you been herding in this area?
 13. If you have moved in the last 20 years: Where did you move from?
 14. Why did you leave that area?
 15. Why did you choose to move to the present area?
 16. Are conditions better here?
 17. Do you intend to stay?
- EFFECT OF DROUGHT IN PAST YEAR
18. What were the main problems you faced in the past year?
 19. What was the cause of these problems?
 20. How many animals did you have before the drought? (estimate)
 21. How many animals do you have now (estimate)
 22. Were you faced with hunger last year?
 - If YES -
 - how did you get food: sold animals
 - used savings
 - planted crops
 - sold handicrafts
 - obtained famine relief
 - where did you get food
 - who did you get food from
 23. What were your major cash needs in the last year - estimate amount, food, clothing, cattle, medical expenses, taxes, school fees, travel
 24. How did you get money to pay for these needs -
 - sold cattle, used savings, sold handicrafts, took a job -
 - type - askari, manual labour, agriculture
 - where
 - income

25. Did you receive any money from tourists or from tourism last year?
(specify)
26. Did you receive any money from WILDLIFE activities last year?
(specify)

RESPONSE TO DROUGHT

27. Did you move your location during the last year? where to, why?
28. Did you move your animals in search of water and pasture? where to, was the move successful?
29. Did any member of your family leave to look for wage employment in the last year? - who, where to, what job, did he succeed?
30. Did you seek help from relatives?
31. Did you get help from the government?
32. How many times did the family move in the last year?
33. Did moving improve the family's well-being?
34. Did any member of the family attempt to grow crops?
- specify.
35. Did you pray for rain or pay a rainmaker?
36. Is hunger common in your family?
37. How many bad year do you remember in the last 20 - 10 - 5 years?
38. How bad was the most recent drought as compared with previous ones?
39. Did you move your location in response to previous droughts?
40. Do you anticipate drought in the future?
41. Do you anticipate famine in the future?
42. What will you do to protect yourself against the effects of drought and famine?
43. Will you remain in this area?

LAND USE CONFLICT

44. Have you had any problems with farmers in the past year?
If YES
 - over what issues? - access to water
 - access to grazing
 - trampling of crops
 - encroachment of cultivation
 - why did these conflicts arise
 - what did you do about them
 - is the frequency of conflict increasing
 - do you think that the situation will improve/get worse over the next 5 years.

45. Have you had any problems with WILDLIFE in the past year?
 IF YES
- what sort of problems? - predation
 competition over grazing resources
 competition over water resources
 - why did these difficulties arise?
 - what did you do about it?
 - are problems with wildlife getting more serious?
 - do you think the situation will improve or get worse over the next 5 years?

46. Have you come into conflict with the authorities in wildlife parks in the past year?
 What sort of issues were involved?
 why did the difficulties come about?
 are problems over the Parks getting worse?

47. Have you had any conflicts with other pastoralists in the past year?
 specify: cause, result, action taken etc.

ALTERNATIVES TO PASTORALISM

48. Have you ever done any work other than herding animals?
 If YES go to 50

49. Have you ever considered doing any other type of work?

50. What type of work would you do?
- askari
 - labourer
 - farmer
 - other

51. Have you ever visited
 NAIROBI, MOMBASA, MAGADI, NGONG, VOI, EMALI, LOITOKITOK etc?

52. What was the purpose of the visit?

53. How often do you go to town?

54. How do you get there? walk, bus, matatu?

55. Have you ever thought of moving to a town
 If YES - where; to do what; with or without family?

56. What weekly wage would you expect? (K/-)

57. Do you send any of your children to school?
 If YES - age & sex

58. Are you happy that they are at school?

59. What do you see as the future for those that are at school?
 60. What do you see as the future for those not at school?

APPENDIX B

REPORT OF A MEETING AT KIMANA

recorded by Mr. Mark Kisopia and Mr. E. S. Mbugua

I. Introduction

Kimana is a small settlement located about fifteen kilometers north of Loitokitok. There is a small irrigation scheme in the area and the nearby swamp is an important dry season resource for pastoralists. There is a considerable amount of wildlife in the area and a tourist lodge is located to the north of the settlement.

II. The Seminar

The meeting at Kimana took place on March 17th¹⁹⁷⁸ at Kimana Primary School. People were informed of the meeting and its purpose on the day before the meeting, the message being passed through the schoolchildren. There were about 40 people present, about one third being Maasai.

Before the meeting started the assistant chief for Orok-Kiteng asked a middle-aged man to lead the participants in prayer and he did so in Kiswahili. After the prayer the assistant chief commended the people for the work which they were doing in laying the foundations for a new classroom for the school. He then reminded them of the survey which the IDS team had conducted in March 1977 and asked them to be cooperative in discussing the problems which had been identified during the survey.

The IDS/ALT group was then introduced by one of the ALT who then gave a brief talk on the nature and purpose of the survey. He introduced Dr. Campbell and invited him to outline some of the results of the survey.

III. The Results of the Survey

Dr. Campbell greeted the participants and thanked them for turning up to the meeting and for being cooperative during the survey. He explained that he thought it important that the results of the survey should be reported to and discussed by the people living in the areas where the survey was conducted.

The survey was conducted at a time of severe drought when many people were receiving famine relief from the government and from the Roman Catholic Mission. He stated that respondents to the survey had identified the following problems:

- i) lack of rain -
- ii) lack of water for the crops and for livestock. The cutting of woodland for building wood, charcoal and for cultivation may have made matters worse.
- iii) trampling and eating of crops by livestock. This was the result of inadequate fencing of shambas and of young herders being unable to control their animals. He asked if this was a severe problem and the participants replied that it was.
- iv) wildlife trampling and feeding on crops. The main trouble-makers reported were elephants, buffalos, Baboons, monkeys, antelopes and warthogs. He asked if it was correct that these animals bothered them and they replied that they did.

IV. The Presentation of the Code by the ALT:

The code consists of a picture which shows a lady chasing cattle which are grazing on the crops in her shamba (Figure 3).

The participants were asked to state what they thought the picture represented. They said that they saw - a Maasai boma

- a cow
- a car
- a house
- trees
- fences
- a woman with a panga chasing away a cow grazing on the crops.

V. The Discussion:

The ALT asked if the situation shown in the code happens in Kimana. They replied that it does. The participants were then divided into small groups and asked to discuss why the situation represented by the code happens. After about twenty minutes they were called together to present their views.

Figure 3.

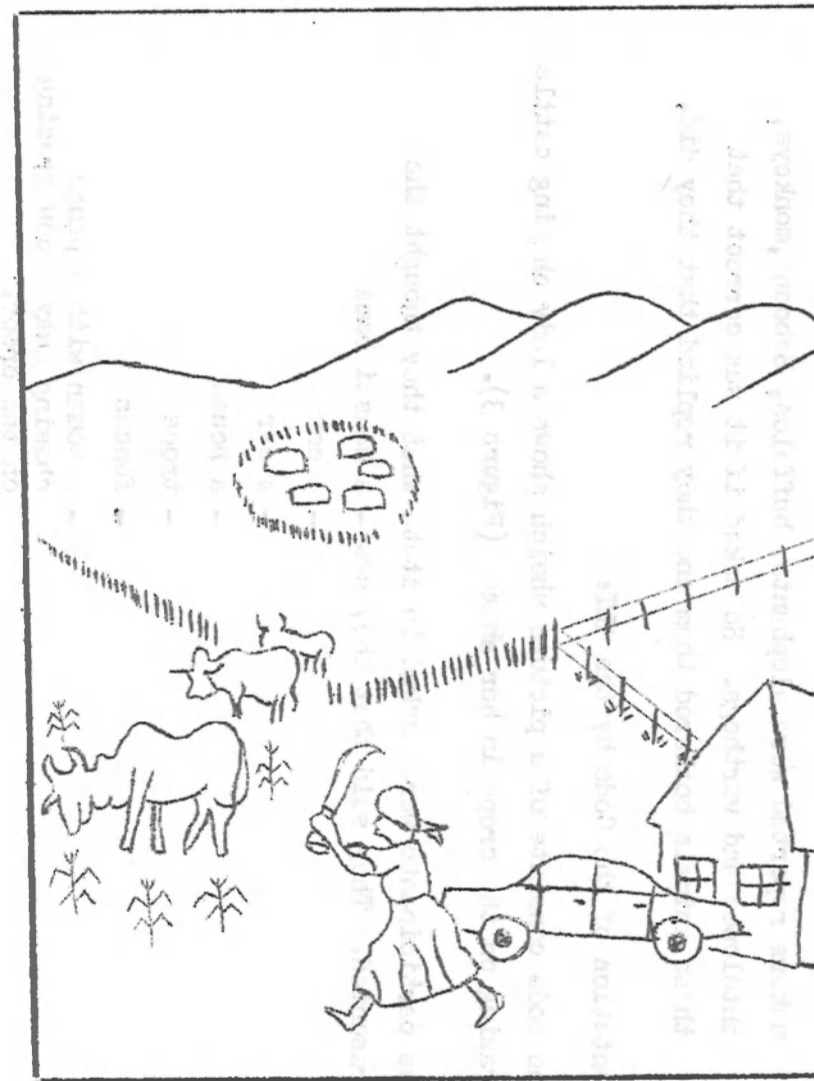
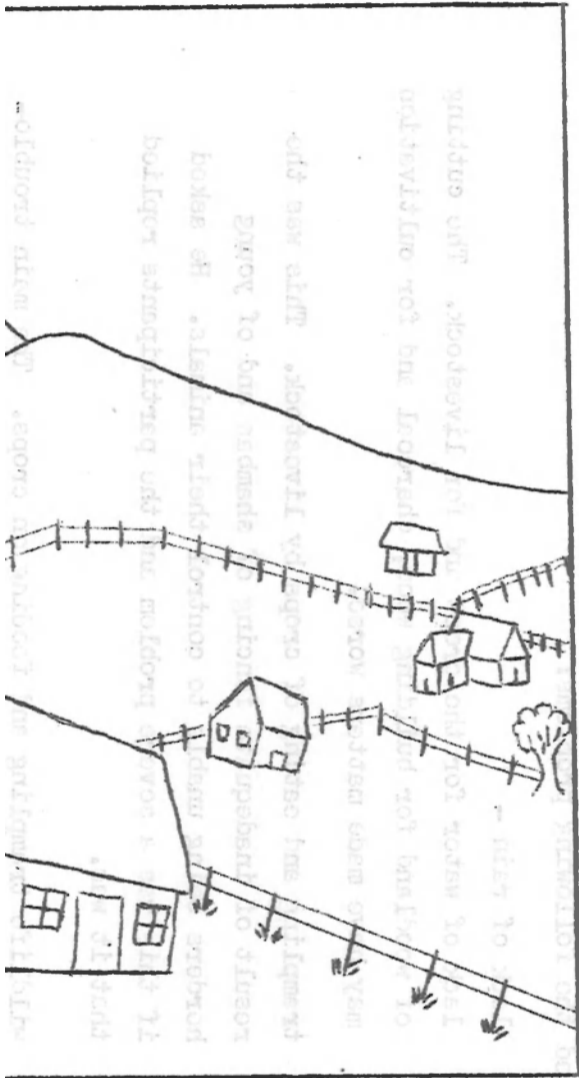


FIGURE 3. EXAMPLE OF CODE USED BY ALT.

1879/80

Some of the most interesting and most valuable specimens of the
Yukon and of the surrounding mountains are the
fossils of the Lower Cambrian period.



They stated that the situation arose because of:

- drought
- poor fencing of shambas
- young children herding the animals

and that it leads to misunderstanding between farmers and livestock owners.

The ALT then asked what might be done to reduce the problem and they responded:

- fencing of shambas
- feeding of animals in enclosures
- cattle owners being more careful.

Dr. Campbell then summarised the responses. He stated that the people clearly understood the problems confronting them and they had good suggestions for overcoming them. He said that during the drought the herders found it difficult to find grazing for their livestock and so they encroached on the shambas - it is necessary then for farmers and herders to cooperate in times of scarcity.

He then introduced the difficulties associated with wildlife. He noted that while it might be possible for the people to find ways of preventing livestock from damaging crops it would be more difficult to stop the damage caused by wildlife. What then could they do about this issue?

They replied that they reported the damage to the Game Wardens but that there were too few scouts in the area. Six people stated that they had reported to the Game Wardens but nothing had been done.

Dr. Campbell asked if any had ever been compensated for the damage and noone had been. He then asked them a number of questions concerning the protection of crops against damage by wildlife.

They stated that they keep drums and dobes in the shambas which they beat at night to keep the animals away. This tended to keep away all but buffalos and the predators. They were asked if they grouped together to scare away the animals.

They responded that they acted individually in this matter and though communal action might succeed with most animals it would not work with the buffalo. One participant stated that buffalos are highly

intelligent and they hide and take a strategic position from which they can attack a person. This man had built himself a house in a tree where he kept drums and debes to beat whenever animals came into his shamba. Bamboons and monkeys were also stated to be difficult to deal with because of their intelligence.

At this point the participants were again divided into groups to discuss ways in which they might protect their crops from wildlife. When the groups reported they suggested:

- the building of electric fences around the shambas.
- cooperation between local people and game scouts
- compensation by the Ministry of Wildlife and Tourism for crops damaged by wildlife
- the building of a Ministry game post at Kimana
- farmers could be provided with "explosives" which they could fire in the air to scare the animals
- game scouts should do their job and act to protect the crops by chasing animals back to the national parks.
- the national parks should be fenced
- more game scouts be recruited. One woman stated that the game scouts are ineffective as when called they demand food and beer but do nothing about the wildlife. Everybody at the meeting agreed with her!

Dr. Campbell then said that wildlife forms the basis for the tourist industry and perhaps the people benefited from tourism. They responded that they earn little from the tourists as Kimana is not on a tourist route and that thought they could sell produce to the lodges the lodges prefer to buy their food in Nairobi and offer only very low prices to local residents. The consensus was that there are few benefits from wildlife - the government gets money from tourism while the people lose their crops and when it comes to famine the government does not do much to help the people.

The survey showed that among pastoralists wildlife is seen as a potential food source in bad years. The participants stated that wildlife are God's creatives and their own and though a few do eat wildlife it is illegal to do so. When pushed on this point it appeared that very few farmers kill wildlife for food.

In conclusion an elder stated that they would try to work

together to solve the problems but if the government failed to compensate them then they should not prosecute when local people kill the wildlife.

The discussion then moved on to a third problem identified by the survey - that of insufficient water.

An elder stated that they have been trying to find ways of reducing water shortages for a long time but they have not been successful. The assistant chief agreed and cited the example of a dam which they built in 1974 but which had failed because they had not had any technical assistance from the government. They had chosen two sites to build dams but had not been able to solve the problem of silting during floods. The meeting appealed for assistance with their water prefects - they had tried to build dams on their own and had failed and they needed government help in the form of expert advice and a bulldozer. They have asked the government for help but no action has been taken.

It was stated that water is important because crops such as maize, beans, onions, tomatoes and cabbages grow well under irrigation.

The assistant chief then stated that he would call a meeting to discuss the water problem and to identify the areas in which they need government assistance in implementing development projects in the area.

Mr. Mark Kisopia then described the benefits which have come from the construction of dams in the waterless areas to the west of the Ngong Hills. A missionary had organised the local Maasai to provide funds and labour for dam construction while he had provided some expertise. Though the streams were still seasonal the dams trapped enough water for the peoples' needs throughout the year. Mr. Kisopia suggested that people from Kimana should visit this scheme and perhaps they could benefit from the Ngong experience.

V. Concluding remarks

Mr. Mbugua stated that he saw that the people of Kimana faced different problems from those of other areas which we had visited. At Kimana the major issues were i) predation by lions, hyenas and leopards, ii) wildlife and livestock grazing on crops and iii) water. It was evident, he said, that the participants understood the nature of these problems and had ideas on how to solve them. They had already taken a number of actions but they recognised that they needed assistance so they should not rest until they have taken the necessary steps to obtain

assistance with their self help efforts to overcome the problems. The IDS team would note their needs in their report and he said that perhaps the report will help them in solving their problems.

He said that they should not be ashamed of asking for government assistance with their efforts. They had tried self help projects and recognised that they needed expert help. If they need help from the government it is a felt need and so they should make every effort to obtain such assistance. It is true that to build a successful dam you need expert advice so you should obtain it, for without it a dam may be poorly constructed and fail to hold water. Mr. Mbugua stated that the problems expressed by the meeting would be noted in the survey report. (Loud applause). He then asked if the IDS team had made a mistake by reporting on the results of the survey. The response was that the people welcomed the report and that they needed more people to help them discuss their problems and help them progress. Mr. Mbugua then stated that he was happy that the ALT was located nearby as they would be able to assist the people in their development efforts.

The assistant chief stood and thanked the IDS/ALT team for reporting on the survey and he assured them that everything that had been discussed would be acted upon. He said that the people are ready to do anything to help themselves and to quicken the pace of development in the area. He thanked the participants and the team for such an educational meeting and said that it will help the development of the whole community.

The meeting closed with a prayer.