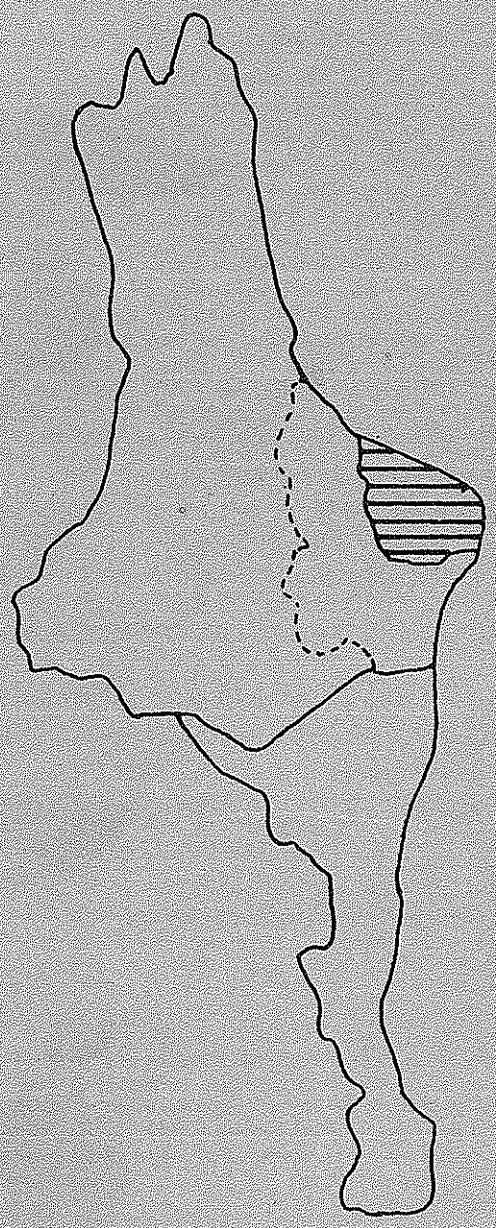
Locational development profile for Masol Location, West Pokot District

Zaal, F.; Tienhoven, I. van; Schomaker, M.; Dietz, A.J.

LOCATIONAL DEVELOPMENT PROFILE

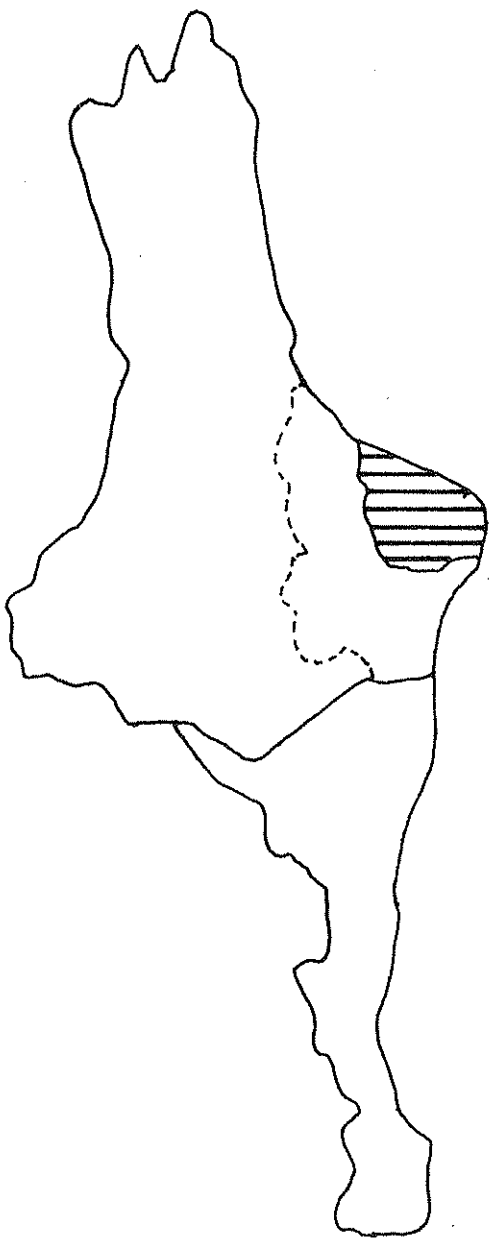


MASOL LOCATION

WEST POKOT DISTRICT

KENYA

L O C A T I O N A L D E V E L O P M E N T P R O F I L E



M A S O L L O C A T I O N

W E S T P O K O T D I S T R I C T

K E N Y A

Regional Development Research
West Pokot / Elgeyo Marakwet
P.O. Box 287, Kapenguria

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November 1985

CONTENTS

0. INTRODUCTION AND SOURCES.

0.1 Introduction.

This Locational Development Profile is part of a group of profiles about locations in West Pokot and Elgeyo Marakwet Districts. They give a summary of the history and situation of the administration, physical geography, population, economy and social services. The profiles are written for people working in the locations and for government employees at divisional and district level.

The information presented in this Profile will not be complete nor 100% reliable. The reader is asked to send any addition and/or correction to the ASAL-Programme Coordinator (P.O. Box 287, Kapenguria) so that the knowledge about the location can be updated.

We would like to thank all the people who gave us so much of their time, energy and friendship.Our special thanks go to Rachel Andiema who helped us in almost every possible way, Huup Hendrix for his support in West Pokot and Ton Dietz who assisted us in word and deed.

Fred Zaal
Ingrid van Tienhoven

0.2 Sources.

Various sources were used to write this profile.
We visited the area in the months of February, March and May 1985 and talked to a number of people working and living in the location. 90, mostly male, representatives of households were questionned by Rachel Andiema. Of these, 47 were in Amolem and Lokarkar, 21 in Akiriamet and Kadongdong and 21 in various places among Masol Pokot living in Weiwei Location. Also, 11 questionnaires were done among Masol Pokot living near Lomut by Leonard Molo, councillor of Lomut Location. These questionnaires were done in such a way that a variety of environmental conditions and living conditions were represented. It was done in April 1985. Also shopowners were interviewed.

We used (unpublished) census figures to get information about the size and growth of the population and about the size of the herd. District Annual Reports 1914-1984 were used and the Annex 1984-1985 and 1985-1986 to the West Pokot District Development Plan 1984-1988. We also used files at the Divisional Office in Sigor and files on schools of the Divisional Educational Office there and of the schools themselves.

Articles and books we used to write the Profile of Masol Location, and the maps we used are:

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Kapenguria, Scale 1:250,000, East Africa (Kenya),Sheet 76/1.

1 AREA AND ADMINISTRATION OF MASOL LOCATION.

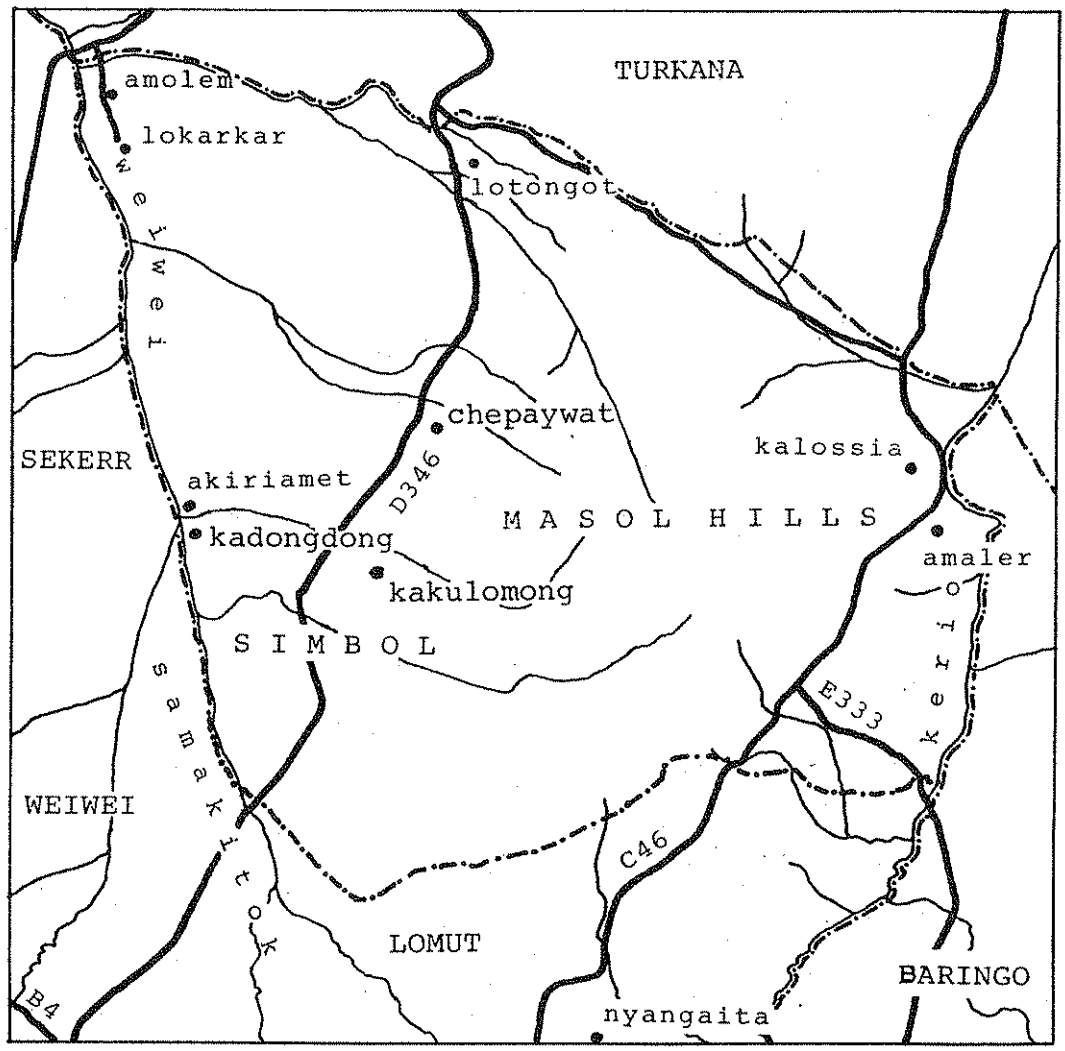
1.1 Area of Masol Location.

Masol is situated in the North-Eastern part of Sigor Division of West Pokot District. Its area is 724 square km of which the greater part are plains, mostly covered with bush and deserted by the people. The central part is formed by the Masol Hills, also deserted nowadays. Many Masol

.

Map of Masol location.

Map 1

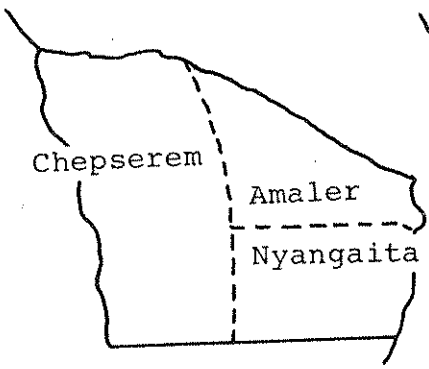


scale 1:250,000

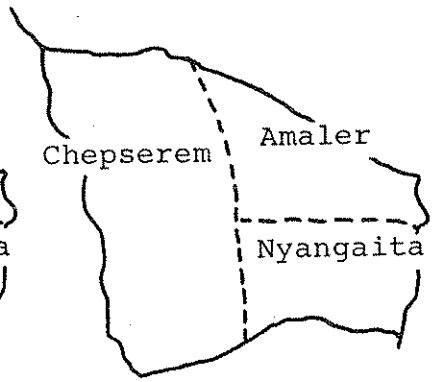
boundary
river
road
village

people live in and around Amolem in the North- West of the location, along the rivers in the West and in the neighbouring locations
These locations are Lomut in the South, Weiwei in the South-West and Sekerr in the West. North of Masol is Turkana District and East is Baringo District.
Until 1980 Masol Location was rather isolated. In that year the tarmac road from Kitale to Lodwar was constructed and specially Amolem and Lokarkar are now better reached by car from Kapenguria. Other parts are not easily accessible because only minor roads exist in the location.

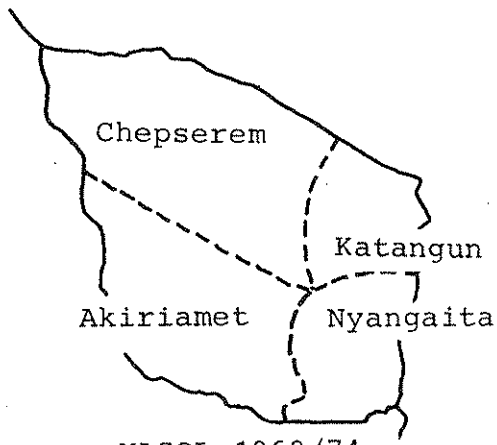
Map 2; sublocation boundaries



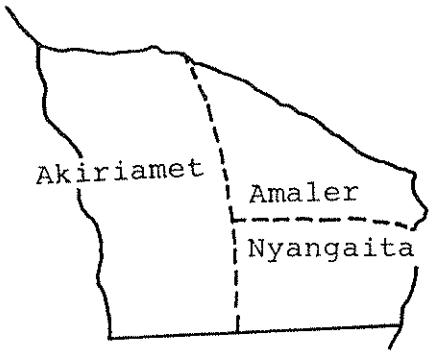
MASOL,1956



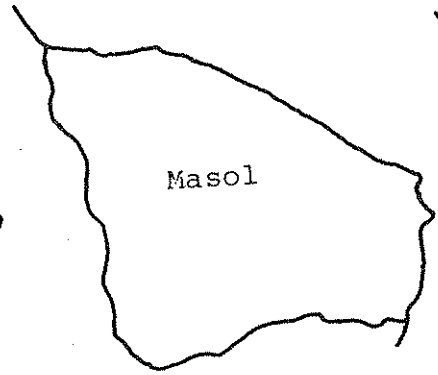
MASOL,1962



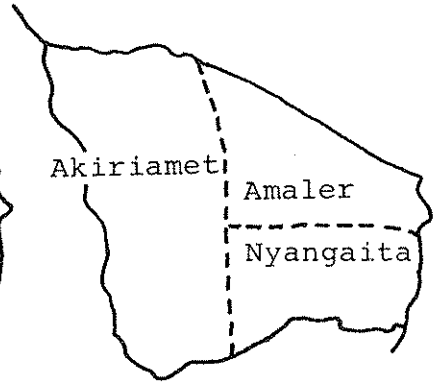
MASOL,1969/74



MASOL,1979



MASOL,24-08-1979



MASOL,1984

1.2 Administrative history.

In 1904 a British military patrol went through Masol for the first time, coming from the South-East. It reached Ngabotok, a place at the Turkwell River North-West of Masol (in presentday Turkana). A British colonial post was established at the Kerio River in 1908. It was supposed to watch over West Pokot and Southern Turkana Districts but real control beyond simple tribute gathering was not attempted. In 1910 the post was replaced to Ngabotok where it stayed until 1914, being the district centre of not only "West Suk" but Turkana District as well. In this period the Masol people first began to notice the influence of these new government institutions; tracks had to be cut for the administration for example. The replacement of the government post to Kacheliba in 1915, and even more from there to Kapenguria in 1929 made Masol one of the locations most difficult to control. There was no road from Kapenguria to Marich until 1940. Trips to the area would last several weeks.

Cattle raiding was always (and still is) a constant worry of government officials (for economic effects see Chapter 4). The first raids recorded in the archives were in 1917 and 1918. 450 soldiers from the Sudan Equatorial Batallion and the first Batallion of the King`s African Rifles, together with 570 Pokot and Karamojong levies were sent to stop this. Two police posts were established in 1919 and the soldiers were withdrawn. One of the posts was in Lotongot, the other in Kalossia. The latter had a European officer of the King`s African Rifles. Although staff was limited, they seem to have had some success.

In 1921 the District Commissioner ordered that the Pokot would no longer be allowed to use the Masol Hills to avoid contact with the Turkana people. The police posts had to check this and later also whether the two tribes didn't cross the boundary agreed upon in 1926.

The first chief in the area, than Alongol Location, was appointed in 1914. In 1917 Masol formed part of Turkwell Location but that was not for very long. In 1921 Masol acquired it's present form and area, and a chief was appointed.

The location and sub-location boundaries as seen by the Government changed through the years. Map 2 gives an overview. The sub-locations are not based on clanland-boundaries as is the case in other locations because there is no clanland in Masol. The changes were always for administrative purposes. The people themselves agree with the 1984-situation as being the correct one.

These frequent changes make it fairly difficult to compare census figures of the sub- locations over the years. The boundary with Lomut in the south also changed a bit in 1962 and 1979. In that year Nyangaita was acquired from Lomut to be given back again in 1979. Today the boundary is back again to that of 1962.

2 NATURAL RESOURCES.

2.1 Geology.

The area is mainly occupied by the oldest rocks found at the earth's surface: the Precambrium Basement System Rocks.These rocks are metamorphic, formed during a situation in wich the existing rocks are changed because of high pressure, high temperatures and/or chemically active fluids. This may occur during tectonic movements within the earth's crust. These metamorphic rocks (gneisses in this area) are characterized by flowing layers.
The geological map gives only a very rough picture: hornblende gneisses with only a small area in the south of the location that is occupied by sedimentary rocks, in this case sandstone.
At this moment nothing is known about mineral deposits of any economic interest.

2.2 Morphology.

A large part of the location consists of a vast peneplain, at an altitude of between 900 and 1200 metres above sea-level (M.A.S.L.). This plain is the result of a long lasting erosion/ denudation process and is the old stage of such an "erosion cycle". The relief is very faint and scattered over the plain are relict mountains. The hills in the centre of Masol Location form the biggest of those relict mountains, but smaller ones of 10 metres in diameter occur too.
Along the Kerio River and the Samakitok and Weiwei Rivers a narrow floodplain has been formed, less than 900 metres above sea-level.

2.3 Hydrology.

In the Eastern part of the location a rather narrow zone of the area drains into the Kerio River with many, more or less parallel, seasonally flowing tributaries. The central and Western part of the location drains into the Weiwei River. The entire area belongs to the Turkwell catchment area and the water of both rivers finally flows into Lake Turkana if it has not evaporated and infiltrated before that.
The only perennially flowing rivers in Masol are the above mentioned rivers. At the moment there are no discharge data available, but it is obvious that the discharge will be much less in the dry season than in the rainy season.In the latter period the rivers may flood in years with a high amount of rainfall while in a dry year the Kerio River might not even reach Turkana District but may stop flowing above ground before that.
Specially in the dry season, when the concentration of dissolved minerals is relatively high, the water of the Kerio River may be rather polluted due to industrial waste

from the Fluorspar Mine in the south of Elgeyo Marakwet District,near Kimwarer.

2.4 Erosion.

Map 4 shows the actual erosion status in the area. It is a satelite image interpretation (landsat 1982) and consequently gives only a very rough and schematic picture. Also, in the period 1982-1985 the vegetation cover recovered and this in turn impedes somewhat further erosion in large area's. However, due to the absence of cattle and goats, wildlife is more profuse now, which influences the vegetation and therefore erosion. Also termites eat a lot of the vegetation cover.

2.5 Soils.

Map 5 gives the combined agroclimatic and soil-map. The first symbol in the codes stands for a certain agroclimatic zone. It gives in one symbol the ratio between the rainfall and the potential evaporation (see table 2).
The second symbol gives the soil group number of which a descriptive characterization is given below. The official classification (name of the soil group) as used by the Kenya Soil Survey is added.

According to the Exploratory Soil Map of Kenya, scale 1:1,000,000, four soil unitscan be distinguised:

A8 (nr.24).
The soils of this code are alluvial soils. This means that the material of these soils is deposited by the larger rivers and forms the floodplain. These soils are well to imperfectly drained, very deep, dark brown to yellow brown. They show stratification, layers of finer loam and coarser sand on top of each other, deposited by the flooding river. They are calcareous, have a lot of mica and are moderately to very fertile; in arid conditions can these soils become saline and useless to cultivation.That is the case here and when not large amounts of irrigation water are used these soils are quite useless.When not located in arid area's however, almost all of it (about 80 %) can be used for agriculture though flooding may cause damage to crops. Fallow periods can be short (one year of every five, 20 % of the time). Possible arable use in any year can be 64 % of the total area of this unit.

Ux10 (nr. 22)
These are soils developed on gently sloping, old peneplains. They are well drained, shallow, very calcareous and moderately to strongly sodic. The sodium is toxic to plants and the soil structure decreases dramatically when the soil is used, and becomes hard and massive. Special fertilizers

have to be used to replace the sodium and a lot of irrigation water to wash out this sodium. These soils are also moderately to strongly saline which is also toxic for plants and binds water to the soil so that not enough water is left for the plants. These soils are of no cultivation value.

H13 (nr 5)
These are soils developed on hilly area's and somewhat excessively drained, which means that water is rapidly removed from the soil. Therefore the amount of water available to plants can be a problem. The soils are shallow to moderately deep, between 0 and 80 cm, have developed on basement rock and are rocky and bouldery. To use them for agriculture can be a problem because of this. Natural fertility is moderate. To avoid erosion, much of the natural vegetation should be conserved so that an average of only 30 % of the area can be used for agriculture. The fallow period should be rather long (90 % of the time) so that the possible arable use every year is not more than 3 % of the total area.

B8 (nr 25)
The soils of this unit are developed on flat area's such as bottom lands and depressions,lowlying area's. They are imperfectly drained which means that (rain) water is not very easily removed from the soil so that it stays wet for long periods. This can lead to a shortage of oxygen in the soil (which is , just like water, of vital importance for plant growth). In parts of the area the soils are even poorly drained and they remain wet for a large part of the year. Groundwater is commonly at or near the surface for a considerable part of the year and again oxygen shortages occur. These soils are also of no practical use as arable land.

2.6 Climate.

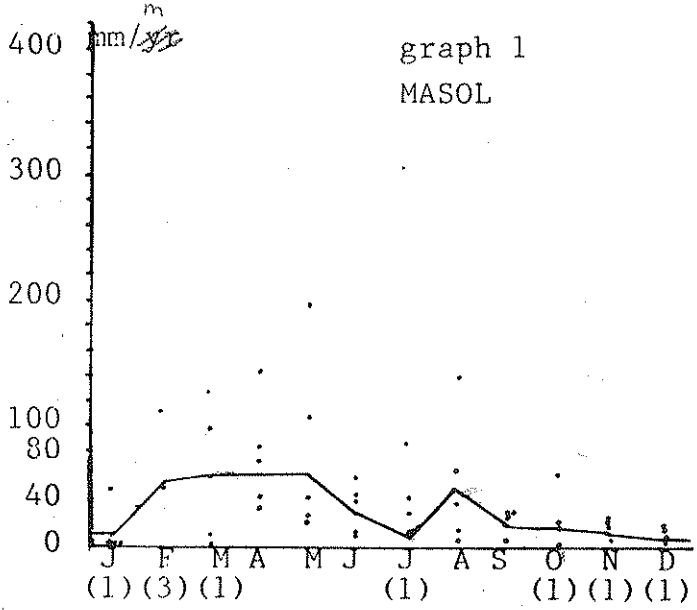
The ecological potential depends, apart from soil and relief characteristics and erosion situation, largely on the climatic conditions in the area:particularly on the annual and seasonal balance between rainfall and evaporation. The latter is mainly determined by temperature and turbulence, the way the air moves at ground level. We have information about rainfall and temperatures, and these will be presented below.

2.6.1 Rainfall.

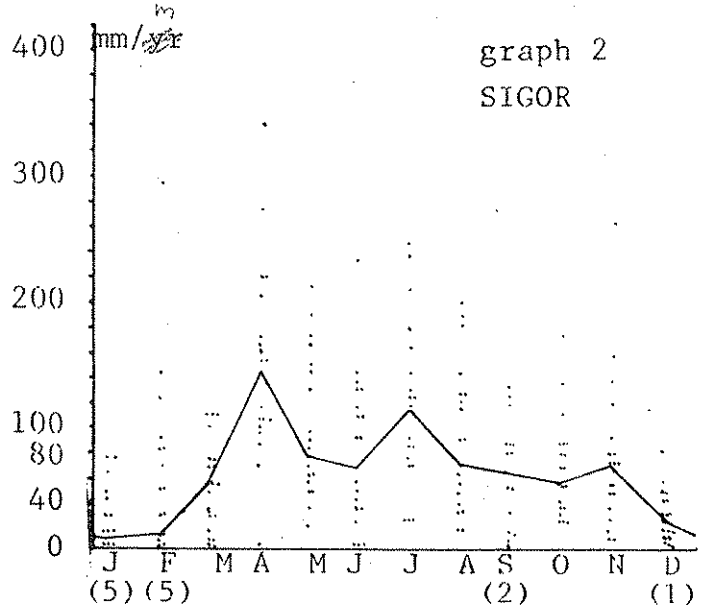
We have data on rainfall for one station in Masol Location (Amolem), for five years: 1979-1981, 1983 and 1984. These data are presented in graph 2, page 10 . In addition data for Sigor will be given to indicate the climatic conditions in the southern part of the plains. Rainfall there is

influenced by the escarpment: air rising against it cools off and evaporated water condenses again. Rain falls more frequently and for longer periods than in Amolem (graph 3). Graphs 1 and 2 show that the long rains in Amolem occur around May and August (in Sigor this is in April and June) and that there are almost no short rains. In Sigor the short rains are around November.

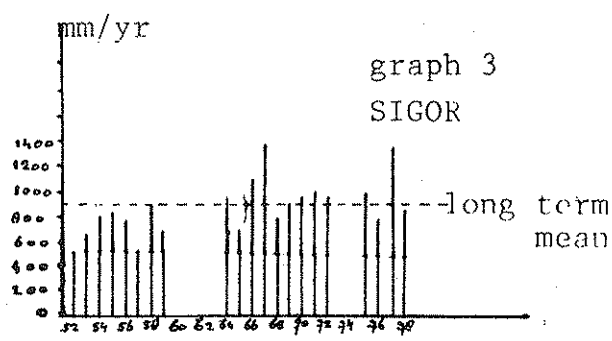
Graphs 3 and 4 show the long term mean annual rainfall: for Sigor it is 885 mm. per year and Amolem 459mm.
As can be seen in the dispersion graphs, rainfall reliability is low, especially in the months the long and short rains can be expected. This makes arable farming difficult to plan. Distribution within the year can vary. Peaks of rainfall can easely fall in April and June or in May and August. Reliability of rainfall over the years is also rather low.
Graphs 1 and 2 show dispersion figures for the monthly rainfall. Every dot corresponds with the rainfall in a particular year for that month. The figures in brackets indicate the number of years in which no rain fell in that month.



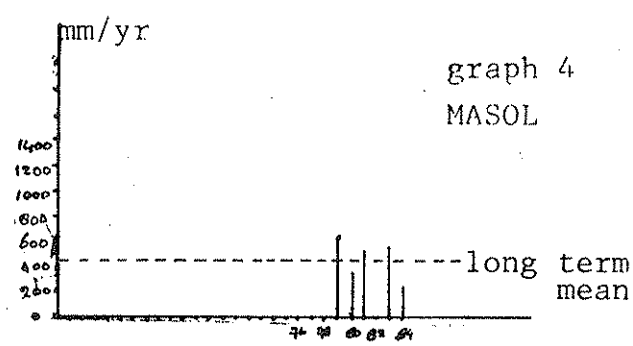
graph 1
MASOL



graph 2
SIGOR



graph 3
SIGOR



graph 4
MASOL

Graph 3 and 4 show the variation from the long term mean annual rainfall, using the available annual figures.

2.6.2 Evaporation.

Evaporation is influenced by temperature and turbulence at ground level. We do not have data on the latter but we do have data on temperatures which are given in table 1. They are averages per month of the years 1981, '83 and '84 for Amolem .

table 1, Amolem.

	J	F	M	A	M	J
max	37.1	38.6	38.3	34.9	35.3	32.8
min	18.9	18.5	21.6	20.6	19.5	17.9

	J	A	S	O	N	D
max	32.8	34.0	36.2	36.6	35.9	36.5
min	16.6	17.3	20.0	19.7	20.2	18.8

Zone	r/-ratio in % *	climate	mean annual temperature (°C)	average number of growing days
IV	40 to 50	semi-humid /semi-arid	18 to 22	180 to 235
V	25 to 40	semi-arid	20 to 24	110 to 180
VI	15 to 25	arid	22 to 30	75 to 110

* r=rainfall, E =potential evaporation.

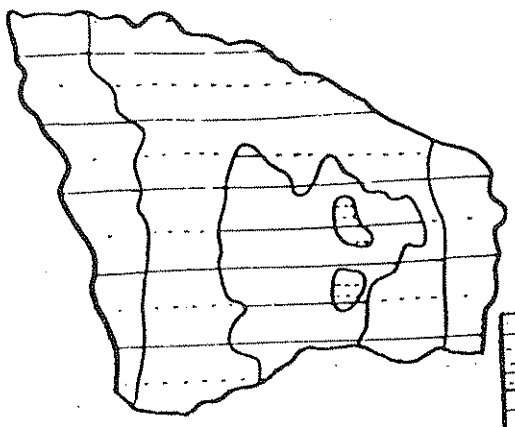
The temperatures, specially in Amolem, are very high: the mean temperature over the year is 27.5 C which means Amolem is in zone VI according to table 2. This is an arid area where rainfall is the major limitation to arable farming

2.7 Suitability of the soil and agro-climatic zone units for agricultural or pastoral activities.

In paragraph 2.6 we mentioned that ecological potential depends on soil and relief characteristics, erosion situation and climate. Maps 3 and 4 show the altitudes and the actual erosion status, map 5 gives the combined soil and agro-climatic zone units, and these maps should be kept in mind to evaluate for the various land mapping units their suitability for agricultural and pastoral activities.

V-5 and IV-5
These units seem suitable for smallholder arable farming with a more traditional technology if crop requirements match with the climatic conditions (erratic and unreliable rainfall is the major limitation to agriculture in that case). Because of the erosion hazard, soil conservation measures are necessary. This means that only an average of 30 % of the area can ever be used. As fertility of these soils is rather low, long fallow periods are necessary (90 % of the time). These percentages together give the possible arable use in a year which is in this case 3 %. Only 3 % of the land units can be used in a year.
Better management than is now applied would increase the yields: ploughing, more weeding, mulching, if possible fertilizers and water harvesting techniques. There is no permanent watersupply so irrigation is impossible.
These units are admirably suitable for grazing, as the Pokot

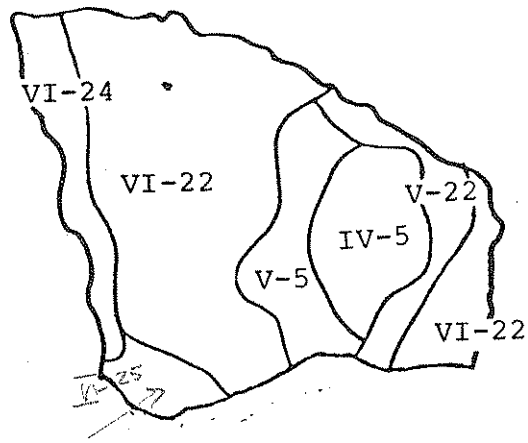
map 3: altitude in m.a.s.l.



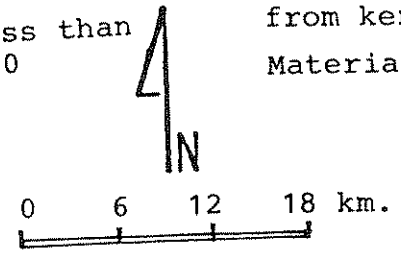
1500-1800
1200-1500
900-1200
less than 900

from survey of Kenya topographical maps

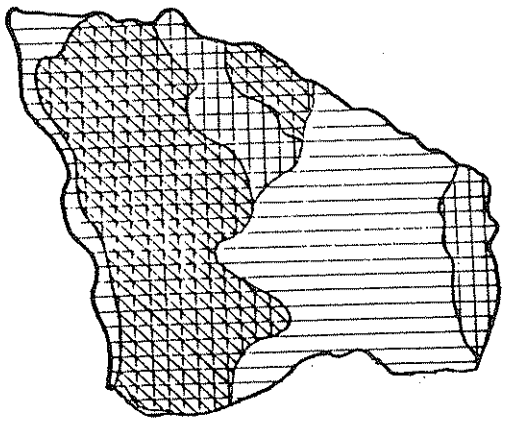
map 5: combined soil and agroclimatic zone map

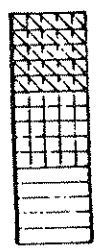


For explanation of the codes see text.
from kenya Soil Survey Material (1980)



map 4: actual erosion status.





severe erosion

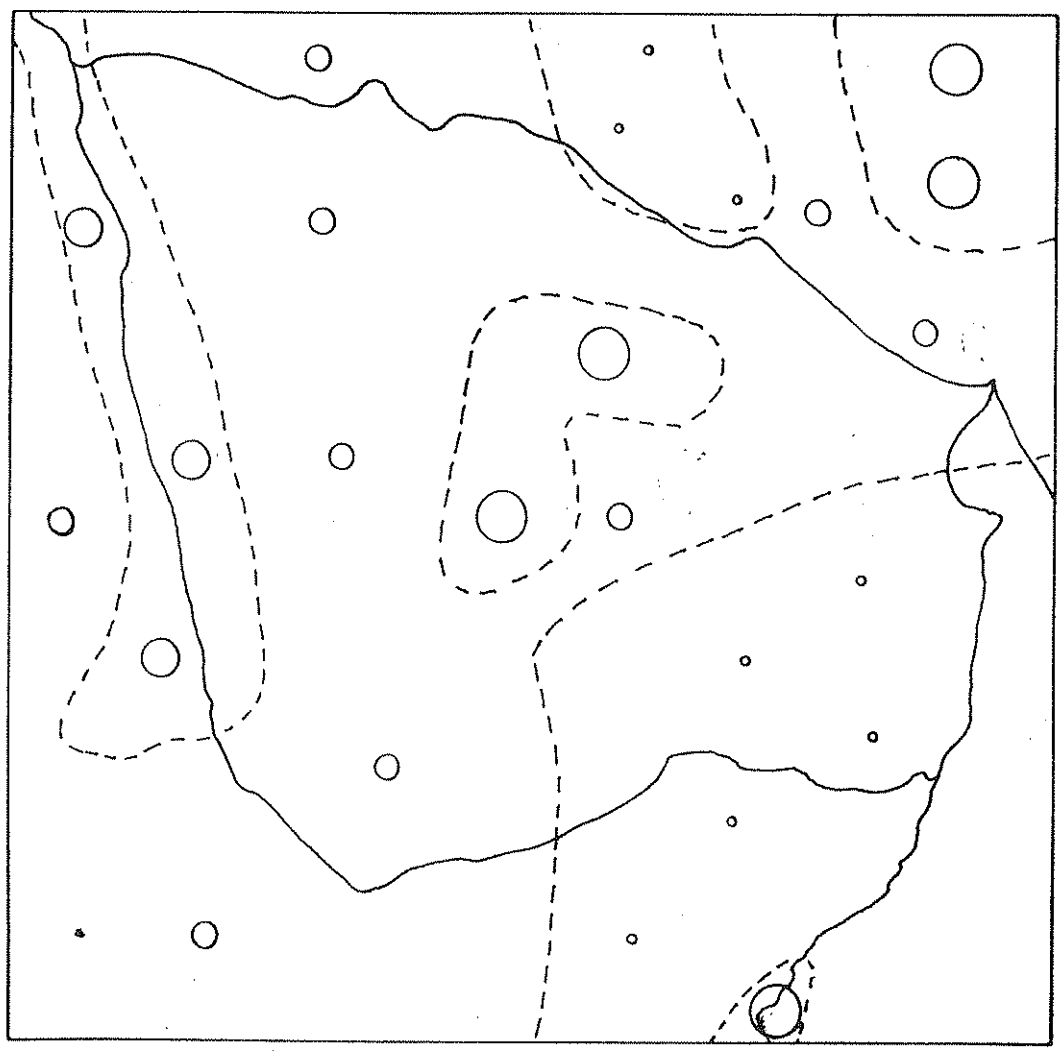
moderate erosion

little erosion

Satelite image interpretation (landsat 1982)

have known for a long time. Overgrazing should be avoided because of the erosion risk so that correct stock ratio's, enough drinking places on the correct spots, bush control through the use of goats by the women, and resting periods are necessary. In fact, many of the present "traditional" management techniques in other words. The North-Western part of the units is infested with tsetse-fly and specially the northern part of V-5 is badly infested. Bush-burning is necessary there as the Masol Pokot knew too. Map 6 gives an overview for the location as a whole for a year in which the traditional way of range management was still practiced. New research might give quite different resultsand more insight in the relation between bush- growth and tsetse fly in this area. The situation will probably have worsened.

Map 6, Tsetse-infestation in Masol Location.



Source: Safari reports 1931

——— boundary
– – – – – extend infestation

° = not infested
○ = slightly infested
◎ = much infested
● = badly infested

V-22, VI-22 and VI-25.
These units are not suitable for any arable farming because the soils have a sodic sub-soil and are saline. Both properties are very unfavourable for plants. The VI-25 unit is also imperfectly drained. If irrigation and careful drainage are used, and special fertilizers are used to wash out the toxic compounds these units might yield a crop, if high-temperature crops are cultivated. However, these measures are costly and in general these units do not seem worth the trouble.
These units seem suitable for grazing animals however. Overstocking should again be avoided as the vegetation cover is rather poor. Drinking places and rest periods for the vegetation will add to the quality of the units. Tsetse infestation is slight (see map 6).

VI-24.
This unit is moderately to very suitable for arable farming when irrigation is properly used. Advantages are the moderate to high fertility, the stratified texture and the moderate drainage that sometimes even allows plants to grow on groundwater. Disadvantages are the unfavourable climatic conditions, the flooding hazard and the salinization hazard. Irrigation is possible, specially if drainage is very good and percolating water takes away the salt. When a lot of irrigation water is used, allmost all of it can be used (80 %) and fallow periods can be short (20 % of the time) so that the area used yearly can be 64 % of the total area of this unit. When this is done there arise very big problems for the pastoralists who use the grazing along the river in the dry season. Therefore either not all of this unit should be used for arable farming, or special fodder should be grown for their animals.

3 POPULATION.

3.1 History of population development.

In general there are not many population statistics and, if available, they are unreliable. Reasons for this are the fact that not enough staff was available to collect these figures and the fact that Masol-people were (and are for that matter) semi-nomadic people which makes it difficult to count them. A third reason is that the Pokot are reluctant to have their children observed by strangers which the enumerators mostly are.
The figures we do have indicate a steady population growth, interrupted by sharp temporarely declines due to droughts, raids or diseases in the area (for security situation see chapter 4.2).

From 1923 to 1934 the population grew from 1010 to 1360 persons, an average yearly growth of 2.5 %. Than, from 1934 onwards, the number of people decreased dramatically due to a severe drought in the second half of the thirties. Many people fled the area with their cattle and in 1938 there were only 890 people counted. After the drought the people returned and from 1938 onward the population figure rises again.In 1943 it was 960, also not very high because it was quite dry again that year and many men were in other locations or even districts to find grazing for their animals. In 1948 the figure was 1160 according of the census of that year, and in 1962 1641 people were counted. Than another period of drought came in the early sixties, and especially in 1964 and 1965. It caused great loss of animals, not only among the Pokot but particularly among the Turkana people. To rebuild their herds the Turkana started to raid other tribes. First the Baringo people were the victims and many of them fled to Masol with their herds. Specially the south of the location became heavily overstocked and densely populated (see 3.3). In 1969 4036 people were counted in the location. This situation could not continue for long and in 1970 many people had left the overgrazed and raided location. A number of those went to neighbouring locations and many of them still live there. Still, the population grew, particularly since 1975 when Amolem Irrigation Scheme was started. In 1979 3474 people were counted and an estimated 1000- 1200 Masol Pokot lived outside the location at that time *.
Nowadays about 1500 people live in the location and approximately 900 Masol Pokot live in Sekerr Location, 1900 or less live in Weiwei Location, and 1900 at maximum in Lomut Location so that the total number of Masol people is estimated to be 6200 *. The average growth a year is 2.5 %

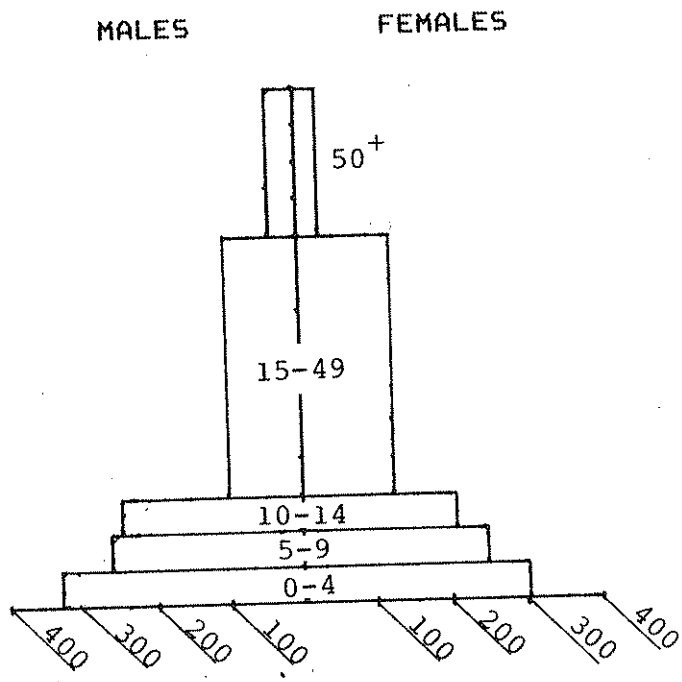
* estimates are based on 1962, 1969 and 1979 census figures, various other publications and our own observations

over the period 1962-1984 which is in line with other population characteristics (see 3.2) and with growth figures of earlier years.

3.2 Population characteristics: population pyramid and polygamy.

A high population growth rate of about 2.5 % means a doubling of the population every thirty years. This could cause serious problems in the near future. Also it means a very young population. That is the reason we think that the following population pyramid, based on 1979 census figures (including those who lived in Masol Location at the time of the census) gives underestimated figures for the 0- 4 and 5- 9 age groups

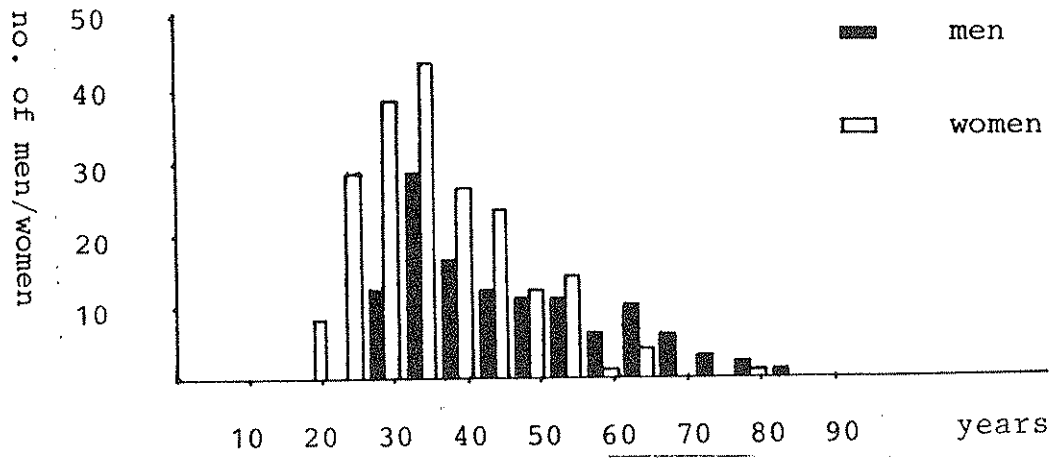
graph 5



Men marry when they are 25 years or older, women when they are 15 years or older. This means that a number of women between 15 and 25 years of age is available as second wife. Because the population is so young, this number is very high. In fact it is so high that it is possible for a

large number of men to find a second wife within the own location. It is because there are so many young people that polygamy of this kind is possible among the Masol Pokot (which includes those living in other locations).
However, an estimated 10- 15 % of the wives does not come from Masol Location. They come from the surrounding locations in West Pokot.The Masol people used to give (and some still give) a larger number of animals as bridewealth than other people did in surrounding locations. The latter tried to marry their daughters to Masol men.
The average difference in age between man and first wife (for the people we interviewed, see 0.2 and 3.5) was 10 years, between man and second wife 18 years, between man and third wife 25 years, with the fourth wife and for the few who had married five wives it was 32 years. Of the 98 men interviewed 64 had more than one wife. The following graph shows the ages of all men interviewed and those of their wives.

graph 6



Age of married men and their wives.

3.3 Densities and migration.
Until the sixties densities were rather low which is normal in most semi- arid lands in West Pokot. They varied between

0 and 3 persons per square km. The densities changed with the season.In the rainy season the lower and wetter, more forested parts were left because of tsetse infestation. Densities were higher than in the Masol Hills and on the Simbol Plains. Many seem to have been living in the area around Lotongot and Chepaywat. In the dry season this migration reversed in direction. Because there are not many perennial rivers, densities in the dry season were high there and overgrazing occured frequently on the plains along the rivers.

In the sixties a grazing scheme was started (see chapter 4.3.3) and this influenced migration. Every three months the people had to move to a new grazing block. However, not all Masol Pokot had joined the Masol Grazing Scheme and they followed their traditional migratory paths.Chepaywat, Chepserum, Akiriamet and Kakulomong seem to have been places where many people lived at the time. The first figures are from 1962, three years after the Scheme started. They are presented in table 2 .The figures are for the dry season. Note the low number of people in Nyangaita.

table 2

	MALE			FEMALE			TOTAL		
	ADULT	CHILD	TOT.	ADULT	CHILD	TOT.	ADULT	CHILD	TOT.
CHEPSERUM	124	172	296	215	159	374	339	331	670
AMALER	119	184	303	193	166	359	312	350	662
NYANGAITA	67	73	139	101	68	169	168	141	309
MASOL	310	429	739	509	393	902	819	822	1641

Then, as descibed in 3.1, Baringo people invaded the location. Especially Nyangaita, traditionally an area where Baringo people go for dry season grazing, became very populated. The following table gives the number of people according to the census of 1969. The sublocations were different from those of 1962 for this census. Chepserum sublocation was divided in Chepserum and Akiriamet, and Amaler was renamed Katangun sublocation.

table 3

	MALE			FEMALE			TOTAL		
	ADULT	CHILD	TOT.	ADULT	CHILD	TOT.	ADULT	CHILD	TOT.
CHEPSERUM	187	244	431	298	251	549	485	495	980
AKIRIAMET	121	103	224	126	121	247	247	224	471
KATANGUN	142	194	336	210	169	379	352	363	715
NYANGAITA	391	457	848	567	455	1022	958	912	1870
MASOL	841	998	1839	1201	996	2197	2042	1994	4036

The population density for Masol as a whole was 5.6 persons per square km. but it was of course much higher in Nyangaita and also in Katangun.Not long after the census was held the Masol Grazing Scheme collapsed because of the large number of animals for which it could not provide the grazing, and many left the location. In 1979 the following number of people lived in the location:

table 4

	MALE			FEMALE			TOTAL		
	ADULT	CHILD	TOT.	ADULT	CHILD	TOT.	ADULT	CHILD	TOT.
MASOL	859	833	1693	1018	763	1781	1877	1595	3474

The census did not subdivide to sublocational level. Average density was 5 persons per square km. but varied between 0 and 0.5 in the central parts of the location and 7.5 around Kalossia, Lotongot, Amolem and Lokarkar and along the southern boundary. In 1985 this slow West and Southward movement had continued to the point that only Amolem, Lokarkar and Akiriamet with Kadongdong South of that were habited by about 1200 Masol people. The others had left for Sekerr, Weiwei and Lomut Locations. Now population pressure in those neighbouring locations is high and overgrazing and erosion are widespread.

3.4 Socio-cultural characteristics of the population.

Until recently the people of Masol could.be described as purely semi-nomadic. Their herds grazed not only in Masol but in Baringo District, Lomut Location and in the lower parts of Weiwei and Sekerr Locations as well.

In 1970 they were for the first time engaged in agriculture near Akiriamet, on the right bank of Weiwei River.
In spite of the fact that a distinction can be made between agricultural and pastoral Pokot, they see themselves as a unit. No central authority exists in the Pokot culture. Authority lies with the elders, older men who are experienced and can solve conflicts*. Both agricultural and pastoral Pokot speak a common language,* are in constant contact and intermarriage occurs. In fact, the agricultural Pokot seek to marry the pastoralists because the latter pay the bigger bridewealth in stock which is very much sought after.

Particularly for the Masol Pokot it applies that, as cattle are more or less commonly owned (through mutual lending), members of the same kokwa (neighbourhoods, groups of families) defend eachother in their own interest. Cattle is obviously of great importance and economic and socio-cultural uses of cattle can not always be separated easily. For example, "tilia" is a form of risk spreading. It is the exchange of a cow for a steer. This steer is than used for a feast or ceremony, and the person who owned the cow has a right on a number of calves. He can even order his cow back when he has lost his own herd. The other can use the milk of the cow. This system is not only an economic one, it creates also a social bond between the "tilia" partners. Only trustworthy partners are wanted. The more animals you can order back , the higher the status.
Age sets play a part in Pokot culture but not such an important one as in other parts of Kenya. Age-sets are not military ranks but are status-gradings of adult men. Older men are more important and are chosen as community leaders because of their experience.
There is a clear division of work between men and women. The men are responsable for the herd, although women can and do have rights on some animals. When they marry they claim this right*. The elder men decide where to graze the herd. The women keep some of the cows around the house to milk them.They are responsible for the small stock. The women do most of the work around the house, cleaning, preparing food for which they have to collect firewood and water, healing and many other jobs.

3.5 Questionnaires.

In April 1985 101 questionnaires were done among Masol Pokot in different places in Masol and neighbouring locations. These places were chosen in such a way that a variety of situations in which the Masol Pokot find themselves was covered. Three groups were considered and the people in those groups chosen at random: a group of people living on

* Schneider, H.K.;Livestock as food and money, in: The Future of pastoral Peoples, Ottawa, 1981.

and around the Amolem Irrigation Scheme (42 people living in Amolem, 5 in Lokarkar), a group that has started agriculture on their own (9 people in Akiriamet and 12 in Kadongdong) and a third group, refugees from Masol Location living now in neighbouring locations (22 in Weiwei Location of which 10 in Karenoi, 8 in Korelach and 4 around Sigor, 11 in Lomut Location, all living near Lomut Trading Centre). We will refer to these groups as A, B and C respectively and consider them separately here and in chapter 4. In this way a more detailed picture is given of the people and their activities in and around Masol Location in 1984-1985. Mostly men were interviewed because the women are extremely reluctant to answer questions, although the person who did the questioning was a woman.

Group A.
The average number of wives of the men interviewed was 1.8, but on average only one wife lived in exactly the same place or "village" as the man. The answers the men gave are for the household as a whole: a household consists of a man and his wife or wives, where ever they live, and the children of these man and wife or wives, and the visitorsthey take care of. Household is used here as an analytical instrument:the person interviewed includes it's members when considering an answer. His wives may live in different places and in fact can be quite autonomous in decision making and making a living for themselves and their children. Visitors are included because they often stay for years. In fact the visitors are often parents or wives of the father so that the household forms an extended family.
The average size of a household is 7.8.

Group B.
The number of wives of a man is on average 1.9 (in Akiriamet 1.5, in Kadongdong 2.1) and unlike the situation in Amolem most of the wives live in the same place (on average 1.3 and 2 respectively). The size of the households of this group is 7.9 (Akiriamet 7, Kadongdong 8.8).
People in Akiriamet settled between 1965 and 1983. Kadongdong is a recent extension, people settled there between 1982 and 1984. They differ in some characteristics, therefore seperate figures for both places are given.

Group C.
Average number of wives per man was for the people in Karenoi 2, Korelach 1.4, Sigor 1.7 and Lomut 2.3. The number of wives living in the same place was 1.9, 1.2, 1 and 2 respectively. The average size of the households was for the people living in Karenoi 11.2, Korelach 7.3, Sigor 7 and Lomut 8. There are quite a number of visitors in these places, specially one family in Karenoi which had 19 visitors. People came here in the same period as those in Akiriamet.

4 ECONOMIC DEVELOPMENT.

4.1 Development until the fifties.

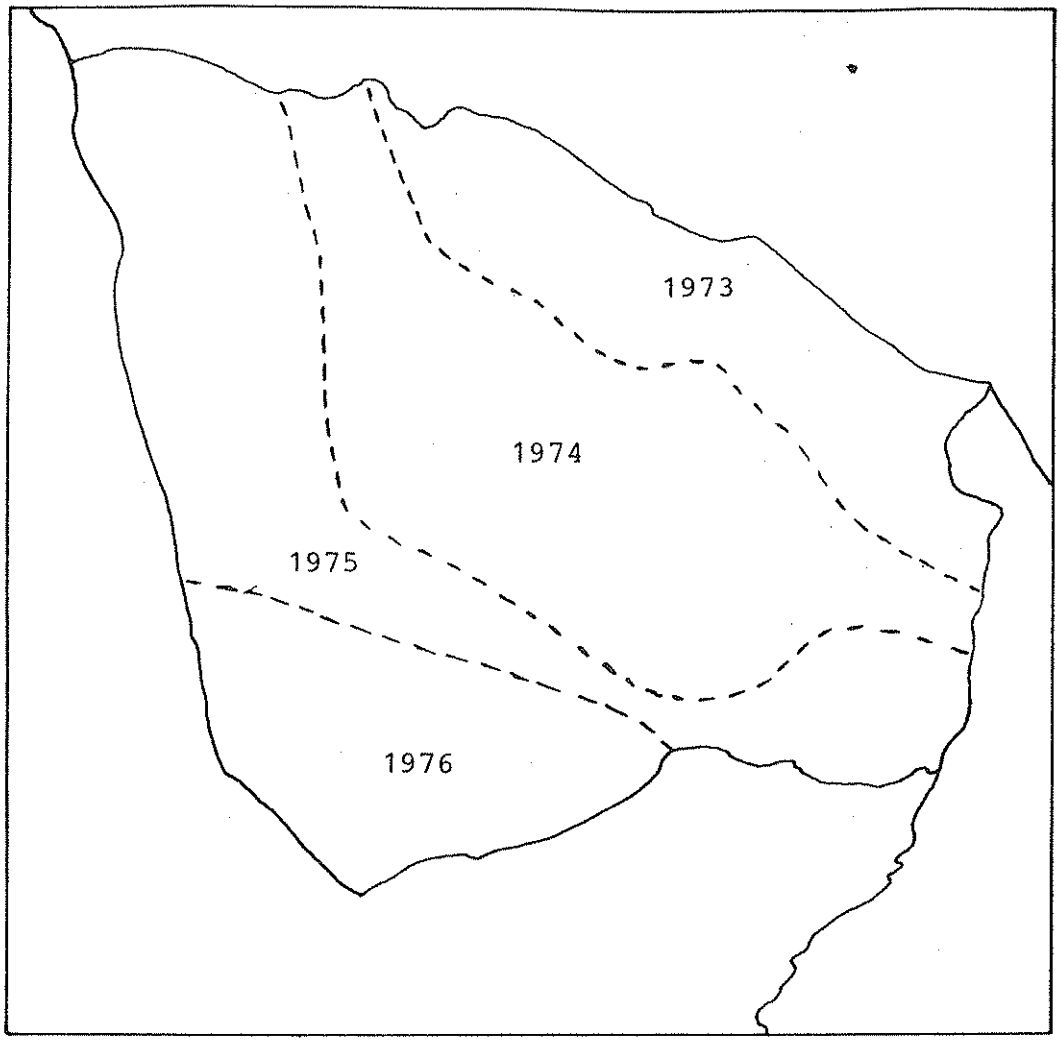
Masol has always been an area of importance for pastoralists, who, until the fifties, could practice their traditional way of living without much outside interference. Later, more government attention becomes apparent.
Censuses were held by the British Government in the twenties for the first time and these indicate a sparsely populated area where quite a number of animals were held. The 1926 census figures are as follows: 12568 head of cattle, 19411 small stock, approximately 1000 donkeys. The average herd per adult men and his wives was 43 head of cattle, 67 small animals and 3 to 4 donkeys.There was no arable farming in the location. When grains were needed animal products were bartered at the markets in Weiwei, Lomut and Chesegon locations for grains by the women.
Other activities of the government in the period until the fifties were the efforts of officials to end the cattle raids

4.2 Lack of security:raids.

In the past, when drought or disease reduced the number of animals of a tribe, raids were organized to rebuild the herd in the fastest possible way. Counterraids were more often than not the results. Mainly cattle were stolen, goats were left to the women and their children, the men often killed. Measures that were taken by the British to try to end this have been mentioned in 1.3. Periods of heavy cattle raiding, recorded in the archives, were in 1918-1919, between 1923 and 1925 (initiated because the Turkana had lost cattle to northern tribesmen), the early fourties (after the period of drought in the late thirties), the late sixties (following the drought in 1964-1965), in 1972-75 and in the early eighties, following dry years.
Specially the last two periods are important because the effects can still be noticed.
The few relatively quiet years between 1969 and 1973 came to a sudden end when in 1973 Turkana Ngoroko's, cattle raiders, threatened North Masol and caused severe counter raiding. Families in that area abandonned their rangelands and fled to the Masol Hills. This is traditionally a refuge area and in the past it was a save move. This time however it proved to be wrong, because of the new way of raiding. See map 7.

All livestock was taken, more people killed, including children herding the animals, while automatic weapons and cars were used.

Map 7, Desertion of Masol Location in the early seventies



——— boundary

– – – – – extend of desertion

In 1974 the Masol Hills and the Northern Simbol Plains were deserted, in 1975 the Southern Simbol Plains across the Samakitok River. By the end of 1976 almost all of Masol Location was abandonned. The people had left for Sigor, Kainuk, Orwa and Marich *. The pressure on grazing land there increased and this caused overgrazing and erosion. Also they came into conflict with local agriculturalists because what was left of the herd was kept on the sorghum shamba's. The goats' diseases in 1979 and the cattle deaths in the early eighties made an end to many of those problems

4.3 The fifties and later periods.

In the fifties much more government attention to economic development becomes apparent. Activities like the censuses and keeping order were supplemented by the introduction of veterinary measures, destocking quota's, the Masol Grazing Scheme and the opening of salesyards to create an outlet for a surplus of cattle.

4.3.1 Veterinary measures.

These were taken to prevent stock diseases e.g inoculation against tsetse fly.The Masol Pokot resisted these measures in general for a long time, they were most difficult to convince of the need for this but they seem to have had their cattle inoculated against fly in 1956.
These measures caused the herds to grow and overgrazing on an unprecedented scale began to be the next problem.

4.3.2 Destocking quota's.

The overgrazing was seen by the government as being to a large degree caused by the government itself and subsequently as being the responsibility of the government to solve. Destocking quota's were set and to create an outlet for the animals sold,cattle salesyards were opened in 1957 and 1964.The Pokot didn't seem to be able to meet the quota's though.
Even grazing control schemes were set up, with grazing guards posted in Masol in 1956 by ALDEV (African Land Development Program) but these met with resistance from the Masol Pokot.

4.3.3 Masol Grazing Scheme.

More coherently planned however was the Masol Grazing Scheme.
In the early fifties plans were formulated on district level to set up Grazing Schemes in the lower area's of the district. The first of these schemes actually implemented

* Con ant, F.P.;Refugee settlements etc,1981.

was Riwa Grazing Scheme in 1954, in Riwa location. It was meant to be an experiment. It was successful and in 1957, following reports * descibing Masol Location as barren of grass except in tsetse infested area's plans were made to ** Area Council, 1956.
add Masol to the grazing schemes. This was realized the next year. The scheme was quite ambitious. It was 58,000 ha in size, water was scarce and the area was either badly infested with tsetse fly, or devastated by overgrazing.
The scheme was to be in four blocks, each to be used for four months and than to be left alone for a year. The cutting of the traces for Block 1 was ready in 1959. This bush clearing was very expensive. It costed 1000 pounds for 240 ha. of thick bush to be cleared near Samakitok River in 1958.
Also 4300 pounds were granted by ALDEV and DAC for watertanks to be constructed (see 5.3). This was started at Lotongot River with two supervisors paid by ALDEV. Wells were dug and pumps constructed at Lotongot, at first only used by government officials on safari. Later, dams were built at Simbol and Chepserum.
Although in that way risking the success of the scheme destocking quota's were set for Masol Location as a whole of 550 head of cattle a year in 1958. Only 347 head of cattle were actually sold.
In 1959 the number of animals with which the Masol were participating in the scheme had gone down to 1590 cattle and 4872 small stock, indicative of the lack of enthousiasm of the Pokot and of their resistance against destocking.
In 1962 more dams were built (Chemuro, Losiakona, Chemokonke, and Mochoren earth dams, see 5.3), but lack of rain caused an early move out of Block 4 and towards the rivers.
In 1963 there was enough rain for the dams to hold water, there was enough grazing , but again in 1964 and following years a severe drought caused the water at the dams to dry up. Not only West Pokot but Baringo and Turkana Districts suffered this drought and Baringo people invaded the location with their herds in search for pastures.Masol became heavily overstocked and the Baringo people's cattle introduced an epidemic of foot and mouth disease. The end of the scheme came with the Turkana raiders in 1968 and 1969, who tried to rebuild their herds this way.The raids and the poor grazing conditions made people leave the location for Sekerr, Weiwei and Lomut Locations in 1969. Some of them, having lost their stock still live around the trading centres there, and survive on Famine Relief food, casual contracts, and some arable farming. They were joined later by more destitudes.

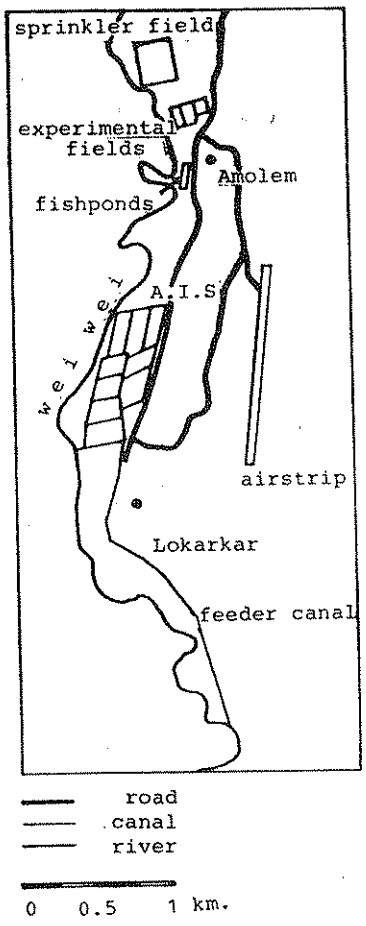
As described in 4.2, those destitudes came in the seventies. As a result of the abandonment in 1976 the rangeland quality

*Area Council, 1956

deteriorated. Pokot rangeland management consisted of trans-migration between wet and dry season pastures. At the end of the dry season fire was set to the bush on and around the Masol Hills to improve the fertility of the soil, to get rid of ticks, bush, and tsetse flies. Goats were seen as important animals to keep the acacia shoots in check. When the women in charge of the goats left the area in 1973-1976, this constraint was lifted and acacia species proliferated at the expense of the grasses. Already in 1978 much of the former rangeland was useless, imprenetable and infested with ticks and tsetse flies *.

4.4 Amolem Irrigation Scheme.

The irrigation scheme at Amolem is located on the Eastern bank of the Weiwei River, about 5 km. off the tarmac road from Kitale to Lodwar. It was started in 1975 by the Ministry of Agriculture, with staff from FAO through UNDP, and funds and assistance from NORAD. After 1981 UNDP withdrew. Together with Kakerongole (started in 1966) and Katilu Irrigation Schemes (started in 1970) it was set up to provide food and work, and to settle pastoralists who had lost their herd after the drought and raids of the sixties and early seventies.



4.4.1 Phase 1

Of the first years of the schemes' existance no information is available, except that there was a flood in 1977 which did a lot of damage. Either no one wrote anything down or the files are lost.The first years were an experimental phase, meant to acquire reliable data on climate, crop water requirements and soil infiltration rates. Therefore, the absence of files from that first period is regrettable.However,we have data of 1979 and later years. We will give an account of the phases in the history of the scheme, with the problems and results.

4.4.2 Phase 2.

Phase 2, the first non-experimental one was from 1979 to 1983. In that period, water supply was pumped and irrigation was by ridge and furrow. This method of irrigation can be implemented fast but it is very costly.Because the water was

* Conant;Thorns paired,etc,1981,and interviews

pumped anyway, a sprinkler installation was tried too. Problems in this period were both technical and social in nature.

Technical problems were, first, that the pumps used for irrigation did not have the right specifications and that there was a shortage of diesel fuel and spare parts. Secondly, the transit loss of water between pumps and end of field canal was more than 50 % so that either the pumps had to be used for longer periods or the fields further away were not used. Also, the locally produced syphons were flat and almost useless. Fourth, the quality of the Government seeds used at first was very low. Only 20 % germinated.

Social problems were , first, the fact that people had to get used to the regulated way of farming on the scheme. Certain activities had to take place on a prescribed moment and this was new to the former pastoralists. Secondly, mostly men had titles on the land though women mostly worked on it and this was not an incentive for the women to produce more. Thirdly, both Turkana and Pokot were allowed to have a plot on the scheme and cooperation between these two groups was rather problematic (see 4.2).

To solve at least some of the technical problems it was decided in 1980 that the method of irrigation of the main field would be changed from ridge and furrow with a pumped watersupply to that of basin irrigation with a gravity-fed watersupply. This change of method was completed in 1983.

4.4.3 Phase 3

The change of method was accompanied by a reduction in plot size from 0.4 ha. to 0.24 ha. This made it possible to settle all former "Food for Work" recipients, who had worked on the canal, on the scheme. However, many of the people we interviewed thought their plot too small. Again there were problems, both technical and social in nature.

Of the technical problems the most important was (and is) the fact that the level of the riverbed varied with the season. After a flood or a period of high discharge it can be considerably lower. This makes the production of water from the intake rather difficult. Another problem was the levelling of the ground which was not accurately done. This caused dry and waterlogged patches and a reduced yield.

Social problems were again the fact that cooperation between Turkana and Pokot was and is low so that communal tasks such as the maintenance of the main canal were not readily undertaken. Also tenants seemed to rely less on their own efforts to produce food as they were given Famine Relief food even when there was no direct need for it. This enabled them to give less attention to their plot and more to the

panning of gold. 23 of the 42 people interviewed by us in Amolem said they went to pan for gold in 1984, 9 of them all year round, but most of them specially in the rainy season. In that season the panning can be done near the places where the gold is found. Favourite places are Lolech and Marich, in Sekerr Location. Of course, panning in the rainy season interferes seriously with agricultural activities .

The following table gives the production figures achieved on the scheme in the period 1979-1984.

Table 5 , yields on Amolem Irrigation Scheme in kg/ha.

	MAIZE	SORGHUM	GREENGRAM	COTTON	SUNFLOWER	COWPEAS
1979	1526	n.d.	534	2235	n.d.	n.d.
1980	804	684	138	1733	n.d.	n.d.
1981	750	600	n.d.	1600	700	n.d.
1982	1880	1500	n.d.	n.d.	1750	n.d.
1983	2000-3500	2000-4000	400-600	n.d.	n.d.	1000-2000
1984	3397	2096	60	n.d.	n.d.	n.d.

Other crops, cultivated on the experimental fields or by individual farmers are cassava, pawpaw, sweet potatoes, sugarcane, banana's and pigeon peas, but we do not have data on yields more than that they are "average". Also there is a tree nursery where fruit seedlings are grown and budded. Production in 1983 was 1650 seedlings to be budded, 420 budded.
Results in 1984, though in a dry year, give reasons to doubt the expected yields of 1983 in the table. Total area of the main basin is 40 ha, of the sprinkler field 12 ha.the number of tenants on the scheme is 220 at maximum, each with 0.24 ha. Three crops a year should be possible but this has never been achieved so far. Only in 1979, 1982, 1983 and 1984 there were two crops, in 1980 and 1981 there was only one harvest. Investments in the scheme have gone down considerably the last few years.The number of staff has decreased and there is only one ex-patriate working for the scheme but living in Katilu.
Maize and sorghum are the most important crops grown. Other products are not encouraged and are sold by only one farmer using the field given to him by an ex-patriate who left the scheme some years ago.

4.5 Akiriamet and Kadongdong.

Amolem Irrigation Scheme is however not the only place where agriculture is practised. Already in 1970 it is mentioned in the archives that Masol people were growing maize in Akiriamet, at the confluence of the Weiwei and the Samakitok Rivers. From our interviews it has become clear that this is a permanent agricultural settlement. An extensive area has been cleared of bush and even a furrow has been dug to irrigate the land at Kadongdong, a recent extension of Akiriamet (more detailed information about the people living in the various places in 4.7). This furrow doesn't work yet but people are still working on it. They say they lack the knowledge about furrows because they were pastoralists in the past, who have come to realize that cattle is no longer a safe way of living and of investments.
Here too, people sometimes leave the area temporarily. The crops are destroyed by ngoroko's or by wild animals which take the opportunity to eat the crops and destroy the fences. Wild animals are an increasing nuisance . Specially baboons, buffalo's and elephants damage the crops often.

4.6 Economic situation of people of groups A, B and C.

In this paragraph we will give a description of the economic situation of the people of the groups mentioned in chapter 3 Attention will be given to livestock and agriculture, and to income and expenditure of the households of the different groups (for size of household see chapter 3).

Livestock.

On average, the people of group A said to have had 127 head of cattle and 81 small stock per household before the raids (in this case before 1973), lost 125 head of cattle and 57 small stock between 1973 and 1984, and said to have 7 head of cattle and 9 goats and sheep now.The latter figure is likely to be too lowand the others a bit too high, but it is indicative nevertheless for what happened in the area. The total number of animals the respondents said to have lost in the period 1973-1984 was more than 5000 head of cattle and more than 2000 small stock.
After they were raided many people acquired new animals, but not very many.They either bought them (11 persons) or got the animals from their tilia partners.Response to this question was low. 8 households sold a total of 7 cattle and 9 goats and earned about 7000 shs. No skins were sold. A cow produces on average 0.5 litres of milk in dry season, and 1.5 in rainy season. An estimated 40 % of the herd consists of lactating cows.

8 households had 39 beehives which produced 144 litres of honey. A beehive gives about 5,5 litres of honey in a year. no money was earned with this honey, it is used to brew beer which is given at ceremonies.

Agriculture.
Of the 47 households, 9 had no plot on the Amolem Irrigation Scheme, 32 had one and 6 had two. The participants in the scheme do not have to pay for the use of land, water and implements. 1984 was the first year the tenants had to pay for the seeds but many used seeds left over from the year before. 11 households paid 874 shs in all for the seeds. No casual labour is used by the tenants. Also fertilizer is not used. Average yield in 1984 was, according to the tenants interviewed, 190 kg of maize and 96 kg of sorghum per plot (of 0.24 ha).This was clearly not enough to feed a household with 7 or 8 members (see income /expenditure).Also it makes us wonder whether the figures given by the Scheme Manager in the Annual Report 1984 are correct (graph 5).
6 people sold food produced on the scheme (in all, 180 kg of beans, 400 kg greengrams, 400 kg maize and 80, kg of sorghum) and together received 5900 shs. Especially greengrams seems to be a good cash-crop. Also some debes of maize (20 kg each) were given to relatives or needy people.

Income/expenditure.
The following table gives the total income and the average percentages of that income spent on various items, per household in 1984. This table is meant to give an indication of the living conditions of the people in general in Amolem and Lokarkar.That is why the Chief and Assistent Chief, both having been interviewed, are excluded. Their income is very much higher than that of the rest of the people in the survey and this would give a wrong impression when averages are given. Another point is that income equals expenditure because saving money does not occur or when it occurs, it is only very short term.

table 6

INCOME (in %)

place	sold animals	sold food	job* income	from relatives	gold panning	beer brewing	other or unaccounted	tot.
Amolem	5	8	16	1	24	33	13	100

EXPENDITURE

place	buy anim.	grain	milk meat	school	h.h. need **	cloth ***	trans ****	har. *****	other or unaccounted	tot.
	13	38	2	2	9	14	4	10	8	100

100 % =2400 shs. for an average household.
* job income is money earned with permanent jobs or casual contracts

** h.h. needs are household needs: pans, fat, salt, soap, etc.
*** cloth. means clothing.
**** trans means money paid for transport.
***** har. means harambee.

One should be careful with these figures. They are to be seen as approximations of the figures of the population at large.

Group B: Livestock
The people of this group, living in Akiriamet and Kadongdong, said to have had at average 72 heads of cattle and 190 small stock per household before the raids. For Akiriamet these figures are 43 cattle and 66 small stock, for Kadongdong 93 and 282. People said they were raided between 1974 and 1984 in Akiriamet, in Kadongdong most of them were raided between 1965 and 1967, only a few people mentioned later years. The number of animals an average household lost was 69 cattle and 40 sheep and goats (Akiriamet (A) 36 and 9,Kadongdong(K) 93 and 62).Most of the small stock was lost because of the goats' diseases in 1979. Now an average household has about 10 head of cattle and 5 small stock (A: 13 and 7, K: 7 and 4 respectively). Again these figures might be too low.
New animals were acquired from relatives and tiliantan mostly.
Milk production per lactating cow per day is 0.5 litres in dry season (when the animals are kept at the riverbanks around Amolem, Akiriamet and Sigor), and 1.5 to 2 litres per day in the rainy season. People sold 10 cattle and 14 goats and received 8880 shs for them.One skin was sold for 20 shs. The people interviewed did not possess any beehives.

Agriculture.
The following table gives an overview of the area and yield for 1984.

table 7

	Akiriamet	Kadongdong	total group B
ha "owned"	7.4	5.8	13.2
ha cultivated	6.8	5.8	12.2
no. of househ.	9	12	21
ha/househ. owned	0.8	0.5	0.6
ha/househ. used	0.75	0.5	0.6
total yield in kg	90	1800	1890
yield in kg/ha	13	310	155

Agriculture in both places was not very successful, but when we consider that 1984 was an extremely dry year it is remarkable that a crop was harvested in the first place.

This was done with the use of groundwater and water harvesting techniques. The people in Kadongdong are working on a furrow but it was not yet in operation in 1984.In general, they seem to be hard working people and successful. However, the harvest was not enough to feed the members of the households and other sources of income were very important.Six people said to have given food to relatives even.

income/ expenditure
The following table gives the average percentages and annual income and expenditures of the households interviewed for 1984.Again the figures should be seen as indicative of the situation of the population as a whole.

table 8

INCOME (in%)

place	sold animals	food	job	from relatives	gold panning	beer brewing	other or * unaccounted	tot.
Akir.	18	4	4	1	14	14	45	100
Kadong.	11	0	3	3	13	10	60	100

EXPENDITURE (in %)

place	buy animals	grain	milk meat	school	h.h. need	cloth.	trans	har.	other	tot.
Akir	15	38	2	0	13	16	3	6	7	100
Kadong.	0	40	0	0	14	11	2	13	20	100

Akiriamet: 100 % = 3600 shs. per average household
Kadongdong:100 % = 2500 shs. per average household
* This high percentage can partly be explained by the selling of tobacco and other items.Still it is a bit disappointing and needs further enquiries.

It is quite clear that people in these places live differently from those in Amolem. There is no school so nothing is spend on that. No money is left to buy animals with, or to be able to afford meat or milk. The high percentage used to buy food indicates the tight position people here are in.

Group C: livestock.
The following table shows the loss of animals of the people in the various places (averages again per household, 1985).