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**Pastoralists in dire straits : survival strategies and external interventions in a semi-arid region at the Kenya/Uganda border: Western Pokot, 1900-1986**

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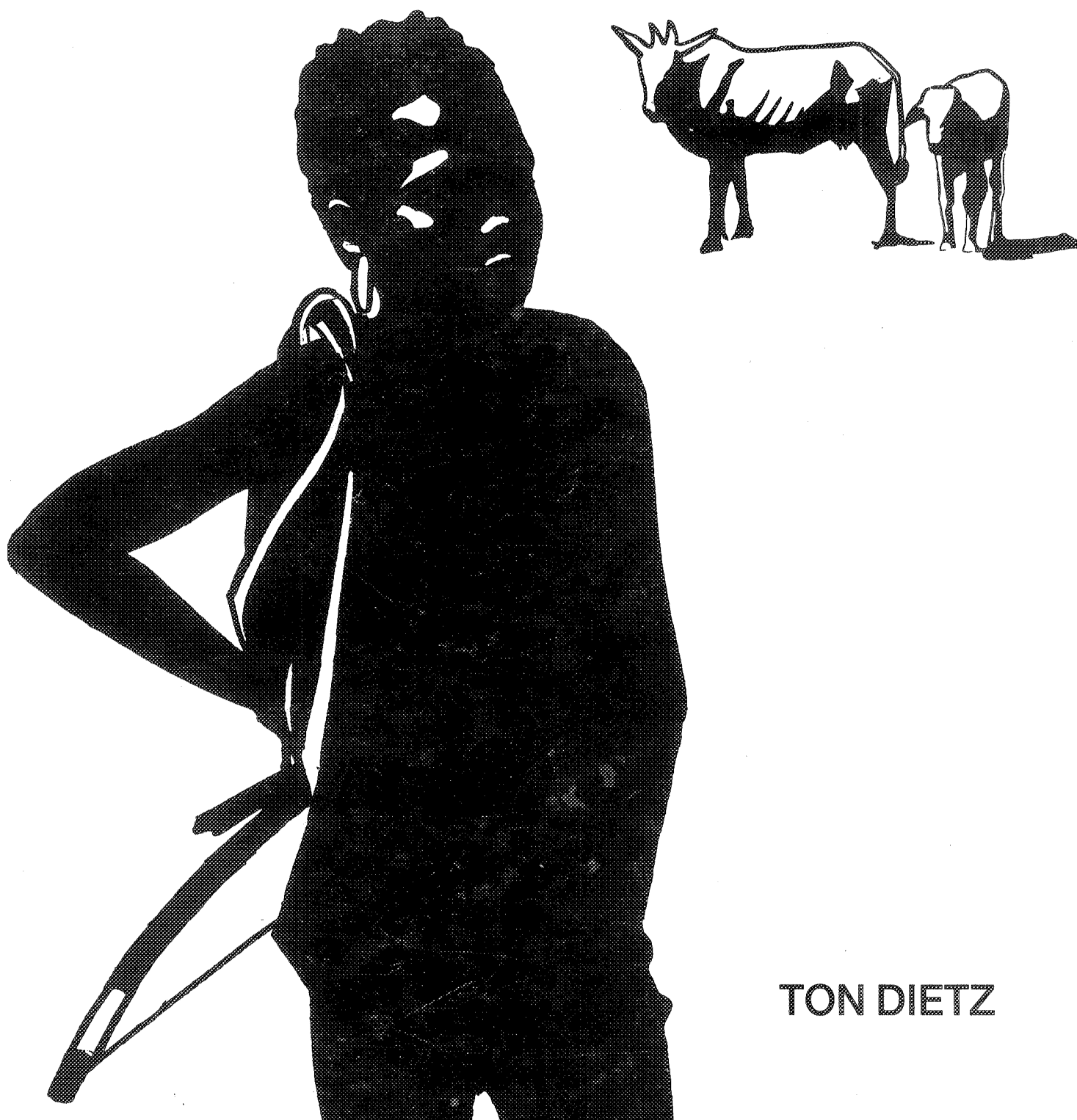
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# PASTORALISTS IN DIRE STRAITS

survival strategies and external interventions in a semi-arid region at the Kenya/Uganda border: Western Pokot, 1900 - 1986



TON DIETZ



# PASTORALISTS IN DIRE STRAITS

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## PASTORALISTS IN DIRE STRAITS

survival strategies and external interventions  
in a semi-arid region at the Kenya / Uganda  
border : Western Pokot, 1900 - 1986

## ACADEMISCH PROEFSCHRIFT

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The value of 100 Kenyan Shillings, 1950-1986

	US\$	DF1	Ugandan Shs	Local Goats
1950	14	53	100	8
1960	14	53	100	7
1970	14	51	100	3
1975	14	35	100	1.3
1980	13	26	100	1.1
1981	11	22	560	1.0
1982	9	24	810	1.1
1983	8	23	1160	1.1
1984	7	22	2510	0.7
1985	6	18	4050	0.7
1986	6	15	8820	0.7

Source: United Nations, International Trade Statistics Yearbook, Vol.1, New York, 1984; International Monetary Fund, International Financial Statistics Yearbook 1986 and Vol. XL/2 (Febr. 1987); Last column: see table 4.5 of this study.

## PREFACE

In 1977 a group of students from the Department of Human Geography of the University of Amsterdam asked me to supervise desk research on Dutch development assistance to Kenya. I was a junior staff member at that time, with some fieldwork experience in Zambia. We studied the regional inequality and the role of the state in Kenya, using concepts derived from discussions about 'peripheral capitalism'. Kenya proved to be a fascinating example of large diversity and rapid changes in types and levels of 'market integration'. Together with my wife and colleague Annemieke van Haastrecht and two students, Bernhard Schellenberger and Marijke Veldhuis, we decided to go to Kenya ourselves and to prepare a study of four types of 'peripheral' districts: Machakos, Kitui, Elgeyo Marakwet and West Pokot. We got the information that the Kenyan government had asked the Netherlands to fund an 'Arid and Semi-Arid Lands (ASAL) Development Programme' in Elgeyo Marakwet and West Pokot. Annemieke and myself decided to concentrate on those two districts. During 1981 it became clear to us that the Netherlands Ministry of Development Cooperation (DGIS, Research and Appropriate Technology section) was prepared to sponsor our research plans, under the condition that we would work together with the ASAL Programme Coordinator and that we would concentrate our research on the semi-arid lowlands and escarpment zones. The enthusiasm and insistence of the ASAL PC, Huup Hendrix, resulted in a broad, explorative and practical research during our one year stay in Kenya between April 1982 and March 1983. The cooperation also resulted in a lot of products: Locational Development Profiles, sector studies, District Atlases, District Information and Documentation Centres and, later, in an assignment as 'backstoppers' of the ASAL Programmes, with visits to West Pokot in August 1984, February and November 1985 and November 1986.

In 1982-83 we were formally attached to the Institute for Development Studies of the University of Nairobi -where we presented two working papers- and we worked with an official research clearance from the Office of the President and from the District Commissioners. In 1984-86 we were cooperating with the ASAL section of the Rural Planning Division of the Ministry of Planning and National Development. Here the contacts with Mr. Kidenda, Mr. Kalikandar, Mr. Owiti and Mr. Kipkan sharpened our sensibility to some of the ins and outs of the Kenyan state machinery at the 'Nairobi' level. Contacts with many Kenyan civil servants had done so before in the districts.

My original intention was to study the impact of development projects on regional and inter-household differentiation of processes of market integration and to do so historically. In this book you will indeed find quite a lot of information on market integration. However, during our fieldwork in 1982-83 and even more so during ASAL-related fieldwork during and after 1984 it became evident that 'market integration' could hardly be studied historically and was not the issue at stake at the moment. Drought and other disasters in 1979-81 and again in 1984-85 resulted in a major struggle for survival. Market integration was related to survival strategies, not so much to state interventions and even less to development projects. To understand socio-economic developments going on in the semi-arid parts of our research areas, we

had to look for a new theoretical basis. In this process of reorientation, Mirjam Schomaker played a major role. She was a student in physical geography, specialized in land evaluation, when she assisted us during half a year in 1982-3. After that she continued to bridge the gap between human and physical geography. We gradually refined a model approach of 'population supporting capacity' and it was this approach which provided us with the key to understand the impact of variability and crises on the economy of semi-arid areas. Not the 'impact of development projects on market integration' became our field of study, but the 'impact of external interventions on survival strategies in a highly variable environment'.

We gained a lot from the opportunity to discuss our ideas with colleagues and students cooperating in the 'Semi-Arid Lands Project Amsterdam'. I would like to thank them for providing a stimulating academic environment.

The DGIS connection meant an emphasis on descriptive work. In 1985 it was felt that it was about time to start with a more analytical analysis of our archival and fieldwork material. I decided to concentrate this in-depth study on the western part of the area of the Pokot. This economic region includes parts of Karamoja in Uganda; between 1932 and 1970 even most of the study area was administered by Uganda. I was greatly assisted by a student, Jan Willem le Grand, who went to Karamoja twice to study archival material, to gather a lot of 'grey' literature and to interview key informants. In Kenya, indispensable assistance was given by a number of research assistants, especially Simon Lopeyok Otyang, Romanus Partany Chizupo, Albinus Kotomei, Michael Ptalam Lodiokile and Rachel Andiemba. I hope this book will stimulate them to go on with their own research on Pokot culture and economy. Of course, without the numerous Pokot informants this study would not have been possible. I wish them a pastoral future. Important was the assistance given by Rinus and Leoni van Klinken, while the fieldwork experience of our students Irene Dubel, Marjanne de Kwaasteniet, Jack Koninx, Niels de Vos, Fred Zaal, Ingrid van Tienhoven, Marjo Gallé and Bert Vermaat worked as catalysts for my own thoughts.

Thanks are due to DGIS and to the University of Amsterdam for financing the research; to Pelle Mug for financial management; to the various people at the 'Kenya desk' of DGIS, to the Netherlands Embassy in Nairobi and above all to the ASAL staff in the field. My two supervisors Prof. Wim Heinemeijer and Prof. Herman van der Wusten deserve a lot of gratitude for their stimulating and thorough criticism; Prof. Ad de Bruijne, Prof. Jan Hinderink and Prof. Pim Jungerius for reading the manuscript; Jan ter Haar for drawing the figures; Bert Vermaat for making fig. 4.5; Rob van Hussen for designing the front cover, Claire Renardel for word processing and editing assistance; Gerard Renardel for his logical comments and Philomeen van Dielen for allowing me to use her printer. Another type of gratitude goes to my parents and parents-in-law, to my children Luuk and Richard and to my wife, colleague and critic Annemieke. To her I would like to dedicate this book.

Haarlem, September 1987.

## 1. INTRODUCTION

### 1.1 Pastoralists in Dire Straits

There is considerable evidence of a major crisis of pastoralism in Africa. Droughts are sometimes selected as primary causes, but population growth, ecological deterioration - or 'desertification' - and an adverse political and economic environment are also often mentioned. Societies of largely autonomous mobile livestock herders seem to be doomed. Hjort exclaims that "growing scores of people (are) being pushed out of the pastoral economy" (Hjort 1982, p.24). Campbell & Axinn (1980) wonder whether pastoralists are "obsolete societies en route to extinction". Aronson (1984, p.74) writes: "in every case that I know of, pastoralism is losing ground". A leading development economist, who has worked in African livestock development for many years, suggests that so-called traditional livestock systems are "without development potential" (Jahnke 1982, p.223). Wherever possible, international development institutions and governments regard arable farming as the future for impoverished pastoralists; where this is not possible, migration to other areas or charity-dependence seem to be the only available options. Many former pastoralists have indeed turned into charity-dependent 'peasants-cum-labourers' at a poverty level that strikes observers (and themselves) as extreme, and without any accumulated wealth left. Recent studies on Kenya give saddening examples: Hogg (1980) on Isiolo, O'Leary (1983) on Kitui, Odegi-Awuondo (1983) and Hogg (1983a) on Turkana.

The victims of the crisis of pastoralism mainly live in environments where rainfed food production is a very risky activity, where 'cash crop' farming is often hampered by input and marketing constraints, where many irrigation ventures have turned out to be expensive failures and where non-agricultural opportunities are very limited. Former pastoralists in semi-arid areas are examples of a 'Fourth World', part of a global class of paupers. They are starvation-prone, without assets other than their own bodies. Their physical survival is at stake. On a more abstract level of analysis we may indeed wonder whether there is any chance of survival of a pastoral way of life.

'The Future of Pastoral Peoples' has become a popular theme in studies on Africa and the Middle East. A major conference in Nairobi, in 1980, had this title (Galaty e.a. 1981). In the journal 'Nomadic Peoples' it is discussed at length (mainly) by anthropologists. In the 'Pastoral Development Network' of the British Overseas Development Institute, planners and various brands of researchers exchange their views on the theme. Pastoral societies have long been a research domain for anthropologists (although pastoral anthropologists claim that they occupy peripheral positions within anthropology, see Schneider 1984, p.55). All kinds of theoretical squabbles have taken place there, between 'culturalists', 'formalists', 'feminists', 'marxists', 'synthesists' and others (1). Many anthropological studies show a 'one place, one time' approach, embedded in one of these paradigms. Full of interesting details, they often lack perspective. In dealing with the 'future of pastoral peoples' we need a historical, change oriented approach instead, in which pastoralists and former pastoralists are



studied in their environment: both the natural environment and the 'regional' environment, that is the relevant political, socio-economic and cultural context. Recently, pastoral anthropologists are discovering this historical, regional approach. Little's work is an example for Kenya (e.g. 1983). Tully provides an example for Pokot, calling her approach 'human ecology', but many other recent studies could be mentioned, on Kenya and elsewhere (in Dutch anthropology for instance the work of Jorritsma 1979, on Niger). Anthropologists have moved towards a 'geographical approach', if geography has a broad connotation, combining the physical environment - often confusingly called 'ecology' - with the socio-economic and political environment on various levels of scale. People's living conditions, and possibilities for improvement, are strongly embedded in this environment, although of course people are not 'determined' by their environment. People can change their environment by migrating to other places. They can also change their environment by transforming it, both the 'physical' site-characteristics and the socio-economic and political context or 'situation'. Geography as a discipline studies the way people (individuals, households, communities, institutions, of various levels of scale) are influenced by changing environments and the way environments are influenced by changing people (see Van der Wusten & Heldring 1987, pp.21-26). In this study, this geographical approach will be applied to a particular group of people: pastoralists and former pastoralists in western Pokot, in a particular environment: a semi-arid area in northwestern Kenya and northeastern Uganda, in a particular period: the 20th Century. The approach can perhaps be called a 'new regional geography', in which 'internal' and 'external' influences on social change both get the attention which they deserve (see Kleinpenning & Reitsma 1987) and in which it is clear that human geographers have to make use of other disciplines, in particular physical geography and anthropology in this instance.

Four research questions are central to this study:

1. How crisis-prone is the economy in semi-arid western Pokot, due to threats from the physical environment?
2. What types of strategies have the people of western Pokot developed to survive these recurrent crises?
3. What impact did external interventions have on crises and on survival strategies of the western Pokot?
4. Under what conditions can pastoralism be a viable livelihood in western Pokot?

The concepts used in these research questions need some clarification: aridity will be dealt with in chapter 2; chapter 3 is devoted to the physical environment; who the 'people of western Pokot' were/are is a topic of chapters 1.3 and 4. That leaves us with the concepts of 'crisis', 'survival strategies', 'external interventions' and 'pastoralism'.

'Pastoralism' is a livestock-(or better: pasture-)based economy. We prefer to operationalize this concept by demanding that livestock products directly or indirectly provide more than half of the food needs of households. Pastoralism can cover various space-time situations, from hypermobile nomadism - where both humans and animals are constantly on the move - to stationary ranches or dairy enterprises where people are

completely sedentary and animal mobility is confined to the ranch (not included are zero-grazing and in-door types of livestock enterprises). Livestock (pasture) is the basis of the definition, not mobility. Nomadic pastoralism is a specific type of pastoralism and even there 'mobility' is often very variable; see Salzman 1980, p.13. The literature is full of conflicting and confusing definitions; see Yadeta 1985, p.23. If livestock products directly provide more than half of the food needs, we may call the economy 'subsistence pastoralism'. If livestock products are sold or bartered and food is bought with the proceeds, the economy may be called 'commercial pastoralism' (in that case the diet of pastoral households can be very much grain-dominated). If less than half of the food needs are covered by direct or indirect livestock products, but livestock is part of the economy, we may call the economy 'agro-pastoral'. If livestock is used for manure and draught power, and if fodder is produced to feed the animals, we may call the economy 'mixed farming'. In subsistence pastoralism, commercial pastoralism, agro-pastoralism and mixed-farming, food needs may partly be covered by non-agricultural sources: hunting and gathering, charity (whatever its source), and various types of monetary income, earned by selling non-agricultural produce (minerals, handicrafts), services (petty trade, prostitution) or labour (permanent, seasonal, casual, workspaid, food paid). As soon as non-agricultural income covers more than half of the food needs it is better to speak about a 'mixed economy'. A complex typology could be developed, working with certain break-off points where 'agro-pastoralism' becomes 'purely' arable, or where 'mixed economies' stop to be mixed (in case of strong wage dependence, or charity-dependence, or whatever non-agricultural dependence). The way in which food consumption is covered is the core of this typology (see chapter four for a discussion about food needs and chapter seven for a conclusion).

'Crises' are any depredations of wealth (in pastoral societies mainly animal wealth) and any situations of calamity-caused food shortages, and health threats, which endanger the physical continuity of life and the socio-economic continuity of an accustomed way of life. 'Survival strategies' are any devices which are used to pull through periods of crisis. The concept of 'survival strategies' is currently used in many development studies, not only in the Third World but in Europe as well (see Redclift 1986). According to Redclift the concept has its origin in Latin American urban studies in the 1970s (as 'estrategias de supervivencia economica') in an attempt to move beyond 'marginality' and 'informal sector' analysis. The concept focusses on household behaviour under adverse conditions. But the concept is confusing because the underlying concept of 'crisis' is unclear. In our opinion, the concept of 'crisis' should be reserved to periods of drops in livelihood levels (by droughts, floods, cyclones, epidemics, war, violence, price-drops of produce or any other causes). Crises are experienced as a rather severe deterioration in wealth, health and food supply, although the 'time element' is difficult to define: floods may be a one hour affair; droughts may cover two or three years; relative price-drops of produce may be a creeping process of a longer duration even. In situations of structural extreme poverty, with a continuous threat of starvation, it is better to speak of 'misery' or 'extreme poverty' instead of 'crisis' (otherwise the crisis would often be as long as life). It is also better

to use 'self-rescue' instead of 'survival' under these circumstances of extreme, long-term poverty, as Van Schendel (1987) suggests in a very interesting study on "self-rescue and survival in Bangladesh". People who do have sufficient food normally, and who do have some capital (land, animals) at their disposal are in a different position. For them, the loss of capital and severe food shortages are clearly a deterioration, compared to former experience. If they are aware of risks, their 'survival' and recovery not only depends on the methods of survival applied during and after a crisis. Their 'survival' and recovery capacity will also depend on their preparedness for crises, during 'normal' circumstances. Van Apeldoorn (1981, p.92) speaks about "mechanisms to deal with adversity, of both a precautionary and a coping nature". Streefland (1987, p.4) suggests to differentiate between short-term curative and long-term preventive "modes of survival" (as well as short-term preventive and long-term curative).

We suggest that at least three meanings of 'survival' should be discerned, all with its own goal (and with a different time horizon):

- a. the basic survival of individuals and households, trying to avoid death during a crisis; here 'survival' means: staying alive;
- b. the short term and long term economic survival of household wealth, despite the occasional occurrence of disasters, which may suddenly destroy the accumulated wealth of households or whole communities;
- c. the long term survival of a 'way of life', e.g. pastoralism or - more generally - a peasant mode of socio-economic existence, despite threatening attacks on this 'way of life'; here not 'individual' or 'household' survival are at stake, but the survival of a sociological category (see De Janvry 1981); even broader is the notion of 'cultural survival': the resilience of certain 'ethnic' practices and beliefs - often in an accommodated form - despite penetration of e.g. westernization or christianity/islam.

In this study we will use 'physical survival', 'survival of (animal) wealth' (or 'capital' survival) and 'survival of pastoralism' respectively, to avoid the conceptual confusion which abounds in this field. 'Survival of pastoralism' can be further differentiated. After a crisis the recovery of pastoralism asks for strategies to rebuild the herd and flock. In a large number of instances, however, rebuilding the herd to a stock density per capita level commensurate with subsistence pastoralism (see later) is impossible. The survival of pastoralism can be safeguarded in two other ways, as we will see in Chapter 4: by pastoral intensification and by pastoral commercialization.

Theoretically, both strategies can prevent the extinction of pastoralism as a way of life, even if traditional 'subsistence pastoralism' can no longer exist.

The concept of 'strategy' is confusing too. Ten years ago, most students of development problems would immediately think in terms of governmental or institutional development strategies, with 'goals', 'aims' and 'means'; in terms of 'projects' and 'programmes' with 'output', 'effects' and 'impact'. A host of 'monitoring' and 'evaluation' literature is part of the results (e.g. Casley & Lury 1982, Clayton & Petry 1983). During the 1980s, both in planning and in academic circles, the role of institutional development 'strategies', the impact of development 'projects', has been more and more discredited. For some, government 'development strategies' are no more than 'hollow phrases',

meant to attract foreign donor funds, to be used by a political elite and with no impact on regional development. For others, well-meant 'development strategies' can only be broad outlines, at best 'catalysts' for growth or modernization at a local level. 'Macro-strategies' and 'state interventionism' are no longer fashionable.

On the other hand, thousands of local fieldwork studies repeatedly proved that people themselves have their own livelihood approaches and - if they are living in insecure environments - their own modes of survival against the livelihood threats, be they natural, political or economic. Schmink (1984, p.89) writes: "in contrast to the earlier tendency to conceive of poor populations as passive 'victims', the concept of 'survival strategies' highlighted their active, productive role in society" (quoted in Rutten 1987, p.3; the concept of 'survival', however, is unclear). No longer 'peasants' or 'pastoralists' can be pictured as passive respondents to external or 'contextual' impulses, as people who live from day to day, without any 'planning for tomorrow'. They are often much better strategists than the development planners above. Actor-oriented approaches (Long 1986) prove that peasant or pastoral households have their own strategies, with long term goals (e.g. a sufficient herd), short-term aims (e.g. food security during a drought) and a host of methods. These goals, aims and methods often conflict with the 'institutional' strategies, a most obvious difference being the fact that long term household security and survival of household wealth are more important than gains in yields and income: a low-risk, low-income strategy is often preferred to high-income, high-risk ventures (see Binswanger e.a. 1980, Cancian 1980).

Critics of the use of 'strategy' for poor households's modes of adaptation to harsh circumstances say that the concept of strategy puts too much emphasis on rationality and on freedom of choice (e.g. Rutten 1987, Van Schayk 1987). For us, this is precisely the reason to use the concept. As we will show in this study, the poor indeed play active and inventive roles - although within constraints of course -; they do it by weighing negative and positive consequences; they can indeed choose between various options, and if they do, it is more a matter of deliberate decision making than a matter of irrational behaviour. It does not matter whether responses are new or part of a so-called patterned response (Streefland 1987) or lifestyle (Beals 1975, see Van Schayk 1987). Other points of criticism are the suggestion of household unity and the neglect of the macro-level (e.g. White 1980). The sanctification of the household level may be a weakness of some household strategy studies, but there is no reason why students of household survival strategies could not study the impact of the outer world or the internal differentiation within households.

In general, it is wise to differentiate between household 'livelihood-improvement' strategies and 'survival' strategies, the last ones specifically dealing with actual or expected periods of crises. In semi-arid areas, with extreme natural insecurity, it is questionable if there is much room for 'livelihood' strategies beyond survival strategies. Households are very much aware of the high vulnerability: natural disasters can happen any time and non-natural attacks can always be expected. Livelihood strategies must be survival strategies in the first place, if households want to avoid to be defeated by a harsh environment.

In the literature about semi-arid Kenya, there is one outstanding example of a study about indigenous survival strategies during and after droughts: the dissertation written by Wisner (1978). Wisner discerns seventy-four possible practices of, what he calls, 'drought adjustments', in eastern Kenya, especially the Tharaka area of Meru. He also looks at the accessibility of these practices for classes of farmers, from the very rich to the very poor, in a community with extreme polarization. Fifty of his 'practices' are more or less agricultural strategies, part of them only accessible to the very rich. His agricultural practices can be further split into two: livestock and crop adjustment strategies. But Wisner also mentions a number of non-agricultural 'drought adjustments', part of them of a demographic nature. Wisner's study was very important to set the tune for our own work. Other valuable studies were those by Porter (1979), Hogg (e.g. 1980) and Gufu & Lusigi (1987).

This leaves us with one concept to deal with: external interventions. The Pokot - as any people - are not an isolated, autonomous group, coping with a natural environment alone. In the course of their history they had to deal with influences from a wider environment. Neighbouring people - Karimojong, Sebei, Turkana, Maasai - acted as 'checks and challenges', as allies and enemies. We will deal with their influence in parts of Chapter 4. During the 19th Century caravans became a new external phenomenon; during the 20th Century state institutions, missions and (some) entrepreneurs from the outside. It is difficult to categorize the external interventions in order to study their impact on the economy, and especially on the survival strategies, of western Pokot. First it is important to separate the interventions by 'neighbours' from those of 'institutions'. How to deal with the institutional interventions? It is not uncommon to see all institutional interventions in the light of a 'penetration' or 'incorporation' process, in which international capitalism, via the state, eats into a non-capitalist, locally autonomous and highly self supporting society (e.g. Cliffe, Coleman & Doornbos, 1977). On the other hand it is not difficult to see that most current institutional interventions are presented under a 'development' umbrella. All investments, even police bases, are included under the 'development budget' and are part of 'development plans'. 'Development' has become a 'container concept'. Any investment and any inducement of change is regarded as part of 'forward' and 'upward' processes of improvement, but improvement defined by whom, for whom, where, influencing what aspects of life, and for how long? Development is a normative concept, reflecting the norms of those who use it, their priorities, their 'weights'. How do we value the 'development' of a region where all people have recently learned how to read and write, where child death rates have gone down considerably, where real cash income has more than trebled in a few years time, where most people have lost the collective and individual ownership of the land, where almost all have become Christians, where animal wealth has gone down from a high level to a very low level and where local political autonomy has been eroded to a large degree? On top of all that, the 'underdevelopment' literature has made it abundantly clear that external investments or interference in general can result in drainage of wealth; that it can improve the income, wealth or level of living of some and deteriorate those of others; that socio-economic

polarization may increase; that interference can freeze indigenous processes of change and that it can block indigenous processes of accumulation of wealth (for some or for a community as a whole). Categorization of external institutional interventions in terms of 'incorporation' and 'development' bears the weight of all those considerations.

In this study we will restrict the term 'development intervention' to those activities which directly improve the level of living (esp. the quality of health, food, water, energy, clothing, shelter, and education) and those activities which increase or improve the means of production (land, water, animals, tools, seeds, but labour power as well). All interventions outside the direct improvement or increase of means of production and outside the improvement of the level of living will be grouped under the concept of 'incorporation': the intensification of commercial, communicative and institutional links between a local community and the extra-local (or even global) environment (Pearse 1975; see Hardeman 1984, p.25) but also: a larger conformity between a community's culture and economy and an influencing environment. Incorporating interventions include attempts at commercialization (the relative increase of commodity market participation, see Hinderink & Sterkenburg 1979, 1980, 1987) and 'capitalist transformation' (the change towards private ownership of material means of production, and towards wage-labour - the relative increase of labour market participation; see Dietz & Van Haastrecht 1982). However, the study of incorporation attempts should not be confined to economic interventions. It also includes mobilization attempts (the increased participation in higher scale organizations; see Heinemeijer 1968). And we will see that the establishment and strengthening of state power, and the construction of a hegemonic apparatus is a major element of incorporation. We may call it 'political integration'. A specific aspect of incorporation is cultural change, in the restricted sense of attempts to change beliefs, values and attitudes in the direction of a penetrating ideology, be they 'westernization', 'christianity' or - in a more general sense - 'modernization' (it may, of course, also be islamization, 'African socialism' etc.). If we look at the gamut of interventions which can empirically be determined, part of the 'development interventions' - following our definition - clearly have 'incorporation' aspects as well. The improvement of labour, via health care and formal education, is a most obvious case in point. Health care does result in the availability of more, healthier labour power - in a society like the Pokot, this is of great importance to enable physical mobility and agricultural strength. But health care is also used as a political tool to increase der Geest, 1986, shows clear examples from Cameroon). Missionary societies, coming to 'virgin' areas like Pokot, are quick to make health care their first service, their crow-bar. Education not only enhances the knowledge of (future) workers - although not always adequate for their immediate surroundings - it also functions as a major tool of cultural modernization and of national cultural integration; in other words, besides a 'development' intervention it is an incorporation intervention as well. On the other hand, incorporation can enhance development: road building and credit facilities for traders can result in commercialization of agriculture and this can (not always does) increase

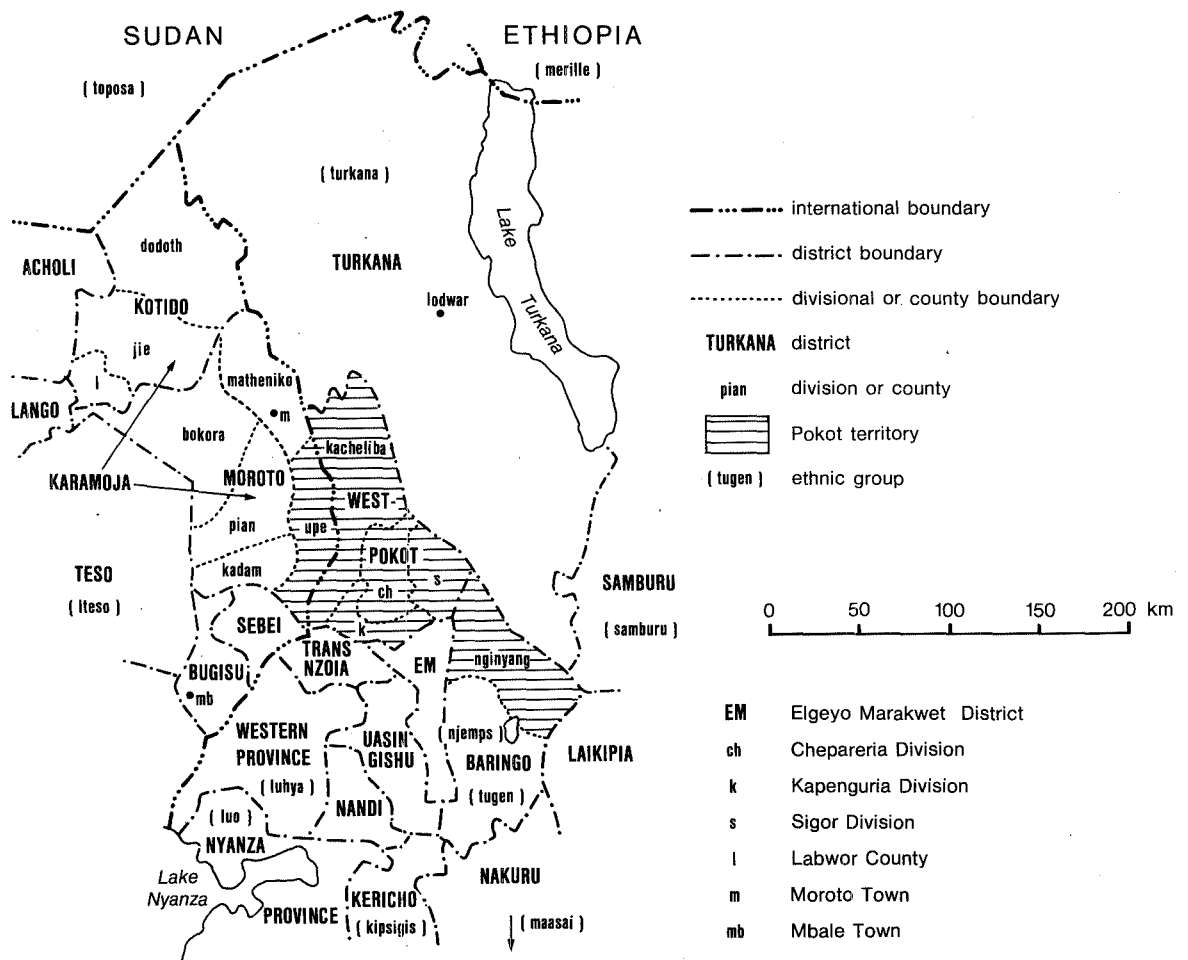


Figure 1.1 Administrative and Ethnic Regions: NW Kenya, NE Uganda, 1986

consumption levels. Increased army and police presence, even increased repression, can (not always does) result in higher, more stable productivity, and in a decrease of theft or raids. These 'classificatory' difficulties should be kept in mind, when reading Chapter 5.

## 1.2 The Research Area

The research area measures 7,500 square kilometres and currently has approximately 100,000 inhabitants, most of them Pokot. The area of western Pokot covers the western part of West Pokot District in Kenya and Upe County of Karamoja in Uganda. West Pokot District is situated in northwest Kenya, bordering Upe in the west and Sebei District - also in Uganda - in the southwest. In Kenya the southern borders are the large farms of Trans Nzoia District and the Cherangani forests of Elgeyo Marakwet District. In the east we find the plains of Baringo District, inhabited by the 'East Pokot'. In the north and northeast there are the plains of Turkana District.

Upe County is the easternmost part of Moroto District, Karamoja. Virtually all of it is semi-arid. Upe County borders on its western side Matheniko, Pian and Kadam Counties of Moroto District, and Sebei District (Figure 1.1).

As we will see, the semi-arid areas of West Pokot cover most of the District, but they can be differentiated in two zones:

- the western area, with a long history of mainly pastoral land use with minor rainfed cultivation activities and only recently a strong increase in cultivation and in non-agricultural ventures;
- the eastern area, with longstanding indigenous (or 'traditional') irrigation practices and a pastoral economy, which has strong links with Eastern Pokot in Baringo District.

We will concentrate our study on Upe and the western part of semi-arid West Pokot. The eastern part of West Pokot District, with its very complex irrigation practices and different pastoral realm, justifies a book of its own. Readers who are interested in this eastern part of the Pokot area are referred to Schneider 1953, Porter 1965, Muir 1985, Tully 1985 and to the Locational Development Profiles which we have made for the Arid and Semi-Arid Lands (ASAL) Development Programme of West Pokot (2).

Upe and the western part of West Pokot can be regarded as one economic region, although with unclear economic boundaries: sometimes sharing grazing lands with the Karimojong to the west and with the Turkana to the north and east; also, there are normally some food exchange contacts with the southern and Sook highlands, both inhabited by so-called 'agricultural' or 'hill' Pokot. That we regard western West Pokot and Upe as one economic region can be defended by pointing at the fact that the area forms one herd mobility realm during droughts and by the fact that the area has a more or less identical economic history: a pastoral economy until about 1970 and drastic changes towards a diversified economy afterwards; a change from an emphasis on the plains within the region to an emphasis on the mountainous and river valley parts. Politically the research area was never united and has a peculiar



history. It offers interesting material for political-geographical speculations. Although most of the area formally belonged to Kenya since 1926 - after some unclarity between 1902 and 1926 - the area northwest of the Suam River has been administered by Uganda between 1932 and 1970, together with Upe. This means that even after Independence (Uganda 1962, Kenya 1963) the administration of a Kenyan area was in the hands of a neighbouring state. Only in 1970 this 'Karapokot area' was returned to Kenya and regarded as 'Kenya mpya' or 'new Kenya' afterwards. The people of the Karapokot area were successively subjected to the governments of Kenya Colony, Uganda Protectorate, the Republic of Uganda (under Prime Minister and later President Obote) and the Republic of Kenya (first under Prime Minister, later President Kenyatta and subsequently under President Moi).

It is probably informative to give a brief description of the research area, as we have experienced it between 1982 and 1986 (Figure 1.2). Political life in West Pokot centres around Kapenguria, economic life around its 'twin city' Makutano. Together they have approx. 5,000 inhabitants. These centres are located at 2,000 meters above sea level in the humid highlands of the District, which are full of maize, beans and dairy cattle nowadays. Recently, in 1981, Kapenguria-Makutano were connected with the regional centre of Kitale in Trans Nzoia District by an excellent tarmac road (40 km), which further leads to the town of Eldoret, the Provincial Headquarters of Nakuru (at 300 km) and the national capital Nairobi (at 450 km). This tarmac road also connects Kapenguria with Lodwar in Turkana District (250 km) and traverses through central and eastern West Pokot, opening up an hitherto very isolated area. Before 1981 a journey from Kapenguria to Kitale during the (long) rainy season was extremely difficult.

Near Makutano one can climb a few hills and have a magnificent view on the plains below. The difference in altitude is more than 1,000 meters. Looking north one can see the Escarpment, separating the lowland plains and the Sook highland plateau. This escarpment is the natural boundary between the eastern and western Pokot lands. Looking at the horizon one can see far away Mount Kadam, part of the Chemorongit Hills and - if the weather permits - even Mount Moroto. Minor hills are visible too, for instance Kacheliba Hill and Kapchok Hill, both with a peculiar shape. Looking down, a green ribbon is clearly visible, the Suam River vegetation. It is the only perennial river in the research area. From Makutano a difficult road goes down the escarpment to the northwest and reaches the plains at a place called Mtembur, with a church and a few ramshackle shops. In the meantime one has seen most incredible gullies. By car the descent only takes twenty minutes. But on foot one feels the words of an adult education officer, complaining that "the climbing up and climbing down is taxing in terms of exhaustion" (WP Dept. of Ad. Educ. AR 1982). From Mtembur a minor road goes to another small centre, recently enriched with a health dispensary: Serewa. From there one can go to the area of the Kanyarkwat Group Ranch and up again to the Trans Nzoia highlands.

The main road continues to Kongelai Group Ranch until it reaches Kongelai Centre, on the Suam River. Here there are a few shops, and 'hotelis', these typical places where you can get 'chai na mandazi': very sweet tea with a delicacy made from maize meal mostly, although you must hope they are fresh. From Kongelai a minor road follows the eastern

side of the Suam River, nowadays full of 'shambas' (fields). Crossing a number of wide seasonal rivers, one reaches the sorghum fields and settlements of the Sook lowlands and ultimately the Korpu gold area, a place where a South African gold prospector had his camp during the 1950s and where after 1979 many Pokot and Turkana (and occasional foreign adventurers) tried their luck.

Near Kongelai, a minor road branches to Chesera and from there either to Chepkopegh - a major goat's market nowadays - and further to the Sook highlands (Chepnyal, with a footpath to Ptoyo, with its dispensary and school), or to Chepareria, an important market place and since 1979 a Divisional Headquarters. Many farms are situated here nowadays. In Chepareria a Norwegian/Icelandic Lutheran mission has been established recently, not far from an Irish Catholic Mission which started in 1974. A dispensary, a Youth Polytechnic, a Secondary School and a lot of shops make it a thriving centre. The growth of Chepareria has certainly been stimulated a lot by the tarmac road. Many matatus - those crowded public vehicles so typical for Kenya - bridge the 20 km distance to Kapenguria. We can start our journey again to Kongelai.

On foot and with animals it is not too difficult to cross the Suam River, but with a car there is in fact only one crossing: the Suam bridge between Kongelai and Kacheliba Centre. One enters the plains west of the Suam River, which are called 'Kapcheripko' by the Pokot. Kacheliba is a major centre nowadays, with more than 40 shop buildings, although not all are used and the used ones are not always open. In Kacheliba you can also find the Divisional Headquarters, a major Army camp, a Divisional Police Centre and a large Roman Catholic mission (Italians this time; since 1973) always to be recognized by its beautiful trees and carefully maintained vegetable gardens. Also there are some other churches and there is a large Government Health Centre, not far from the Catholic dispensary. After 1970, Kacheliba was revived from obscurity, to become the new headquarters of 'Karapokot', later 'Kacheliba' Division. Until 1930 it had even been the District Headquarters - strangely enough situated in an area not recognized by Uganda to be Kenyan. When the district staff moved to Kapenguria (1930) and when also an Anglican Mission left for the highland (1936), only two shops were left and nothing else.

From Kacheliba one can go to the southwest, to an excellent grazing area that experienced severe insecurity lately and where the General Service Unit of the Army now tries to restore law and order. Not far from there, just across the border, a large temporal settlement existed in 1984-85, a gold place called Chepkarerat. Insecurity, gold fever, miserable living conditions and a 'quick rich' attitude made it an outlaw place. The other former centres in southern Upe (Karita, Lokales) are abandoned nowadays.

Less dangerous is the road from Kacheliba to the north. Via some minor school settlements one reaches Kodich Centre and furtheron Kunyao Centre. Until there you can go back with the 'matatu' taxi, once a day, to Makutano a two and a half hour ride. In Kodich you will always meet the Chief of Kapchok Location and he will tell about the latest developments going on: the new irrigation project, riverine agriculture, the beekeeping cooperative, the dispensary and so on. In Kunyao you can visit a few Somali owned shops and hotelis and have 'chapati' (a pancake mostly made from maize meal), 'karanga' (a soup with meat and potatoes)

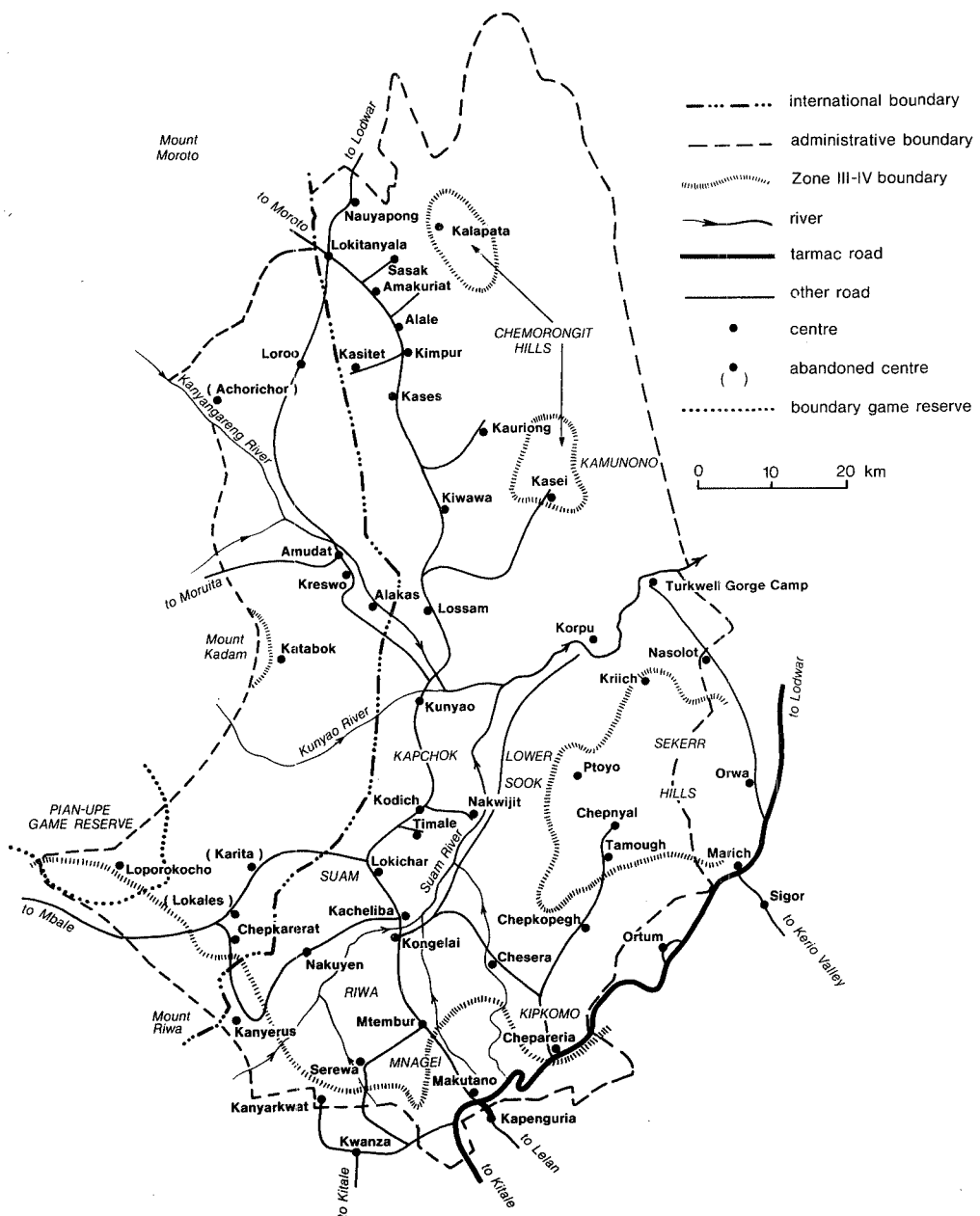


Figure 1.2 Research Area: Roads and Centres, 1986

or even 'pilau' (flavoured rice). If you don't want chai, you can have a 'soda' if you are lucky: in the most incredible places you can drink coca cola, pepsi cola, fanta or sprite, mostly 'moto' (hot), but refreshing during the hot days. Driving on the road you hardly see huts. But as soon as one gets out, people come from nowhere and they might bring you to their 'manyattas', groups of huts, surrounded by a fence of thorn bushes. Sometimes you receive some 'black' milk, a bit of sorghum porridge or a local brew. The more you go to the Uganda side, the more huts are grouped together. Manyattas near 'the enemy' might have more than fifty huts even (Andersen 1978, pp217-236 gives a nice description of Pokot 'traditional architecture').

From Kodich a road branches to Nakwijit Centre, a traditional market place where Pokot from the western plains used to exchange milk and goats for grains brought by inhabitants of the Sook highlands. Nakwijit is now in the middle of an extended area of riverine cultivation, although - as everywhere along the Suam River - people fear malaria mosquitoes and tsetse flies. Only few actually live along the river. Most cultivators walk the three to five kilometres between their huts and fields. The plains are regarded as much more healthy.

From Kunyao an old road branches to Amudat in Uganda, the centre for the Upe Pokot and not far from the Kenya border. There is no border post. (Officially you need permission from the District Commissioner in Kapenguria to cross the border, sometimes this is checked by policemen stationed in Kunyao). Besides the mission hospital and a few shops there is not much left in Amudat, nowadays. All the shops are closed. From Amudat the road goes on to Loroo and across the Kenya border again to Lokitanyala, a very minor centre nowadays, but of some importance in the past. From Amudat a road goes to the west (Moruita) and further north to Moroto, headquarters of Moroto District, more than 100 km away and mostly through Karimojong territory, for a Pochon (singular for Pokot) not a nice thing to do. But of course he can go through the bush of Upe, from Amudat a stiff walk of sixteen hours. From Amudat to Kunyao (and its 'matatu' further to Kapenguria) is another six hour walk.

After 1970 a new road was made from Kunyao to the north, this time all inside 'New' Kenya. First one has to cross the very wide Kanyangareng River, which is impossible during the rains; there is no bridge. The river is mostly dry, however. From there the road goes to Lossam - after Kacheliba and Kunyao the third place where the Police can ask you "what the hell are you doing here". North of Lossam, Kiwawa Centre was recently developed by fundamentalist American missionaries from the ACK mission. It includes a health centre. To the east a mountainous area rises: the Chemorongit Hills or 'Korokou' in Pokot language, with Tarakit, Tarakwet, Pcholio and Tenus peaks. Recently rainfed cultivation proved to be a possibility. Some schools were built and Kasei developed as a minor centre. To the south of Korokou one can find the Suam River again, and the Korpu gold camp. East of it recently the building started of the Turkwell Gorge Dam, a very large hydro-electricity project. North of the Korokou we find another mountain range: Kopokoch or Kubbakou in Pokot, with the Lorosuk, Kachagalau and Kalapata peaks, forested areas which are recently being deforested to make room for rainfed farming. Here we also find major gold places nowadays. Between Kubbakou and Korokou a minor centre developed recently: Kauriong. The road to the north passes through Kases, Kimpur, Alale and Amakuriat

centres until it reaches the old road at Lokitanyala. From Kunyao to Alale takes two to three hours by car. In Amakuriat a Roman Catholic mission station has recently been built; in a place between Amakuriat and Alale, but more towards the mountain side, another mission started: the Africa Inland Church with a US missionary from the Reformed Church of America. Both Alale and Amakuriat are rapidly developing into centres of some importance.

North of Lokitanyala there is one more centre, Nauyapong, with an old dispensary, a police post and a few shops. From Alale to Nauyapong is another two hours by car. To the North one looks down upon the Turkana plains. It is possible to go down by car, although the road is very bad. During rains it is impossible, but in fact that is true for the whole road west of the mountains. River crossings and muddy paths are almost impossible to negotiate.

The area west of the road, from Lossam to Nauyapong, is virtually deserted these days, due to the Karimojong threats. The same is true for the area east of the mountains, since a much longer period. Although regarded as Pokot grazing land, the Turkana threat is so strong that no herdsmen venture in these eastern areas. It was probably back in the 1960s when the last Pokot settlements could be found between Kubbakou/Korokou and the Turkwell River.

The names of the areas of this study are rather confusing. For clarity's sake we will give a short summary:

West Pokot: the administrative unit, currently comprising Kapenguria, Chepareria, Sigor and Kacheliba Division. Between 1932 and 1970 excluding Kacheliba Division (Karapokot).

West Suk: the colonial name for West Pokot.

Karapokot: the area of Kacheliba Division.

Karasuk: the colonial name for Karapokot, used by Uganda until 1970.

Upe: currently the Pokot County in Moroto District (Karamoja), Uganda; in 1932-1970 including 'Karasuk'. We will always use Upe/Karapokot if we mean Upe, including 'Karasuk' area.

Western Pokot: Upe, Karapokot and the area 'East of Suam'.

East of Suam: Sook, Riwa and Kipkomo Locations as well as (lower) Mnagei.

Western West Pokot: Western Pokot excluding Upe (but including Karapokot).

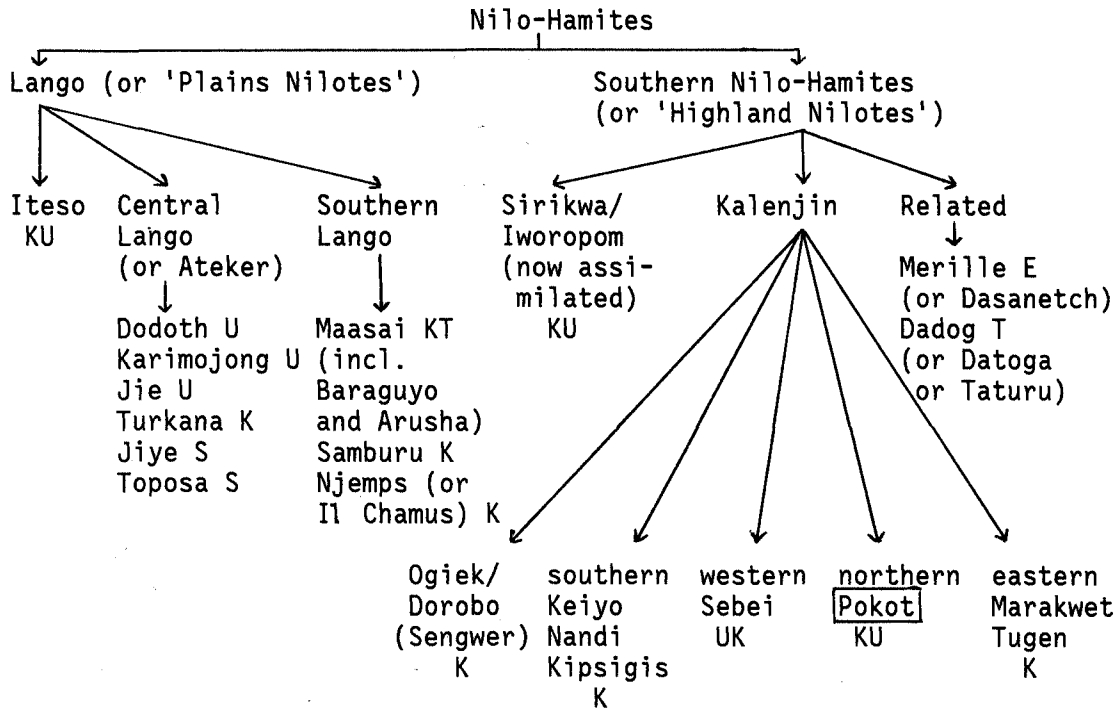
Semi-Arid Western Pokot (SAWP) or Western Pokot Lowlands: western Pokot without the more humid areas (that is: without the Chemorongit Hills, the Sook highlands, the southern part of Kipkomo, the southwestern parts of Riwa, Karapokot and Upe, and the Kadam foothills).

### 1.3. The People

The current inhabitants of the research area are Pokot (singular Pochon). Pokot are the most northern branch of 'Southern Nilo-Hamites' (Huntingford 1953), also known as 'Highland Nilotes' and nowadays called 'Kalenjin'. Close ethnic affiliates are the nearby Marakwet and Sebei and the more far away Keiyo, Tugen, Nandi and Kipsigis (see Fig. 1.1 and 1.3). They all trace their origin to a 'Proto-Kalenjin' group of pastoralists that came from an area near the Sudan-Ethiopia border to the

surroundings of Mount Elgon around AD 1000 (Were & Wilson 1984, p.42-47) although not all scholars agree. Ochieng' (1975, p.27, 55) believes that the Proto-Kalenjin had settled in the Mount Elgon area before A.D. 500. Tully (1985, p.55, referring to Ehret 1971) suggests that the Proto-Kalenjin had moved to the western highlands of Kenya by the time of Christ and that between AD 900 and 1100 a northern Kalenjin, Pokot- or proto-Pokot speaking group, had occupied the Cheranganis and the Uasin Gishu plateau. Between 1500 and 1650 most of the Proto-Kalenjin were dispersed to the northeast and southeast of Mount Elgon. Probably around 1650 a separate Pokot tribe, or 'Pokotozek' (Wilson 1970, p.129) had formed with its own language and a habitat around the Cherangani Massif, also venturing into the lower plains to the north and the east.

Figure 1.3 Close and Distant Tribal Affiliates of the Pokot



E = Ethiopia, K = Kenya, S = Sudan, T = Tanzania, U = Uganda

Together the Nilo-Hamites are approx. 4 million people nowadays (most important: Kipsigis: 900,000; Iteso: 400,000; Maasai: 400,000. Pokot are 200,000). Languagewise they are part of a larger family: the Nilo-Maa group of languages, which also covers the Nilotic languages (Lwoo, including Kenyan Luo), the Bari languages and the Otuko languages (the last two groups in Sudan).

Sources: Huntingford 1953; Gulliver 1956; Ominde 1968, pp.85-92; Crazzolara 1969; Ochieng' 1975; Kesby 1977; Carr 1977.

The story goes that during the early part of the 19th Century the Pokot had lost most of their cattle to Maasai and Nandi raiding parties (e.g. Dundas 1910) and were forced to put more emphasis on agriculture, along the Muruny and Weiwei Rivers. Some Pokot sections began to construct irrigation furrows there to cultivate sorghum, alongside the rainfed fingermillet. The history of these irrigation practices is unclear. Most writers think the Pokot adopted the ideas of irrigation from the Marakwet who - in their turn - refer to an extinct 'Sirikwa' tribe which had started irrigation furrows before, on the western side of the Kerio Valley. But despite increased crop cultivation the Pokot still regarded (and regard) a large herd of cattle as an important goal in life. Around 1860, groups of Pokot acquired large numbers of cattle from Samburu, who lived in the east (Dundas 1910, Schneider 1953, p.176, Cox 1972; Tully 1985, p.60 is sceptical about this, however). Threatened by Samburu revenge and Turkana southward expansion, many Pokot moved to the northwest with their animals, if necessary hiding in the eastern part of the Chemorongit Hills, which also offered some cultivation opportunities. According to Wilson (1962, p.116) the Pokot of the Chemorongit Hills "subsisted on honey, wild fruits, and herds of goats and sheep, and only small herds of cattle were owned by a few individuals" (but his spokesmen, old Karimojong, may well have been tempted to underreport Pokot cattle wealth).

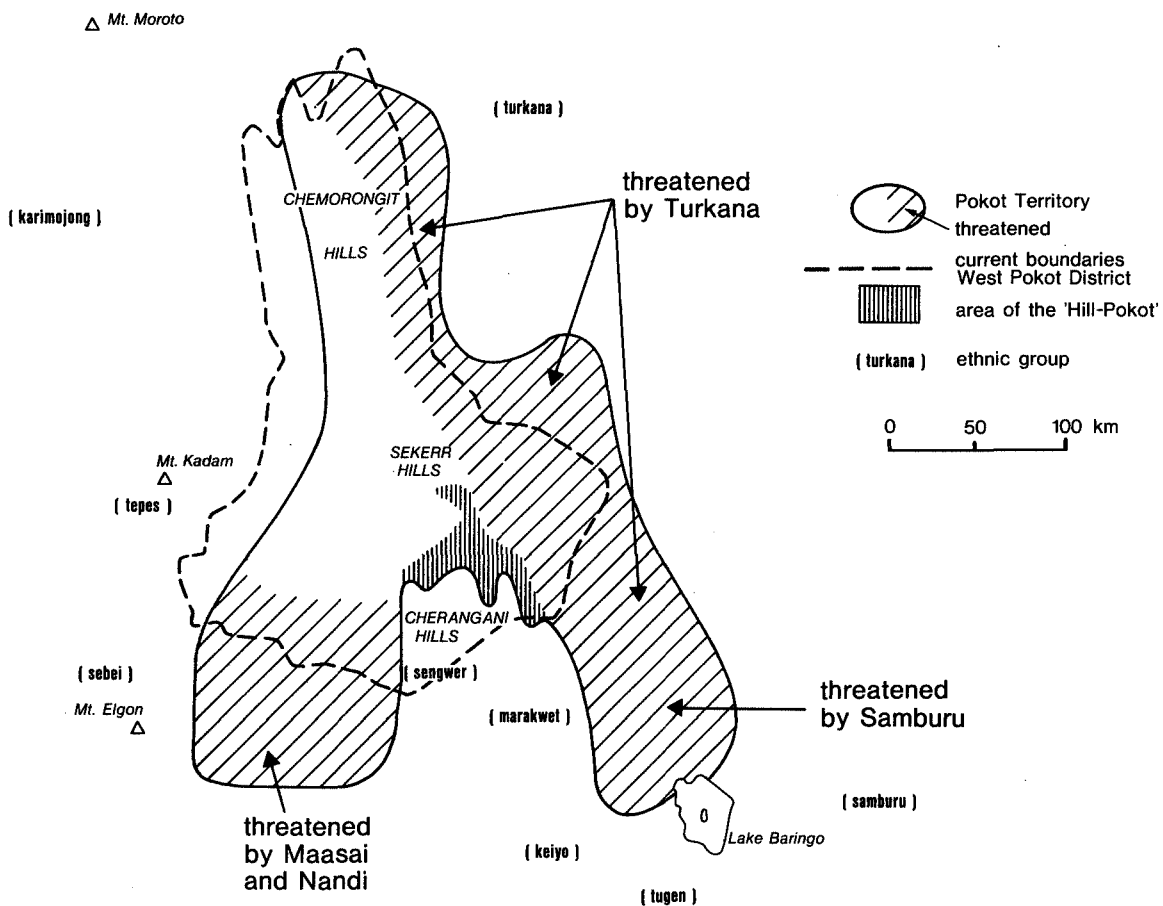
The western part of the Chemorongit Hills must have been virtually empty around 1860 and was only used by Karimojong herdsman during exceptionally dry years as a refuge grazing area. More south, the plains of Riwa were almost unoccupied too. All of it had been part of the area of a mysterious Oropom tribe, which was defeated by Karimojong sections before 1830 (Turpin 1948, p.162; Cox 1972, p.22; Brasnett 1958, p.113). Wilson (1970) suggests that the Oropom (or Iworopom) were of bushmanoid (Khoisan) descent and the original inhabitants of a large area, including all of current Pokot-land. It is also possible that the Oropom were an earlier offshoot of the Proto-Kalenjin, who migrated to the Elgon-Cherangany area and who assimilated the original (Khoisan) inhabitants. What seems to be clear is that between 1720 and 1830 Oropom groups were threatened by Pokot and Karimojong and concentrated their settlements along the Turkwell/Suam River, in the Chemorongit Hills, and in parts of Karamoja. After the final defeat of Oropom sections by Karimojong, before 1830, the Karimojong regarded the Suam River and the area west of it as their territory. Pokot did not go there, and their use of the western plains was limited to the southwestern part. Pokot herders, who had gone to Riwa, and - during dry seasons - to the Mnagei highlands and even more south, were threatened, however, by Nandi and Uasin-Gishu Maasai attacks. Figure 1.4 gives an interpretation of the Pokot territory around 1880.

When the herds of the Karimojong and the Uasin-Gishu Maasai were heavily reduced by rinderpest and other disasters, during the terrible scourge that hit East African pastoralists all over between 1886 and 1896, Karimojong and Maasai occupation contracted to their central areas. Pokot herders took advantage and gradually enlarged their grazing and settlement area to the west and south. Due to the extreme isolation of the herds, Pokot cattle were probably far less attacked by rinderpest (Turpin 1948, p.163). A lot of desperate Karimojong were assimilated and this is the time Pokot adopted Karimojong customs (Peristiany 1951).

Around 1910 the Pokot had moved into Kapcheripko (AR Turkana 1912-13, AR Turkana and Suk 1913-14); around 1920 they used most of present-day Upe and during the 1920s they also threatened the more central areas of the Ngipian and the Ngimatheniko sections of the Karimojong. In Barber's words: "the Pokot invasion was like the waves of a rising tide" (Barber, 1968, p.164).

East of the Chemorongit Hills, however, the Pokot lost ground to the Ngabotok section of the Turkana and also in the southeast - in present-day Baringo - they were under attack from Turkana and Samburu. In the south, Pokot extension was blocked and countered by White settlers, the 'soldier settlers' of Trans Nzoia, after 1919.

The westward movement meant longer distances to the centre of Pokot culture, Mwino and Sekerr, in the east. Karimojong and Turkana were more nearby and during times of tribal peace occasional contacts and interethnic marriages resulted in a process of cultural fusion. The



Sources : Barber, 1968 and Archives

Figure 1.4 Pokot Territory around 1880



most important result was the adoption of the Karimojong practice of 'sapana', the grading of adult men in cohorts, in addition to the Kalenjin ageset system based on circumcision (Peristiany 1951). Decorative styles (e.g. the clay cap) and domestic tools (e.g. the headrest) were adopted and the Pokot language was influenced with Karimojong and Turkana words.

By 1930 the study area was fully under Pokot control. They had developed a cattle-centred way of life, and they very much relied on livestock products for food. Besides cattle they also had goats, sheep, donkeys and some camels. The mobility of herds and men was large. During the rainy season they stayed near the homes in the plains; during the dry season they left for far away grazing areas, either on the mountain sides or near the Suam and Kanyangareng rivers. Sometimes temporal dry season camps were even 50 km away. Women, children and elderly people used to stay in the more permanent settlements, near the stores of sorghum and millet. Women took care of small stock and calves plus most of the cows in milk. They were also regarded as responsible for the children, for minor cultivation, for daily meals, for brewing beer, for water and firewood and for building of huts and stores. Their permanent settlements were only abandoned if too much dung and dirt had accumulated, once every five to ten years. Permanent settlements were also abandoned when crop harvests had failed and stores were empty. Social cohesion was provided along lineage, clan, marriage, age-set and neighbourhood lines. Economic ties were and are strengthened by labour exchange (labour parties), stock associateship ('tilia') and bridewealth-arrangements. Within households - which are generally patrilocal and preferably polygamous - the male head is the nominal 'owner' of all wealth. In practice, particular animals and particular pieces of land are the property of wives and children. Bridewealth payments and inheritances are widely spread (in general within three generation groups). When the head dies the largest part of his wealth goes to his eldest son. When a mother dies the largest part of her property goes to her youngest son. This is related to their particular responsibility of father resp. mother during old age. Indigenous higher political authorities did not exist among the Pokot around 1900; unlike some other Kalenjin groups, medicinemen or spiritual leaders had no political authority. Between 1930 and the late 1960s there was not much need for defence cooperation in most of the study area. From the late 1960s onwards, however, the Turkana threat increased and in the late 1970s and early 1980s the study area was fully under attack from Turkana, Karimojong and Sebei 'warriors', or 'cattle rustlers' ('ngoroko'). These attacks, coupled with a number of disastrous droughts, animal diseases and increased population, forced the Pokot to look for non-traditional survival strategies.

#### 1.4. Methods of Investigation

As in any explorative type of research, our findings are based on a large variety of sources of information and methods of investigation. We used various types of archival information, books and articles written by scientists, civil servants and missionary workers, consultancy reports, maps, landsat images, interviews, questionnaire surveys,

'sondeos', group discussions, and our own observations.

It is remarkable how much archival information could be found about government interventions. The British habit of systematic reporting proved to be very useful for our reconstruction purposes. For the first part of this Century, district annual reports, handing-over reports, intelligence reports, miscellaneous correspondence and political record books could be used in the National Archives of Nairobi and - on microfilm - in Cambridge. For the period after about 1950 a deserted office store in Moroto provided valuable information about Upe, including 'Karasuk'. In Kapenguria and Kacheliba lots of reports could be unearthed from 'look for yourself' archives. This provided almost complete sets of District Annual Reports and Annual Reports for the Ministry of Agriculture in the district for the period starting in 1950. Missing reports could be traced elsewhere, e.g. in the library of the Ministry of Agriculture in Nairobi. Besides annual reports, the paper hunting resulted in lots of monthly and quarterly reports of various departments, of project documentation, of correspondence and minutes of meetings, although not all complete. Nowadays, all is brought together in the new District Information and Documentation Centre, which we helped to build up. Of course, government documents are most probably biased. Two factors, however, make them very useful: the turnover of officers writing them is very fast; mostly each annual report has been written by another officer, with a different style, different experience and often different opinions. Further, officers who have read former reports - especially for a number of years - are rare. Hearsay and personal experience play a much more important role in forming opinions than systematic reading of 'old' reports. Written reports seem to be there for the archive (and hence for researchers like us).

For the period since 1982 we were near the fire ourselves. We had the opportunity to interview many civil servants, to be part of the ASAL Programme, to visit most of the area and the projects and to interview missionaries and lots of local informants. Also we engaged a number of local research assistants who carried out systematic interviews and who proved to be excellent informants 'from below'. We have tried to encourage their local research activities and part of their results could also be used in this study.

In 1982 the first systematic interviews were done in three case study areas, Kongelai, Kodich and Alale. Without a sample framework we had to decide to interview households by chance, in areas that were decided upon before, to enable a coverage of various sites and to prevent 'road side bias'. These interviews were mainly explorative and provided 'orders of magnitude and directions of change'. In Alale the interview information was followed up by a 'sondeo', a concentrated research activity of a combined group of civil servants, researchers and local assistants (see Chambers 1980, who reported the idea from Hildebrand). Later this sondeo-technique was also followed to find detailed information about waterpoints and their use. In Alale, in 1985, part of the households was reinterviewed to give detailed information about their survival strategies during and after the 1984-drought.

In Kodich, interview information could be used which was gathered as part of the 'Suam River Agricultural Project', an ASAL-sponsored activity. Three rounds of information could be used, one specifically gathered to find information about survival strategies in 1984-85. This

same interview was done in Kongelai. Finally, in 1986 information was gathered about the life histories of members of one lineage, originating in lower Sook.

Another important source of information about the study area is the work of other scholars. No writer has ever specifically studied the study area as such, but in a number of studies information about the area is presented. Peristiany (1951) did cultural research which is of some value; in Dyson-Hudson's major study about the Karimojong (1966), also Upe and Karapokot figure. The political problem of 'Karasuk' was discussed in Brasnett (1958), Docherty (1958) and Dyson-Hudson (1958) in the Uganda Journal. Before, Turpin had presented his view in this journal (1948). Barber included a chapter about the Pokot in his magnificent book about the 'Imperial frontier' (1968). The most important information about the western Pokot - although concentrating very much on Upe - is given by Cox (1972), a Medical Doctor stationed in Amudat and later Kapenguria. After 1970 the Kongelai area has received some attention because of the Group Ranch experiment during the Kapenguria Division Special Rural Development Programme. Livingstone (1975), Widstrand (1973) and the SRDP evaluation team of IDS (1973 and 1975) have covered the subject. Recently Yadeta (1985) included a case study of Kongelai and Chepareria in his peculiar book about West Pokot. Some more general books provide useful information too: Henkel's study (1979) about the service situation of West Pokot and two other districts; the Kenya Soil Survey study resulting in an agro-climatic and soil map of Kenya (1982) and Jaetzold & Schmidt's study about agro-ecological potential (1983). For current information, the new District Atlas West Pokot (1985) is excellent.

Specific books about semi-arid areas elsewhere in Kenya provided valuable ideas too as well as background information for an introductory chapter about semi-arid areas in Kenya. Also information about Karamoja was useful. We will refer to these books later.

We have first made six Locational Development Profiles for the study area: Alale (1982, see also Dietz & Van Haastrecht 1982, a working paper for IDS), Kasei-Chemorongit, Kapchok, Suam and Sook (all 1983) and Riwa-Lower Mnagei (1984). Later, Vermaat & Gallé have made a Profile for Kipkomo (1986). The Profiles provide a systematic overview of agro-ecological potential, local administrative, demographic and economic history and current services. These Profiles were made for the ASAL Programme and distributed locally. Discussion with local informants about the Profiles provided us with further information.

The research was a voyage of discovery. The reconstruction of external interventions was cumbersome but not impossible. The discovery of indigenous survival strategies and responses to external interventions was a combination of systematic research - not always with convincing results - and 'bits and pieces' detective work. The more we began to understand, the more we were perplexed by the ingenuity of these Pokot. They have made extreme opportunism the major guiding principle in their current survival strategy.

## 1.5. The Organization of the Book

First we will present a general overview of the semi-arid areas in

Kenya: their location and their recent positions within the Kenyan society. Also a brief history of government ideas about these dry areas is given, this time also including ideas in Ugandan government circles concerning Karamoja, the only semi-arid area in Uganda. It will become clear that government attention for dry areas was fluctuating very much. Periods with a lot of attention for dry areas in general also show - with some time lag - an increase in attention for our study area or part of it. In this chapter also the specificity of the position of (semi-arid) West Pokot among the other dry districts in Kenya will be highlighted.

In chapter three the natural conditions of semi-arid western Pokot are presented with specific attention for the livestock and arable potential of our study area. The variability of the climatic conditions and the uncertainty which is a result of this variability gets a lot of attention. A history of natural disasters from 1885 onwards is included. In chapter four we deal with the population of the study area, their land use and - most important - their complex indigenous survival strategies. Our analysis of, what we call, the theoretical population supporting capacity and the actual population densities and land use shows that 'population densities' for average situations do not say much. 'Critical population densities' are reached during periods of droughts and other disasters. 'Population pressure' in semi-arid environments during droughts is very much influenced by the ingenuity of indigenous survival strategies. People were forced to apply a whole range of new 'survival strategies' - in addition to existing ones - because of a dramatic decrease of economic security.

In chapter five the institutional interventions in the study area are disentangled. Here we deal with governments and with missions. In the sphere of governments we have to deal with administrative measures and their effectiveness in imposing higher order political authority and in enforcing various types of incorporation. But we also have to deal with development measures in a large number of fields. We will see that government activity is not at all a clearly defined and unidirectional process of planning and implementation by one entity. 'The government' is a compartmentized, internally often contradictory and frequently confused and badly informed set of actors. It will also be evident that crises are both aggravated and relaxed by institutional interventions and that survival strategies are both assisted and thwarted. Some crises are of a pure government making, some survival strategies too.

In chapter six detailed studies are presented of the indigenous survival strategies and external interventions in three specific case study areas. Kongelai is an area not far from the district decision making centres, with rainfed arable farming possibilities along the Suam River, and always governed by Kenya. External interventions were quite important during the 1950s and early 1970s. Kodich is an area more to the north, also with rainfed arable farming possibilities along the Suam River. This area saw the activities of the governments of Colonial Kenya, Colonial Uganda, Republican Uganda and Republican Kenya, although external interference only became important during the late 1970s and early 1980s. Alale is an area in the extreme north. It is a hilly area, where rainfed arable farming is possible at the hillside. It has always been very remote from centres of decision making. It experienced the same succession of governments but with minimal impact. During the 1980s

missionary activity succeeded to have some impact. Within three sub-regions of our study area, 'East of Suam', 'Southern Karapokot' and 'Northern Karapokot', each case study area is the area which experienced the strongest intervention. The case study areas are therefore not representative; they give the opportunity to study the impact of external interventions on crisis, and on survival strategies in its most 'outspoken' form.

In chapter seven the findings of these explorative investigations are summarized in a more systematic way. The major part of this chapter is devoted to the impact of external interventions on three 'layers' of survival strategies: physical survival, the survival of animal wealth and the survival of pastoralism. Our study indicates that the 'state' (or other external actors) can only partially influence 'development' and simply lacks the sensitivity and flexibility needed to cope with these harsh and highly insecure environments. The study also indicates that the impact of interventions can never be understood by only looking at 'projects' as such. If 'development evaluators' really want to do a useful job, they should study local society as a whole for a long period of time and they should study all interventions, not a selection of 'development' interventions alone. Development planners should accept that local, dispersed 'survival strategies' are often more important than planned strategies from above. Interventions are only part of things that matter, not unimportant, but mostly not decisive either. Unfortunately, interventions that really mattered often had a negative impact on local survival prospects, as we will see.

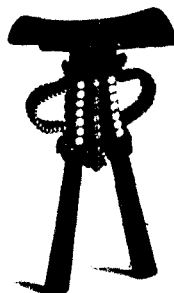
#### Notes

(1)

In a volume of 'Nomadic Peoples' the various theoretical positions are clearly pictured: Galaty (1984) reviews the 'culturalist' stand-point (with Herskovits, 1926, as 'founding father'), Schneider (1984) the 'formalist' view, Ensminger and Bradburd the feminist and marxist positions, while Salzman (1984) shows a 'synthesist' way out.

(2)

Locational Development Profiles were made for almost all locations in West Pokot District: Alale (1982), Kasei-Chemorongit (1983), Suam (1983), Riwa & Lower Mnagei (1984), Sook (1983), Kipkomo (1986 by Vermaat & Gallé), Lelan (1983), Sekerr (1983), Masol (1986 by Zaal & Van Tienhoven), Cheptulel & Lomut (1986 by Van Tienhoven & Zaal), Weiwei (1986) and Batei (1987 by Gallé & Vermaat). Readers who are interested in the Mnagei highlands of Southern West Pokot are referred to Reynolds (1982) and Tully (1985). Readers who are specifically interested in Pokot irrigation practices are referred to Dubel & De Kwaasteniet (1983) and to Van Klinken (1985). Unfortunately, the most detailed anthropological study of a community in the irrigated area has never been published (Meyerhoff 1981). More literature is given in the bibliography of the District Atlas West Pokot (1985).



Pokot headrest  
(Andersen 1978, p.230)

## 2 SEMI-ARID KENYA AND UGANDA: LOCATION, POSITION AND A BRIEF HISTORY OF POLICY ORIENTATIONS

### 2.1 The Location of Semi-Arid Areas in Kenya

In the literature one finds many definitions of semi-aridity. The most simple ones use annual rainfall averages, sometimes combined with an altitude limit. During the discussions in Kenya in the 1950s and 1960s about African land potential, sometimes 25 inches (635 mm), 30 inches (762 mm) or 35 inches (889 mm) were used as the upper rainfall limit of 'semi-arid and arid' or 'marginal agricultural' lands (Ominde, 1971, p.146, Wisner, 1978, p.35-36, p.61). Recently the Kenyan Government included all those areas with between 200 and 850 mm of rainfall per year in their target zone for the 'Arid and Semi-Arid Lands Development Programme' (GoK 1979, ASAL-Report). There are also human geographers who define the semi-arid area by annual rainfall averages only: e.g. Porter uses 400 and 800 mm as the limits of the semi-arid zone in East Africa, although he admits that "our simple definition leaves unanswered questions of whether the rain is concentrated in one season or divided into two, moisture demand (potential crop transpiration), soil character, crop phenology, crop and field management (...), variability around monthly and annual means" (Porter, 1979 p.7). Porter's semi-arid area for Kenya is given in Figure 2.1.

Sometimes the semi-arid areas are defined as those areas where the probability of annual rainfall less than 500 mm is between 10 and 30 %, assuming that an annual rainfall below 500 mm means an absolute crop failure. Hence the chance of crop failures is between one and three years every decade. Figure 2.2 shows this 'high risk' or 'drought prone' area. In the western part of Kenya it fits rather well with the 400-800 mm rainfall area. In the southeastern part of Kenya it is smaller (Wisner, 1978 p.43, using Ogendo & Ojany 1973).

More sophisticated definitions relate average annual rainfall figures to average annual evaporation figures. The UNESCO map of the 'World Distribution of Arid Regions' uses the ratio  $P/E_{tp}$  or Average Annual Rainfall divided by the Average Annual Potential Evapotranspiration. Areas are called 'semi-arid' which have a ratio from 0.20 to 0.50. Interannual variability in these areas is between 25 and 50 % according to this source (UNESCO 1979). The scale of this map is very small however (1:25,000,000) and a lot of detail is lost. See Figure 2.3. In Kenya this type of measurement was done on a larger scale in the (new) Agro-Climatic Zone Map of Kenya (Kenya Soil Survey 1982, scale 1:1,000,000). Potential annual evaporation is used here ( $E_o$ ) and calculated from altitude figures (1). Where the 'moisture availability index' ( $P/E_o$ ) is between 0.15 and 0.25 the area is called 'arid' (Zone VI), where it is between 0.25 and 0.40 it is called 'semi-arid' (Zone V) and where it is between 0.40 and 0.50 it is called 'semi-humid to semi-arid' (Zone IV). In the KSS-study it is assumed that the potential evapotranspiration is 0.8 times the potential evaporation (KSS, 1982 p.44) (2). For 'arid' areas it means that  $P/E_{tp}$  is between 0.19 and 0.31 in an average year, for the 'semi-arid' area the boundaries are 0.31 and 0.50, and for the 'semi-arid to semi-humid' area 0.50 and 0.63. In the semi-arid zone there are 113-146 'full-moisture days' on average; in the

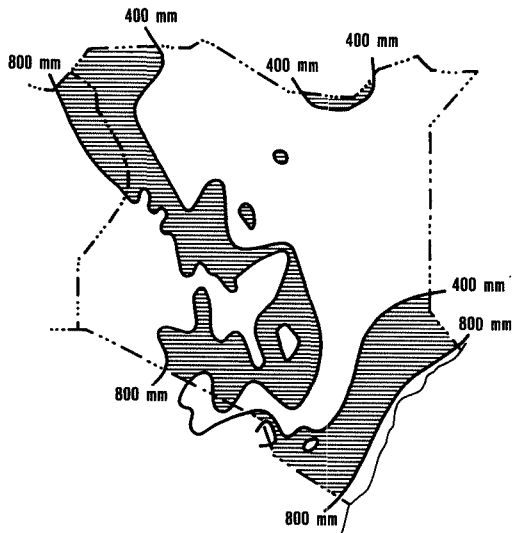





Figure 2.1  
Semi-Arid Zone Kenya  
according to Porter  
(1979 p.8): between  
400 and 800 mm annual  
rainfall

 semi-arid zone between  
400 and 800 mm annual rainfall

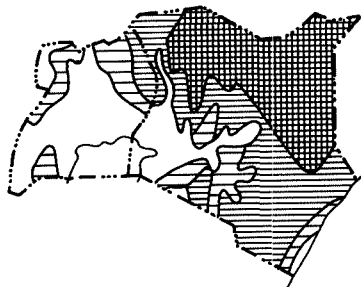
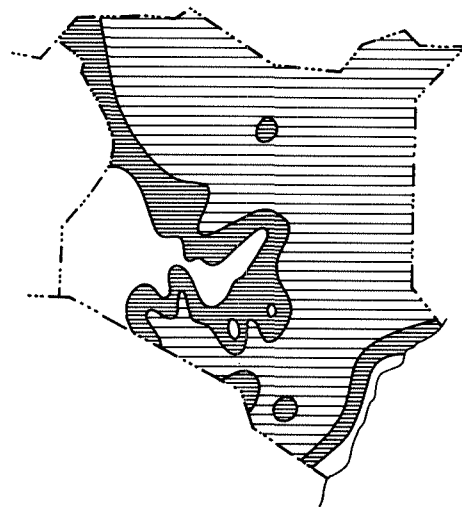
0 100 200 km


Figure 2.2  
Drought-Prone Areas  
according to Wisner  
(1978 p.43), using  
Ogendo & Ojany 1973


 10-30 % chance of annual  
rainfall below 500 mm


 above 30 % chance of annual  
rainfall below 500 mm

0 100 200 km



 Arid P/Etp 0.03-0.20

 Semi-Arid P/Etp 0.20-0.50

 Sub-Humid P/Etp 0.50-0.75

0 250 500 km

Figure 2.3 Dry Zones in Kenya and Uganda, according to the UNESCO-map  
"World Distribution of Arid Regions" (1977)

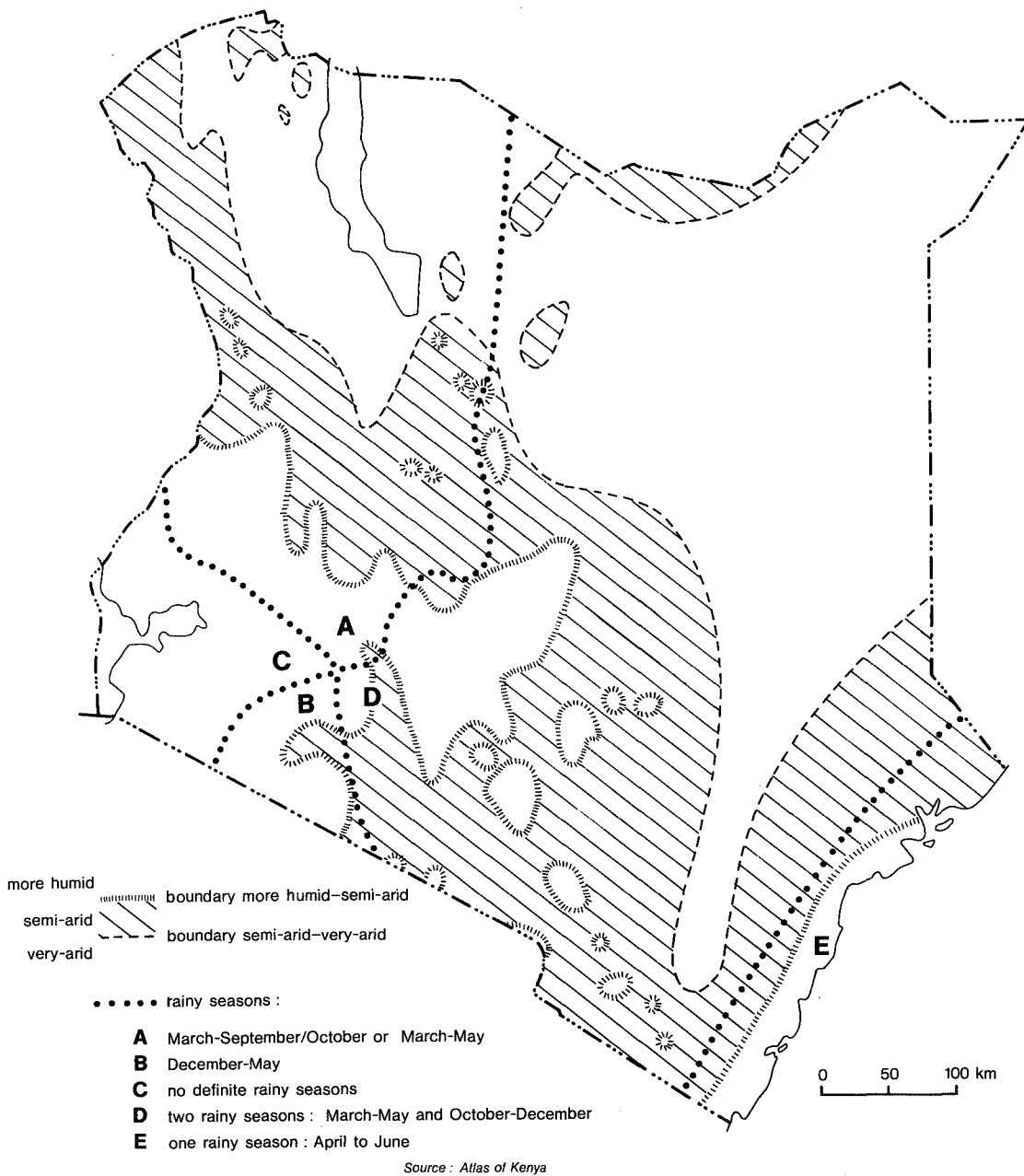


Figure 2.4 Semi-Arid Areas in Kenya; own interpretation (based on Kenya Soil Survey 1982, including risky Zone IV)



semi-humid to semi-arid zone 146-230. Compared with the UNESCO approach it is evident that what is called semi-arid by UNESCO covers the 'arid' and the 'semi-arid' zones of KSS. What is called 'semi-humid to semi-arid' by KSS is called 'sub-humid' by UNESCO.

In order to enable a comparison of results from our study about Kenya with studies done elsewhere in the world, we decided to use the UNESCO-classification as the basic one and to deal with 'semi-arid' areas in their definition; that is the arid and semi-arid zone following the KSS classification.

It is important, however, also to include those areas which are called 'sub-humid' by UNESCO (KSS Zone IV), which have large agricultural risks because they face semi-arid or even arid conditions regularly. To determine these risky sub-humid areas, it is necessary to look at the rainfall patterns and the rainfall variability. Kenya Soil Survey differentiates between five types of areas in terms of vulnerability to drought: (north-)western Kenya, eastern Kenya, the northern coastal strip, the southern coastal strip and the coastal hinterland (no information is given for the southwestern parts) (KSS 1982, p.48).

In (north-)western Kenya the sub-humid areas (KSS Zone IV) are much more vulnerable than in the other parts of the country: the chance of a serious rainfall deficit (3) in the rainy season (4) is between 20 and 65 %: one out of five years near Zone III and two out of three years near Zone V.

In eastern Kenya the risks in Zone IV are much less: between 7 and 20 %. Along the Coast the situation is more complex. Here the climatic risks in Zone IV are relatively small too. In the coastal hinterland and in Narok and Kajiado they are a bit higher (20 to 35 %). The difference can be explained by the percentage of rain not falling in the 'rainy' or growing season. In western Kenya this percentage is much higher. In eastern Kenya there are two growing seasons and the percentage of rain falling during these growing seasons is relatively high. Because of the high agricultural risks in Zone IV areas in western Kenya, we will include them in our analysis of semi-arid Kenya. Figure 2.4 gives a combined picture of Zones VI, V and risky IV (5). These are the 'reference areas' for our study. Figure 2.5 combines the semi-arid areas with the location of Kenyan administrative districts. In an appendix to this chapter, detailed information is given per district. Table 2.1 gives a summary per province. This table shows that the most extensive semi-arid area can be found in the Rift Valley Province, followed by Eastern Province and Coast Province. In Rift Valley and Coast Provinces more than 50 % of the land is semi-arid. In Eastern Province it is almost 40 %. The district figures given in the appendix show that there are nine districts with more than 75 % of its area in the semi-arid zone: Kajiado, Samburu, Kitui, Laikipia, Taita-Taveta, Machakos, Baringo, Lamu and West Pokot. These are referred to as 'semi-arid districts' in our study. Two districts have between 50 and 75 % semi-arid areas and eight districts between 25 and 50 %. In nine districts minor portions are semi-arid. Together it means that twenty-eight of Kenya's forty-one districts have to deal with problems related to semi-aridity.

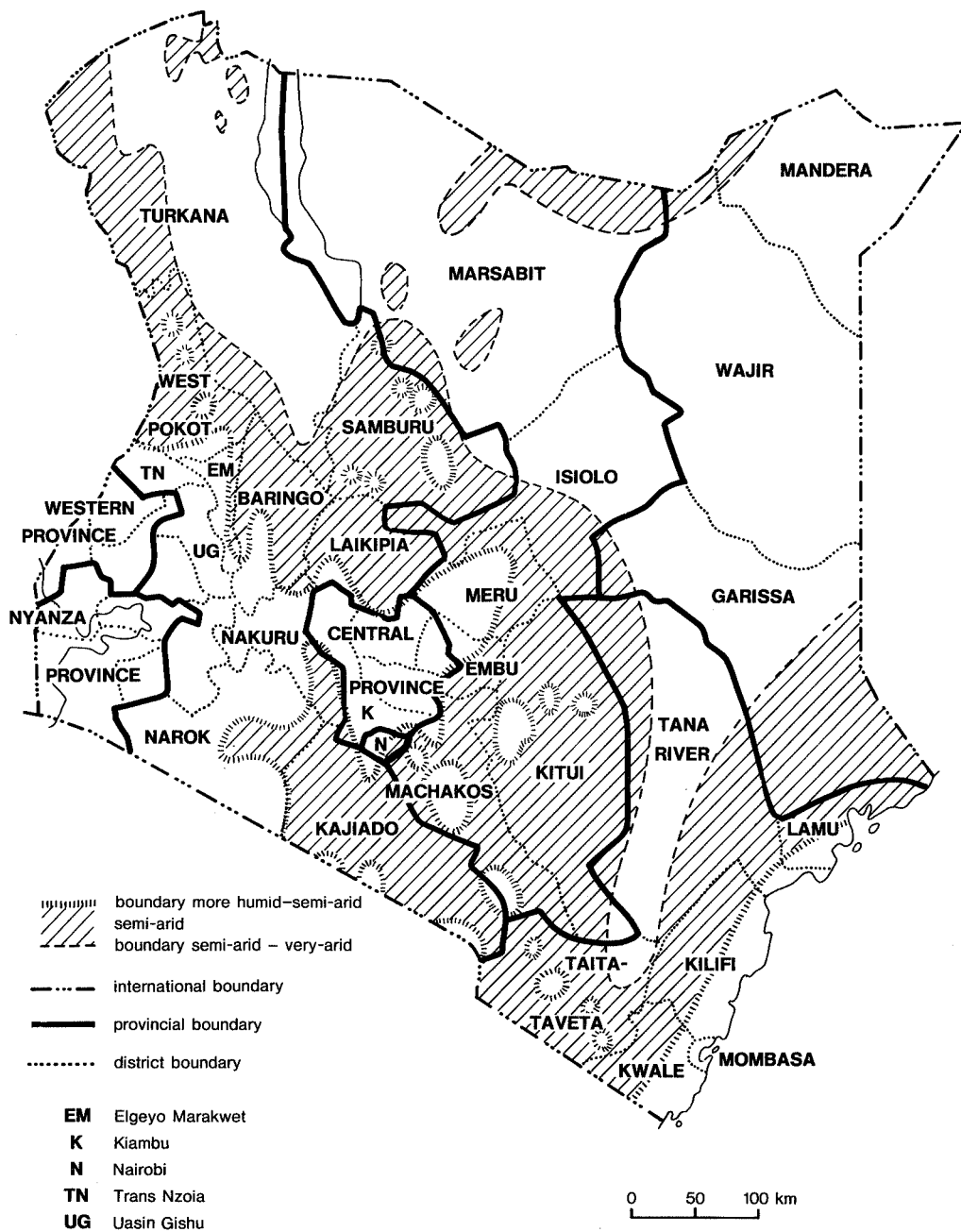


Figure 2.5 Kenya: Semi-Arid Zone and District Boundaries

Table 2.1 Summary of Agro-Climatic Zones, per Kenyan Province

Province	Zone							Total
	I+II+III	IV		V	VI	VII	IVhr+V+VI	
		low risks	high risks					
		(x 1000 km <sup>2</sup> )						
Rift Valley	35	9	8	38	44	35	90	169
Western	8	0	-	-	-	-	-	8
Nyanza	12	1	-	-	-	-	-	13
Nairobi	0	0	-	0	-	-	0	1
Central	11	2	0	0	-	-	0	13
Eastern	6	6	0	26	33	84	60	156
Coast	2	7	-	18	28	27	47	83
Northeastern	-	-	-	1	19	107	20	127
Kenya Total	74	25	8	83	124	253	217	569

For Kenya as a whole we can conclude that 38 % of the land area is semi-arid, according to the definition used in this study. Even more is very arid: 45 %, mainly concentrated in seven very dry districts: Tana River, Garissa, Wajir, Mandera, Marsabit, Isiolo and Turkana. Only 17 % of Kenya's land area can be regarded as 'humid', if we include the less risky parts of Zone IV. It will not surprise anybody that this is the area where most of the population and the bulk of the agricultural production is concentrated. Most of the humid areas can be found in the highland parts of the Rift Valley Province, and in Central, Nyanza and Western Provinces.

## 2.2 The Position of West Pokot and Other Semi-Arid Districts in Kenya

The availability of regional statistics has resulted in a few internationally renowned 'regionalizations': Soja's "Geography of Modernization in Kenya" for the situation around Independence (Soja 1968), various contributions in Obudho & Taylor (1979) and Bigsten's study on "Regional Inequality and Development in Kenya" (Bigsten 1980). Unfortunately, only Soja's study has the appropriate level of scale to be of use for our analysis of the relative position of West Pokot and other semi-arid districts in Kenya. The other studies mostly use the provincial level, which is far too crude. Soja's datamatrix, and his analysis, shows that West Pokot District had one of the lowest rankings in Kenya on almost all his variables, around 1962. Compared with other semi-arid districts, it shared this bottom position with Samburu and Baringo, although not far below Lamu and Kitui. Among the semi-arid districts, Machakos and Laikipia were leading. Within Kenya as a whole, these two districts occupied median rankings. Semi-arid districts lagged

behind most of the humid districts on Soja's 'development' and 'modernization' characteristics.

To be able to get a more recent picture of the relative position of semi-arid districts, and West Pokot in particular, we carried out our own regional analysis at the district level, for the late 1970s (see Dietz & Koninx 1984). Here we will present the most relevant results. The nine semi-arid districts will be compared with selected other groups of districts on a number of aspects. Six groups of 'other districts' will be used as a reference. Districts with a confusing mix of humid and dry areas (Meru, Embu, Elgeyo Marakwet, Narok, Kilifi and Kwale) will be left out of the analysis.

Table 2.2 Semi-Arid Districts and Other Districts: Demographic Characteristics

Districts	1	2	3	4	5
Semi-Arid Districts	133	2400	18	1.44	0.82
Kajiado	20	149	7	1.73	0.98
Taita Taveta	17	148	9	1.33	0.89
Lamu	7	42	7	1.89	1.10
Kitui	29	464	15	1.36	0.63
Machakos	14	1023	72	1.45	0.79
Baringo	10	204	21	1.27	0.93
Samburu	18	77	4	1.10	0.80
Laikipia	10	135	13	2.00	1.09
West Pokot	9	159	17	1.64	0.88
Very Dry Districts(*)	327	749	2	1.37	1.01
Humid Districts					
Central Province	13	2346	178	1.40	0.89
Western Province	8	1833	223	1.38	0.77
Nyanza Province	13	2644	211	1.25	0.77
Rift Val.Highlds.(**)	18	2016	113	1.56	1.11
Urban Districts(***)	1	1169	1308	1.55	1.81
Kenya: all	570	15327	27	1.40	0.95

Where:

1. km<sup>2</sup> x 1000 (SAD/Kenya: 24 %)
2. Population in 1979 x 1000 (SAD/Kenya: 16 %)
3. Population Density (inhabitants per km<sup>2</sup>) in 1979 (SAD/Kenya: 67/100)
4. Population Growth 1969-1979; x 1969 level (SAD/Kenya: 17%)
5. Sex-ratio 1979: m/f (20-50 years old) (SAD/Kenya: 0.86/0.95)

\* Garissa, Isiolo, Mandera, Marsabit, Tana River, Turkana, Wajir

\*\* Kericho, Nakuru, Nandi, Trans Nzoia, Uasin Gishu

\*\*\* Nairobi, Mombasa

Sources: Kenya Population Censuses 1969 and 1979.

Table 2.3 Semi-Arid Districts and Other Districts: Economic Position

Districts	1	2	3	a	4	b	c	5	6
Semi-Arid Districts	9	41	282	362	28	304	178	395	
Kajiado	9	35	362	1	0	29	13	314	
Taita Taveta	19	59	419	40	1	11	6	426	
Lamu	12	27	476	0	1	4	(26)	795	
Kitui	4	9	138	1	1	31	29	145	
Machakos	9	40	291	312	23	127	58	553	
Baringo	7	15	216	2	1	23	4	160	
Samburu	6	26	234	0	0	2	1	42	
Laikipia	24	69	711	6	0	40	40	694	
West Pokot	3	5	126	0	1	37	1	267	
Very Dry Districts	4	15	216	0	4	12	61	112	
Humid Districts									
Central Province	18	62	512	2277	7	935	176	1573	
Western Province	7	26	240	35	85	177	30	194	
Nyanza Province	7	39	318	248	195	737	17	492	
Rift Valley Highlands	25	70	595	1304	22	1000	323	1440	
Urban Districts	52	61	5338	..	..	..	..	..	
Kenya: all	16	56	763	5712	251	3415	964	733	

Where:

1. Number of wage labourers as percentage of population 15-60 years old, 1979 (SAD/Kenya: 8 %; SAD absolute figures: 79,000)
2. Wage labourers in private service as percentage of all wage-labourers, 1979 (SAD/Kenya: 6 %; SAD absolute figures: 32,000)
3. Wages per Capita, 1979, KShs (SAD/Kenya total wages: 6 %)
4. Estimated value of arable production, 1977, m.KShs
  - a. export crops: coffee, tea, pyrethrum, cashewnuts, sisal (SAD/Kenya: 6 %)
  - b. industrial crops: cotton, sunflower, tobacco, sugarcane (SAD/Kenya: 11 %)
  - c. other crops (mostly food crops) (SAD/Kenya: 9 %)
5. Estimated value of livestock production sold to other districts, 1977, m.KShs (SAD/Kenya: 18 %)
6. Estimated value of arable production plus commercial livestock production per capita, 1977, KShs (SAD/Kenya: 54/100)

Sources and remarks:

1,2,3:

'Wage labour' means casual and permanent wage labourers in firms with more than ten workers, and civil servants in government service, according to definitions and measurement by the Kenyan Central Bureau of Statistics in 'Employment and Earnings in the Modern Sector, 1979' (CBS 1981). The population between fifteen and sixty years old is exclusive of those attending school, according to Kenya Population Census 1979, Tables 1 and 4 of Volume 1. For a historical analysis see Dietz & Koninx 1984, pp.35-43. In 1979, 972,000 wage labourers were recorded; 680,000 male 'regular' labourers; 121,000 male 'casual' workers; 132,000 female regular labourers and 33,000 female casual labourers. Regular and casual labourers working in small firms and in the so-called informal sector are not recorded, nor are seasonal farm labourers, working with small and medium scale farmers.

4,5,6:

The estimated agricultural production has been derived from 1977 annual reports of the Department of Agriculture of all districts and provinces. (1977 was a good year with good yields and with high prices for coffee and tea). District Agricultural Officers normally give a rather accurate picture of cash values of

small farmer 'cash crops' (especially coffee, tea, pyrethrum, cashew nuts, sisal, sugar cane and cotton), but they mostly lack information about large scale farms, especially for coffee and sisal. We have estimated the total district value of these two crops, by dividing the national value of the crop for 1977 (Statistical Abstracts 1979) by the district percentage of the acreage of the crop (as given in Statistical Abstracts 1981, p.107). District Agricultural Officers were ordered to estimate the total value of arable food production (mainly maize and other grains, beans, potatoes, root crops and legumes) by first estimating the crop acreage, then estimating the average crop yield per acre and finally the (mostly official) market value per bag. 'Total production' of non-exported crops thus includes production for home consumption and local sales. There is a large variety in the quality of measurements and estimates, however, and especially for Western Province the production is probably very much underestimated. Food production value for semi-arid districts is rather inflated by the high prices of sorghum and millets compared to maize. On the other hand a lot of coarse grains are probably neglected. In the sphere of livestock production - very important in semi-arid lands - only the sale of hides and skins, 'commercial' slaughter and registered commercial milk sales are mostly presented in the District Agricultural Reports of 1977. Most if not all of these livestock sales leave the district. Livestock production for home consumption or for local sale or barter was never included, a serious omission. To get the population of 1977, the Census population of 1979 was multiplied by 0.92. More details can be found in Dietz & Koninx 1984, pp.59-74 and p.141.

Table 2.4 The Social Position of Semi-Arid Districts compared to Other Districts

	1	2	3
Semi-Arid Districts	20	60	44
Kajiado	25	38	30
Taita Taveta	34	67	52
Lamu	36	43	31
Kitui	13	58	38
Machakos	19	71	55
Baringo	25	56	39
Samburu	21	17	13
Laikipia	30	60	48
West Pokot	12	24	18
Very Dry Districts	16	12	10
Humid Districts			
Central Province	24	71	58
Western Province	18	69	51
Nyanza Province	17	73	53
Rift Valley Highlands	29	66	51
Urban Districts	117	58	66
Kenya: all	28	62	49

Where:

1. Civil servants per 1000 inhabitants, 1979 (Source: CBS: Employment and Earnings in the Modern Sector, 1979, Table 12 and Kenya Population Census 1979, Vol.1, table 1); (SAD/Kenya: 11 %; SAD: 47,000 civ.serv.).
2. School attendance as percentage of total population between five and twenty years. Source: Kenya Population Census 1979, Table 4, pp.229-277; (SAD/Kenya: 15 %; SAD total attendance: 591,000).
3. Population with education experience ('ever going to school'); Kenya Population Census, 1979, Table 5, pp.279-325; (SAD/Kenya: 13 %; SAD abs.: 1,052,000).

Tables 2.2 to 2.4 show that the group of 'semi-arid districts' is between the humid and the very arid groups on most variables. Compared with Kenya as a whole, the group of semi-arid districts is mostly below the average: a lower than average population density; a female dominated sex-ratio, indicating labour outmigration; a lower than average percentage of wage labourers and wage income per capita; lower than average presence of civil servants; lower than average production value per capita or cash income from export. Also 'school attendance' and 'percentage of educated people' are below average, although here the difference with the Kenyan average is not so big. Unfortunately health indicators are not available at the district level. The commercial live-stock income per capita is above average and - surprisingly - also the population increase between 1969 and 1979 is above average. The tables clearly show that among the semi-arid districts, West Pokot lags far behind. For clarity's sake a separate table (2.5) will be presented.

Table 2.5 West Pokot Compared with Semi-Arid Districts and with Kenya

	WP	SAD	KEN
Population density (inh/km <sup>2</sup> , 1979)	17	18	27
Sex Ratio (M/F 20-50 yrs, 1979)	0.88	0.82	0.95
Population growth 1969-1979	1.64	1.44	1.40
Wage labour (as % of population 15-60 yrs., 1979)	3	9	16
Wage labourers in the private sector (as % of all wage earners, 1979)	5	41	56
Wage income per capita, 1979, KShs	126	282	763
Est. Agric. Production Value per Cap. 1977, KShs	267	395	733
Est. % of Agric. Prod. Exported, 1977	2	43	56
Civil Servants per 1,000 people, 1979	12	20	28
School Attendance, % of all eligible children, 1979	24	60	62
Educated people, % of all people, 1979	18	44	49

WP = West Pokot, SAD = Semi-Arid Districts, KEN = Kenya

West Pokot shares the bottom position with four other districts which are often called 'pastoral' (e.g. Ogendo 1983, p.126 in a confusing 'planning classification'): Samburu, Kajiado, Baringo and Kitui. The leading semi-arid districts of the early 1960s, Machakos, Laikipia and Taita Taveta were still leading at the end of the 1970s. Lamu had become an in-between case.

The information presented in the tables needs some clarification. All districts in the semi-arid group have some humid areas. Almost invariably those humid pockets have the highest population densities, with the exception of protected forests. High densities can be found in the humid areas of Ngong and Loitokitok in Kajiado, Kitui town in Kitui, the southwest of Laikipia, the Taita hills, Mbooni and surroundings in Machakos, the Tugen hills and the Eldama Ravine area in Baringo, the Coast and the islands of Lamu, and Mnagei in West Pokot. Population

densities in the real semi-arid areas are always lower than the district averages. The highest densities in semi-arid areas can be found in Machakos and parts of Kitui. In these semi-arid areas arable cultivation is widespread now. This is also true for semi-arid parts of Baringo, Taita, West Pokot and Embu, Meru, Central Province, Elgeyo Marakwet and Kilifi (see Epp and Killmayer 1982, and Kliest 1985). Most of the arable production concerns food crops for home consumption or local sale: sorghum, millets, beans and peas, cassava and increasingly maize. In some semi-arid places we find cotton (Machakos, Kitui), sisal (Machakos, Taita, Baringo) and pineapples (lower Kiambu). In a few semi-arid places irrigation projects were started: Hola and Bura in the East (mainly cotton), Mwea in Central Province (rice), Perkerra in Baringo and the 'Turkwell cluster' in Turkana and West Pokot (grains, fruits).

Indigenous irrigation can be found in semi-arid parts of Elgeyo Marakwet, West Pokot, Kajiado, Taita Taveta and along the lower Tana River. Most products here are for home consumption, but in some places horticultural crops are produced for urban or even export markets. The bulk of the value of estimated agriculture production of semi-arid districts (table 2.3) comes from the humid parts within the semi-arid districts (especially maize, coffee and pyrethrum). District figures of agricultural production value are not very useful for our purpose, but lower order estimates are not available. In the semi-arid areas proper, the value of marketed livestock products will definitely outweigh the value of marketed arable products. If production for subsistence and local sale is included, the value of livestock production is much higher than the value of arable production, but we have to take into account that per unit of food value livestock products are much more valuable in money terms than grains (especially maize). Semi-arid districts which can be called commercial livestock areas are Machakos, Laikipia, Kitui, Lamu and Kajiado. Here animals and hides and skins bring in quite a lot of money. Compared with the livestock production for home consumption only Laikipia and Lamu can probably be regarded as 'real' commercial areas: in Laikipia there are many large commercial ranches; in Lamu a lot of cattle coming from Somali-areas changes hands. In terms of commercial livestock integration (commercial livestock sales per capita) West Pokot clearly lags behind, followed by Samburu and Baringo.

A problem with the marketing of arable and livestock produce from the semi-arid lowlands is that "any surplus the lowland creates is marketed through the highlands, and is often handled by middlemen from the highlands, who buy cheaply and add a big markup to the price when they sell. At times of good harvests in the lowlands, better yields in the highlands ensure that low prices prevail, thus the farmers get little when they have something to sell. In times of food shortages, farmers in the semi-arid areas must buy from the highlands at high prices" (Porter 1979 p.55). Also the traders or marketing boards like the Cotton Seed and Lint Marketing Board will not be prepared to invest much of their profit in the semi-arid lands; "there are usually better areas nearby, where investments of scarce capital will create a greater economic outcome" (Porter, *ibid.*).

Not only the district figures about agricultural income must be treated with care. Also those for wage labour, wage income and the numerical strength of the civil service conceal the fact that they refer mostly to humid parts of dry districts. Almost 60 % of the wage earners in semi-



arid districts are civil servants: 47,000 out of 79,000 in 1979; in Kitui and West Pokot even more than 90 % . A large group of civil servants is stationed in District Headquarters and in most of the semi-arid districts these are located in the humid pockets: Kitui, Nanyuki, Wundanyi, Kabarnet, Lamu and Kapenguria. In Machakos the District Headquarters are located near the humid hills. Only in Kajiado and Samburu the District Headquarters are located in a dry area, for many civil servants a reason to ask for a transfer as soon as possible. For education the district averages give too bright a picture too: children from more densely populated humid areas have better access, and often more incentives and opportunity to go to school. For the semi-arid parts of dry districts school attendance and education level will invariably be lower than the district average suggests. Separate attention should be given to processes of migration to and from dry areas. As we have stated elsewhere (Dietz 1986), dry districts had a negative migration balance before 1970 but a positive migration balance by 1979. As can be seen from table 2.2, between 1969 and 1979 the semi-arid districts had an increase of population that was even higher than the very high Kenyan average. However, there are large differences between semi-arid districts: Baringo, Taita, Samburu and Kitui still have negative balances and a lower than average rate of population growth. Laikipia, Lamu, Kajiado and West Pokot are very clear immigration districts, although most migrants go to humid areas within these dry districts. In 1979, 240,000 people counted in the semi-arid districts, or 10 % of the population, were born elsewhere (CBS Population Census 1979, unpublished material). Half of them lived in two districts only: Laikipia and Machakos. In 1969 only 130,000 immigrants had been counted in the nine semi-arid districts (Rempel 1977). Most of the higher and middle level civil servants come from outside. The strong increase in the number of civil servants and teachers, stationed in dry 'hardship' areas, is reflected in the increase of immigrants, between 1969 and 1979. After 1980, the import of government employees further accelerated, as was the import of construction workers for all types of building activities. Government initiatives were also responsible for the increase of immigration in the case of planned settlement projects (as in Lamu) and expanded education boarding facilities in 'nomadic' areas (as in Kajiado and West Pokot, see Nkinyangi 1981). Other immigration is a result of spontaneous settlement processes, mostly in humid parts of dry districts (as in Laikipia, Kajiado and West Pokot) but sometimes in dry areas (as in Kitui). In the latter case Wisner suggests to speak about 'ecological marginalization' (Wisner 1978, or better perhaps: agro-climatic marginalization). Immigration can also be a result of labour migration to dry districts: the ranches of Laikipia, the Magadi mine in Kajiado, sisal estates in Taita and tourist lodges in Kajiado, Taita, Samburu and Baringo. Increased economic activity also attracts traders and other small businessmen. A quarter of all immigration originates from other dry districts, partly as refugees from disaster areas (Turkana in Samburu and West Pokot, Samburu in Laikipia and Ugandan Upe-Pokot in West Pokot), partly because of increased intratribal movement (as between the Akamba districts Machakos and Kitui). Outmigration from dry districts is still mainly spontaneous settlement in nearby forests or large farm areas (Pokot in Trans Nzoia, people from

Baringo in Nakuru), school migration, because of lacking higher education facilities at home, and - most important - labour migration. In Kenya, labour migration, and wage labour in general, are very much male dominated affairs. This means that sex-ratios for people between twenty and fifty years of age can be used as indirect measures of labour migration (Ominde 1971, Rempel 1977). How greatly the sex-ratios can differ between a clear labour immigration area, such as Nairobi, and an unmistakable labour expulsion area, such as Kitui, is illustrated in Figure 2.6.

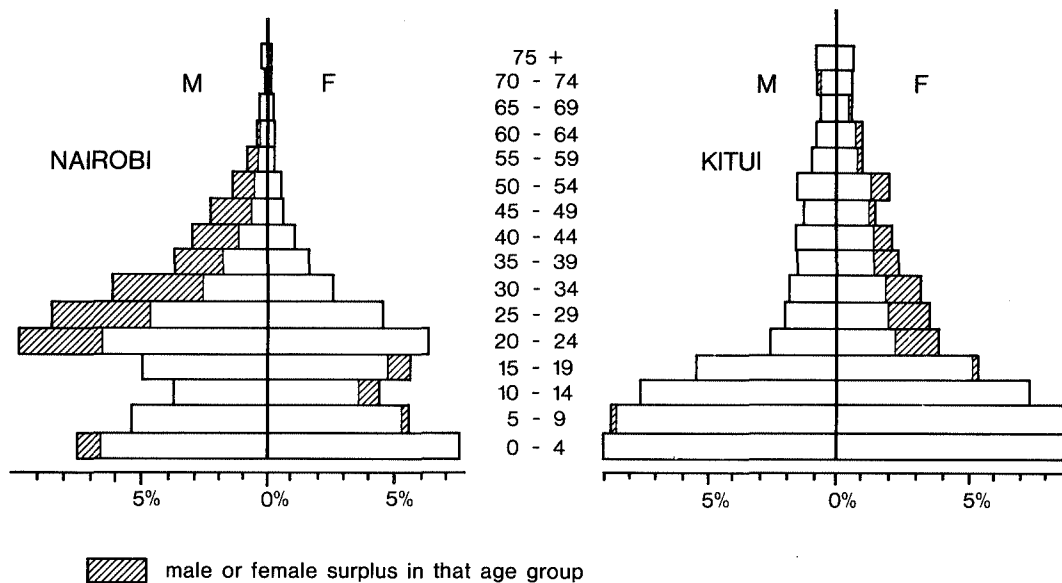


Figure 2.6 Population Pyramids of a Typical Labour Attraction District (Nairobi) and a Typical Labour Supply District (Kitui), 1979

In table 2.1 the last column shows the large differences in sex-ratios for various parts of Kenya. Large differences are also visible between the semi-arid districts, with Kitui a clear case of female dominance and Laikipia and Lamu of a male dominated sex-ratio. Also the West Pokot ratio is slightly female dominated. Sex-ratios, however, are only a starting point of analysis. In colonial times the registered labour migrants were always compared with the 'estimated number of able bodied men', which was set at 80 % of all adult men. It is possible to do the same for the Census years 1969 and 1979. Table 2.6 shows the results. In 1969 Kitui and Machakos were participating in the Kenyan labour market on a large scale; West Pokot, Lamu and Baringo on a modest scale - although for West Pokot the female surplus can partly be accounted for because men were herding cattle in Uganda and were not counted in the Kenya Census. Other dry districts provided very few labour migrants. By 1979, Lamu had become a labour import area and labour migration from Machakos, West Pokot and Baringo had become less important, although it was still high for Machakos. Labour migration from Kitui had risen to the very high level of 42 % of

all 'able bodied men'. It also seems that people from Taita and from Samburu had begun to look for employment elsewhere on a much larger scale. Those from Taita mostly went to Mombasa, those from Samburu to ranches in Laikipia. Writers such as Wisner (1978) and Stichter (1982) are right with their suggestion that Kenya's labour supply zone is getting larger.

Table 2.6 Estimated Labour Migration from Semi-Arid Districts, 1969 and 1979

District	% Male Labour Migration	
	1969	1979
Lamu	12	+
Taita Taveta	2	7
Laikipia	+	+
Machakos	26	21
Kitui	35	42
Kajiado	0	0
Baringo	9	2
Samburu	1	20
West Pokot	16	9

Method: % labour migration =  $\frac{L}{(M_{20-50} + L) \times 0.8}$  + = male surplus

where  $L = (F_{20-50} \times K) - M_{20-50}$ ,

where F= females; M= Males;

K= M/F(20-50) for Kenya as a whole: 0.94 in 1969; 0.95 in 1979

Source: own calculation from Censuses 1969 (table III) and 1979 (table 3); (6)

If we compare the various semi-arid districts, labour migration has become a structural strategy for economic survival for the majority of the households in Kitui and Machakos and recently perhaps Samburu. After having studied two local communities in Kitui, O'Leary concludes that "almost all men over twenty-seven years of age are either at present migrant workers or have been (...) . Wage labour has become an integral part of the economy of the neighbourhood" (O'Leary 1984 p.74). Schellenberger (1981) calculated that in 1977 about 60 % of the total cash income of Kitui was derived from migrant labour remittances. With our data it is possible to apply a regionalization approach along the lines of commercial and labour market integration (see Hinderink & Sterkenburg 1980 as well as Ettema and others in Politiek en Ruimte, 1982, for a review of regionalization approaches within the 'incorporation paradigm'. If we take 15 % labour migrants as a criterium, Kitui, Machakos and Samburu were integrated in the Kenyan economy as remittance areas by 1979. For commercial integration we need another exercise. If we take the arable export value plus the value of

industrial crops (table 2.3, column 4a+b), add the commercial livestock value (column 5) and divide this total by the population in 1977 (table 2.2, column 2, x 0.92) we get an approximation of the commercial agricultural value per capita in 1977, although we miss commercial food crops. Table 2.7 gives the results.

Table 2.7 Commercial Agricultural Value per Capita, 1977, Semi-Arid Districts

District	Commercial value per capita
Lamu	692 Shs
Machakos	418 Shs
Laikipia	371 Shs
Taita Taveta	346 Shs
Kajiado	102 Shs
Kitui	73 Shs
Baringo	37 Shs
Samburu	14 Shs
West Pokot	14 Shs

Table 2.7 shows a clear difference between Lamu, Machakos, Laikipia and Taita Taveta on the one hand, and the other five semi-arid districts on the other hand. In 1977, a commercial producer could buy maize for roughly 0.70 Shs/kg. An average person needs 250 kg of grains per year - if no other food is available - which means that a fully commercial farmer had to spend 175 Shs (at least) per capita to satisfy food needs. If we take this 175 Shs as a criterium - so that at least one person in a household could be fed with the proceeds of the sale of export crops and/or livestock products - we may call four districts commercially integrated in the Kenyan economy. It is clear, that the position of West Pokot is completely at the bottom of the semi-arid districts in this respect.

In figure 2.7, a typology is presented of the semi-arid districts at the end of the 1970s. West Pokot is in the -- quarter.

Figure 2.7 Typology of Semi-Arid Districts in Kenya

labour migrant integration	+	mixed integration	remittance economy	Machakos	Kitui Samburu	+
	-	commercial economy	subsistence economy or charity-dependent	Lamu Laikipia Taita Taveta	Kajiado Baringo W.Pokot	-
		+	-	+	-	
		commercial integration				

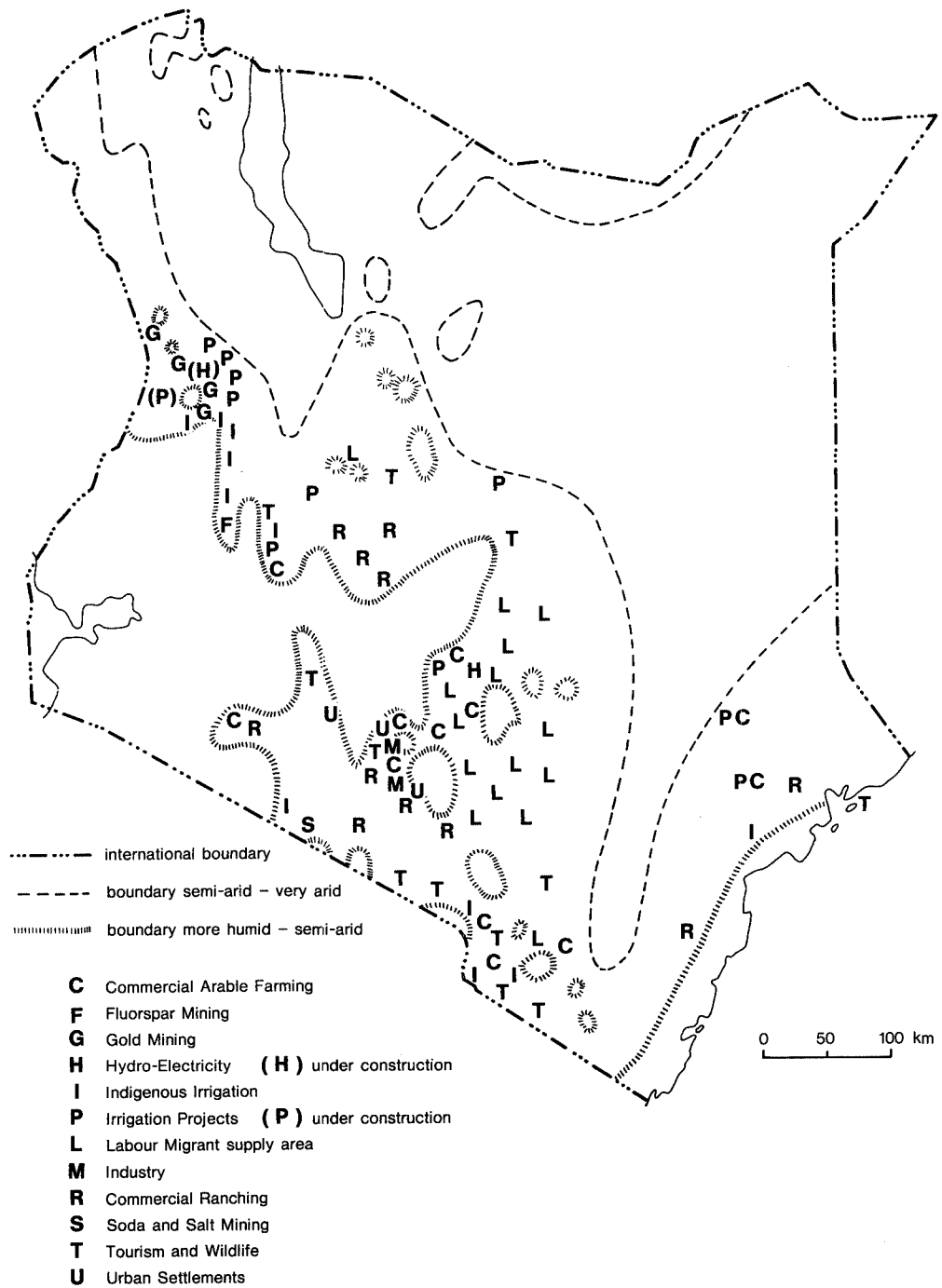


Figure 2.8 Kenya: Economic Characteristics Semi-Arid Areas

As a conclusion of this description of the position of semi-arid areas, we present a tentative map (Figure 2.8) indicating the current economic functions of semi-arid areas. Here we include information about semi-arid areas outside the semi-arid districts, as we have defined them.

## 2.3 Policy Orientations Concerning Dry Areas in Kenyan Government Circles, 1900-1986

### 2.3.1 Introduction

Before 1880 the pastoralists were the predominant force in Kenya. Especially the Maasai and the Somali were controlling large portions of the territory. According to Van Zwanenberg (1975, p.80): "The economic geography of East Africa has been described as a sea of pastoralism surrounding a few islands of agricultural production". Dramatic droughts and diseases (rinderpest, smallpox) between 1880 and 1900, followed by a colonial policy favouring settler agricultural and ranching interests, resulted in a complete reversal of the fortunes of the pastoralist societies. After Independence (1963) the government of Kenya always gave priority to sedentary agriculture, especially in the areas of the former "White" highlands and in the areas of Kikuyu, Embu and Meru ethnic groups. In most of dry Kenya the inhabitants had to cope with a harsh policy on top of a harsh environment. We will present a short chronology of colonial and postcolonial policy orientations concerning the dry areas and its population. Here arid areas are included, simply because most of the government policies described, do not differentiate between semi-arid and arid areas. Readers who want to know more about the history of political interference in dry areas of Kenya are especially referred to Van Zwanenberg (1975), Migot-Adholla & Little (1981), Raikes (1981), Ngutter (1981) and Spencer (1983). The political interference in dry areas is generally seen to have a number of 'historical breaking-points'. These are 1938, 1954, 1965 and 1976. Our periodization uses these breaking-points. In 1938 a compulsory destocking campaign marks the start of much more active interference in range management; in 1954 a change of settler-dominated agricultural policy to a policy more stimulating small farmers influences the orientation towards dry areas too; in 1965 a severe drought meant the final collapse of what was left of colonial dry area investments and a more clear orientation towards the marketing of cattle, hoping that 'group ranches' would be the solution; in 1976 a new 'marginal lands' focus stimulates a lot of attention for arid and semi-arid lands, with more emphasis on arable potential. Of course, the various areas experience these changes in orientation not all during that particular year. Mostly there is a time-lag and - due to institutional inertia - changes from above, even if they are meant to be radical, are often implemented in a flattened way, mostly adding new activities and leaving the institutional forms of old orientations intact for the time being.

### 2.3.2 The Period between 1900 and 1938: Pacification

British rule in Kenya was established between 1888 and 1920, with most of the people subjected by 1903. Early Colonial policy was mainly concerned with pacification, separation of 'tribes' and imposition of definite boundaries between them, despite fierce resistance especially from inhabitants of the very dry areas in the Northwest (Turkana) and Northeast (Somali). Tribal grazing boundaries were imposed to control human and stock movements. The whole of northern Kenya, the 'Northern Frontier District' and the 'Turkana and Suk (or Pokot) Reserve', became a closed zone, with restricted movement, a situation that would last until 1968. Existing marketing networks (for instance between Boran and Maasai) were forced to disappear. Mostly this was defended because of the need to enforce rigorous quarantine regulations to prevent settler stock from being infected by 'African stock' (Raikes 1981, p.118, Wisner 1978, pp.28-29; it is interesting to note that settlers first acquired most of their herds from purchase of indigenous animals and only started to complain about disease threats after they had built up large herds themselves; quarantine regulations were imposed in 1917; see Spencer 1983). Kitching (1980, Ch.VIII) gives a very interesting view on the subordination of the indigenous livestock economy in early colonial Kenya.

In the early part of this Century the pastoralists lost an important part of their grazing area to 'white farms and ranches' (in 1934 there were 2000 settlers with 2 m.ha in Kenya, most of these former pastoral land; Leys 1975, p.29). Especially the Maasai were hit: they lost part of Kaputiei, Donyo Sabuk, the Central Rift Valley, the Mau escarpment, Laikipia and Uasin Gishu. The Pokot lost the northern part of Trans Nzoia and the Churo area in Laikipia. Most of the area that was confiscated was the pastoral area with the highest rainfall, particularly important during periods of drought in the lowlands. But besides these humid areas, the pastoralists also lost semi-arid grazing areas. In these areas large-scale European enterprises were developed: the livestock ranches in Laikipia and Nakuru, and the sisal estates in Taita Taveta and western Machakos. These areas started to attract large numbers of labour migrants and government services.

In the semi-arid and arid 'African Reserve areas' taxation and - in the more densely populated areas - direct labour recruitment were used as methods to attract labour migrants to the settler areas. For the time being, however, this policy was not very effective. Although the British had appointed African Chiefs, their effective power to enforce alien laws was very limited. Mostly the British did not bother too much about 'lawlessness' in the remote dry areas. Now and then, however, military and police actions were organized against cattle thieves, tax defaulters, boundary trespassers and so-called criminal elements.

### 2.3.3 The Period between 1938 and 1954: the Land Conservation Problem

In the 1930s - and especially during the 1931-34 drought - environmental degradation of the land was increasingly shaking the nerves of government employees dealing with semi-arid areas (see Anderson

1984). Especially Baringo, Maasailand and the Akamba areas (Kitui and Machakos) were thought to become heavily overpopulated and overstocked. Although there was enough vacant land in the vicinity of the African reserves that was set apart for settlers but never used, the tribal areas were not extended. The solution was called 'destocking'. Already in the 1920s, Councils of Elders were pressed to change the marriage payments from animals to money. Also some butcheries were started officially to form outlets for so-called surplus cattle. But success was limited.

When in 1937 a Rhodesian firm, Liebigs Ltd., came to Athi River (Machakos) at the invitation of the government, to start a meat canning factory, a forced destocking campaign was hastily started in the Akamba area in 1938. Herdsmen were forced to sell part of their stock to Liebigs for very low prices. The 'Akamba Political Protest', following this campaign, was so widespread that the Government was forced to diminish the campaign and to use persuasion instead of violence (Munro 1975, pp.229 ff). During the war, cattle was acquired for much higher prices than before, with a clear response from most livestock owners. After the war, prices went down and the cattle trade only started to expand again after 1954 (Raikes 1981, p.22).

The political problems of destocking led to emphasis on other methods of ecological regeneration. Some grazing areas were closed, to facilitate natural recovery or reafforestation. Other areas were registered and enclosed, hedges planted against runoff, land terraced along contours etc. In north Machakos these measures were already successfully implemented between 1938 and 1940 but then reconditioning was stopped because of the war. In 1946 the African Land Development Board was established. The board resumed the policy of ecological rehabilitation using the same techniques, but adding tsetse fly eradication, vaccination campaigns, water development and marketing (Migot-Adholla & Little 1981). Finances were no longer a major bottleneck, as the war and post-war economic boom resulted in strongly increased government revenue. A 'Ten Year Development Plan (1946-1955)' resulted in a first attempt at integrated planning. ALDEV very much concentrated its efforts on the semi-arid districts (see ALDEV Board 1962; Ngutter 1981). A very specific type of ecological policy was started with the National Parks Ordinance in 1945. In the course of time Maasai and Akamba pastoralists lost complete access to Nairobi National Park, and Tsavo West National Park. Game reserves in Kajiado (Amboseli) and Narok (Masai Mara) restricted grazing use. Somali and Boran pastoralists lost access to Tsavo East National Park. Further Parks and Game Reserves were established in other parts of the country.

The ecological problem and the reduction of the number of cattle were not the only dry area issues discussed among civil servants. The economic growth which resumed in the late 1930s, followed by the war and a strong economic growth afterwards, resulted in an increased demand for wage labour. Before the war, labour migrants were predominantly found among the Kikuyu, Nandi, Luo, Luhya and Kipsigis ethnic groups, all from humid areas (see Stichter 1982, p.48). During the war, also many men from semi-arid areas - especially Akamba - were recruited for Army Service. During the Mau Mau guerilla (1950-56), white employers regarded many Kikuyu workers as too dangerous and they replaced them by newcomers: again many Akamba, but also Tugen (from Baringo) and Pokot



were recruited. Soon Kitui and Machakos were among the areas with the highest labour migrant participation in Kenya.

#### 2.3.4 The Period between 1954 and 1965: the Pastoral Intensification Problem

The year 1954 is regarded as a major turning point in Colonial attitude towards African agriculture in general: from a settler biased policy to more attention for productive development in the African 'reserve' areas. The different attitude is also visible in the ideas about dry areas in government circles.

In the mid-1950s, overstocking was no longer seen as the major problem of dry areas. Now inadequate land-use methods and traditional land tenure patterns became the most important fields of interest. In the semi-arid areas the pastoral land-use was intensified through rotational grazing schemes and through water development (waterdams, boreholes) and veterinary measures (cattle dips, vaccination campaigns). Also experiments were started with better grass species, reseeding and tsetse fly eradication. Most of the arid area was left aside, though. In the semi-arid area the measures to increase the carrying capacity and to prevent further erosion were mostly enforced by 'strong government', with grazing guards, fines and imprisonment for pastoralists who neglected the rules. Nature was against the schemes, however. The severe drought in 1960-61 led to the breakdown of the rules. In 1961 only 10 % of the existing schemes was still operative. The schemes came under severe attack by African politicians at the eve of Independence. The insistence of livestock officials to enforce a policy that was regarded as totally inadequate during times of drought by the pastoralists had a long lasting effect on the attitude of pastoralists towards 'government'. As Van Zwanenberg states: "once again the pastoralists were reinforced in their wisdom (... of) the stupidity of government officials" (Van Zwanenberg 1975, p.107). Despite this experience, the Range Management Division in the Ministry of Agriculture, established in 1963, relied heavily on a report by Brown (1963) about the 'Development of the Semi-Arid Areas of Kenya'. In this report, limiting stock to the carrying capacity of the land and controlling stock movements through rotational grazing were the major issues, either to be accomplished by individual ranches or by some form of communal or corporate grazing associations.

Grazing scheme policy was coupled with an outspoken marketing policy. In the eyes of government officials the major function of dry lands was their supply of livestock to the Kenyan market. According to Swynnerton in his famous 'Plan to intensify the development of African Agriculture in Kenya' (1955, p.7): "the semi-arid pastoral areas can never be developed intensively", but "some food requirements should normally be grown" and a "constant and valuable flow of livestock and their products may be derived". It should be said that Swynnerton used a very restricted definition of semi-arid lands: 'below 625 mm of rainfall and at an altitude of less than 4000 feet'.

An important instrument of commercialization of the dry pastoral economies was the African Livestock Marketing Organization, ALMO, from 1952 to 1963. Market expansion was pursued through stock quota, stock

routes, fencing, holding grounds and water supplies. Also at intermediary places between producer areas and the market, abattoirs were started. ALMO delivered cattle to the canning factory in Athi River, which was taken over from Liebig's by the Kenya Meat Commission in 1950 (Raikes 1981, p.119). In ten years time the number of stock slaughtered by KMC doubled.

About the arable use of semi-arid lands the policy ideas were not all that clear during the late Colonial period. Mau Mau prisoners had been used to start minor irrigation projects (Holo, Mwea, Perkerra) and there was some attention for indigenous irrigation and its commercial potential (e.g. in Marakwet). Rainfed agriculture started to get some attention too: the Department of Agriculture encouraged farmers in dry areas to grow 'famine crops', particularly cassava and sweet potatoes. Also the first results of plant breeding, to get more drought resistant maize varieties, became available ('Katumani-maize'). To avoid the loss of surplus harvests of good years, storage techniques were improved and inter- (or even intra-) district trade in food crops was restricted. The 1960-61 drought resulted in more attention for food crop monitoring and in the first large scale famine relief operation.

### 2.3.5 The Period between 1965 and 1976: the Marketing and Land Ownership Problem

After Independence in 1963, tribal and even international boundaries broke down. The new government was confronted with an irredenta ('shifita') problem in Somali-areas. Also in the Northwest clashes between Turkana, Karimojong and Pokot, following the 1965 drought, created widespread insecurity.

Independence also resulted in the breakdown of regulations regarding stock quota and stock offtake. With an expanding beef consuming urban population, measures had to be taken to safeguard commercial beef production. In the first Kenyan Five Year Plan (1966-1970) the policy choices for the dry land are clearly formulated: "with the exception of some areas suited to growing sisal, commercial prospects for which are deteriorating, and about 200,000 acres of irrigable land, this enormous area is not suitable for cultivation but rather for stock raising or wildlife with its associated industry of tourism" (Government of Kenya - GoK - 1965, p.133; here the dry area is defined as "all land receiving less than 900 mm of rainfall in an average year").

In the Ministry of Agriculture, a Livestock Marketing Division was organized as a successor to the ALMO. The LMD "was supposed to move cattle either for direct slaughter or for finishing elsewhere in such a way that it would become a permanent and reliable outlet" (Von Kaufmann 1976, p.282). For the first time, the dry areas were regarded as having a high potential for economic growth. In an important study, Meyn (1970, p.4-10) estimated a total herd of between 1.9 and 3 million head of cattle in the pastoral areas, half of it in Maasai rangelands (Kajiado and Narok districts), 35 % in areas of medium potential range land to the North and East and the remaining 15 % in the most arid areas to the North and Northeast. Aldington and Wilson (1968) had already corrected the idea that offtake rates from so-called traditional herds were extremely low: instead of 9-10 % they estimated an annual offtake rate

of at least 12 %. With better organization of livestock marketing it was thought that this rate could be improved towards the 'normal' rate of 25 % for commercial ranches.

Ideas were formulated to organize a stratified beef industry. Arid areas would raise calves. After that, ranches in the semi-arid areas would fatten the cattle. In the vicinity of the market, in more humid surroundings, the fattening would be finished, producing heavy-weight, high quality animals.

The marketing strategy proved to be a success only in parts of Maasailand and - surprisingly - in the Somali-area (where probably an existing commercial network towards the East was redirected towards the Nairobi market). In other areas market organization was apparently not the only problem. Various critics blamed the government for not raising the meat prices or at least prices for high quality meat, which was almost exclusively bought by affluent members of society at very low prices (Von Kaufmann 1976).

A lot of emphasis was put on the Maasai area. Humid fringe areas were rapidly adjudicated as individual holdings. Also quite a number of Maasai leaders succeeded in registering large tracts of semi-arid land as individual ranches soon after Independence. This was also happening in Machakos on former European land. The government gave a lot of infrastructural assistance but soon it was realized that the provision of water and other facilities to these individual ranches alone was very expensive and politically dangerous. For semi-arid areas a 'group-ranch' policy was thought to be more adequate. In 1965 the World Bank sponsored a prototype group ranch in Kajiado. In 1968 a 'Kenya Livestock Development Programme' was launched. The idea was to provide credit to adjudicated group ranches, with registered members and lead by a Group Ranch Committee which would also be responsible for grazing management. Investment credit could be used to make boreholes and cattle dips (or even firebreaks and waterdams). Working capital credit could be used to buy 'Sahiwal' bulls for upgrading the local herd and to buy steers for fattening. Sales income could then be used to repay the debts. (There is a considerable literature about Maasai Group Ranches, e.g. Davis, 1970; Hedlund 1971; Doherty 1979 and Galaty 1980; about Group Ranches in Samburu, see Fumagalli 1978).

At the end of KLDP phase 1 (1974) it was clear that most group ranches had a lot of problems; the 1972-74 drought proved that confining animals to the group ranch territory was impossible, that land management was badly needed, and that group ranch committees faced a lot of management problems. There were not enough funds to maintain the facilities, and incomes per capita from cattle marketing proved to be very low. Credit repayment was already a problem in most of the early group ranches. According to Raikes the Maasai areas were examples of 'range areas, littered with the carcasses of failed livestock projects, some of which have only hastened the overgrazing and land degradation' (Raikes 1981, p.3).

The group ranch concept and livestock commercialization were also major themes in the lowland part of the Special Rural Development Programme. This SRDP (1970-76) operated in six administrative divisions throughout Kenya as an attempt to introduce the concept of integrated rural development (see IDS 1975; Holtham & Hazlewood 1976; Oyugi 1981; Asmeron 1984). One of these divisions was Kapenguria in West Pokot and a number

of Group Ranches were started there.

During the 1965-76 period, crop cultivation in dry areas got hardly any attention from government circles. In the third Five Year Development Plan (1974-78), even the 'medium potential' areas were regarded as areas "where crop production is marginal on account of relatively low rainfall in them and this is a hazardous undertaking given the existing techniques" (GoK 1974, p.198). Wisner (1978, p.36-37) hit the right nail on the head by commenting: "only about one million of the approximately four million Kenyans living below 30-35 inches annual rainfall are primarily stock raisers. Thus according to official perception the livelihood of the other three million is not capable of improvement or stabilization because of the nature of the land they inhabit. It would seem that the official fixation with production of exchange values has indeed led the government into such a cul-de-sac". In some government circles the opinion existed that all those cultivators in the dry areas should not be there.

Most of these cultivators could be found in Machakos and Kitui, where a process of semi-proletarianization was well underway: a large minority of the households relied on remittances of male labour migrants and on the (inadequate) production of food for home consumption by the women and children. Via the mechanisms of the 'economy of affection' - as it is aptly called by Hyden, 1983 - all households in the Akamba-area mutually assisted each other with remittances and food, trying to balance crises on the labour market and crises in local food availability. A fast growing population - in the 1970s, 4 % per year - increasingly endangered the land availability for subsistence production, especially in Machakos. The breaking down of fallow requirements resulted in productivity decreases and soil erosion. It would last until 1976 before the government realized the dangers involved. The ILO (1972, pp.405-410) had pointed at another danger: increasing land use conflicts in semi-arid areas between cultivation, pastoralism, wildlife and wood production, a theme that gained importance afterwards (e.g. Odegi-Awuondo 1982, Rutten 1985, Peperkamp 1986).

In one field, some government activities in arable farming are worth mentioning: irrigation. In 1966, the National Irrigation Board was established, a parastatal organization, which was expected to improve existing schemes like Mwea and Hola, and to develop new schemes, for which consultancy firms were engaged to do the preparatory work. In 1967, FAO/UNDP funded a number of small-scale irrigation projects, mainly with the objective of augmenting food supplies and of providing an alternative livelihood to destitute pastoralists, e.g. in Turkana. In the early 1970s, irrigation activities in Taita Taveta District and the Lower Tana area were initiated, either by government or by foreign sponsored non-government organizations. In 1977 the Ministry of Agriculture started a Small-Scale Irrigation Unit to assist all these small scale projects. On the whole, however, irrigation was and still is a marginal affair (see SNV 1986).

### 2.3.6 The Period after 1976: Food Security and the Neglect of Livestock

Between Independence and the mid-1970s, the large majority of Kenyan

development initiatives focussed on the humid areas of Rift Valley, Central and Eastern Province. The dry zone only got a meagre share of the development budget, although it is impossible to establish the degree of relative neglect (see Wiggins 1985, p.93). The droughts of 1971-73 and 1976 had a shock effect on the Kenyan bureaucracy and on foreign donor countries. In 1976 the Division of Land and Farm Management of the Ministry of Agriculture established a 'Marginal Lands Committee'. Supported by FAO/UNDP and by USAID, projects were started in dry areas, labelled 'integrated rural development', in practice with a lot of emphasis on water development, education and health facilities. In the sphere of productive development short-term commercialization successes were no longer pursued. 'Range subsistence cultivators' (Raikes 1981, p.115) were discovered as target groups. Dry land food production had to be increased by higher yielding, drought resistant varieties of maize, sorghum and millets. Also more small scale irrigation projects were started with the aim to provide employment opportunities and local food. The emphasis of production interventions shifted from livestock improvement and marketing to arable food production. Experimental projects were started in Machakos, Kitui and Baringo districts, following USAID-sponsored, very broad inventories of land potential and development problems. In Machakos, an all embracing 'Machakos Integrated Development Programme' was launched in 1978, with EEC support. Soon it was part of a nationwide 'Arid and Semi-Arid Lands Programme' (ASAL).

When the ASAL Programme was launched, in 1979, four major general aims were formulated (Kenya 1979, p.16):

- improving the so-called human resource base (providing basic needs through better water, health and educational facilities);
- exploiting and improving the productive potential of ASAL areas including the creation of local income-earning opportunities;
- conservation of resources;
- a better integration of ASAL areas in the Kenyan economy.

USAID supported the general strengthening of the national administrative capacity to deal with ASAL areas. In the Ministry of Agriculture an ASAL branch was established. In the Ministry of Economic Planning and Development a specific senior officer was made responsible for interministerial coordination.

The ASAL branch of the Ministry of Agriculture concentrated on research: inventories were made of the Tharaka area of Kitui, Meru and Embu, of the Taveta area in Taita Taveta and of Laikipia. Later this approach was heavily criticized in an official evaluation as being very expensive, too much time consuming and not enough planning oriented (Hook 1983). The activities of this ASAL branch got a negative evaluation and in 1984 it was dissolved. From then onwards, the coordination was fully under the Ministry of Economic Planning and Development (later Ministry of Finance and Planning, now -for the time being?- Ministry of Planning and National Development). Only ASAL activities in Baringo - the President's district - were directly under the Office of the President (7).

More positive was the experience with twelve area-specific ASAL Programmes, which were started in fifteen districts, adopted by various donor countries. In table 2.8 some details are presented. In 1986 all dry districts had ASAL Programmes, with the exception of Maasailand, Samburu, Lamu, Tana River and Northeastern Province.

In total, various donors committed almost 700 m.KShs for area-specific ASAL Programmes between 1979 and 1986 (of which almost 400 m.KShs for the Machakos Integrated Development Programme). Per 'ASAL-capita' the highest commitments per year could be found in Ndeiya Karai (Kiambu) and Baringo, both programmes which work on a subdistrict level. Other ASAL Programmes planned to spend between fourteen and sixty-five KShs/ASAL-capita/year. Although the establishment of area-specific ASAL Programmes was important, one should not overestimate their financial importance.

Table 2.8 ASAL Programmes in Kenya

Area	Donor	Inhab.	Est.Inhab.	Year Star- ted	Donor Funds	
		1979 ASAL- Districts (1)	1985 'real' ASAL-areas		Total (2) m.KShs	KShs/ ASAL- inh./ year
Machakos(MIDP)	EEC(EDF)	1,023,000	750,000	1978	389	65
Baringo(BPSAAP)(*)	World Bank(IDA)	60,000	60,000	1979	108	257
Embu Meru Isiolo(EMI)	U.Kingdom(ODA)	1,137,000	150,000	1980	74	82
Turkana	Norway(NORAD)	143,000	170,000	1980	29	28
Kitui	US(USAID)	464,000	560,000	1981	39	14
West Pokot	Netherlds.(DGIS)	159,000	70,000	1982	15	54
Elgeyo Marakwet	Netherlds.(DGIS)	160,000	70,000	1982	13	46
Kiambu (**)	Netherlds.(DGIS)	40,000	5,000	1983	4	267
Laikipia	Switzerland	135,000	125,000	1984	1	4
Kwale-Kilifi	IFAD	719,000	?	1984	2	?
Taita Taveta	Denmark(Danida)	148,000	125,000	1985	3	24
Siaya(FGCS)	IFAD	475,000	90,000	1986	-	-

(\*) in Marigat and Nginyang Divisions.

(\*\*) in Ndeiya and Karai locations.

(1) own estimates, using Kenya Population Census 1979; sublocational figures (adding 26 % for 1979-85 growth), administrative maps of the districts and the KSS map of Agro-Climatic Zones 1980 (KSS 1982). For Machakos additional use was made of Bernard & Thom 1981, p.381)

(2) Total commitments since start up to mid-1986. For Machakos, Baringo, EMI, Turkana and Kitui, Wiggins' figures (1985) are used with some additions: Baringo: Wiggins gives 78 m.KShs for 1979-84. We know that in 1985-86 another 15 m.KShs was allocated. This was doubled to get our estimate for 1984-86; Turkana: Wiggins gives 45 m.KShs for 1980-88. We deduct 16 m.KShs for 1986-88; Kitui: Wiggins gives 27 m.KShs for 1981-85; in 1985-86 the allocation was 12 m. KShs; for Embu-Meru-Isiolo Wiggins gives 74 m.KShs for 1982-86; we assume that between 1980 and 1982 nothing was spent. Like Wiggins, we exclude EMI road investments. For West Pokot, Elgeyo Marakwet and Kiambu internal reports were used (also see Dietz 1985, Owiti, Kipkan & Dietz 1985 and Dietz, Owiti & Van Haastrecht 1987); for Laikipia, Kwale-Kilifi, Taita Taveta and Siaya the 1986 Printed Estimates of the GoK Development Budget could be used (1985-86 allocations).

In West Pokot, for instance, the ASAL Programme expenditure in 1983-84 was close to four m.KShs while the total government development allocations for the district were above sixty m.KShs of which 58 % would be funded by foreign donors (WP Annex to the DDP, 1983-84). Financially, ASAL Programmes may be relatively unimportant, within the organization of 'district development', most ASAL Programmes play very important roles.

Within Kenya, ASAL Programmes are the most outspoken examples of a form of 'territorial regional planning' (see Gore 1984, p.160), with activities in many sectors, from small scale irrigation and soil conservation to rural health and women groups (see Dietz 1985, pp.11-21). ASAL Programmes mostly finance a large number of small, scattered projects, to be implemented by the existing government machinery and with considerable popular participation.

ASAL Programmes until now were far from identical, though. There has been no attempt to arrive at any form of resemblance in organization, financial management and degree of donor support, planning methodology, project identification and selection, local participation and the like. Some donors give loans, others grants; some donors work through consultancy firms, others via expatriates in donor service. In some programmes the donor money follows official Kenyan government procedures, in others 'direct payment' methods are used. In some programmes all projects are located in the ASAL zone proper, in others also activities in humid zones are financed. Even the programme targets are rewritten in different styles; e.g. in Kitui the 'human resources' can not be found in the ASAL-Kitui objectives. The result is a large heterogeneity of programme activities and programme emphasis.

After a few years of ASAL experience it is clear to all participants that the development of the arid and semi-arid lands needs a long, continuous commitment. Wiggins' conclusion is very valid (1985, p.106): "ASAL Programmes are trying to change, reorientate or overcome the following simultaneously: a) the priorities of GoK, and especially the informal priorities set by short-run and personalistic political interests, b) the mode and style of GoK operations, c) donor agency ways of working (and) d) the technical difficulties of dry land development. With such an agenda, small wonder that the ASAL Programmes face, and will continue to face, serious problems".

It must be said that the 'ASAL Programme approach' has a following wind in Kenya, since the launching of the 'District Focus for Rural Development', in 1983-84, a major decentralization attempt (see Office of the President, 1984; Makokha, 1985). In each district the District Development Committee, chaired by the District Commissioner and with the District Development Officer as its secretary, has to be the leading agency in development planning and implementation. At all lower levels (Divisions, Locations and Sublocations) committees of civil servants and selected 'local leaders' had to be established, especially to assist in project identification and recruitment of 'local participation'. Within the administration, communication should no longer be mainly vertical (Nairobi - Provincial Headquarters - District) but mainly horizontal (within the district between different departments): in organizational terms a 'matrix type of bureaucracy'. Large numbers of extra civil servants were posted to the districts from Nairobi. The District Development Five Year Plan - an exercise started in 1974 - was no longer enough; now each year an 'Annex to the District Development Plan' had to be made, with information about all development projects in the past year, a forward budget and a two-year rolling plan. Information about the district had to be improved: it was decided that each district had to have a 'District Socio-Cultural Profile'. Decisions made in the Ministry of Education to 'Kenyanize' part of the curriculum also resulted in more attention for district-specific problems. Most donors

which are involved in ASAL Programmes, enthusiastically embraced the 'District Focus' strategy. The interesting situation exists now that districts which were virtually 'unknown' in Nairobi government circles ten years ago, are now leading the 'District Focus' strategy: the first district with a District Information and Documentation Centre was Turkana; the first district with a Socio-Cultural Profile was Baringo; the first districts with a District Atlas were West Pokot and Elgeyo Marakwet. And in all experiments with financial procedures and popular participation Machakos takes the lead.

ASAL Programmes were not the only new institutions created to deal with dry areas. Also River Basin Development Authorities were established, to initiate and coordinate region-wide large-scale development activities, which were, in many respects, the opposite of the ASAL approach. In the dry areas the 'Tana and Athi River Development Authority' was formed in the southeast, in 1978 (with a predecessor started in 1974), and the 'Kerio Valley Development Authority' in the northwest, in 1979. They were subjected to the (new) Ministry of Regional Development, later the Ministry of Energy and Regional Development. In practice the Authorities had no relationship with the Provincial and District Administration, often to the dismay of officers at these two levels. Major projects coordinated by the Authorities are the Tana River Hydro-electricity Scheme in Machakos/Embu, the Turkwell Gorge Hydro-electricity Scheme in West Pokot (since 1985) and the Bura Irrigation Scheme in Tana River District. Although Authorities are not confined to the dry areas - there is a specific 'Lake Basin Development Authority' in the humid southwestern part of Kenya - a lot of funds of the Ministry of Energy and Regional Development are planned to be spent in the dry parts of the country. According to the National Development Plan 1984-88 this Ministry will get 22 % of all development funds in 1987 instead of only 5 % in 1983-84. It shows its increasing importance, on paper. Implementation, however, is rather slow with the exception of the hydro-electricity projects.

The 1984-88 Plan also promises more attention for dry areas in the Ministry of Agriculture and Livestock Development (pp.34, 178-179, 182-183): a 'national sorghum and millet development project' was started, as well as a 'Desert Crop Promotion Programme'. To improve cotton marketing a 'Cotton Processing and Marketing Project' was envisaged. A detailed 'Irrigation Development Programme' was promised, and the indigenous gravity irrigation activities had to receive more government attention. For the livestock sector, however, the Plan did not launch any new initiatives, or it must be the increase of meat export to the Middle East. The failure of livestock policies was more or less admitted by assuming that the Kenyan meat consumption per capita will diminish. In the Plan the Group Ranch approach was no longer mentioned; in 1986 this approach was heavily criticized in Kajiado, where the subdivision of the Group Ranches even became official policy (see Dietz, Owiti, Brandt & Atinga 1986).

The neglect of livestock development in the 1984-88 Plan is a continuation of livestock neglect which was prevalent after 1976. In the sphere of water development and preventive animal health care (vaccination, dips) there were some government initiatives in the dry



lands. But marketing was no longer seen as a major government responsibility. The Kenya Meat Commission was only seen as the buyer of the last resort, resulting in the forced purchase of thousands of emaciated and low grade cattle, at prices nobody else would pay, during the 1984 drought, and in lack of funds to buy at market prices during good years. This resulted in extreme underutilization of KMC facilities in all but the driest years (Munyakho 1986). It is interesting to note, that the same relative neglect of livestock development is also visible in ASAL Programmes.

Of course, increased attention for dryland development in the 1984-88 Plan, and the specific ASAL Programmes and River Basin Authorities initiated for dry land development, do not necessarily mean the allocation of more development funds to these areas. It could be possible that Plans and Programmes only have objectives in the sphere of 'window dressing'. We will try to check the 'real' interest in semi-arid districts by looking at their relative importance in budget allocations. In the past it was always impossible to reconstruct Kenya-wide district allocations for the various ministries. District-specific information in the annual 'Printed Estimates' of the Development Budget was virtually lacking. Nobody would probably deny, though, that dry districts got a very meagre share of the development budget, before the 1980s. After the launching of the 'District Focus for Rural Development' the information about district development allocations improved considerably. All ministries were encouraged to add a district specific sub-vote to all their planned investments. The 1986-87 'Printed Estimates' (Kenya 1986) give the allocation for 1985-86 and these are so well broken down, that out of a total development budget of 8,187 m.KShs, 4,917 m.KShs or 60 % could be traced as district specific allocations. Some ministries very much succeeded in avoiding projects to be headed under a 'general' vote (e.g. the Ministry of Water Development). Other ministries (e.g. the Ministry of Agriculture and Livestock Development and - surprisingly - the Ministry of Planning and National Development) still have a long way to go. Our following exercise should be treated with caution for other reasons too. Although improvements are being made, still the national planners who prepare the Budget do not succeed to include all planned government investments. Especially donors sometimes completely circumvent the official budgetary procedures and their allocations are not always included in the Printed Estimates. Further, any head of department in Kenya can tell stories about omissions, mistakes and typing errors in the Printed Estimates. He (or in very few cases she) will add stories about 'Authorities to Incur Expenditure' which are expected but never come, of 'AIEs' which are not expected and which suddenly arrive, of project funds that are not completely or not at all spent, etc. Despite all these weaknesses - and the fact that it only refers to one year - the results of the analysis are still very interesting. We will use the characterization of the districts in 'very dry', 'semi-arid' and various types of 'humid' as before. Approved budget allocations for 1985-86 are compared with the estimated population in 1985. This gives the 'approved allocation in KShs per capita': Table 2.9.

Table 2.9 Approved Development Budget Allocations 1985-86 per capita

District	Approv. Alloc. m.KShs	Pop.1985 x 1000(*)	KShs/ cap	Compared with Ken. rural districts
Semi-arid districts	807	3025	267	+
Kajiado	22	188	117	-
Taita Taveta	22	186	118	-
Lamu	40	53	755	++
Kitui	90	585	154	-
Machakos	340	1289	264	+
Baringo	181	257	704	++
Samburu	35	97	361	+
Laikipia	36	170	213	-
West Pokot	41	200	203	-
Very dry districts	485	943	514	++
Garissa	27	163	166	-
Isiolo	11	54	204	-
Mandera	16	134	117	-
Marsabit	25	121	209	-
Tana River	218	116	1881	++
Turkana	169	180	941	++
Wajir	18	175	104	--
Humid districts				
Central Province	531	2956	180	-
Western Province	267	2310	115	-
Nyanza Province	342	3331	103	--
Rift Valley Highlands	868	2541	342	+
Kenya rural districts	3938	17839	221	
Urban districts	979	1473	665	
Kenya districts	4917	19312	255	
Kenya total budget	8187	19312	424	

(\*)1979 figure x 1.26 (growth 1979-85 with average annual growth of 4 %)

The results confirm the impression of considerable recent attention for dry districts: both the group of 'semi-arid districts' and the group of 'very dry districts' receive a relatively large development budget allocation. Of the four groups of humid districts only the 'Rift Valley Highlands' share this characteristic. Central, Western and Nyanza Province receive relatively little attention. Within all these groups there is no conformity, however. In the group of the very dry and semi-arid districts four districts have very high allocations per capita: Tana River (Bura irrigation scheme!), Turkana (a donor relief playground), Lamu (settlement schemes) and Baringo (the President's district). Other high district averages can be found in Nairobi (800 KShs/cap), Elgeyo Marakwet (740 KShs/cap), Nakuru (720 KShs/cap) and Uasin Gishu (640 KShs/cap), but none as high as Tana River or Turkana. Very low district averages can be found in parts of Nyanza Province:

Kisii (53 KShs/cap) and South Nyanza (44 KShs/cap), even far below the lowest figure for the dry zone (Wajir, 104 KShs/cap). It is also very interesting to study the sector distribution of the budget allocations over the districts. Here we will only look at some conclusions. If we confine ourselves to the semi-arid and very arid districts, we see that in the very arid districts all major departments are overrepresented with the exception of 'Environment' and 'Education'. Especially the overrepresentation of the Ministry of Agriculture and Livestock Development (Bura Irrigation Scheme!) is striking. The average overrepresentation of the semi-arid districts is clear too, although less pronounced. Here especially the ministries of Energy and Regional Development, Water Development and Health are overrepresented. In the very arid districts two ministries cover more than half of the allocations: Transport and Communications, and Agriculture and Livestock Development. In the semi-arid districts two other ministries cover more than half of the development budget: Energy and Regional Development and Water Development, while Transport and Communications is very important too.

It is not enough to study the development budget alone. The recurrent budget is twice as important: 17,024 m.KShs in 1985-86 (Kenya 1985, Estimates of Recurrent Expenditure). Most of the recurrent budget goes to salaries of civil servants: 5,700 m.KShs to Education, 2,100 m.KShs to Defence, 1,800 m.KShs to the Office of the President (Provincial Administration, Police), 1,500 m.KShs to Health and 1,200 m.KShs to Agriculture and Livestock Development, to mention the most important ministries in terms of the recurrent budget. In 1979 there were 60,000 civil servants in the dry districts; in Kenya as a whole 427,000: that is 14 % of the civil servants for 21 % of the population, or, if we only look at the non-urban districts: 16 % for 22 %. Although the number of civil servants in dry districts has risen after 1979 and some improvement of the relative position of semi-arid districts can be expected, as far as the recurrent budget is concerned the semi-arid districts are relatively behind.

#### 2.3.7. The Recent Dry Area Focus: Why?

The recent increase in Kenyan government attention for dry areas can certainly be explained partly by the recent drought experience. In 1971-73, 1976, 1979-81 and 1984 crops in semi-arid zones virtually failed, livestock died in large numbers - in 1984 approximately one million out of a total Kenyan herd of 8.7 million 'beef' cattle (Munyakho 1986) - and even humid areas were confronted with diminished harvests.

Internationally, the African droughts of 1973-76, especially in the Sahel, and 1980-84, all over western, eastern and southern Africa, caused widespread concern. Many donors were prepared to assist and also Kenya got its share.

Famine situations in dry rural areas were partly relieved with government and missionary Famine Relief actions, coordinated by the Provincial Administration and with important roles for District Commissioners, Divisional Officers and local Chiefs.

In colonial times Famine Relief already existed in the form of food

supply to shops (food that could be bought) and food transport regulations. With the 1961-62 drought and floods this already changed: part of the food was distributed free. According to Wisner (1978, p.65) at least 34,000 tons of maize were distributed, especially to Machakos, Kitui, Kajiado and Narok. Also during the 1965 drought Famine Relief was provided free.

Starting with the 1971 drought, the northern districts received Famine Relief almost continuously, recently partly in the form of 'Food for Work' projects. According to Kliet (1985) 56,885 tons of maize and beans were distributed by the government in the 1973-83 period. More than 45 % of it went to Eastern Province and 40 % to Northeastern Province, two provinces with chronic food problems and with refugees from Somalia and Ethiopia. But also Turkana, Baringo and Samburu districts received relief food in most of these years (Kliet 1985, p.67). In West Pokot Famine Relief was given in 1979-82 and 1984-85. In absolute terms, Famine Relief is not so important, but its regular appearance - and the fact that in some areas families are continuously depending on Famine Relief since the early 1970s - shows the need for more structural solutions.

The political importance of droughts is not so much felt in the dry areas, however, but in the urban centres. The effects of droughts in the grain producing humid areas of the country are much more dangerous for political stability than the effects of drought in the dry zones. The long queues in front of Nairobi food shops in 1980, did more to alert the government than famine deaths in Turkana. In 1980 alone, 370,000 tons of grains were imported, when the political danger was realized. Afterwards, a better warning system (the Central Bureau of Statistics' Farm Forecast Surveys) and higher food stocks resulted in a relatively relaxed government answer to the very severe 1984 drought.

More structural answers were given too. The 1984-88 National Development Plan comments (Kenya 1983, p.177): "the drought related reduction in food production and the unprecedented large food imports in 1979-81 have caused policy makers to become acutely aware of the incipient imbalance between food supply and demand, caused by the pressure of a rapidly increasing population on Kenya's limited area of high potential land". The targeted economic growth rate of 4.6 % per annum was thought to be reached for 30 % by extending the cropped area in the dry zones, which could be attained by "the development of appropriate farm technologies and farming systems well-adapted to the specific needs of crop production under semi-arid conditions. Moreover, new drought-evading and drought-resistant crop varieties will be introduced" (Kenya 1983, p.177; see also Kliet 1985, p.94)

Agricultural growth in the drylands was thought a possibility by the results of recently established international dryland research centres, especially ICRISAT and ICARDA. Also the results of Ministry of Agriculture experiments (e.g. in the Katumani Research Station) were regarded as encouraging. Dryland agriculture was no longer neglected by international and Kenyan agricultural experts.

In Kenya, rapid economic growth in the drylands was also planned via irrigation schemes. Dryland irrigation in Kenya has always been of minor importance. In 1977, however, the World Bank approved a forty million Dollar loan for the 'Bura Irrigation and Settlement Project', a plan to settle 5,150 families on 6,700 ha of irrigated land along the Tana River

(a plan that would develop into a nightmare later, see De Leeuw 1985). A large number of small scale irrigation projects was started too. In irrigation, foreign expertise was widely used.

Many observers of Kenyan development policy look at the dry area focus with suspicion. Why should Kenya invest so much money in risky environments, while prospects of increased agricultural production in less risky humid areas are not yet exhausted? Three types of humid areas could produce much more food and other agricultural produce, is the opinion of many commentators:

- 1) the forests, although this will lead to major hydrological changes;
- 2) the densely populated western areas (Western and Nyanza Province), although social problems seem to block improvement strategies (e.g. see Lavrijsen 1985; Tomlinson 1981, p.181, strongly advocates to focus Kenyan development efforts on this area);
- 3) the large farms and ranches of the Rift Valley Highlands, although this is against the interests of the current political and economic landed elite.

Especially the last point gets a lot of attention from critical observers, who do not believe that "the possibilities for further rapid productive gains in the wet highlands (...) have been largely exhausted (...)" (Wiggins 1985, p.93). Once and again one reads that it "would be worthwhile to investigate the (...) economic and agro-technical possibilities of the subdivision of some of the country's large farms into smaller, intensively farmed, production units" as it is politely formulated in Kliet (1985, p.94).

In the early 1960s, the large farms and ranches of the 'White Highlands' became a major target for land redistribution via settlement schemes and spontaneous colonization (see Mbithi & Barnes 1975). It was a period of large scale migrations and of political struggle concerning the land issue. After 1965 politically the situation stabilized under a new, Kikuyu-dominated elite, which was no longer interested in fragmenting large farms into many small plots for the landless people, but in taking over large farms as such. The political elite used its administrative and political power for a large scale process of 'primitive accumulation', in which 'land grabbing' was the major game. After 1965 the 'Land Issue' in the Kenya Highlands continuously provoked criticism from the Kenyan Left. Debating it - as a possible solution to problems of social inequality and of rural economic growth - became tricky. 'Developing the drylands' became an easy phrase to counter the issue of 'redistributing the highlands'.

For many Kenyan planners and politicians 'developing the drylands' is not only or not mainly a lightning rod for political opposition, though. Since the 1974-78 Development Plan there is a genuine attention for regional inequality and for alleviating poverty of specific target groups, among them the pastoralists (see Masakhalia 1981; GoK 1983, p.56). There is a general feeling within the Kenyan civil service that extreme regional and socio-economic differences in income and access to social services will endanger political stability and prospects for further national economic growth. Economically, the population in dry areas constitutes a potential market for Kenyan industrial products, a market which is largely untapped. Renewed attempts at livestock commercialization would mean a higher meat supply to urban consumers as well as 'commoditization' of consumption in pastoral areas (if we follow

Long's terminology; Long 1986). The attitude of 'liberal' donors to allow considerable local purchase of capital goods for development projects in dry areas also stimulates the expansion of the Kenyan urban-industrial economy.

In some government circles it is believed that 'nation building' means detribalisation and cultural conformity. The most outspoken examples of 'deviant' cultural behaviour can be found in the dry areas (e.g. with the result of forced clothing campaigns in West Pokot and forced changes of cultural practices, like 'moranism' in the Maasai society). The fact that many dry areas are located in troublesome border zones (West Pokot and Turkana: Uganda; Turkana: Sudan; Marsabit, Wajir, Mandera: Ethiopia; Mandera, Garissa, Lamu: Somalia; Taita Taveta and Kajiado: Tanzania - all countries which were not Kenya's best friends during the past decade), adds an important facet to the need for integration of the drylands into Kenya's economy, politics and culture (whatever that may be).

Finally we should mention a last point of major importance for the increased attention for Kenya's drylands: the background of the President and the composition of the political elite. During President Kenyatta's era (1961-1978) the dominant elite had no interest whatsoever in the drylands. Their economic interests were located in the Central Highlands even if - as with some Akamba politicians - their background was from dry areas. The second President, Daniel T. arap Moi, (since 1978) originates from the semi-arid Baringo District. He is a Tugen, part of the Kalenjin ethnic group. He is certainly more aware of the problems of dry areas than Kenyatta ever was. The political necessity to counter Kikuyu-opposition and Luo-leftism, resulted in a political web in which Kalenjin politicians, Akamba army men and an occasional Maasai, Samburu or Somali leader play important roles, especially after the abortive Airforce coup d'etat in 1982. As the parliamentary system, under a one party organization, represents local interest - most politicians are elected in local constituencies - needs of Kalenjin and Akamba voters are voiced more loudly now and reach more ears in the political centre. Many of these constituencies face dryland problems.

Summarizing, the recent increase in government attention for the drylands has a number of reasons. The reasons are partly humanitarian: famine relief; 'alleviating poverty'; a 'welfare' approach of basic needs improvement for poor groups; There are economic reasons: meat supply of urban centres; the diversion of migrants away from urban centres and large farm areas; the opening up of a potential market. There are cultural reasons: 'nation building'; cultural conformity. Finally there are political (military) reasons: the background of the ruling elite; the location of dry areas in troubled border zones. For the various semi-arid and arid districts the relative importance of the various reasons differs a lot. The reasons will also differ between the Kenyan government and the donors involved, between sections of the Kenyan government and between the donors. Wiggins (1985, pp.101-102) suggests that the dominance of the various donors involved in dry area development means a dominance of humanitarian, 'welfare state' motives. The Kenyan state is rather ambivalent, in his opinion: donors are encouraged to supply funds, but Kenyan additions are minimal. Many Kenyan politicians and civil servants who are eager advocates of dry

area development as long as donors are involved, hardly conceal their doubts regarding political, personal and 'national-economic' gains from dry area development, if Kenyan manpower contributions are at stake. If Wiggins is right, the dry area focus will be an unstable one, and very much donor-dependent. The parcelling out of Kenyan semi-arid districts among donor organizations results in what may be called 'neo-protectorates' (see O'Loughlin & Van der Wusten, 1987).

#### 2.4 Karamoja, Uganda

For Kenya it has been possible to present a lot of detailed quantitative and qualitative information about the dry areas there. To understand the history of Upe/Karapokot we also need background information about Uganda and especially about Karamoja: Upe has always been part of Uganda; Karapokot between 1932 and 1970. For those western Pokot who were administered by Karamojan authorities, Uganda was of course a more relevant political environment than Kenya. The reader who is expecting comparative quantitative data about semi-arid Uganda will be disappointed. Chaos in Uganda meant the virtual absence of statistical information and the bits and pieces which are available are very unreliable. We have to content ourselves with a more qualitative approach.

Within Uganda, Karamoja is the only semi-arid area (see Figure 2.3, before). It is inhabited by three related although often antagonistic (agro-)pastoral groups, the Dodoth in the North, the Jie in the centre and a cluster of three Karimojong-sections - Bokora, Matheniko and Pian - in the South. There is also an agricultural group (the Labwor) and there are a number of so-called mountain tribes (e.g. Tepeth or Sor, Teuso or Ik, Nyakwai). And, of course, there are the Pokot in the Southeast. All groups have been studied by anthropologists, and for cultural information, I refer to Gulliver (1955) on the Jie, Deshler (1964) and Thomas (1965) on the Dodoth, Dyson-Hudson (e.g. 1966) on the Karimojong, Herring (1973) on the Labwor, Turnbull (1967, 1972) on the Ik and Weatherby (1969, 1979) on the Sor.

It is impossible to be specific about the relative position of Karamoja (or its current two districts Moroto and Kotido) within Uganda, as was done for the Kenyan dry districts. Even the most simple regional data are lacking. Nobody will probably deny, however, that in terms of provision of services and level of cash income, Karamoja has always occupied an absolute bottom position (e.g. see LWS 1981, p.3 and 1985, p.8). Only in terms of animal wealth, the people in Karamoja were well off. Table 2.10 gives estimates about the number of people and animals. After the 1920s the Pokot were approx. 6-8 % of the total number of inhabitants, but with a larger share of cattle wealth.

We do not want to present a lengthy history of external interference in Karamoja; readers are referred to Barber (1962 and 1968), Welch (1969), Baker (1977), Cisternino (1979) and LWS publications for the most recent period. We will give a broad outline here, and be more specific in Chapter 5 as far as external interventions were relevant for Upe and Karapokot.

When the first British government agents entered Karamoja (Major Macdonald and Captain Austin, 1898), they found a population whose

cattle wealth had virtually been destroyed by rinderpest and other scourges, between 1886 and 1896, and whose response had been to survive by gathering wild food and by hunting elephants in order to eat their meat and to sell their ivory. Ivory traders, slave traders and Ethiopian soldiers created a situation which enabled the destitute pastoralists to restock their herds, and to become heavily armed opponents to any 'pacification' attempt. After some hesitation, it became clear to the young British Protectorate Government in Kampala, that only a military occupation could stop 'lawlessness', and Ethiopian intrusion. In 1911,

Table 2.10 Karamoja 1920-1986(\*):

Year	people x 1000	source	cattle x 1000	source
1920	50	Cisternino 1979 p.79	100-300	Barber 1968 p.150
1949	123	Ibid p.79	500	Cisternino 1979 p.79
1956	160	Ibid p.103	560-600	Ibid/ Evans-Jones 1960 p.6, p.36
1961	176	Ibid p.79	410	Ibid
1963	172	Baker 1967 p.7	604	Baker 1967 p.6
1969	294	LWS 1981 p.5	700	Cox 1972 p.79, p.91
1980/81	360	LWS 1985 p.8	200	LWS 1981 p.11
1986	364	(50,000 people died 1980-81; 2.7 % annual growth rate)	320	KDP 1986

(\* ) Karamoja covers approx. 27,000 km<sup>2</sup>, excluding 'Karasuk'

the King's African Rifles were stationed in Karamoja. To avoid arms' trade, the area was closed to all traders (except three Somalis with special and very limited licences); traders who were found were prosecuted and their goods confiscated. The military (1911-1914, followed by the Police, and from 1919 to 1921 the soldiers again) 'pacified' the people by disarming them ("by shooting them, burning their huts and seizing their livestock", Welch 1969, p.54). Some elders were appointed as 'chiefs' and local people were ordered to make roads and to erect government buildings (Moroto Headquarters was built between 1914 and 1920). In 1919, 2000 people were working on buildings and roads (Barber 1968, p.141).

Because of a cutback in Imperial defence spending after World War I and trouble in neighbouring Turkana, the soldiers were withdrawn in 1921 and sent to Turkana. Under a civilian administration taxation started and the income of (sub-)Chiefs was made dependent on the taxes they collected (Mamdani 1982, p.69). For tax purposes and general control, the territory of administrative units was fixed. In the South, the Karimojong lost access to important dry season grazing areas. To ensure sufficient labour for road maintenance, some communities were resettled



near roads, and in 1923, the free movement of people was checked: chiefs had to ensure that at least half of the men were in their (fixed) manyattas at any time (Dyson-Hudson 1966, p.15). In 1921, an absolute quarantine for cattle made an end to intertribal cattle trade (only lifted between 1925 and 1927, Quam 1978, p.55). To prepare 'controlled trade' for the future, stock inspectors were appointed in 1922 and in 1923 even a small inoculation campaign started. In 1923, however, serious trouble erupted (see Barber 1962) and, induced by the fierce resistance to their 'civilizing attempts', the Protectorate government decided to leave the pastoralists of Karamoja in peace with their cattle. Even missionaries were not allowed to work in Karamoja (Cisternino 1979, p.67).

In 1931, the quarantine for cattle was relaxed and in 1933 cattle began to be exported. This gave some more opportunities to pay taxes, to a government that faced a financial crisis. Approx. 25,000 head of cattle were exported between 1933 and 1939 (Quam 1978, p.55). To get cheap labour for road works, from 1934 to 1936 all men between 18 and 45 years of age had to work for a period of one month in a year on government projects. The second World War further increased the market integration of both cattle and labour: in 1941, 400 Karimojong were recruited in the Army, and Liebig's Ltd - a firm with a factory in Kenya - was given the right to buy beef cattle in Karamoja to supply the British forces in the Middle East. To assist the 'war effort', chiefs were given a minimum quatum of cattle to be delivered (Baker 1977, p.161). Between 1940 and 1945 almost 50,000 head of cattle were purchased. In 1946, a 'cattle marketing scheme', with the government as the sole buyer, had to cash in on increased 'market behaviour' among the peoples of Karamoja. In 1946 a waterdam construction programme began, although they had been preceded by a few dams in the waterless western areas, in 1938 (Baker 1977, p.161). In 1948 the first District Veterinary Officer was appointed and in 1949 cattle inoculation started. When in 1949 Karamoja was included in the Ugandan Local Government Act, a District Council became important, which was to be the organizer of the cattle marketing scheme. Quam (1978, p.56) writes: "The scheme was devised to stimulate and regulate the cattle trade in the district for three developmental goals: (1) destocking the area enough to halt environmental deterioration caused by overgrazing and concurrently turn the people away from their allegedly 'dangerous' dependence on livestock and toward a more sedentary and peaceful existence as agriculturalists; (2) locally financing the native administration which was destined to expand its staff and duties under the new colonial policy; and (3) providing animal protein to the urban industrial populations whose post-war prosperity and growing numbers sharply increased the demand for beef". The Karamoja Cattle Scheme got its cattle from monthly markets at county centers, but also from confiscation by the government as payment of fines and taxes. On average, Karamojan market prices per head of cattle were 166 Shs between 1954 and 1961 - much lower than in neighbouring Teso-land - ; net average profits for Karamojan cattle sold in Kampala were 198 Shs for the Local Government (Quam 1978, p.58). During the 1950s the number of marketed cattle was 10,500 per annum, on average (Baker 1977, p.162), which could hypothetically mean a huge revenue for the Council. In practice, high overheads, mismanagement (diseases, theft) and disastrous investment adventures (a biltong and meal plant at Namalu, to process

'scrub cattle') brought increasing losses (Baker 1967, p47, p.50). In 1960 the K.C.S. monopoly on the purchase of cattle was broken and local subsidiaries of British food companies started to buy Karamojan animals, alongside K.C.S. Because of drought, the sales went up to an average of more than 25,000 head of cattle a year in 1960-62 - Quam 1978, p.60, Mamdani 1982, p.71).

Marketing of cattle was not the only government activity during the 1950s. After 1951, the protectorate government drastically increased its interference with Karamoja, as part of an East Africa-wide modernization and appeasement attempt. The number of waterdams was further increased; UNICEF sponsored a large scale borehole drilling programme; ox ploughs were introduced; irrigation experiments were started and for the first time, missions were allowed to come in and were invited to start education and health care. As a result, the European presence in Karamoja increased from a few people in 1950, to thirty government officers and their families, and eighty-seven others, mainly Anglican and Roman Catholic missionaries in 1959 (Welch, 1969, p.123). In 1955 the Agricultural Department added another field of intervention: range management and the "reduction of stock numbers to a level commensurate with carrying capacity" (Welch 1969, p.79): the Karamoja Rehabilitation Scheme, part of a Karamoja Development Scheme, under a 'Special Development Section' in Kampala. The Karamoja Development Scheme got 4.7 m.Shs for a five-year period (Evans-Jones 1960, p.6). Five experts were added to the District Team as the 'Natural Resources Section'. Soon they got the status of 'Assistant District Commissioners' and they became very much involved in administrative and security matters. Pasture rehabilitation got further attention in a specific 'Karamoja Development Plan', presented in 1958. A shortlived 'Intensive Reclamation Areas Programme' treated a pilot area (see Pereira 1962 and Wilson & Napper 1979); game reserves were proclaimed, as well as forest reserves. As a result of increased government intervention, more Karamojans got jobs.

In the meantime, to the dismay of 'developmentalists', cattle raids made their comeback, and became ever more violent. First reported in 1945-46, they were an annual embarrassment in the government reports from 1953 onwards. Between 1958 and 1961, more than 300 raids were reported, with all groups in Karamoja involved. Policeposts were strengthened and in 1958 a 'Special Regions (Karamoja) Ordinance Act' gave the central government strong powers, e.g. to declare an area a 'prohibited zone' and to impose collective fines. Not much could be done to stop raids, though, as the 1960-61 drought caused widespread insecurity, and the British did not want to burn their fingers just before Independence (1962).

In 1961, an African-headed 'Karamoja Security Committee' set the tune for a much harsher treatment: the cause of the trouble was seen to be "the irresistible desire of every Karimojong to acquire cattle by any means and at any cost"; it was noted that "the only force they will respect is that superior to their own and the only authority that which can fight and defeat them"; the solution would be a "necessary showing of the flag", with the aim "to strike holy terror among the people" (Bataringaya-report, quoted in Welch 1969, p.124-126). In 1962 half of the Army was in Karamoja (3000 soldiers), and there was a fierce battle with the Ngipian-Karimojong. In 1966 a 'special force' paramilitary

police of 450 men was stationed in Karamoja (disbanded in 1971), together with a strongly increased normal police force, and 2000 Uganda Army men, stationed in Moroto (Welch 1969, pp.185-190). All people were ordered to surrender their spears (Cisternino 1979, p.134 on the role of General Amin). Any resistance was handled by - among others - confiscation of cattle. For instance, after a fight with the Jie, in 1966, 30,000 head of cattle were rounded up 'for inspection'. But raiding, in stead of decreasing, went up. Between 1966 and 1968, 200,000 cattle were reportedly raided of which only 40,000 were recovered by government forces (Kar.AR 1966-68). In 1966 alone, 740 deaths were recorded as a result of raids (Baker 1977, p.190). Soon the first 'police raids' were reported too: groups of policemen selling their booty for personal gain. Local government involvement in 'blood money committees' (after 1964) added an additional possibility for 'primitive accumulation' by government officials: "the standard practice is that Karamoja District Authority officials" (the name of the Local government, after 1962) "find a tribesman claiming a loss (often inflated), then submit a claim (inflated again) for cash compensation. He then pays the tribesman the inflated claim, while pocketing the difference. (...) Raiding is becoming a trading organization to enrich certain people, who have high standing in the administration" (Welch 1969, pp.205-207; also p.125, p.193).

The new Uganda Government did not only show force, however. The British attitude to treat Karamoja as a 'human zoo' (Cisternino) was heavily criticized and a much more intense government involvement was advocated. In 1963 a 'Committee of Inquiry into the Marketing of Cattle from Karamoja' (Mahadevan 1963) suggested a 'free market system' of cattle auctions, the formation of a parastatal body (which became Uganda Meat Packers) and the construction of a meat packing plant (built in Soroti, south of Karamoja). Between 1965 and 1969, per annum an average of 23,000 head of cattle were bought at auctions. More than half was bought by UMP (Baker 1967, p.15: "for export to the Middle East and Congo"). UMP worked at a loss, though, and did mostly not succeed to be 'a buyer of last resort', which discouraged willing Karamojan sellers. Compared to the 1950s, however, the number of animals sold during the 1960s had more than doubled. Increased marketing of cattle was accompanied by strongly increased government investments in watersupplies - mainly waterdams - and inoculation. Between 1963 and 1968 mass vaccination campaigns were organized against rinderpest and contagious bovine pleuropneumonia. Between 1963 and 1965 the government drastically increased its expenditure for Karamoja (from 3.3 m.Shs recurrent budget and 1.3 m.Shs capital budget, to 6.0 m.Shs and 4.2 m.Shs respectively). The government also employed more than 1700 local people. The Karamoja District Authority had to rely heavily on subsidies from the Central Government. On the other hand it raised personal taxes from a level of 15 Shs per man in 1963 to 55 Shs per man and per woman in 1968. In 1967 the Karamoja District Authority had severe financial problems: maintenance of roads and waterdams could no longer be financed and, in 1969, even a bursary system was stopped to pay for the education of secondary school children in Karamoja, which had just got started in the 1960s. In 1967, the Central Government representatives in the District, the 'District Team', became much more important and very far reaching proposals of a District Team Ad Hoc Committee on Resettlement,

lead to heavy clashes with the members of the Karamoja District Authority. When, in 1969, also the Chiefs were 'displeased' with the resettlement plans (and its forced change from livestock to agriculture), the central government started to appoint outsiders and a large scale confrontation seemed ahead.

Amin's take-over in 1971 meant the end of all 'developmentalist' plans. Lack of funds, lack of foreign exchange and lack of expertise, resulted in a virtual breakdown of most facilities. The 1970s were a decade of 'economic inversion' (Cisternino 1979, p.30), a crude example of disengagement from the world economy, and not really motivated by 'autarchy', 'selective spatial closure' or any other 'territorial' regional development strategies (see Gore 1984, pp.156 ff). Very serious was the fact that veterinary medicine and vaccin was hard to get (LWS 1981, p.111). Also, cattle marketing organizations deteriorated, and the meat factory in Soroti, had to close in 1976 (Alnwick 1985, pp.130-132). Trade in general collapsed with the expulsion of Indians from Uganda and the breakdown of transportation. In fact, the only working facilities were managed and paid by missionaries. Like the rest of Uganda, Karamoja suffered under a military occupation, with soldiers and coopting civil servants who used the proceeds of plunder and cattle raiding as their major source of income. Confiscation of cattle was used as a fine for everything. After Amin had ordered all men in Karamoja to wear trousers (in 1971, see Wilson 1973), naked herdsmen had to give cattle if they were caught and then they were lucky not to be shot on sight (Cisternino 1979, p.93; interviews).

When Amin was defeated by the Tanzanian army and Ugandan exiles, in April 1979, and the impoverished Karimojong could lay their hands on all types of weapons (Cisternino 1985, p.155; Wilson 1985, p.165), they started a self-organized restocking campaign, which first was directed at Turkana and Pokot and at the pastoralists of war-torn southern-Sudan, and later at the Iteso towards the South. Recent reports speak about the raiding of half a million head of cattle in Teso-land alone (Ocan 1986). But also within Karamoja itself, groups raided each other, whole villages were massacred (Wilson 1985), and a few 'cattle barons' acquired vast numbers of cattle, while, according to Knutsson (1985 p.185) the large majority of households in Karamoja were left without cattle. Government military actions to recover weapons (as in 1984 and 1986) were hardly effective, and added to the general insecurity (see Timberlake 1985, p.195). The rapid disintegration of newly created militia units in 1979-80 had done so before.

It then "left groups of armed, hungry and often drunken soldiers to obtain food supplies from roadblocks and from raids on villages and settlements" (Stephenson 1980). Travelling by road became very dangerous because of "road banditry at gunpoint" (LWS 1982, p.4). It still is today. In 1986, "life was often disturbed by heavy gunfire, widespread looting and harassment of people, who had to leave their settlements now and again, leaving 'ghost villages' behind" (Even 1986).

Lawlessness was coupled with natural disasters (cholera, rinderpest, droughts) in 1979-81 and 1984-85. The 1979-81 calamities caused the death of an estimated 50,000 people, or one-seventh of the population of Karamoja (LWS 1985, p.2). Although Mamdani (1982, 1986) tries to convince us that the roots of this severe famine were colonial -in a doubtful 'analysis' of colonialism (see Gartrell, 1975)-, Alnwick (1985,

p.123) and Knutsson (1985, p.185) clearly show that the general insecurity was to blame for the outrageous effects of the adverse natural conditions. People could not cultivate their normal acreage; seeds and stores had been destroyed or looted. Cattle had either been stolen or hidden in far away places, its food products no longer available to the majority of the inhabitants. The normal animals-for-grain trade was no longer possible because there were no traders who dared to transport animals, or food, or anything. The disruption of transportation all over Uganda made that food supply was not even available, had they wanted to bants. The normal animals-for-grain trade was no longer possible because no traders dared to transport animals, or food, or anything. The disruption of transportation all over Uganda made that food supply was not even available, had they wanted to bring it to Karamoja. On top of that, the Ugandan currency notes lost their value, making cash savings worthless. The insecurity also caused the virtual breakdown of health care: even the Moroto Hospital was looted and abandoned in 1980 (Knutsson 1985, p.1985; see also Cox 1985). The Kampala-government (there were three of them in 1980) was partly not aware and partly not interested in what was going on in Karamoja. The Catholic Mission desperately tried to get assistance (Tescaroli 1981, p.19). International relief organizations, sometimes together with local missions, began to organize food aid after July 1980, in a very chaotic way at first (see Stephenson 1980, Wells 1985) and a bit more coordinated after December 1980. Alnwick (1985, p.125) and Knutsson (1985, p.186) report four different United Nations organizations involved and at least twelve foreign non-governmental organizations. Especially during 1980 not all areas were reached, rations were inadequate mostly, due to logistic problems, and for many people the food aid came too late. A survey carried out in Kadam County, immediately west of Upe, in November 1980, concluded an infant mortality rate of 607 per 1000 live births in the year preceding the survey, and a crude death rate of 212 per 1000; almost 80 % caused by starvation (Biellik & Henderson 1985, p.150). According to Alnwick (1985, p.135) "the voluntary agencies had a virtual carte blanche to go where they liked and do what they liked with negligible interference, or indeed interest, from the country's government. Agency staff, vehicles and equipment could be taken into and out of Karamoja through the unmanned Amudat border post without even stopping. Immigration, customs and other formalities were non-existent. Agencies could work directly with the missions, or what remained of local government staff, to establish their relief programmes". In a review article about the famine relief operation, Cisternino (1985.p.159) states that the operation - although rescuing a lot of lives - weakened the local organizational 'resiliency', undermined whatever local food trade would have been possible, undermined the capacity of local iron and wood workers and led to a sudden increase of the influence of christian missions and rudimentary forms of education, with far reaching effects in the long run.

After a period of free food donations, food for work projects were designed in 1981-82 and again in 1984-86. Missionary organizations, and NGOs like Oxfam very much tried to encourage arable farming. Some people involved, even advocated a wholesale resettlement operation (see Wilson 1985, pp.167-170), bringing former pastoralists from the dry

central and eastern areas to more humid western areas to become farmers there. Wilson used the few thousand 'resettled' people in Namalu (Pian) and Kapedo (Dodoth), and their rather successful harvests in 1982 and 1983 as an argument, and bitterly contested any attempt to build up a pastoral economy again. The 1984-drought was of course a major testcase for arable farming in the 'resettlement schemes'. Wilson's approach proved to be a most valuable one in that particular area: in Kapedo "the project stood out as a green belt", "our settlers were not seriously affected". The contrast with the rest of the area was such, however, that between June and September 1984 the project population grew from 1600 to 35,000 ... In 1986 more than 20,000 people were trying to cultivate at Kapedo (Wilson, 1986).

Of course, strong government assistance to rebuild the disaster-stricken livestock economy was unthinkable due to insecurity. In the long run, however, livestock development should be the first priority in any development plan for a semi-arid area like Karamoja. As far as we know, Rowland & Cisternino (1980) were the only ones in the 'aid community' who dared to think along those lines. A major dilemma is the emphasis on food security or on external marketing, within pastoral development, and the adjustment of services, like education, to pastoral needs (see Nsibambi & Byarugaba 1982). People like Wilson, however, seem to think that arable farming and not livestock keeping is the future for Karamoja. Other government and missionary functionaries are less outspoken, though in practice not livestock (vaccination, supply of animal drugs, range management etc.) but other projects are stimulated. The most important development programme between 1981 and 1986 was the Karamoja (Emergency) Development Programme. It was started in 1981 with funds from the European Economic Community and the Lutheran World Service, at the request of the Government of Uganda, and closely related with the Church of Uganda. Almost 10 million US \$ worth of foreign funds were received, or 25 \$ per capita (that is not far from donor commitments per capita in Kenyan ASAL Programmes like the ones in Machakos and West Pokot; compare table 2.8; 1 \$ = approx. 15 KShs). "KDP's aim was to provide a comprehensive and integrated programme of assistance to enable the Karimojong to reduce their dependence on food aid, improve the economic and social infrastructure, strengthen the local administrative and extension services and improve health facilities" (LWS 1985, p.9). The programme's emphasis was on distribution of agricultural inputs (seeds, cassava cuttings, hoes), on afforestation, on water development (Moroto Water Supply, boreholes and waterdams), road works and the rehabilitation of Moroto Hospital. From 1984 onwards income generating activities by women's and men's groups were encouraged (but in the sphere of livestock on poultry keeping only). Primary schools were assisted too and in 1985 a primary health care project was sponsored. In the sphere of livestock, vaccination of cattle (CBPP, rinderpest and bluetongue) was mainly successful in the second half of 1981 and in 1983. Also, some veterinary medicine was supplied irregularly. Livestock assistance, however, was very much hampered by insecurity, difficult logistics and ambivalence about the future of the livestock economy in Karamoja (various LWS documents 1981-1986). While projects like the Oxfam Kapedo Resettlement Project, the Karamoja Development Programme, and various projects by the Catholic Diocese were mainly directed at sedentary cultivators, with an apparent

aim of keeping them sedentary, the people themselves are dreaming of a pastoral future again. And they are going beyond their dreams. The pastoral survival strategies of some have proved to be so successful that they have herds again which are so big that they now need many people (without animals of their own) for herd management, and for defence. Compared with Kenya's semi-arid areas, the case of Karamoja dramatically illustrates how important it is in what country a semi-arid area is located. In Kenya, semi-arid areas gradually attracted a lot of funds and attention recently, on the basis of country-wide economic progress and political stability. In Uganda, semi-arid areas got their share of political chaos and economic deterioration. In Kenya the serious drought of 1979-81 did not result in large scale famine deaths; in Uganda it did. There is one interesting resemblance between Karamoja and semi-arid Kenya worth noting: the unprecedented increase in missionary activities.

#### Notes

(1)

$E_o = (2422 - 0.358 \times h)mm$  (where  $h$  = altitude in metres) except along the Coast where  $E_o = (2175 - 0.358 \times h + 2.47 \times d)mm$  (where  $d$  = distance from the Coast in kilometres); see KSS 1982, p.44.

(2)

According to Bailey (1979, p.75) the coefficient was thought to be 0.9 by Penman from observations in England and the coefficient will vary with the climate and the land use. The 0.8 figure was taken from Jaetzold's 1977 study about Kenya.

(3)

Seasonal  $P < 2/3 E_o$

(4)

According to KSS (1982, p.48) the rainy season is normally between April and August in western Kenya. According to the National Atlas of Kenya (1970, map 15) the rainy season rains in western Kenya are between March and September or even October, with the exception of the Northwest where only March - May can be regarded as a rainy season.

(5)

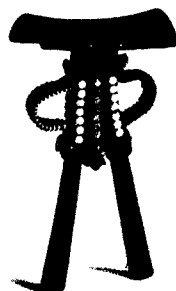
KSS (1982, p.46) explicitly states that the accuracy of the map differs. "Notable areas where data are lacking are the hinterland of Lamu, Narok district and the hill areas of the dry northern parts of the Country".

(6)

I would like to apologize for giving a wrong formula in Dietz 1986, p.23.

(7)

We had the opportunity to get inside information because of a research and later 'backstopping' relationship with the ASAL Programmes in West Pokot and Elgeyo Marakwet (e.g. Owiti, Kipkan, Dietz 1985) and a consultancy assignment to propose monitoring and evaluation procedures for ASAL Programmes in general (Dietz 1985). Wiggins' (1985) article was very useful too. Wiggins had been related to the ASAL Programme in Embu, Meru and Isiolo.



Appendix 2.1 Table 2a Agro-Climatic Zones per district

District	Total Land Area km2 (*)	Zone I,II,III %	IV l.risk h.risk % % %			V %	VI %	VII %	Total Semi-Arid % km2
West Pokot	9090	24	-	34	23	19	-	76	6939
Elg.Marakwet	2722	73	-	18	6	3	-	27	729
Turkana	55476	-	-	0	4	34	62	38	21081
Samburu	20809	3	1	7	24	61	5	92	19144
Laikipia	9718	9	6	8	65	12	-	85	8260
Baringo	10627	21	-	14	50	14	-	78	8401
Nakuru	7024	64	8	6	22	-	-	28	1967
Narok	18513	45	34	-	21	-	-	21	3888
Kajiado	20963	1	5	-	56	38	-	94	19705
Uasin Gishu	3784	100	-	-	-	-	-	-	-
Trans Nzoia	2468	100	-	-	-	-	-	-	-
Nandi	2745	100	-	-	-	-	-	-	-
Kericho	4890	100	-	-	-	-	-	-	-
<b>Rift Valley</b>	<b>168829</b>	<b>21</b>	<b>5</b>	<b>5</b>	<b>23</b>	<b>26</b>	<b>21</b>	<b>57</b>	<b>90114</b>
Garissa	43931	-	-	-	1	38	61	39	17300
Wajir	56501	-	-	-	1	2	97	3	1300
Mandera	26470	-	-	-	-	5	95	5	1325
<b>Northeastern</b>	<b>126902</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>15</b>	<b>84</b>	<b>16</b>	<b>19925</b>
Marsabit	73952	0	0	0	2	11	87	13	9890
Isiolo	25605	-	-	-	2	26	72	28	7100
Meru	9922	48	18	-	20	14	-	34	3373
Embu	2714	32	27	-	41	-	-	41	1113
Kitui	29389	1	3	-	39	52	5	92	27081
Machakos	14178	5	16	-	72	8	-	80	11342
<b>Eastern</b>	<b>155760</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>17</b>	<b>21</b>	<b>54</b>	<b>38</b>	<b>59899</b>
Taita Taveta	16959	1	2	-	19	63	15	82	13906
Tana River	38694	-	3	-	2	32	63	34	13156
Kilifi	12414	5	22	-	35	34	4	69	8566
Mombasa	210	71	29	-	-	-	-	-	-
Kwale	8257	17	11	-	70	2	-	72	5945
Lamu	6506	-	22	-	65	12	-	77	5010
<b>Coast</b>	<b>83040</b>	<b>3</b>	<b>8</b>	<b>-</b>	<b>22</b>	<b>34</b>	<b>33</b>	<b>56</b>	<b>46583</b>
Nairobi	684	28	52	-	21	-	-	21	142
Kiambu	2448	70	19	-	11	-	-	11	270
Murang'a	2476	90	10	-	-	-	-	-	-
Nyeri	3284	77	19	-	4	-	-	4	131
Nyandarua	3528	88	11	1	-	-	-	1	25
Kirinyaga	1437	83	16	-	2	-	-	2	26
<b>Central</b>	<b>13173</b>	<b>82</b>	<b>15</b>	<b>0</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>452</b>
Busia	1629	92	8	-	-	-	-	-	-
Bungoma	3074	100	-	-	-	-	-	-	-
Kakamega	3520	100	-	-	-	-	-	-	-
<b>Western</b>	<b>8223</b>	<b>98</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>



Appendix 2.1, Table 2a Continued

District	Total Land Area km2 (*)	Zone I,II,III %	IV		V	VI	VII	Total Semi-Arid	
			l.risk %	h.risk %				%	km2
Siaya	2523	78	22	-	-	-	-	-	-
S.Nyanza	5714	84	16	-	-	-	-	-	-
Kisumu	2093	100	-	-	-	-	-	-	-
Kisii	2196	100	-	-	-	-	-	-	-
-----									
Nyanza	12526	93	7	-	-	-	-	-	-
Kenya	569136	13	4	1	15	22	45	38	217115

(\*) Statistical Abstract 1981, situation 1979, with some corrections.

Source: own calculations from KSS 1982.

### 3 SEMI-ARID WESTERN POKOT: NATURAL CONDITIONS

#### 3.1 The Location of Semi-Arid Areas in Pokot

The Pokot population is administratively covered by three units nowadays: West Pokot District in Kenya (including Karapokot or Kacheliba Division now), Nginyang Division in Baringo District, also in Kenya, to the East, and Upe County, Karamoja District, Uganda, to the West. Almost all of Upe and Nginyang is semi-arid. In West Pokot 76 % of the area can be classified as semi-arid, if we follow our definition (see 2.1). Humid exceptions are the southwestern parts and the slopes of Mount Kadam in Upe, Mount Tiati in Baringo and the Cherangani, Sekerr and Chemorongit Hills in West Pokot (see Figure 3.1).

The driest zone, KSS Zone VI, can be found in the eastern part of West Pokot and in the western and northeastern parts of Nginyang. Zone V is situated in the lower northwestern parts of West Pokot and around the Masol Hills, in most of Upe and in most of Nginyang. Zone IV can be found in the southern part of semi-arid West Pokot and directly around the mountains and hills. A high altitude (more than 3,000 metres at Kadam, Sekerr and Cherangani) is almost synonymous with low temperatures, low evaporation, ample rainfall, and long, relatively secure rainy seasons. Low altitudes (900 - 1,500 meters for the plains) mean high temperatures, high evaporation, low and erratic rainfall, and short, extremely insecure rainy seasons.

In economic terms, semi-arid Pokot can be divided into three distinct regions: the western grazing land (covering Upe, Karapokot and western West Pokot), the eastern grazing land (Masol in West Pokot as well as Nginyang) and a central area with indigenous irrigation, at the foot of the eastern Cherangani and Sekerr hills. The irrigated area separates the two grazing areas.

In our study we will confine ourselves to the western grazing lands. In current administrative terms this means: the area of Upe County in Uganda, and in Kenya: Karapokot or Kacheliba or 'Karasuk' Division (with Suam, Kapchok, Kasei, Chemorongit and Alale Locations), Riwa Location and the lower parts of Mnagei Location (both belonging to Kapenguria Division), Kipkomo and Sook Locations (belonging to Chepareria Division). Together, the western grazing lands cover a semi-arid area of 6,570 square kilometres. In Upe, Karapokot, Riwa, Sook and Kipkomo an additional 900 square kilometres of more humid land are (or were) used for grazing too. In Figure 3.2 the administrative boundaries are given, together with the zonal boundaries.

#### 3.2 The Agricultural Potential of Semi-Arid Western Pokot

Compared to humid areas in the tropics, annual rainfed arable production per ha is low and unreliable in semi-arid areas. The climatic constraints of rainfall and temperature mean that only a few crops can be grown successfully. Especially where there is only one rainy season - as in West Pokot - annual yields are meagre. In relatively dry years crop failure may be complete. Mobile herding, albeit giving low food yields per unit of land, seems a more reliable form of land use in areas

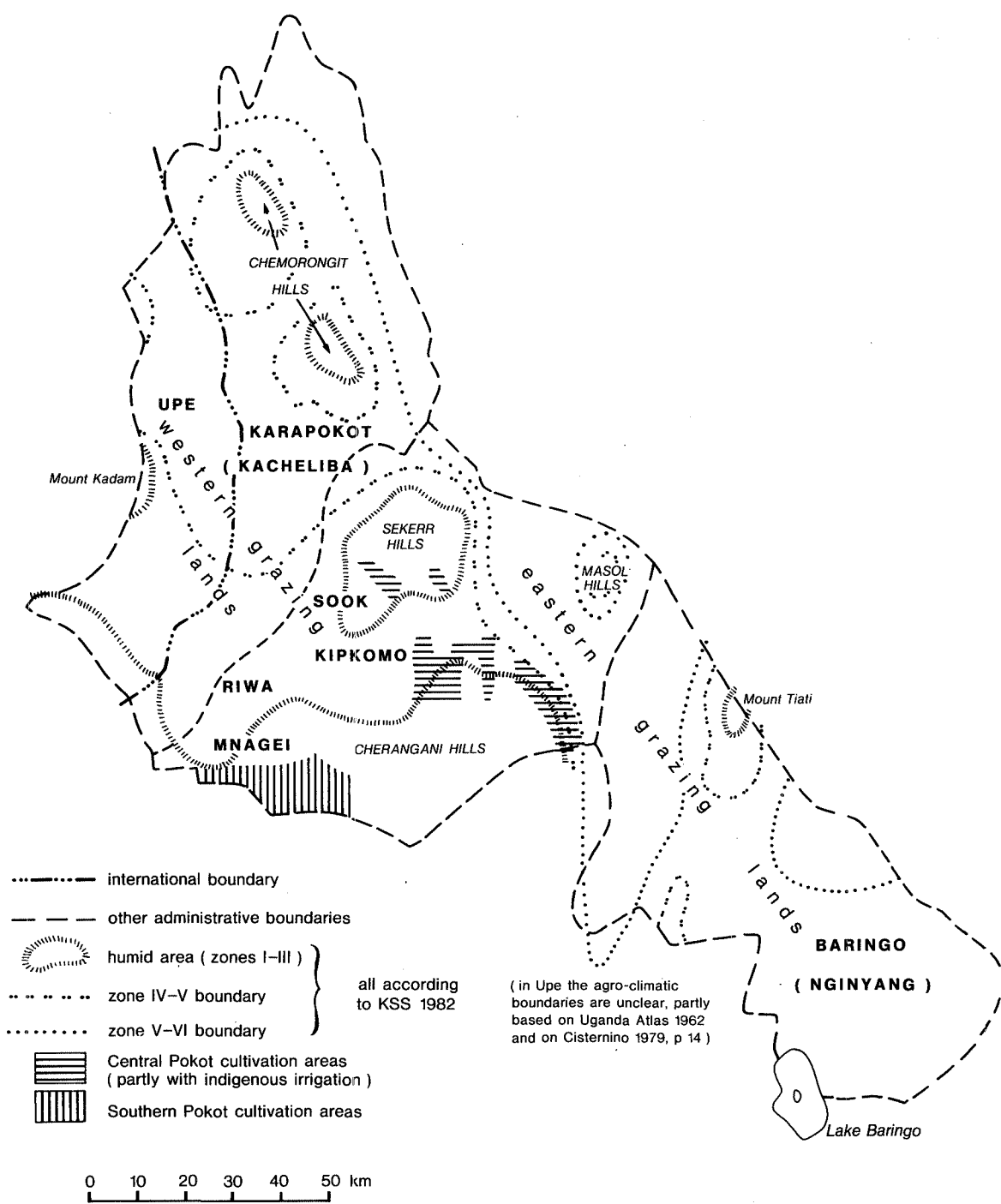


Figure 3.1 Pokot Territory: Administrative Divisions, Agro-Climatic Zones and Economic Regions

without severe animal disease hazards (e.g. those caused by the tsetse fly).

But climatic constraints are not absolute. Semi-aridity is not everywhere identical with low agricultural productivity. Innovations like better animal and crop husbandry, better breeds, better seeds, other crops and varieties, fertilizers and chemicals, water harvesting techniques and irrigation, can all considerably improve agricultural production per unit of land.

On the other hand, not all constraints are climatic. Soil and relief characteristics may pose severe problems for sustainable arable farming and animal husbandry. Insecurity caused by raids and theft can sometimes be more threatening than agro-climatic insecurity. Labour availability and labour organization can be major socio-economic constraints to higher production levels, as well as land ownership, water and land rights, socio-cultural factors, the provision of services and the political and economic context (Ruthenberg 1971, p.286).

Before dealing with these variables, we will first try to be more specific about the climatic constraints for agricultural production in semi-arid environments.

### 3.2.1 Climatic Constraints

Moisture availability and temperature limit the type of agricultural land use under rainfed conditions. In western Pokot we find all three 'grades' of semi-aridity: Zone VI, V and IV.

#### Zone VI:

Zone VI is the driest and hottest part of semi-arid western Pokot with average annual temperatures between 22oC and 30oC and rainfall averages between 500 and 700 mm. Most of the rainfall arrives in short torrential downpours. The Zone VI area in Western Pokot covers approx. 700 square kilometres in eastern Karapokot and approx. 40 square kilometres in northeastern Sook Location, near the Turkwell Gorge. The natural vegetation is a combination of bushland and scrubland, with Acacia species and annual and perennial grasses (1). The only major agricultural option is (semi-)nomadic pastoralism. The herds and flocks have to migrate continuously because of the large spatial and temporal variation in water, grass and bush food resources. There are, or better were, cattle, goats, hairsheep, donkeys and some camels. Less mobile ranching is clearly a suboptimal choice here. Since a decade, Zone VI areas in western Pokot are virtually deserted because of insecurity.

Calculations about the number of animals that can use these Zone VI areas can only be based upon very general estimates. Braun has made an attempt to estimate the carrying capacity in stock units per ha (KSS 1982, p.46-47). His estimates are given in Table 3.1: also for Zones IV and V. The 740 square kilometres in western Pokot allow a minimum of 3,700 stock units, if we follow the minimum figures of Braun's model.

The actual number of growing days can differ a lot for a particular area; also it is very important whether the growing days form one period or are scattered over various periods. The growth of dry matter

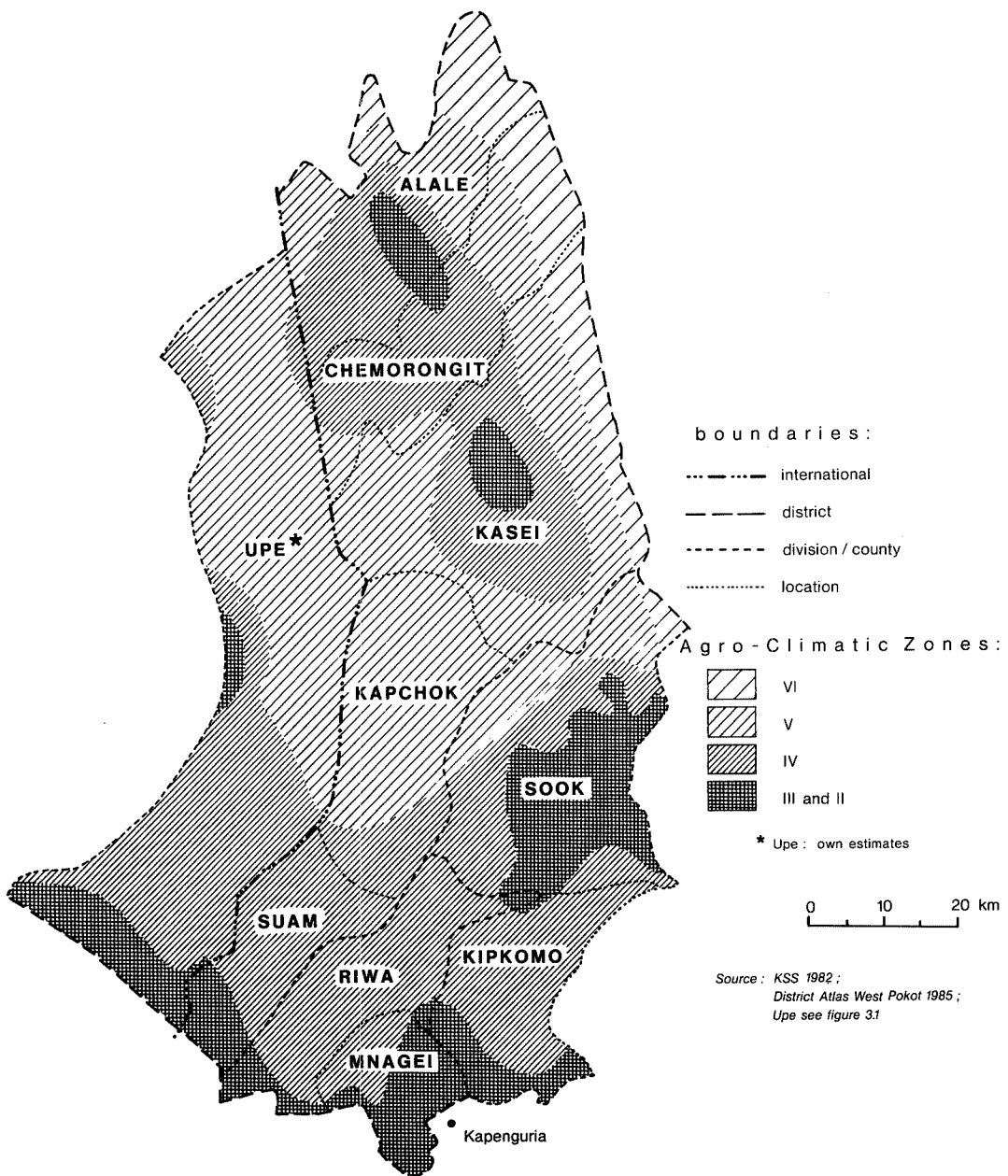


Figure 3.2 Study Area: Agro-Climatic Zones and Administrative Boundaries 1986

Table 3.1 Carrying Capacity Estimates for Semi-Arid Lands

	VI	V	IV
Average number of growing days	75-110	110-180	180-235
potential daily production in kg dry matter/ha	15-25	25-40	40-50
potential annual production; idem	1000-3000	3000-7000	7000-12000
consumable dry matter percentage	15-25	25-40	40-50
consumable dry matter (kg/ha)/year	150- 750	750-3000	3000- 6000
carrying capacity stock units/ha	0.05-0.25	0.25-1	1-2
ha/SU	4-20	1-4	0.5-1

is exponential and after complete withering, growth has to start anew. In practice the dry matter production will be on the low side. But this is not always true: where the moisture retention capacity of particular soils is high, plants can grow during dry spells. If these soils are regularly supplied with new soil nutrients (e.g. by flooding) also the nutrient availability does not necessarily limit productivity. Especially along rivers in Zone VI the available dry matter can be considerably higher. In that case, the percentage of dry matter that is 'consumable' can also be higher. 'Non-consumable dry matter' is either not palatable or should not be used for ecological reasons, in Braun's model; but one should be careful here: first, for goats and camels less plants are unpalatable than for cattle and sheep; a continued use by 'browsers and grazers' will mean the use of a relatively high percentage; second: the ecological care is a matter of judgement. Finally the model uses a 'Stock Unit' (SU) of 300 kg liveweight and a dry matter intake per stock unit of 3000 kg per year, which is probably overestimating the animal food needs. The differences of opinion about dry matter production and carrying capacity are large. Zaal has compared a number of models in an attempt to arrive at an estimated carrying capacity for Masol Location in the eastern part of West Pokot District (Zaal 1986): Pratt & Gwynne's study about East Africa (1977) arrives at 0.08 SU/ha for their Zone VI and 0.25 su/ha for their Zone V, which are not identical with KSS zoning. Breman (1975) uses the formula  $Dm=(0.9 \times MAR)+720$  in his study about the Sahel ( $Dm$  = dry matter production in kg/ha, MAR = mean annual rainfall in mm). If MAR=500 to 600 mm - as in West Pokot Zone VI areas - this means a dry matter production of 1170 to 1260 kg/ha. But he regards 50 % as consumable, which gives about 0.20 SU/ha. Pratt & Gwynne's and Breman's estimates are within the KSS range. Le Houerou & Hoste (1977), in their study about the Saheli-Sudanic Zone use another formula:  $Dm=(2.6 \times MAR)+360$ . With 500 to 600 mm mean annual rainfall this would mean 1660 to 1920 kg Dm/ha or - again with 50 % consumable - 0.28 to 0.32 SU/ha. For the same type of area Diarra (1976) is even more optimistic. According to him :  $Dm=(2.88 \times AR)+720$ , or 2160 to 2448 kg/ha, when the annual rainfall is 500 to 600 mm. With again 50 % consumable it means 0.36 to 0.41 SU/ha. Both with Le Houerou & Hoste and with Diarra the dry matter estimates are within the KSS limit, although on the upper

side. But they arrive at a much higher carrying capacity because of the percentage of the dry matter that can be eaten by animals. Finally it is useful to look at the estimates in the Hunting Report about western Sudan (1974). For most of the area - which is comparable with Zone VI - the carrying capacity is estimated to be 0.07 to 0.08 SU/ha. But better soils can have 0.25 SU/ha and riverine soils even 1.4 SU/ha. It is interesting to note that none of the models for dry matter production differentiate between various altitudes or potential evaporation levels. Penning de Vries (1983, p.25) adds a further complication by saying that "traditional methods for estimating the carrying capacity do not take into account the reduction in biomass due to exploitation".

The variety of results warns us for a rigid use of only one figure. Raikes' warning must be kept in mind that "most of the 'hard' data available on the livestock sector in East Africa, are in fact anything but hard. The prevalence of informed (or uninformed) 'guesswork' extends through almost every aspect of livestock data 'collection', including carrying capacities ..." (Raikes 1981, p.4).

The use of 'stock units' is highly confusing too. Pratt & Gwynne use 300 kg liveweight (for a cow and her calf) as the unit and regard 'shoats' (sheep and goats) to be 0.14 - 0.2 stock units, on the basis of weight (and hence feed requirements, which is not completely correct). Elsewhere in the same book (Pratt & Gwynne 1977, p.37, p.279) they use 450 kg as the 'Livestock Unit' or 'Standard Stock Unit'. Raikes states that "in most (...) computations an adult bovine (bull, steer or cow) is taken as the standard, donkeys are 1.2, calves 0.5 or 0.6, sheep and goats 0.2" (Raikes 1981, p.14). Livingstone (1977, p.229) uses a 'Kenya stock unit', "the equivalent of 600 lbs (272 kg) of liveweight bovine". Elsewhere a 'Unit of Tropical Livestock' is regarded to be 250 kg (Kessler & Ohler 1983). Dahl & Hjort (1976) use a 'Standard Stock Unit' of 215 kg and they regard goats to be 0.33 SSU and sheep 0.20 SSU on the basis of animal food production. Jaetzold & Schmidt (1983, p. 215) use 'Livestock Units' in a study about Kenya, where cattle under one year of age are the equivalent of 0.2 LU, cattle between one and two years 0.45 LU and adult cattle 0.65 LU. Young goats and sheep are 0.1 LU and adult goats and sheep 0.15 LU (they do not give a weight figure per LU). In 3.2.5 we will further deal with this difficulty.

Two more problems are important. First: annual averages hide a large variety in actual rainfall and its distribution, which may result in large differences in quantity and quality of actual dry matter production from one year to another. Secondly, the Zone VI areas in western Pokot are part of a spatial pattern in which the mobile pastoralists also include Zone V and IV areas and even parts of the humid highlands. Zone VI plains are only used as rainy season pasture; Zone VI riverine areas, on the other hand, only in the dry season; during the rains the riverine areas are infested with tsetse fly. For the calculation of the actual carrying capacity the relevant zones should be analyzed in a coherent model.

In Zone VI, rainfed arable farming is hardly possible. Theoretically (KSS 1982, p.45ff) bulrush millet could be grown with suboptimal results, but this is not practised. Local water harvesting experiments (e.g. in Masol in eastern West Pokot) prove that in some areas near rivers a small yield of sorghum and even maize is possible. Irrigation schemes (like the ex-FAO Amolem scheme in Masol) allow harvests of a variety of crops, using

riverine soils but with great difficulties and a large risk of salinization.

#### Zone V:

We find Zone V areas in central Kacheliba Division (1650 sq.km), northern Upe (770 sq.km) and in northwestern Sook (180 sq.km): together covering 2,600 sq.km. In Zone V (in WP with average annual temperatures between 20 and 24°C and rainfall averages between 600 and 800 mm), the natural vegetation is bushland with grasses and with trees along the major rivers.

In the Zones V and even IV of Kacheliba Division and adjoining parts of lower Kapenguria and Chepareria Division scrubland is also very general. Partly these scrubs have a high nutritive value for goats, camels and even for sheep and cattle (e.g. *Balanites*, *Acacia Tortilis*, *Grevia* and *Cadaba*) but partly they are unpalatable (e.g. *Lannea* and *Commiphora*, *Aloe* and *Sanseveria*) or even poisonous (*Capparis Tormentosa*) (Hartley 1985, part I, p.5 and part II, p.3-4).

Probably the scrub growth in Zones V and IV developed recently. E.g. the Karimojong claim, that Karapokot was a 'White Country' once, meaning a grassland area (Hartley 1985, II, p.1; Mamdani 1982, p.66). The riverine areas were claimed to be free of tsetse fly. The fly was invading the Suam area only after 1960, according to Pokot elders. Tsetse fly and bush encroachment are related by the Pokot to the disappearance of bush fires, which are no longer part of grazing management since the 1950s (with the exception of a Zone IV area in the Southwest). The Pokot suggest that not so much government suppression of bush fires had this result, but climatic changes, which resulted in lack of grass so that bush fires could no longer develop. To keep bush encroachment in check, goats are regarded as very valuable, by Pokot herdsmen.

In Zone V, semi-nomadic pastoralism still is the major agricultural option, but ranching becomes a viable alternative theoretically. The Zone V areas in northwestern Pokot serve as rainy season pastures in a pattern of herd mobility in which the higher (Zone IV) areas of the Chemorongit hills as well as the riverine areas along the Kanyangareng River in Uganda, and the slopes of Mount Kadam, also in Uganda, serve as dry season pasture. For KSS-Zone V the carrying capacity is estimated between 0.25 and 1.00 SU/ha (see table 3.1). In riverine areas it can be higher (although these parts are not accessible during most of the year; in heavily degraded areas - dominated by thorn bush - it will be lower, as Baker (1967, p.32) suggests for Upe). Braun's minimum figures suggest a minimum carrying capacity of 65,000 SU in the Zone V areas of western Pokot.

Production of bulrush millet and pigeon pea might give good results in the more humid parts of Zone V, but this is not practised. Other crops may give good results in relatively wet years but they may fail altogether in dry years: e.g. sorghum, adapted maize varieties, cassava, cowpeas, groundnuts, cotton, sunflower, sisal and castor. In the Zone V areas of WP rainfed sorghum is cultivated traditionally along the rivers and recently the growing of maize and some other crops is attempted. Traditional irrigation is practised in parts of Zone V in eastern West Pokot: here sorghum and maize are cultivated with an average yield of about 800 kg/ha. Recent irrigation schemes situated in this Zone (e.g. the farm of the Kerio Valley Development Authority in Sigor) produce



other crops too - e.g. cotton - but until now with a very low production per ha. This, however, is all outside our study area.

#### Zone IV:

In western Pokot, Zone IV are located in Kacheliba Division (1,400 sq.km), Upe (750 sq.km), most of Riwa (380 sq.km) and Kipkomo (350 sq.km), the western part of Sook (280 sq.km) and lower Mnagei (Serewa: 70 sq.km). Together, Zone IV covers 3,230 sq.km. In Zone IV (in WP with an average annual temperature of 18 - 24°C and rainfall averages between 800 and 1100 mm), the natural vegetation is bushland and woodland with grasses. In degraded parts also scrubland can be found, The non-degraded parts of the area are excellent grazing land with an average possible number of livestock of 1 - 2 SU/ha. However, the percentage of digestible protein is lower than in zones V and VI, unless burning is practised (Hartley 1985, II, p.4). Excellent Zone IV grazing areas can be found in the Southwest. Using Braun's minimum figures for Zone IV, a minimum number of 323,000 stock units could use the Zone IV areas of western Pokot. It may well be that Braun's estimates for Zone IV are too high. Following the results of the 'Projet Production Primaire au Sahel', not rainfall but soil fertility (esp. nitrogen and phosphorus) is the limiting factor in the more humid parts of the semi-arid zone, resulting in a lower dry matter production than expected on the basis of soil humidity alone (see Penning de Vries 1983). On top of that, the relief in Zone IV-areas of western Pokot - partly an escarpment zone - may result in severe erosion. Most of Zone IV in West Pokot District is heavily degraded. For this area, Jaetzold & Schmidt use lower than normal carrying capacity estimates, because of ecological degradation (1983, p.194-195): from 0.20 SU/ha in their 'lower midland zone' to 0.80 SU/ha in the 'upper midland zone' (we converted their 'livestock units' into KSS stock units). The Zone IV areas of Upe have been described as very degraded too (Wilson 1960, 1962).

In Zone IV sedentary ranching may be a viable option, except in the driest of years, under conditions of grazing management and exclusive use. The Pokot themselves do have forms of grazing management (e.g. grazing reserves - 'kakikar' as the ones in Kapchok, mentioned by Hartley 1985, p.16 and 19; in Lower Sook we also found a very precise definition of grazing of particular areas for particular animals - even differentiating between calves of various age). Improvements of grazing management as such should not be too difficult. The second condition for sedentary ranching, exclusivism of grazing, is very much against Pokot traditions. Imposing it will be almost impossible, as we will see. Although Zone IV land is good grazing land, livestock keeping is far less productive compared with arable use in years with average to good rainfall, even with the prevailing low arable productivity. We will thoroughly deal with this issue of the population supporting capacity based on livestock or on arable farming in Chapter 4.

Crops which may be cultivated under rainfed conditions in WP-Zone IV areas are not only maize but also sorghum, finger millet, cassava, cow pea, sunflower, castor, sisal, groundnuts and beans. Some crops give suboptimal results: pigeon peas (especially in the colder parts), sweet potatoes, simsim and Arabica coffee. Theoretically cotton can give good results only in the hot parts of Zone IV; tobacco and Robusta coffee only when the hot parts are also relatively wet. Some fruit trees (citrus,

mango) can do very well here. For bulrush millet, coconut and cashewnut the Zone IV areas of WP are not hot enough; for wheat and barley they are too hot. Rainfed production of sugarcane, bananas, yams, irish potatoes, tea, pyrethrum and wattle is not viable. The same is true for dairy and woolsheep production (KSS 1982, Acland 1971, more detailed crop potential estimates can be found in Jaetzold & Schmidt 1983, pp.188-195).

Most of these crops have been tried out in Zone IV areas in WP, but only sorghum, fingermillet and maize are widely cultivated nowadays. In eastern West Pokot District households cultivate cassava, bananas and sugarcane along rivers; in areas of indigenous irrigation sorghum will be cultivated on irrigated plots as soon as the rainfed fingermillet or maize harvests seem to fail. In western Pokot irrigation cannot be found yet.

In general, Zone IV areas are situated at a higher altitude than Zone VI areas in western Pokot: 1300 to 1700 m instead of 900 to 1100 m. In higher altitude areas plants normally need longer growing seasons. According to Kenya Soil Survey (1982, p.50) the amount of potential dry matter production reduces with 10 % per unit of time for every 300 metres above 1200 m. Despite the lower dry matter production per unit of time, higher altitudes have a higher total dry matter production not only because of generally higher rainfall and lower evaporation but also because of a greater potential photosynthesis (mainly because cooler nighttime temperatures reduce dark respiration and thereby more carbohydrate is stored) and a longer growing season. Areas above 1650 m may have two times the yield of lowland areas for the same type of crop, both with adequate rainfall (Porter 1979, p.22). He adds (p.24): "These contrasts in potential photosynthesis are built-in environmental differences which no amount of plant breeding, soil engineering or changes in agricultural practices can undo. Just as the mid-latitudes have a built-in yield advantage over the tropics (...) so farmers in the highlands have an enduring edge over those who farm in the (...) middle and lower altitudes, quite independently of differences in rainfall and variability". This thesis is interesting enough to quote, although I cannot judge if Porter is right.

### 3.2.2 Harvest Failures and Loss of Livestock because of Droughts, Diseases and other Natural Causes

Although the relatively dry conditions in semi-arid areas generally give a low yield per ha, more problematic is the fact that the rainfall is very unreliable and sometimes so low or so irregularly spread that it results in a complete failure of harvests. Besides, a large number of animals become vulnerable to various diseases due to scarcity of water and food. Rinderpest and pleuropneumonia are the major killers.

Nature-related famines are no recent phenomena of course. Famines are even used as major aids to reconstruct the precolonial history of East Africa (Webster 1979). Major famines, resulting in widespread migration movements and the extinction of whole ethnic groups, hit the area around Mount Kadam - and probably current western Pokot as a whole - between 1725 and 1729, between 1785 and 1792 and during the 1830s (Weatherby 1979). Later, major famines are those of the 1890s, early 1920s and

1979-82. For semi-arid western Pokot we have reconstructed the chronology of droughts after 1885, with additional information about other natural disasters. The results are presented in table 3.2 and figure 3.3.

Table 3.2 Drought and Other Natural Disasters, Western Pokot 1885-1985

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Sources: meteorological data, especially rainfall stations Kongelai/Kacheliba and Amudat; Kapenguria for the highlands; annual reports for West Pokot (West Suk) District; annual agricultural reports; progress reports of District and Divisional Livestock Departments; Calendar of events for West Pokot, made for the 1979 Census; Calendar of events for Upe County, made for the 1969 Census; Turpin 1948, Welch 1969, pp.289-295, Alnwick 1985, pp.142-144; local interviews; sources for the period 1930-1949 are meagre: annual reports only and these are of a relatively bad quality compared to 1918-29 and after 1949. It is possible that the 1930-49 period is underreported. For the other periods cross-checks were possible from various sources.

Only the problematic years are mentioned.

- 1886-87 Contagious Bovine Pleuropneumonia epidemic.
- 1894-96 Rinderpest epidemic, large majority of cattle died; severe famine.
- 1895 Locusts.
- 1896 Drought; many goats and sheep die of disease (probably mange).
- 1900-11 No information.
- 1912 Exceptionally dry (first rainfall measurement).
- 1918 Severe drought, also in the highlands; human disease epidemic (West Suk AR: "the population has undoubtedly been heavily reduced").
- 1919 Influenza epidemic continued; general famine until July; shortage of grass.
- 1920-21 Rinderpest; small stock diseases.
- 1921-23 Very low rainfall, rinderpest and heavy losses due to lack of grass.
- 1924 Extremely low rainfall in Upe; probably also in Karapokot.
- 1927 Drought, very severe food shortage, also in the highlands; famine.
- 1928 One third of all stock lost due to drought.
- 1929 Drought, and when rains started: locusts.
- 1931 Grass practically all eaten by locusts.
- 1933-34 "Terrible dry season" in Upe; rinderpest; harvest failure highlands?
- 1938 Late start of rain; crops failed (but good harvest in the highlands); rinderpest in West Pokot.
- 1939 Extremely low rainfall in the highlands.
- 1940-41 Rinderpest, drought; in Upe/Karapokot the Uganda Government organizes the selling of grain; high cattle sales.

1943/44 Lack of grass; drought; heavy cattle mortality; famine (Famine Relief in Upe: cassava).

1946 Low rainfall.

1947-48 Drought and rinderpest.

1950 Drought; harvest failure, probably also in the highlands.

1952-53 Complete harvest failure; import of famine food.

1957 Very low rainfall (lowest recorded rainfall in Kacheliba between 1953 and 1986).

1960 Rinderpest in northern Karapokot; low rainfall.

1961 Early in the year: famine; maize harvest in July-August destroyed by army worm; in November extremely heavy rainfall with major flood damage; high 'emergency' cattle sales from Upe/Karapokot; the highest ever recorded; very high cattle mortality.

1964 Low rainfall.

1965 Severe drought everywhere, including the highlands; general crop failure; in West Pokot in July people could buy Famine Relief food (36 tons); in October free Famine Relief (90 tons); in Upe Famine Relief from October onwards; In Upe there is an outbreak of East Coast Fever.

1966 Continued drought; Famine Relief in Upe (460 tons up to August).

1967 Continued famine; outbreak of Contagious Bovine Pleuro-pneumonia; in August good harvest, after good rains.

1968 Low rainfall; extremely low in Upe; Famine Relief Upe.

1969 Low rainfall; Famine Relief in West Pokot and in Upe; outbreak of Foot and Mouth Disease Upe.

1971 In some places: drought and famine; Foot and Mouth Disease West Pokot (until 1974).

1972 General low rainfall; poor harvests.

1973 Drought, severe food problems; cattle died in large numbers; Upe: Famine Relief in July-September;

1974 Another dry year, also in the highlands.

1976 Low rainfall.

1978 Start of serious goat's disease (Contagious Caprine Pleuro-pneumonia in Upe).

1979 CCPP also in Karapokot and West Pokot; most goats died; bad harvest.

1980 General severe drought; famine; rinderpest (Upe), Cholera starts in Upe; starvation, especially in Upe; Famine Relief.

1981 Cholera in West Pokot; rinderpest general; large scale cattle deaths; famine until August (Relief food until 1982).

1984 Extremely low rainfall; total crop failure lowlands; Famine Relief far into 1985.

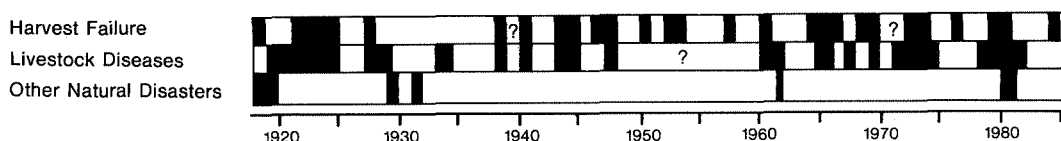


Figure 3.3 Harvest Failure, Livestock Diseases and Other Natural Disasters

Source: table 3.2

Major problematic years/periods during this century were 1918-24, 1927-29, 1943-44, 1952-53, 1960-61, 1964-69, 1971-74, 1979-81 and 1984. Drought with crop failure and lack of animal feed did result in general food shortage in most of these periods, especially when combined with animal disease epidemics. One can see that the people can statistically expect such a period of disasters once or twice every decade, with minor droughts in between. But the droughts in the early part of this century (or better: beginning in the 1890s) and those in the 1960s, 1970s and 1980s seem to have been more severe than those in the 1930s, 1940s and 1950s.

Low annual rainfall does not always result in crop failure. Relatively high annual rainfall may not always lead to good harvests either (rains during the harvest period, for instance, may result in crop damage and storage risks). It is the concentration of rainfall in the growing season that matters, or more precisely: the availability of adequate soil moisture during the growing season. The literature on this subject shows a complex field with conflicting points of view and very different methods of analysis. We have been looking for a sound method to judge the monthly rainfall figures on their ability to 'predict' crop failures in the past. Three methods have been applied, combining empirical evidence and theoretical estimates (on the use of models for the computation of risks, see Schweigmann e.a., 1981).

- a. One method that is being used in Kenya specifically (KSS 1982, National Atlas of Kenya 1971; Siderius 1978, p.6, and many others) relates rainfall and potential evaporation ( $E_o$ ). For maize to succeed, the rainfall in the growing season must be  $\frac{2}{3} \times E_o$  in a consecutive period of five months. For maize the growing period in Semi-Arid Western Pokot (SAWP) is considered from April to August and  $E_o$  during this period is thought to be between 750 and 880 mm. Rainfall in this period must be more than 500 - 600 mm to support a crop (Siderius 1978, p.8). The method is rather rough since dangerous dry spells within the growing period are neglected. One could perhaps make the method more specific by comparing monthly rainfall figures with monthly evaporation estimates during the growing period, using the  $P > \frac{2}{3} E_o$  formula. Unfortunately, empirical evaporation figures are hardly available. We will call this the Kenya Soil Survey or KSS method.
- b. The FAO Agro-Ecological Zones Project (FAO 1980) compares the monthly rainfall with the potential monthly evapo-transpiration (PET or  $E_{tp}$ ) (2). A month is called sufficiently wet for a crop that is adapted to dry conditions when  $P > 0.5 E_{tp}$ . Although also here there are differences of opinion, we may estimate  $E_{tp}$  to be  $0.8 \times E_o$ . In the FAO method rainfall is assumed to be stored as soil moisture as soon as there is surplus rainfall (that is:  $P > E_t$ ). But there is a maximum storage period of one month (3).
- c. Bailey (1979, p.77ff) used monthly precipitation figures and mean monthly temperature figures to arrive at 'Bailey's moisture index  $S_i$ ' where  $S_i = 0.18P / (1.045)^t$ , ( $P$  in cm, and  $t$  in °C). Months are called 'wet' when  $S_i > 0.81$  and 'dry' when  $S_i < 0.53$ . In between they are called 'neutral'. According to Bailey a 'rainy season' must have at least

three consecutive months in the neutral or wet categories for grain crops to succeed (Bailey 1979, p.88). But 'Bailey' must be adapted to SAWP, with a relatively high altitude (900 - 1500 m). Also the existence of a huge escarpment nearby will result in more cloudiness. Both factors result in longer growing periods compared to coastal flat tropical areas with the same theoretical P/Eo ratios. In SAWP, finger millet, sorghum and maize need at least four months. Bailey's 'three months' clearly is too optimistic.

To compare these three methods, we will consider the situation in Kongelai, in the southern part of SAWP, along the Suam River, at 1311 m. This is the only meteorological station in SAWP for which at least one full year of evaporation figures was available: 1982-83 (4).

#### Kongelai 1982-83

With the empirical information about evaporation and rainfall available for Kongelai (5) in 1982-83, we can calculate the monthly moisture situation, according to the KSS and FAO methods. To apply Bailey's method we need monthly temperature figures. These are non-existent, however, so we had to find a theoretical solution to get them. The KSS suggests the following formula to find the theoretical annual temperature for a place in inland Kenya:  $t(av) = 30.2 - 0.0065 \times h$ , where  $h$  is the altitude in metres and  $t$  is given in °C. Kongelai is located at an altitude of 1311 m, which gives a theoretical average annual temperature of 21.7°C. But it is the monthly variation that is important in Bailey's formula. As an estimate we will use index figures for monthly temperatures, calculated for another place, Kapenguria (Chewoyet), at 35 km distance in the humid highlands, based on fifteen years of recording (Jaetzold & Schmidt 1983, p.183). In table 3.3 the findings are presented.

If we look at the rainfall and evaporation figures for Kongelai in the 1982-83 season, the differences between the months are striking. Three quarters of all rainfall were recorded in four months, but these months did not form a continuous rainy season; there was a dangerous dry spell in June. Table 3.3 also shows that the period with lowest evaporation concurs with the rainy season, a situation which is favourable for crop growth.

Comparing the prediction of the three methods, the KSS method is clearly the most conservative one. Crops can only grow in April and May, in July and in November. The dry spell in June prohibits a maize crop to succeed (but it does not pretend to say anything about more drought adapted crops or even drought resistant maize).

The FAO method is optimistic: from April to September and in November/December the rainfall is sufficient for a grain crop to grow. In theory two harvests could have been possible if only October would have had more rain.

The Bailey method is not far from the KSS method in its pessimism. Also here the June drought is considered as too severe. But if we allow soil moisture storage of excess rainfall of a previous month (6), the prediction is more in line with the FAO method.

In the actual 1982-83 season, non-irrigated riverine agriculture (in soils with a high moisture retention capacity) produced a maize crop

that was locally considered as not bad at all. The rainfall surplus of May must have been enough to overcome the dry spell in June. If storage of excess rainfall is allowed in the models, 'FAO' as well as 'Bailey'

Table 3.3 Moisture Calculations for Kongelai 1982-83 season

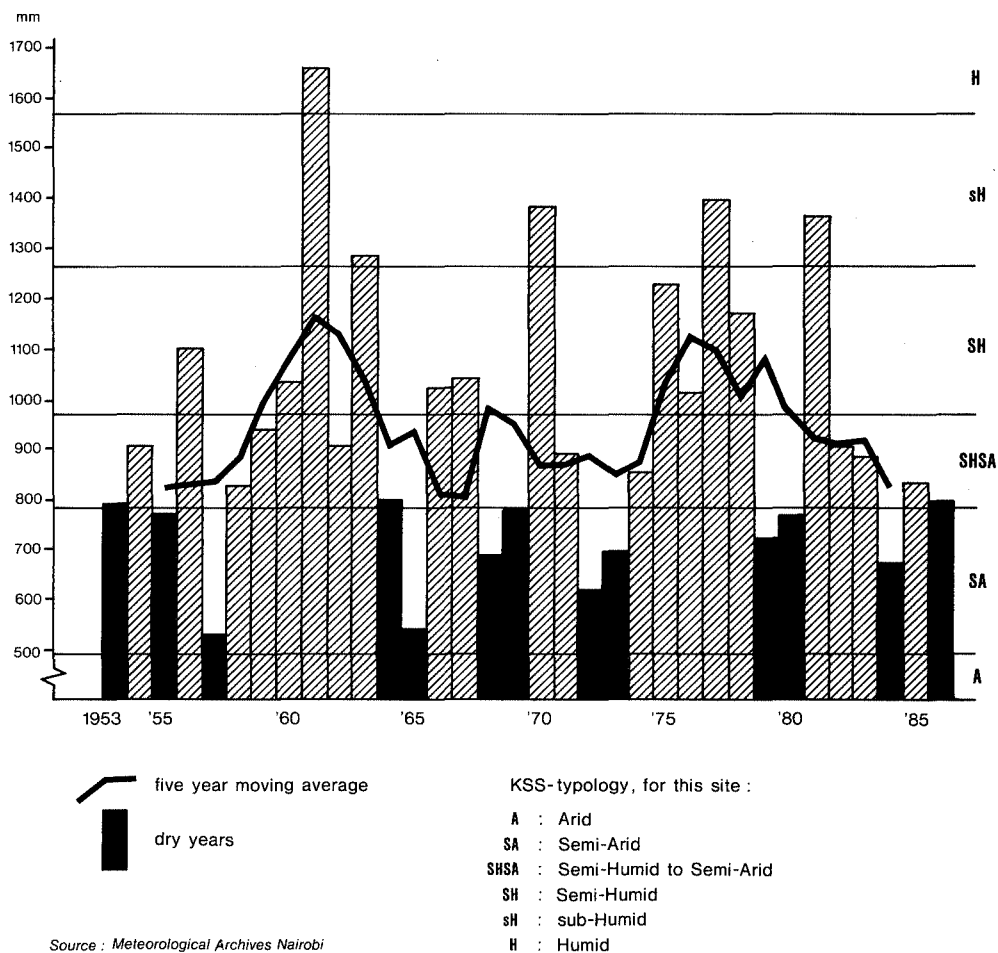
	A 1982	M	J	J	A	S	O	N	D	J 1983	F	M
P (mm) (tot.943, Apr-Aug 608)	134	192	58	148	(76)	(68)	(0)	214	17	13	20	3
Eo (mm) (tot.2089)	182	162	130	125	157	160	168	155	164	227	209	250
2/3xEo(mm) (Apr-Aug 503)	121	108	87	83	105	107	112	103	109	151	139	167
P/(2/3xEo) (Apr-Aug 1.2)	1.1	1.8	0.7	1.8	0.7	0.6	0.0	2.1	0.2	0.1	0.1	0.0
KSS	+	+	-	+	-	-	-	+	-	-	-	-
0.5 Etp (Etp=0.8Eo)	73	65	52	50	63	64	67	62	66	91	84	100
P>0.5Etp	+	+	+	+	+	+	-	+	-	-	-	-
FAO (with soil moisture storage)	+	+	+	+	+	+	-	+	+	-	-	-
$\bar{t}$ index	103	102	98	94	95	97	99	98	99	102	105	107
$\bar{t}$ model (t ann=21.7°C)	22.4	22.1	21.3	20.4	20.6	21.0	21.5	21.3	21.5	22.1	22.8	23.2
Si	0.90	1.30	0.41	1.09	0.55	0.49	0	1.51	0.12	0.09	0.13	0.02
Bailey	w	w	d	w	n	d	d	w	d	d	d	d
Bailey/ storage	w	w	ws	w	ws	d	d	w	ns	d	d	d
Si=0.53; P=	79	78	75	72	73	74	76	75	76	78	80	82
Si=0.81; P=	121	119	115	110	112	113	116	115	116	119	123	125

+ = sufficient moisture                      d = dry  
 - = insufficient moisture                    n = neutral  
 w = wet    ws = wet if storage is included

seem to give realistic results. In other types of soils, however - although hardly any family used these for arable farming in 1982-83 - the harvest prospects were probably more insecure. Here the KSS method seems to give more realistic results, especially for non-drought adapted crops or varieties. For all three methods it is necessary to use a model growing season of four or maybe even five months.

### Kongelai/Kacheliba 1953-1984

For Kongelai rainfall figures are available from 1953 to 1972. The meteorological station was moved to Kacheliba, on the other side of the Suam River, in 1972. For Kacheliba, data are available from 1972 to 1986. We combined both sets of data (7). The theoretical evaporation of a place at 1311 m.a.s.l. is 1953 mm per year, according to KSS (8). The average annual rainfall for 1953-1986 was 934 mm, the median rainfall 883 mm.  $P/E_o = 0.48$ , which means that the area is in the 'semi-humid to semi-arid' zone; 'Zone IV' in the KSS classification. Extreme years were 1961 (1657 mm) and 1957 (532 mm). Figure 3.4 gives the annual information for all the years. If we only look at the annual figures, 'bad years' were 1953, 1955, 1957, 1964-65, 1968-69, 1972-73, 1979-80, 1984 and 1986 (if we call a rainfall total below 800 mm 'bad'). Periods with two consecutive years of low rainfall can be expected to be very threatening. The five year moving average suggests a fifteen year cycle with a low average during the mid-1950s, a high average during the early 1960s, a long low average during the late 1960s and early 1970s, a high average again during the late 1970s, and a low average during the early



Source : Meteorological Archives Nairobi

Figure 3.4 Kongelai/Kacheliba: Annual Rainfall 1953-1986



1980s. Especially for the quality of the range and for the prospects of livestock keeping this is important.

Is there a downward trend (as some climatologists suggest)? Figure 3.1 does not suggest a trend for Kacheliba between 1952 and 1986, it suggests a cycle. Incomplete rainfall figures for Kacheliba during the early part of this century (1912-1923) show that dry years (e.g. 1921 and 1922) were as dry as the lowest annual figures for the recent decades; the year 1912 even had the absolute minimum record (457 mm). A downward trend during this century does not fit with these data.

### Analysis

For the KSS and FAO methods we need a standardized monthly evaporation figure. The standardization is derived from the 1982-83 situation. The monthly average  $E_o$  is derived from the theoretical  $E_o$  (1953 mm). See table 3.4. In table 3.5 the results of the analysis are presented (in appendix 3A we give the monthly rainfall data).

Table 3.4. Standardized  $E_o$  and  $E_{tp}$  for Kongelai

	J	F	M	A	M	J	J	A	S	O	N	D	
Index	130	120	144	105	93	75	72	90	92	97	89	94	based on 1982-83
St.Theor. $E_o$	211	196	235	171	152	122	117	147	150	158	145	153	(av.163mm)
St.2/3 $E_o$	141	131	157	114	101	81	78	98	100	105	97	102	
St.1/2 $E_{tp}$	84	78	94	68	61	49	47	59	60	63	58	61	

First we have applied a method with very demanding assumptions: 'KSS 5': there must be five consecutive months with enough rainfall ( $P > 2/3 E_o$ ). This method can be used for a maize crop which is not adapted to dry conditions and which needs a relatively long growing season. Soil moisture retention is not included. Only in 12 % of the years this crop would have succeeded here. A maize variety with only a four months growing season would have succeeded in 38 % of the years ('KSS 4'). If this maize crop is cultivated in soils with a high available water capacity for plants, e.g. along the Suam river, its potential success increases to 65 % ('KSS 4 + sms').

Bailey's method is adequate for more drought resistant crops, like sorghum, finger millet, adapted maize varieties. At the altitude of Kongelai all these crops need a four months growing season. In soils with a poor available water capacity for plants these crops had a 47 % chance of success; in soils with a good available water capacity for plants, 65 % .

The FAO method gives a successful growing season in even 76 % of the years. Also here sorghum, finger millet and adapted maize varieties are the crops which can be grown. The FAO method allows soil water storage of one month if the previous month had more rainfall than  $E_t$  for that

Table 3.5 Growing Season Possibilities based on Moisture Analysis  
Kongelai/Kacheliba, 1953-1986

	1 KSS 5	2 KSS 4	3 KSS 4 Sms *	4 Bailey	5 Bailey & Sms *	6 FAO	7 FAO: when **
1953	-	-	+	-	+	+	n
1954	-	+	+	+	+	+	n
1955	-	-	+	+	+	+	l
1956	+	+	+	+	+	+	n
1957	-	-	-	-	-	-	-
1958	-	-	+	+	+	+	n
1959	-	+	+	+	+	+	n
1960	-	-	-	-	-	-	-
1961	+	+	+	+	+	+	n
1962	-	+	+	+	+	+	n
1963	-	-	+	-	+	+	n
1964	-	+	+	+	+	+	l
1965	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-
1967	-	+	+	+	+	+	n
1968	-	-	-	-	-	-	-
1969	-	-	+	-	+	+	l
1970	-	-	+	-	+	+	n
1971	-	+	+	+	+	+	n
1972	-	-	-	-	-	-	-
1973	-	-	-	-	-	+	n
1974	-	+	+	+	+	+	n
1975	+	+	+	+	+	+	n
1976	-	+	+	+	+	+	n
1977	+	+	+	+	+	+	n
1978	-	-	+	+	+	+	n
1979	-	-	-	-	-	+	l
1980	-	-	-	-	-	-	-
1981	-	-	-	-	-	-	- ?
1982	-	-	+	-	+	+	n
1983	-	-	+	-	-	+	n
1984	-	-	-	-	-	+	e
1985	-	+	+	+	+	+	n
1986	-	-	-	-	+	+	n

%+            12            38            65            47            65            76            n:62

\* sms: soil moisture storage

\*\* growing season

n (normal): there is adequate moisture in May, June, July and August

e (early) : the growing season started in April or even March, but  
in August moisture was no longer adequate

l (late) : the growing season only started in June or even later.

month.

Not all 'adequate growing seasons' are successful ones. In a 'normal growing season' there is enough rainfall/soil moisture in May, June, July and August. This is the time most farmers regard as the cropping season with land preparation in February - April, sowing/broadcasting in May, weeding in June, birdscaring and weeding in July and August and harvests in August - September. Even if the rains start in April, most farmers regard it as a wise strategy to wait until May before they sow or broadcast. The first rain in April might be a 'false start' of the rainy season. There is another reason for some farmer reluctance to sow early, as can be seen in table 3.6. May is rather secure, but June is dangerous. A crop which is sown in April, produces a rather high level of evapotranspiration of the fields in June (lowering the adequacy of the low June rains), and has a high chance of rainfall during the ripening phase, when the plant needs sun and not too much rainfall. A May crop does not cover the soil so much in June and has its ripening phase in September, a much more reliable situation.

Table 3.6 The Probability of Adequate Rainfall in the Various Months, according to the FAO Method; Kongelai 1953-86

Months with enough rain	J	F	M	A	M	J	J	A	S	O	N	D
absolute	1	3	5	22	28	25	31	32	22	12	14	4
%	3	9	15	65	82	74	91	94	65	35	41	12

Finally we must say that there is no need to start as early as possible to be able to have a second growing season too. A 'second crop' is not realistic in this part of semi-arid Kenya: there was only one year in the 1953-84 period with nine consecutive months with enough soil moisture (FAO method) and there were no years with two periods of four months with enough moisture.

Sowing in May, when the rains have already started in April, is problematic for one reason, however: during the first rains a lot of soil nutrients become available (called the 'nutrient flush'), which is very good for young plants. But farmers here do not try to get the highest possible yields; they try to get a secure yield.

A potential growing season which is either too early or too late poses problems to most farmers. An April - July season (as in 1984) means that most farmers did not sow at the required time. All farmers who had sown in May saw their crop wither in August. A season with a number of false starts and an adequate start in June, July or even later (as in four years during the 1953-86 period), means that most farmers already used their seeds or that they have given up hope for an adequate growing season.

If we only regard a 'normal' growing season as realistic, the probability of a harvest is only 62 %, according to the (optimistic) FAO-method.

As a result, we can assume crop failure situations in 1955, 1957, 1960, 1964-66, 1968-69, 1972, 1979-81 and 1984 for farmers who cultivated sorghum, finger millet or drought adapted maize varieties in riverine soils. For less adapted maize varieties also 1973 would have been a problematic year. In soils with a low available water capacity for plants (here: in all non-riverine soils, except in depressions) the chance of a harvest is simply too small, probably less than 50 %. Especially two and especially three consecutive years of crop failure are very threatening to the survival of the people. During this time span there were three of these periods: 1964-66, 1968-69 and 1979-81. In 1964-65, 1968-69 and 1979-80 also the annual rainfall as a whole was very low resulting in a problematic food situation for animals too. During the second of these 'twin years of drought', a severe crisis is very likely.

### 3.2.3 Soil and Relief Constraints

Not all the land in zones IV to VI can or should be used for agriculture. Some of the area is water (rivers, irrigation furrows). Part of the area has a non-agricultural land use (buildings, roads, game parks). Until now these non-agricultural forms of land use cover less than 10 % of the available space in SAWP. More serious limitations to agricultural use are posed by relief and soil characteristics. Part of the area is too steep to be used by animals or for arable use, due to erosion hazards. In some areas rock outcrops and places with very shallow soils block any arable use. Some soils are so degraded that a large part of the area has been transformed into badlands. When soils are saline or sodic, crop cultivation is hardly possible at all without (expensive) chemical treatment and sophisticated drainage structures. Soils which are too acid also limit the arable use considerably. Biological limitations can be important too, like the tsetse fly (causing Trypanosomiasis) near rivers or endemic East Coast Fever in higher areas (see Dyson-Hudson 1960). Also the activity of termites can threaten grazing areas (see Wilson 1959, p.59). Without fertilizers - and they are hardly used in SAWP - most soils need a long fallow period to retain the natural soil fertility required for crop cultivation. Fallow requirements depend on the natural chemical fertility and soil-physical characteristics of the soils, the vegetation cover during fallow periods, the type of crops grown during the cultivation period and the erosion taking place. We use a theoretical fallow factor adapted to our research area for those areas that can be cultivated (9). The fallow factor (10), depends on the soil type for which we use the description of the various soils in the KSS report that accompanied the Exploratory Soil Map and Agro-Climatic Zone Map of Kenya 1980 (KSS 1982, also Van Haastrecht & Schomaker, 1985). A combination of the Possible Cultivated Area (PCA) and the fallow requirements give a 'PAUPA' proportion, indicating Possible Arable Use Per Annum:  $PAUPA = PCA \times (1-F)$ . We have classified the various soils in SAWP in five soil suitability classes for small scale (traditional) rainfed arable farming, as given in table 3.7. The classification is based on ratings for the soil (land) qualities: chemical soil fertility,

present/hazard of salinity and sodicity, resistance to erosion and workability (see Schomaker 1983, pp.17-20). Unfortunately this analysis could not be done for Upe, because of lack of data.

Table 3.7 Soil Suitability Classes and PAUPA proportion

Classification	PAUPA-proportion	Soil Groups KSS, existing in SAWP (PAUPA proportion in brackets)
Very Good	>49	A8 (0.64)
Good	0.30 - 0.49	-
Moderately Good	0.10 - 0.29	Um24 (0.21), U114 (0.12), F13 (0.12 - 0.15)
Poor	0.01 - 0.09	U119 (0.08), FY1 (0.06), M11 (0.06), M12 (0.05), H13 (0.03), Y10 (0.04)
Very Poor	<0.01	Ux10

For farmers, the specific soil type characteristics are not only important because of the natural fertility and erosion hazards, but also because of their available water capacity for plants. 'PAUPA' does not say anything about the effective water availability for plants in the soil and hence about the ability of plants to survive a period of low or absent rainfall during the growing season. In the 'short description of the relevant soil types' which is added as an appendix (3B), the information about sand/loam/clay, about soil structure and about soil depth gives a clue to the effective water availability. Two maps are presented about the soils of semi-arid West Pokot; the first one with the KSS codes (Figure 3.5); the second one with the differences in suitability for arable farming according to our PAUPA-estimates (Figure 3.6).

The very good soils can be found along the Suam River and its tributaries. 'Good soils' do not occur in West Pokot. The moderately good soils can be found in the Northwest, and in the South of West Pokot. The poor soils cover most of the area of semi-arid West Pokot. The very poor soils can be found in the eastern fringes.

The very good A8 soil also has a good water availability capacity for plants except where there are more chayey parts. Surface sealing and water logging may be a problem during the rainy season. Soils at the foot of the escarpment or hilly areas (F13) generally experience additional moisture because of runoff. Here dense bush growth may be a result. The hilly areas (like H13), experience water loss due to runoff. but this can result in a good grass cover (instead of bush) after the start of the rains; an attribute which for instance makes the Masol Hills in eastern West Pokot a good area for (seasonal) grazing.

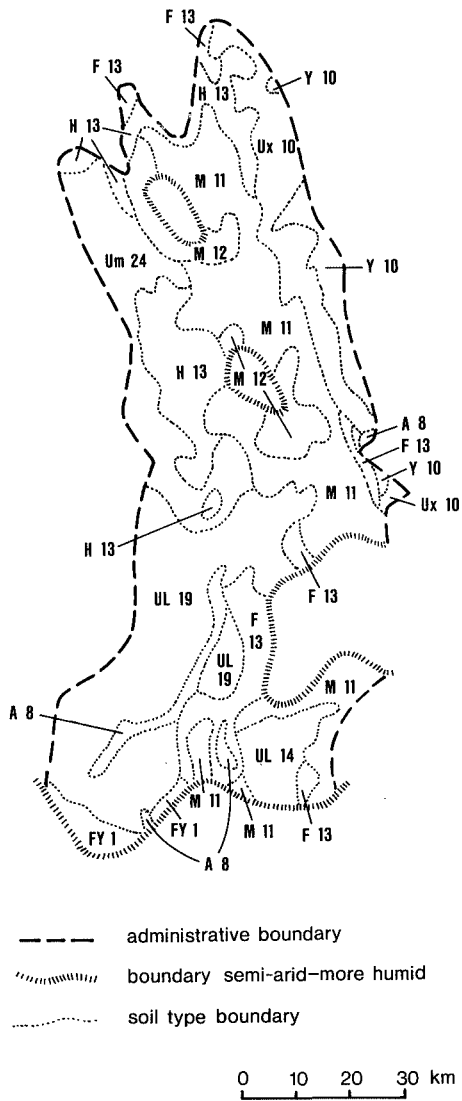


Figure 3.5 Soil Types in Western West Pokot District (According to KSS 1982) See Text and Appendix 3B. Excluding the Humid Areas.



Figure 3.6 Semi-Arid Western West Pokot: Suitability of the Soils for Arable Use

What does the variety in soil and relief conditions mean for the total arable land per annum, which is available for a rainfed, no manure farming system in a year with adequate rainfall in Zone IV and V? We will give an example of an analysis of food crop potential based on the PAUPA method and on current yield estimates for the 'good farmers' in

the area. This will be done for Kacheliba Division. Yield estimates are based on our own surveys, done for the ASAL Programme, on other ASAL surveys and on discussions with officers in the Ministry of Agriculture. The concept of 'good farmers' is a very relative one; in western Pokot cultivators generally use very simple husbandry techniques; especially weeding is normally poor. Seeds however, are of good quality: maize seeds are mostly hybrid varieties, nowadays. 'Good farmers' are farmers who, because of a bit better care or simply because of good luck, obtained relatively high yields for that particular type of land. All yield estimates are for a year with adequate rainfall, e.g. 1983. In statistical terms 'good farmers' can best be defined as farmers with 'first quartile' yields, if all yields have been arranged on an ordinal scale. Yield/ha estimates, based on interviews with cultivators are tricky, however. Acreages are never known exactly and fields may have an odd shape. Some measurements were done, however, and proved that research assistants had a relatively good eye for acreages (all acreages are given in acres by respondents and research assistants). Yields are problematic too. Cultivators in this area give yields in bags of 90 kg (in case of maize) and 80 kg (in case of sorghum and millet). These bags are sometimes used to carry harvests from the field stores to the home stores, which may be a few km away. In that case donkeys are used for transport. Harvests are normally carried by people. Smaller, locally made bags are used, which are used then ('mlot', equivalent to 16-20 kg), which are 'translated' to the big bags. Bags are emptied in local granaries ('topoton'). Storage is not in bags but in local stores. It is important to realise that for instance maize on the cob gives only half of the weight in grains. Asked immediately after harvest, people will most probably think in terms of 'maize on the cob'. When the maize has been brought to the home store they will think in terms of maize grains, because that is what they have transported after drying the maize cobs in the field stores. Another measurement problem is that nobody will include the harvest which is 'eaten from the field' (e.g. green maize). Without irrigation and manure/fertilizer, 32,000 ha are available for arable cultivation in Kacheliba Division in a year. See table 3.8. That is only 8 % of the total land area. 95 % of it is the semi-arid agro-climatic zones IV and V.

If the 'good farmer' yield is 1,000 kg/ha of maize in (average) Zone IV and 700 kg/ha of finger millet in Zone V, we can calculate a total potential production (in this year with adequate rainfall) of 15 m.kg. With an estimated useful caloric value of 3,100 Kcal/kg for maize and 2,800 Kcal/kg for millet, the total possible food crop value of the semi-arid zone can be 74,000,000,000 Kcal, with current food production agro-technology.

The more humid areas in the South of Kacheliba Division have poor soils (FY1). In the North the humid areas are mountainous, mostly with steep gradients (giving a low PAUPA-proportion, mostly for soil conservation reasons). Recent experiences show high yields here and a much better reliability. Yields in Kalapata (Alale) are around 2,000 kg/ha of maize grains and here even in 1984 there was a harvest. One can understand that farmers, who have a choice, cultivate in the humid area first. With the required fallow periods and avoiding steep slopes, the tiny humid part of the Division could add another 3 m. kg. of grains or an extra

Table 3.8 Available Arable Land per Agro-Climatic Zone and Soil Unit in Kacheliba Division

Zone	Soil-Type	km2	PAUPA	km2 available
VI	all	699	0	0
V	A8	4	0.64	3
	H13	333	0.03	10
	M11	516	0.06	31
	M12	7	0.05	0
	U119	396	0.08	32
	Um24	361	0.21	76
	Ux10	36	0	0
	total	1653		152
IV	A8	30	0.64	19
	FY1	5	0.06	0
	H13	100	0.03	3
	M11	280	0.06	17
	M12	244	0.05	12
	U119	493	0.08	39
	Um24	251	0.21	53
	total	1403		143
IV + V total		3056		295
more humid FY1 & M12		258	0.06	15
Total		4013		320

9,000,000,000 Kcal.

A second type of area that is regarded as very valuable, with good and relatively reliable yields, is the riverine A8 soil type, especially along the Suam River. Recently, cultivation is expanding here; fallow periods are virtually neglected, and harvest levels are considered as good, locally (for the time being). In years with adequate rainfall this means 'good farmers' harvests of 1100 kg/ha of (hybrid)maize or 800 kg/ha of sorghum/finger millet.

For Kongelai and Kodich we do have some interesting illustrations of the yield variety: in 1985 a detailed survey was done, covering 114 cultivators along the Suam River and asking their acreages and yields from 1982 until 1984. The results are presented in table 3.9. It will be clear that, for maize, 'median farmers' have yield levels, which are only half as high as our 'good farmers'. 'Poor farmers' have yield levels between 12 and 24 % of the 'good farmers'. The table also shows that in 1984 the large majority of the farmers faced a crop failure. In 1982, 32 % of all maize farmers reported a (virtual) crop failure; in 1983, 24 %.

In 1977, which was a very good year, Jaetzold & Schmidt interviewed 30 farmers at Kongelai. They found a median maize yield of 1735 kg/ha



Table 3.9 Yield/ha, Kongelai and Kodich, 1982-84, Riverine A8 Soil-Type

Year	Yield kg/ha sorghum			n	Yield kg/ha maize			n	crop failure maize	
	poor	med.	good		poor	med.	good		total	<250 kg/ha
1982	120	220	700	11	135	610	1125	75	17%	32%
1983	400	400	800	20	270	585	1125	87	7%	24%
1984	0	0	0	58	0	0	0	94	88%	96%

poor = 3d quartile  
 good = 1st quartile

Source: interviews for ASAL/Suam River Agricultural Development Project, 1985

(Q.1: 2250 kg/ha; Q.3: 940 kg/ha), which is far above our findings. For sorghum they give a median yield of 900 kg/ha (Q.1: 1000 kg/ha; Q.3: 500 kg/ha) and for finger millet 1005 kg/ha (Q.1: 1250 kg/ha; Q.3: 500 kg/ha) (Jaetzold & Schmidt 1983, p.218). If they have not made the mistake to interpret 'maize on the cob' as 'maize grains' (and the same for sorghum and millet), it shows the extraordinary yield levels under good conditions, in this area.

### 3.2.4 Irrigation Possibilities

Inadequate rainfall can be corrected by irrigation. In the semi-arid areas of eastern West Pokot 'traditional' forms of gravity fed furrow irrigation existed long before colonial times, albeit on a very small scale. They were already reported by Austin in 1903, and they were gradually expanded during this century (Van Klinken 1986). During the 1970s and 1980s a few 'modern' irrigation projects were added. The possibilities for successful gravity irrigation depend on the availability of perennial rivers with sufficient discharge levels (or rainfall storage tanks) and on adequate non-saline soils. They also depend on the possibility to construct and maintain irrigation structures (labour, materials for intakes and furrows). Non-gravity irrigation systems depend on perennial river discharge or on groundwater level and the capacity to get the water up in case of put or borehole irrigation and on pumping or siphoning capacity in case of irrigation systems which get their water from a river flowing at a lower level. Soils should be non-saline.

In western West Pokot or Upe no irrigation is practised yet. Only one small irrigation scheme (Cherangan, Kodich sublocation, Kapchok Location) is under construction. Major quantities of capital or labour are needed to realize the irrigation capacity of the Suam River, which was roughly estimated at 1,000 ha by a Dutch firm (HVA 1982, p.1). The Suam River is the only perennial river in the research area.

### 3.2.5 The Possible Livestock Use of Semi-Arid Areas, in Western Pokot

The western Pokot grazing lands cover 6,570 sq.km in the semi-arid zones, 11 % with Zone VI characteristics, 40 % with Zone V characteristics and 49% with Zone IV characteristics. Parts of the more humid zones nearby (in western Pokot an additional 900 sq.km) are used too. For a summary see table 3.10.

Table 3.10 The Western Pokot Grazing Lands: a Summary (estimates in sq.km)

Zone	Upe	Karapokot	East of Suam	Total
VI	-	700	40	740
V	770	1,650	180	2,600
IV	750	1,400	1,080	3,230
more humid	180	260	460	900
Total	1,700	4,010	1,760	7,470

Source: KSS 1982; DAWP 1985 (boundaries 1983); LWS 1985 and Cisternino 1979 for Upe.

Using Braun's minimum estimates, the total number of stock units that can graze or browse in semi-arid western Pokot is close to 400,000. The humid areas within western Pokot would add a minimum of 180,000 stock units (KSS 1982, p.47: 2-4 SU/ha for Zone III). Braun's estimates are very rough. Within the same zone primary food variations in time and space can be considerable, as well as water availability, disease risks and ecological risks. We will try to be a bit more precise, with Karapokot as an example. Using the KSS-model, the semi-arid parts of Karapokot could carry a minimum of 184,800 stock units and a maximum of 462,500 stock units (compare table 3.1). In an attempt to be more precise, we will use the following principles:

- Mountainous units (M11, M12) should not be used; they are far too steep; livestock use results in severe erosion.
- The riverine soils A8 have a high carrying capacity (although this can only be used in the dry season, because of tsetse infestation during the rainy periods). In Zone IV we estimate 2 SU/ha here; in Zone V, 1.5 SU/ha; in Zone VI, 1 SU/ha.
- All other Zone IV soil units have a carrying capacity of 1 SU/ha.
- In Zone V the Ux10 soils have a low capacity (0.25); the other units (F13, H13, Um24, U119) have a capacity of 0.5 SU/ha; in Zone VI the H13 unit has a capacity of 0.2 SU/ha; the other units 0.1 SU/ha.
- One Stock Unit is an undifferentiated model animal of 300 kg liveweight.
- All areas are regarded as accessible, at least during part of the year.

What does this mean? Table 3.11 provides the estimates. Again we will give the example of Kacheliba Division.

Table 3.11 Possible Livestock Use of Semi-Arid Areas in Kacheliba Division

Zone	Soil-type	SU/ha	km <sup>2</sup>	SU
VI	A8	1	4	400
	H13	0.2	122	2400
	other	0.1	573	5700
V	A8	1.5	4	600
	Ux10	0.25	36	900
	other	0.5	1613	80700
IV	A8	2	30	6000
	other	1	1373	137300
IV-VI total			3755	234000
av. SU/ha				0.6
av. SU/km <sup>2</sup>				60

One 'Stock Unit' as an animal with a standard weight of 300 kg and a consumption of 3000 kg dry matter per year, is the equivalent of a Zebu cow and her calf. An average Zebu cow of the 'Maasai-type under better management' weighs 202 - 225 kg (Dahl & Hjort 1976, p.164) and is hence 0.7 SU. It depends on the herd composition how many Stock Units one 'average head of cattle' is. Jaetzold & Schmidt (1983, p.215) studied the herd composition around Kongelai in 1977. They found 35 % cows, 14 % adult males, 38 % young females and 13 % young males. However, 1977 was a year of rebuilding the herd. Yadeta (1985, p.233) studied two herd-groups in 1979, one in Kongelai and one in Chepareria. He found an average of 51 % cows, 17% male adults, 12 % heifers and 20 % calves. His percentage of cows does not divert far from Widstrand's estimate for the early 1970s in West Pokot (50 %) and is also well in line with the examples given by Dahl & Hjort for all types of pastoral areas (1976, p.28-33). If we regard steers and bulls to be 1 SU, heifers as well as cows as 0.7 SU and calves as 0.5 SU (Raikes 1981, p.14), then an average head of cattle is - given Yadeta's herd composition - 0.7 SU. Sheep and goats are mostly regarded as 0.2 SU (Raikes 1981, p.14), although in the literature estimates from 0.1 to 0.5 can be found (Dahl & Hjort 1976, p.228). Sheep and goats are mostly herded together and use different parts of the vegetation. The total of 234,000 possible stock units in semi-arid Kacheliba Division are the equivalent of at least 330,000 average head of cattle or at least 1,170,000 'shoats'. If 'grazers' and 'browsers' are combined the range can feed more stock units. If the purpose is only keeping animals alive (not the production of an acceptable milk yield) more stock units can be accommodated too (see Hjort 1982, p.14).

Immediately we must start to undermine this conclusion.

a. Not all the areas may be accessible: either because of water or disease constraints or because of security problems.

#### a.1 Water:

Cattle need to be watered once every two days in the dry season. This restricts the possible grazing range of cattle which are tied to a sedentary camp. The Pokot prefer these camps to be within 5 km of watering sources (Hartley 1985, p.2, p.6). For the dry herd it means that grazing areas too far from watering points cannot be used. Camels have a much larger range. They can cover distances up to 120 km between watering points, and they can go without watering for 10-14 days. Goats and sheep need water every fourth day at least, in the dry season. For all animals it is important to note that too much water during a drought (with lack of feed) is very dangerous (see Dyson-Hudson & McCabe 1983, p.42).

Before 1945 there were only natural dry season watering points. These were the perennial rivers (although dangerous because of tsetse fly), water holes in some dry rivers and natural springs or subsurface aquifers. After 1945 boreholes were drilled in Karapokot which were rehabilitated and extended in the 1980s. After 1972 also various gravity fed water supplies were constructed by the government and by missions. In the beginning of the 1980s the number of watering sources was further increased by digging artificial wells. Most of these water supplies are both used by people and by livestock. Especially for livestock use, various water dams were constructed in the 1950s and again in the 1980s. During a 1983-84 Water Survey in West Pokot District (Hendrix 1983) livestock use of some areas was reported to be impossible because of lack of water sources, especially in the Northeast. In other areas a lot of labour is necessary to get water.

#### a.2 Livestock Disease:

Disease risks are considerable in West Pokot. Along the rivers the tsetse fly is active, especially during the rainy season. It results in trypanosomiasis, a major killer of cattle and small stock. Herders try to avoid tsetse areas as much as possible in the rainy season and only come to graze their animals along the rivers during the dry season. Higher areas (above 1400m) are also avoided because of endemic (and in Upe imported) East Coast Fever, a tickborne disease (Dyson-Hudson 1960, p.253). Non-location bound diseases are other tickborne diseases, rinderpest and contagious pleuropneumonia epidemics and foot and mouth disease. Areas with outbreaks of epidemics are avoided. In general, however, diseases do not restrict the access to particular areas completely; during some months in the year the risks are regarded as low enough to go to risk-prone diseased areas. During this century disease risks were lowered by veterinary measures (see 5.4.5).

#### a.3 Security:

Before 1925 and after 1967 large parts of the Zones V and VI areas in the east of Kacheliba Division were regarded as dangerous because of cattle raids. After 1973 this was also true for Zone IV areas in the Southwest. Between 1979 and 1982 security problems were very serious in almost the whole of Karapokot, with the exception of the highest areas and of the immediate surroundings of Kacheliba Town (see 4.2 for more details). As a result of the security problems the access to major areas was actually restricted in those problematic periods. Some areas have been no-man's (and no-animals) land for more than a decade now. Security

problems also have another effect: they require a large labour input, which cannot be devoted to animal husbandry as such.

b. All the estimates were based on an 'average year': in Zone VI, 500 - 700 mm, in Zone V, 700 - 900 mm and in Zone IV, 900 - 1100 mm, all without severe dry spells within the rainy season. But what happens in a dry year and especially in a second consecutive dry year? Zone VI can then be regarded as having Zone VII characteristics in terms of primary food production; Zone V can temporarily change to Zone VI conditions and Zone IV may resemble Zone V, even close to VI. The Kongelai-example given in 3.2.3 shows that this situation is far from exceptional. The rainfall can be much more scattered, both in space and in time. We will adjust our model to these dry conditions, although we admit that in practice a loss of 'carrying capacity' will be less extreme than we would expect on the basis of rainfall figures alone. According to Penning de Vries (1983, p.25) during relatively dry years the fraction of good quality forage is larger. Drought also means that animals become less selective (in a Baringo case study Homewood & Hurst - 1986 - show that 'grazers' become 'browsers' to a large extent).

Table 3.12 Possible Livestock Use of Semi-Arid Areas in Kacheliba Division during a Drought

Zone	Soil-type	SU/ha	km <sup>2</sup>	SU
VI	A8	0.5	4	200
	other	0.05	695	3500
V	A8	1.0	4	400
	other	0.1	1649	16500
IV	A8	1.5	30	4500
	other	0.25	1373	34300
Total			3755	59400
Av. SU/ha				0.16
Av. SU/km <sup>2</sup>				16

Instead of 60 SU/km<sup>2</sup> we arrive at 16 SU/km<sup>2</sup> or only a quarter of the carrying capacity during an average year. See table 3.12. As droughts are normally accompanied by severe water problems, increased disease risks and threatening insecurity, the access of large areas may be blocked. This further reduces the possible number of stock units. On top of that, during a drought or threatening raids, Pokot cattle from the areas more west (Upe in Uganda) and more east (Kipkomo, Sook, Riwa) may be driven to or through Kacheliba Division, in an attempt to rescue as much as possible. The relative competition from game also increases.

c. Natural processes of erosion may be speeded up because of 'overgrazing': a few years of systematic excessive use of an area -near water points, or in refuge areas because of insecurity- can increase

erosion and denudation, which may eventually result in range degradation. About the (ir-)reversibility of overgrazing - related to processes of range degradation- there is a large controversy in the ecological sciences (see Hjort 1982, pp.13ff). The District Atlas West Pokot (1985, p.29) shows large areas in the southwestern part of Kacheliba Division - mainly the U119 soil type - to be severely eroded nowadays. Potential livestock use there may decrease to less than half of the standard carrying capacity. If we confine ourselves to the U119 area in Kacheliba, severe erosion decreases the standard carrying capacity there with 45,000 stock units or more.

d. On the other hand the livestock is not necessarily confined to Zones IV-VI. Although 'plain's livestock' is very susceptible to disease risks (e.g. pleuropneumonia, East Coast Fever) when it is herded in upland areas, herders prefer the partial loss of a herd to total disaster in dry years. In Kacheliba Division itself the more humid areas cover 258 km<sup>2</sup> (Zone III with, according to KSS 1982, p.47, a minimum carrying capacity of 2 SU/ha). Theoretically more than 50,000 SU could use these higher areas in Kacheliba in average years; 25,000 SU in dry years. Extra grazing and watering areas can be found to the northwest (along the Kanyangareng River and Mount Moroto), to the southwest (the slopes of Mount Kadam)(all in Uganda) and towards the south: Mnagei or even the Cheranganis or Trans Nzoia. The use of these fall back areas means long migration routes, which is very labour intensive. However, these rescue areas are also used by others: in Uganda by Upe Pokot and by Karimojong herders; in Kenya (southern Pokot) by mixed farmers, nowadays mostly on enclosed holdings: in 1955 less than 20 km<sup>2</sup> was enclosed for arable use; in 1982, more than 200 km<sup>2</sup>. In 1985 there were also more than 40,000 woolsheep in southern West Pokot and more than 3,000 'grade cattle' as well as many (adapted) Zebu cattle and goats. Also, part of the upland areas is inaccessible (too steep; bamboo forest) or forbidden ('forest reserves', 'soil conservation rules' - which may not mean much in practice, especially not during a period of drought).

Finally it is relevant to stress one very important point. We have adopted Braun's carrying capacity estimates, as given in KSS (1982). These estimates allow a considerably higher number of livestock, compared to former estimates. During the 1960s and 1970s the carrying capacity models used were much influenced by the estimates made by range ecologists like Pratt and Gwynne. They worked with an ecology model based on vegetation characteristics and they used six 'Eco-Climatic Zones' (instead of seven, as in KSS' work). Also the carrying capacity estimates per zone are on the low side. For Kacheliba we have calculated the livestock carrying capacity, using their models (Pratt & Gwynne 1977, pp.6-7, p.43, assuming that a livestock unit used is 300 kg liveweight).

The KSS Zones IV-VI cover Zones IV and V and part of III of Pratt & Gwynne, which means an estimated carrying capacity of between 75,000 and 80,000 Stock Units in Kacheliba Division. This is very much below our estimate based on KSS for the semi-arid zone: 234,000 SU during average years. It is close to our estimates for dry years. If Pratt & Gwynne get their models from sedentary ranches it is understandable that they use

Table 3.13 Carrying Capacity Kacheliba, according to Models Presented in Pratt & Gwynne

Zone	km <sup>2</sup>	SU/km <sup>2</sup>	Total SU
II	305	125	38,125
III	102	63	6,426
IV	2,718	25	67,950
V	887	8	7,096
Total	4,013	30	119,597

'dry years' as the limits to carrying capacity; but in West Pokot livestock herding is a very mobile activity, using large areas of different ecological zones. This is enough reason to use the KSS estimates instead. In former times though, the much lower estimates were used, both for planning (Grazing Schemes and Group Ranches) and in analyses (Widstrand 1972, Livingstone 1975), with the result that 'critical livestock densities' were thought to be reached at much lower livestock numbers and with a lot of discussion about 'overstocking' as a consequence. For instance, Dyson-Hudson described the Karapokot area as "a territory largely overgrazed and in places virtually denuded" (Dyson-Hudson 1966, p.246). Also Cox was of the opinion that "much of the area is in fact undergoing a process of degradation to a steppe, and finally an area populated by a few scattered thorn bushes, with areas of bare soil and rocks in between". To support his pessimistic view he adds that in former times "the area used to be covered by tall grass" (Cox 1973, p.34; also see Wilson 1960, p.29). The archival material which indeed speaks about an area with a lot of grass (Kacheliba AR 1916-17) does probably not refer to the more dry areas of Kacheliba Division but to the Zone III areas in the southwest, after many years of very low numbers of animals. It seems that many writers in the 1950s and 1960s were influenced by soil conservation concern or even mania, in which pastoralists were easily blamed for mismanagement. It is surprising that thorough empirical studies in the field of carrying capacity under conditions of mobile (semi-)pastoralism are so scarce.

#### Notes

(1)  
Pratt & Gwynne (1977, pp.46-47) define 'bushland' as "land supporting an assemblage of trees and shrubs, often dominated by plants of shrubby habit but with trees always conspicuous, with a single or layered canopy, usually not exceeding 10 m in height except for occasional emergents, and a total canopy cover of more than 20 per cent. The ground cover is poor and fires infrequent". 'Scrubland' is "land supporting a stand of shrubs, usually not exceeding 6 m in height, with a canopy cover of more than 20 per cent. Trees, if present, contribute less than one-tenth of the canopy cover. The ground cover is often poor; fires are usually infrequent". 'Woodland' is "land supporting a stand of trees, up to 20 m in height, with an open or continuous but not thickly interlaced canopy, and a canopy cover of more than 20 per cent. Shrubs, if present, contribute less than one-tenth of the canopy cover. Grasses and other herbs dominate the ground cover; epiphytic ferns are rare. Often subject to periodic burning".

(2)

The actual evapotranspiration depends on the type of vegetation and on the ground cover, among other things. Et measures are generally based upon a continuous, shortcut grass cover. In practice Et for grains is different from Et for grass and also the vegetation cover is not continuous. Especially in the beginning of the crop season, ploughing (or 'scratching') gives bare soil, which means that the actual evaporation is lower than in the Et (grass) model (see Lauer & Frankenberg 1981, p.39). The same can be said for the effects of bush fires just before the start of the rainy season.

(3)

The storage capacity of the area depends very much on the soil characteristics. Coarser textured soils allow a fast infiltration of rain water causing low runoff but a quick loss of soil moisture. Finer textured soils have a slower infiltration of rain water causing higher runoff, especially during heavy downpours but a long storage period. Very clayey soils, however, hold the water so strongly, that it is hardly available for plants. Other factors are important too: soil structure, surface sealing, stoniness and steepness. The one month storage must be seen as a rough rule of thumb (see Vink 1983). Locally there can be considerable differences. Vink gives 50 - 200 mm for different types of soils.

(4)

In WRAP 1984, Annex 4.1 Meteorological Station 026, Kongelai. The Water Resources Assessment Project presents figures for April 1982 to October 1983. We have taken the April - March period as one year.

(5)

WRAP 1984; however, for August - October there are no data; we used the rainfall figures of Kacheliba, on the other side of the river, for those months.

(6)

Excess rainfall defined as all rainfall above the level where P gives  $S_i=0.81$ .

(7)

For 1983-84 some monthly figures are lacking; we substitute the WRAP-Kongelai figures for them.

(8)

$E_o = 2422 - 0.358.h$  (in metres); KSS 1982, p.44.

Note that the theoretical value is considerably below the level measured in 1982-83 (2087 mm).

(9)

Cultivators in SAWP permit post harvest use of crop residues without constraint. If we follow Ruthenberg's classification (1971) 'fallow' is in fact unregulated ley. On the one hand part of the plant nutrients are eaten by the livestock; on the other hand there is some natural fertilizing of the soil.

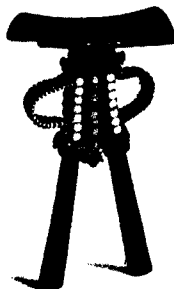
(10)

F = fallow proportion in a particular year;

C = proportion of cultivated land in a particular year;

$F + C = 1$ .

In our model F and C are theoretical, ideal values. In practice the actual C and F can be lower or higher.





Appendix 3.1 Rainfall Figures Kongelai/Kacheliba 1953-1986 (in mm)

Year	J	F	M	A	M	J	J	A	S	O	N	D	Total
1953	0	13	19	185	63	112	110	175	29	60	8	16	789
1954	0	0	0	110	174	136	143	202	76	40	0	28	909
1955	20	22	12	77	58	31	119	153	107	102	20	55	776
1956	66	49	0	110	189	172	174	207	136	0	0	0	1102
1957	79	0	46	0	205	105	0	52	12	11	15	8	532
1958	14	52	38	35	159	62	111	101	105	94	0	60	831
1959	7	49	56	58	211	101	108	105	96	77	71	3	941
1960	24	71	86	112	124	17	188	151	81	47	92	43	1035
1961	0	10	52	98	126	165	281	199	111	137	341	137	1657
1962	28	0	64	33	93	127	190	102	137	56	68	11	909
1963	75	39	104	330	233	31	79	151	0	31	68	130	1290
1964	20	54	43	42	59	87	123	138	116	36	8	72	796
1965	19	0	75	54	62	0	48	79	23	84	42	51	538
1966	3	133	58	130	77	29	261	130	129	52	14	8	1023
1967	0	0	0	120	126	129	365	74	57	88	131	9	1039
1968	0	100	72	122	77	50	110	79	8	38	19	11	685
1969	50	50	75	5	144	21	100	94	145	66	35	0	784
1970	108	40	164	117	342	51	142	228	184	41	10	0?	1385
1971	37	0	19	47	194	122	116	189	73	76	18	1	891
1972	1	35	6	103	47	86	43	84	103	68	42	0	619
1973	19	12	0	42	144	37	73	156	116	35	59	0	693
1974	0	0	193	18	126	91	192	141	34	47	0	0	845
1975	0	91	24	62	147	112	153	413	258	49	0	6	1225
1976	7	13	0	82	208	115	229	230	21	31	69	0	1004
1977	34	7	34	275	177	112	266	120	41	166	163	0	1395
1978	61	70	101	127	89	103	198	170	64	92	27	61	1163
1979	39	55	66	65	44	101	123	87	73	16	40	11	720
1980	0	0	19	125	212	73	40	115	12	10	155	0	761
1981	0	10	325	277	27?	40?	303	185	142	39	1	8	1357
1982	0	0	90	128	175	37	112	76	68	0?	210	4	900
1983	9	0	3*	138	126*	115*	61	171	58	104	61	11	874
1984	0	0	30	78	90	109	66	35	95	40	92	15	650
1985	0	14	51	117	161	106	148	66	39	8	114	1	825
1986	0	16	71	185	34	222	99	77	70	9	6	10	799

\* = WRAP 1985

Source: Meteorological Archives Nairobi; District Annual Reports West Pokot; correspondence.

## Appendix 3.2 Short Description of the Relevant Soil Types in Western West Pokot

### Very good soils:

A8 (AAjc according to the KSS classification): recent floodplains with sediments from various sources; well to imperfectly drained very deep soils, dark brown to yellow brown, predominantly loamy, stratified, micaceous and strongly calcareous. KSS: Calcaric Fluvisols. With the exception of some drainage and human use all of it can be used (80 %) and the C factor is very high, 0.8, which means that the fallow requirements are only 20%. The PAUPA proportion is 0.64. The available water capacity for plants (AWCP) is good except in parts which are very clayey. Occasional flooding during growing seasons may damage plants. Under real arid conditions these soils can have saline properties. When the drainage is imperfect, shortage of oxygen can harm plant growth. In western Pokot we find these soils along part of the Suam River and some tributaries.

### Good soils:

Do not exist in SAWP.

### Moderately good soils:

Um24 (UmUlc+li): a complex of soils on gently sloping lower middle level uplands on undifferentiated basement system rocks which are predominantly gneisses. The soils are well drained, shallow to deep, red to dark red, friable to firm, in places rocky, sandy clay loam to sandy clay. KSS: Chromic Ferrallo-Chromic Luvisols & Chromic Cambisols, lithic phase + rock outcrops. The possible arable use is high (70 %), the only restrictions are drainage and human use and rock outcrops. Fallow requirements are 70 % (C = 0.3); PAUPA: 0.21. These soils are very heterogeneous in AWCP. We find these soils in the northwestern part of West Pokot.

F13 (FUlc), soils on footslopes (slope angle 5-8%), colluvium from undifferentiated basement system rocks, predominantly gneisses. The soils are well drained, very deep, yellowish red to dark reddish brown, loose to friable, coarse sand to sandy clay loam. The topsoil is commonly acid (Siderius 1978, p.16); nitrogen is a problem. KSS: Chromic Luvisols with Rhodic Ferralsols and Luvic/Ferralic Arenosols. The possible arable use is generally high (75 %) but where the vegetation cover is meagre (Zones V and VI) and the material is loose the erosion hazard is high and gullies may develop; there we better use an average possible arable use of 60 %. Also the AWCP is poor in these cases. The fallow requirements are high (80 %). PAUPA proportion: 0.12 - 0.15. These soils are located in central West Pokot. Where the footslopes are near mountainous areas with a lot of erosion and continuous transport of fertile soil material to the footslopes, the natural fertility will be restored much more quickly and the C-factor may jump from 0.2 to 0.5. In that case the PAUPA proportion rises to 0.30 - 0.35.

U114 (U1Flc). Gently undulating lower level uplands with soils developed on basement system rocks rich in ferromagnesian minerals. These soils are well drained, moderately deep to deep, dark reddish brown to dark red, friable to firm, sandy clay to clay and in many places with stonelines. KSS: Chromic Luvisols. This soil type can be found in central West Pokot and that area has many gullies and a high erosion rate. Together with the stonelines it restricts the possible arable use to 40 %. Fallow requirements are 70 % (c = 0.3). PAUPA proportion: 0.12. AWCP is heterogeneous.

### Poor soils:

U119 (U1Uao). Lower level uplands: undifferentiated basement system rocks, predominantly gneisses. A complex of soils which are imperfectly drained, shallow to moderately deep, dark red to dark yellowish brown, firm, non-stony to stony and non-rocky to rocky, sandy loam to clay partly over pisolitic material. KSS: Orthic Acrisols, pisolitic phase, Chromic Luvisols and Eutric Cambisols, lithic phase. In the western part of West Pokot most of these soils are very degraded with many gullies, partly very extreme on the flat and convex parts. Because of this only 25 % can be used for arable farming with 75 % fallow requirements. PAUPA proportion: 0.06. Where erosion is not (yet) so heavy 35 % arable use is possible. PAUPA proportion: 0.09. Most of these soils have a poor AWCP.

FY1 (FYU1c+li). Undifferentiated footslopes and piedmont plains, with slopes up to 8%, on colluvium and alluvium from undifferentiated basement system rocks, predominantly gneisses. These soils are well drained, moderately deep to deep, red to dark reddish brown, firm, sandy loam to clay. KSS: Chromic and Vertic Luvisols. In southwestern West Pokot these soils are extremely degraded with many gullies. Only 20 % can be used with 70 % fallow requirements. PAUPA proportion: 0.06. The AWCP is moderate.

M11 (MUbe). Soils developed on undifferentiated basement system rocks, which are predominantly gneisses. They are somewhat excessively drained, shallow to moderately deep, reddish brown, friable, rocky and stony, sandy clay loam. KSS: eutric Cambisols, partly lithic phase, with Lithosols, eutric Regosols and Rock Outcrops. Possible arable use should be low. Fallow requirements are 60 %, PAUPA proportion: 0.06. AWCP is poor in most places. Very frequent in northwestern West Pokot.

M12 (MUbh). Mountain/Scarp soils developed on undifferentiated basement system rocks, predominantly gneisses. They are well drained, moderately deep, reddish brown to brown, friable, stony sandy clay loam, with an acid humic topsoil. KSS: humic Cambisols with dystric Regosols and Rock Outcrops. The possible arable use should be low: 15 % . Fallow requirements are 65 % . Acidity may harm plant growth. PAUPA proportion: 0.05. AWCP: not as poor as M11. In northwestern West Pokot this soil type can be found in the highest parts.

Y10 (YUxh). These soils developed on alluvium from undifferentiated basement system rocks, predominantly gneisses. They are moderately well drained, very deep, dark yellowish brown to strong brown, slightly to moderately calcareous, slightly sodic, loose loamy sand to friable sandy clay loam. KSS: haptic Xerosols, sodic phase with calcaro-cambic Arenosols. Its possible use is difficult to assess. It depends on how sodic the soils are. We use a conservative possible arable use of 20 % . Fallow requirements are high (80 %). PAUPA proportion: 0.04.

Very poor soils:

Ux10 (UxUrc). Uplands with soils on undifferentiated basement system rocks; the soils are moderately to strongly sodic and saline and have a gravel surface.

Sources:

KSS 1982, pp.17-38; Van Haastrecht and Schomaker 1985, pp. 6-11; the fallow requirements were derived from FAO 1980, C-factor values for Africa. Possible arable use was also based on observations and discussions with MoA staff in West Pokot. For some soil types the PAUPA proportions give a maximum use; for other soil types (especially the H and M types) an ecologically sound maximum with the prevailing land management techniques. In these areas actual use might be (much) higher either because soil conservation techniques are already better or because the cultivators neglect the ecological requirements. Until now almost nowhere fertilizers are used. In some places (especially in A8 and F13 areas) irrigation could be developed, as in eastern West Pokot. On the one hand this increases the productive potential of the land, but on the other hand the soil fertility might not get a chance to recover and - especially in Zones V and VI - salinity hazards are large.

In this Chapter we will examine how the inhabitants of western Pokot used their land during this century and how they coped with the risks involved in semi-arid agriculture. First we will estimate the population supporting capacity of the land if it is used for animal husbandry (4.1). We will discover that the capacity very much fluctuates, which has forced the Pokot to develop a range of livestock-related survival strategies (4.2), including the exchange of livestock products for grains (4.3). After this study of potentials and strategies we will look at the actual human and animal population (4.4). In 4.5 we will see if, when and where the people had to apply intensification measures. Arable farming is one possibility here (4.6), although a risky venture which compels the cultivators to apply arable survival strategies (4.7). Non-agricultural solutions are utilized too (4.8) as well as migration to the humid highlands (4.9). For most households, living in a semi-arid environment means a flexible combination of various opportunities, as is exemplified by one family (4.10). At the end of the chapter the survival strategies will be rearranged according to the classification introduced in Chapter 1.1.

#### 4.1 Population Supporting Capacity on the Basis of Livestock

In Chapter 3 we have dealt with the 'carrying capacity' in terms of stock units. Our analysis shows a wide diversity of estimates and a large variability in space and time. In this section we will add further complications. Here we deal with the population supporting capacity on the basis of livestock. How much food can be produced for human consumption and how many people can be supported? By way of example, we will first limit our approach to a 'model area' of one square kilometre in Zone IV, in a 'standard year' when this area can support 100 stock units, or 140 head of cattle of 215 kg liveweight. We define a 'standard year' as a year with median rainfall total and median rainfall distribution, not following a drought.

How much food can be expected? If we use Dahl & Hjort's 'normal model herd' (1976, pp.27-76 and 139-182), 21 % of all herd-animals lactates, with an estimated lactation of 315 l. Unlike Dahl & Hjort, we prefer to use a conservative estimate of the nutritive value of milk: 700 kcal/kg. Per square kilometre in the reference area this means 6.5 m.kcal. Meat consumption depends on the 'offtake rate'. Again, in Dahl & Hjort's 'normal model herd', 8 % of the animals die natural deaths or are slaughtered as 'emergency slaughters' (before the animals would have died anyhow); 8 % is assumed by Dahl & Hjort as 'normal slaughter'; together 16 % total offtake rate. If all dead animals are eaten, and if we assume a consumable quantity of meat of 50 % of an average animal of 215 kg, with 2,360 kcal/kg, this would give 5.7 m.kcal/km<sup>2</sup>. Following Dahl & Hjort further, blood would give an additional 0.2 m.kcal, offals an additional 0.8 m.kcal. In total, our reference area would produce 13.2 m.kcal of cattle products. In terms of protein, 692 kg would be available (see table 4.1).

Table 4.1 Food Value of Cattle Production in a Reference Area of 1 km<sup>2</sup>; Standard Year.

product	animals	l. or kg/ animal	kcal/kg	m.kcal	gr.Protein/ kg	kg Protein
milk	140	66	700	6.5	37	342
meat(*)	140	9-17	2360	3.0-5.6	121	152-288
offals	140	1.4	4000	0.8	118	23
blood	140	3.56	330	0.2	76	38
total				10.5-13.1		555-691

(\*) Meat consumption depends on the percentage of dead animals actually eaten (wild animals may also be responsible for part of the 'natural deaths').

Source: Dahl & Hjort 1976, p.175 (adjusted).

In Chapter 3 we already found large differences of opinion concerning the primary food production capacity of the land, and the proportion of the vegetation available for domesticated animals. Now we add one more hornet's nest: 'the normal model herd'. The various estimates for Pokot cattle are not identical with those from the 'normal model herd' of Dahl & Hjort. Yadeta (1985, p.223) found 58 % cows and 11 % heifers in Kongelai in 1979, and 44 % cows and 13 % heifers in Chepareria in 1979. Widstrand estimated the percentage of cows and heifers in 1970 at 50 % (Widstrand 1972, p.6). It is safe to assume 40 % of the herd to be cows; the percentage of calves must be high since the time of first calving is between three and four years (see Dyson-Hudson 1970, p.111). Pokot cows have a calving rate of 70 % (Widstrand 1972, p.6). Both the percentage of cows and the calving rate are above Dahl and Hjort's normal model, with the result of 28 % instead of 21 % cows-in-milk in an average year. According to Widstrand (1972, p.5) Pokot cows produce 2.4 kg of excess milk per day, in the rainy season. Our own surveys in 1982-83 in Kongelai, Kodich and Alale indicate 1.5 - 2.1 kg/day. For the dry season our findings are higher than those of Widstrand: 0.3 - 0.7 kg/day against 0.2 kg/day. It is probable that the milk yield of a Pokot herd is higher than in Dahl & Hjort's model.

According to the Ministry of Agriculture and Livestock Development in West Pokot, on average, Zebu cattle weigh 215 kg, of which half is thought to be consumed. The MoALD assumes a total offtake rate of 13 % (and not 16 %) which would result in 1957 kg of meat per km<sup>2</sup> in our reference area in a normal year (that is 4.6 m.kcal and 237 kg of protein). According to Pokot informants, average Pokot zebu cattle are lighter than 215 kg) but a higher percentage than half of the liveweight is eaten. The MoALD-based estimate of the food value of meat is probably correct and below the maximum of the normal model used by Dahl & Hjort.

Cattle are not the only animals in the reference area. We should also look at the food production potential of goats and sheep. If there are only sheep or goats, the same area of one square kilometre in Zone IV

could 'carry' at least 5 sheep and/or goats in terms of primary food production (in a standard year). In Pokot society sheep and goats are of the light to medium weight type (an average adult animal weighing between 15 and 27 kg liveweight). Goat's milk is used - although mostly for children - but milking sheep was and is regarded as too cumbersome (a.o. see Schneider 1953, p.180). Again using model estimates as given by Dahl & Hjort (1976, p.219) we arrive at the following estimated secondary food production of goats and sheep for our reference area of one square kilometre: see table 4.2.

Table 4.2 Food Value of Goat's and Sheep Production in a Reference Area of 1 km<sup>2</sup>

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goats: milk: assumptions:	- 1 km <sup>2</sup> = 100 SU = 500 goats
	- 35 % of the flock is milked
	- milk production for human consumption of 47 litres per lactation or 0.4 l/day
	- 1.5 lactation in a year (of approx. 120 days)
	- milk: 730 kcal/kg and 3.7 % protein
	per km <sup>2</sup> : 9 m.kcal and 455 kg protein
meat: assumptions:	- 1 km <sup>2</sup> = 100 SU = 500 goats
	- annual offtake 21 %
	- 14 kg of meat and 1 kg of offal eaten per dead animal
	- edible goat's meat gives 1,450 kcal/kg and 15 % protein
	- offal: see cattle
	per km <sup>2</sup> : 2.5 m.kcal and 235 kg protein
total:	11.5 m.kcal and 690 kg protein
sheep: meat: assumptions:	- 1 km <sup>2</sup> = 100 SU = 500 sheep
	- annual offtake 25 %
	- 14 kg of meat and 1 kg of offal eaten per dead animal
	- edible sheep meat gives 4,035 kcal/kg and 10 % protein
	- offal: see cattle
	per km <sup>2</sup> : 7.5 m.kcal and 190 kg protein

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In Pokot society, goat's and sheep blood are occasionally consumed. We neglect its food value here.

In terms of energy production cattle and goats lead, sheep are a bit behind (but its major contribution to the diet, fat, is highly appreciated, also because of ascribed medicinal value). In terms of protein production goats are slightly more productive than cattle; sheep protein production is small (see table 4.3).

One thing, however, should never be forgotten: the interannual variability in livestock production can be large. During a first severe dry year, the livestock carrying capacity may go down to a quarter of the average situation in an extreme case (see Ch.3). If we assume that the 'critical density during average years' had been reached before, this would mean an animal death rate of 75 % or - in our example - of 75

Table 4.3 Food Production of Cattle, Sheep and Goats, Reference Area one km<sup>2</sup>, Standard Year

Type of animal	m.kcal	kg protein
cattle	10.5 - 13.1	555 - 691
goats	11.5	690
sheep	7.5	190

stock units per km<sup>2</sup> if all the 'excess animals' die during the first dry year (and only accounting for deaths because of lack of local food). If we assume 75 kg of meat, 10 kg of offals and 5 litres of blood per dead stock unit (not all can or will be eaten and the animals have lost a lot of weight) this means 5,625 kg of meat, 750 kg of offals and 375 litres of blood. This gives 11 m.kcal per km<sup>2</sup> in case of goats, 16 m.kcal per km<sup>2</sup> in case of cattle and 26 m.kcal in case of sheep, and between 683 (sheep) and 964 (goats) kg of protein. Milk production will have virtually stopped. During a second dry year in succession - when again the carrying capacity is only 25 SU/km<sup>2</sup> - milk production for human consumption still is almost nothing; natural animal deaths will be in the range of 8 % or higher; animals are weak, so bleeding will be avoided as much as possible; deliberate 'offtake' by slaughtering animals will be less than the 'normal' 8 % . The animal production in this second disaster year will only be 100 - 200 kg of meat, 10 - 20 kg of offals and 4 - 8 kg of blood per km<sup>2</sup>, considerably below 1 m.kcal. In practice not all the 'excess animals' will die during the first dry year. On the other hand it might well be possible that there were less animals to begin with, and hence a lower actual food supply by dead animals. There can also be so many dead animals in a short period, that a lot of it cannot be eaten or preserved.

It seems reasonable to conclude, that, for the reference area of one km<sup>2</sup> in Zone IV:

- a cattle/goats land use means a potential food production of 11-12 m.kcal during a standard year; a sheep land use gives 7-8 m.kcal as long as sheep are not milked;
- protein production of cattle and goats is higher than protein production of sheep;
- a first severe dry year may result in such a high animal death rate, that food production gives 11 m.kcal (goats), 16 m.kcal (cattle), or even 26 m.kcal (sheep) potentially; - a consecutive dry year results in strongly decreased food production;
- during more moderate droughts, with animal death rates of 30 % (instead of 75 %), a herd or flock that had reached its 'potential' number in preceding years, would give 4 m.kcal (goats), 6 m.kcal (cattle) or 10 m.kcal (sheep) as food, assuming that milk production for human consumption can be neglected.

Until now, we have only talked in terms of kilocalories and protein (and we have refrained from more complex food requirement measures). How many people can be fed with the estimated food quantities? In appendix 4.1 we

present a detailed calculation of human food needs in western Pokot. An average person needs 850,000 kcal/year and 11.6 kg/year of protein if we are on the safe side of the estimates. In table 4.4 we give the possible population density for average and dry years, based on cattle, sheep and goats. We may conclude that possible densities based on protein production are always higher than those based on energy production. We will further refrain from protein; energy production is more critical. Another important conclusion is that during severe dry years possible annual food production is generally higher than during average years: a drought with mass starvation of animals means a heavy blow for the wealth of people, but not so much for the food situation. It will also be clear how important sheep are during a drought. Only a second consecutive dry year means a very much decreased population supporting capacity on the basis of livestock. Most droughts result in lower animal mortality rates than 75 % . If a moderately dry year with 30 % mortality is followed by another moderately dry year with again 30 % mortality, food availability will be lower than during standard years, but not extremely so. Again sheep show to be very important 'drought buffer' animals.

Table 4.4 Possible Population Densities based on Livestock; Zone IV Reference Area; Various Situations

Area	Type of animals	Rainfall	Possible population density in	
			persons/km <sup>2</sup>	
			based on kcal	based on protein
IV non-riverine	cattle	average	12-15	48-60
IV non-riverine	sheep	average	9	16
IV non-riverine	goats	average	14	59
IV non-riverine	cattle	1st severe dry year	19	67
IV non-riverine	cattle	second dry year	1	2
IV non-riverine	sheep	1st severe dry year	31	57
IV non-riverine	goats	1st severe dry year	13	81
IV non-riverine	cattle	moderately dry year	7	27
IV non-riverine	sheep	moderately dry year	12	23
IV non-riverine	goats	moderately dry year	5	32

In Zone V areas the possible population densities can be approximately a quarter; in Zone VI areas only approx. 5 % of the Zone IV estimates. With these estimates, 'critical' population densities on the basis of livestock can be calculated for (parts of) our research area. In a standard year, on the basis of cattle and/or goats, Karapokot for instance could support 19,600 people in its Zone IV, 5,800 people in its Zone V and 500 people in its Zone VI. An additional 2,100 people could be supported from the more humid areas (see table 3.9). Together, these 28,000 people mean a 'critical population density on the basis of livestock' of seven people per square kilometre. In a moderately dry year this figure goes down to three people only. If there are sheep, the



figure may go up a bit. If we repeat this calculation for Upe and the area east of Suam, we find a 'critical population density on the basis of livestock in a standard year' of 11/km<sup>2</sup> in Upe (18,095) and of 16/km<sup>2</sup> (28,658) east of Suam.

#### 4.2 Survival Strategies Concerning Livestock Production in Western Pokot

Because of the continuous threats of drought, livestock diseases and man-made problems, herders in western Pokot have developed a whole range of 'survival strategies' to survive the attacks on wealth, and to survive food crises during and after calamities. We will successively deal with herd accumulation, animal diversity, herd mobility, animal health, selective breeding, the pastoral diet, the management of the environment, raids, and the acquisition of additional pasture. In section 4.3 we will look into the exchange of livestock products for grains as a separate strategy.

Herd accumulation is a general attitude among (semi-)pastoralists. Mostly this can be explained by food needs. Average pastoral households of eight members need between fifty and ninety-six stock units to produce enough food. In Pokot society there have been few households during this century with herds beyond the food needs of their members. 'Large herds' owned by individual herders were long understood to be a result of a so-called 'cattle complex' (Herskovits 1926), an irrational form of accumulation, even threatening the environment ('overstocking', a pastoral version of the 'tragedy of the commons'). Even recently the issue is brought up now and then as a matter of concern (Patterson 1969, Livingstone 1977). But only stock owners with very large households or other labour power available, can afford the management of a large herd. Per capita it is questionable whether there has ever been such a lot of 'excess stock' as is sometimes suggested. Also, even if these wealthy stock owners have accumulated a herd beyond the food needs of their households and additional workers, the herd should be regarded as an important savings account (and one with a high average 'interest rate'), an indigenous form of insurance. In most pastoral societies, and also among the Pokot, these 'savings' are generally distributed among less wealthy pastoral families, who thus get milking rights for instance. Indirectly a lot of redistribution of wealth takes place because the wealthy stock owners are supposed to 'show their social prestige', by participating generously in ceremonies, by assisting the destitute members of society, by generous stock associateships and bridewealth arrangements (in general see Trouwborst 1956; Raikes 1981, pp.24-30, among many others; for Pokot society, e.g. Schneider 1953, Ch.V). We will give evidence that there were no 'surplus herds' and also that there was no 'overstocking' during most of this century for most of Western Pokot, despite all the talking in government circles. Herds below the food needs during droughts, will not be easily depleted by deliberate sale. The large majority of the herd owners will only sell cattle when:

- there are very pressing financial needs, and no other sources of cash available, or

- prices are regarded as so high that alternative food can be cheaply obtained, if this alternative food is available, or
- the number of animals that are starving during a drought is so high, that there will be far too much food to eat or preserve locally (this is often so during an epidemic).

In Pokot society - as in many other (semi-)pastoral societies - not cattle but small stock is regarded as the trade good, and pastoralists try to build up a large flock in years with good rainfall, to be able to sell or barter goats and sheep during times of stress. As Dahl & Hjort (1976, p.111) have shown, building up flocks can go very fast with annual growth rates of 18 to 26 % for sheep and 31 to 41 % for goats. After a disaster, herdsman will build up flocks also to exchange them for cattle, later.

For example, a herdsman in Pokot who has lost all his cattle and was left with twenty goats, may have forty-nine goats after three years (with an annual growth rate of 35 %). If he sells twenty-nine, for an average price of 150 KShs, he can currently buy one bull and two cows, if there are people available who want to sell.

Animal diversity and herd mobility are two other corner stones of the economy in pastoral societies. For Gufu & Lusigi (1987) they are the core of 'drought strategies' in African pastoral systems. Diversified livestock husbandry means the attempt to combine various types of animals in every pastoral household. In Tully's words (1985, p.172): "diversified herds allow a more efficient use of the environment, permit a wider range of animal products, and contribute to a steadier supply of food than a single species herd. Pokot livestock also vary in their resistance to catastrophe: drought, disease or raiding. Both the animal's ability to survive and also to recover reproductive capacity are important aspects of drought-resistance". She adds that the different waiting time after drought from the beginning of the rains to the first availability of milk is important: for goats five months, for cattle nine months, for camels one year. A successful Pokot herder has grazers (zebu cattle and sheep) and browsers (goats, donkeys, sometimes camels), although we have already referred to a study which showed that grazers also browse and browsers also graze (see 3.2.5). Despite the continuous anti-goat attitude in government circles, goats are regarded as very valuable by Pokot herdsman: drought resistant animals, that can feed on browse which is not eaten by cattle and are less attacked by tsetse fly and tickborne diseases. They are seldom raided; they produce milk and offspring soon after the end of a drought and they have a very high growth rate. They do not need a lot of difficult labour and they can easily be sold or bartered. Besides, they can be slaughter-ed without the interference of social customs around slaughtering decisions and consumption. The only problem is the susceptibility to epidemics, which can wipe out the complete flock in a short period. Cattle are regarded as the most valuable animals by the Pokot. The Pokot apply a herd management strategy in which lactating animals, calves and cows which soon give birth, are separated from most male animals and the non-milk giving females during most of the year. The women normally take care of most cows in milk and the young stock, near the homestead, not too far from permanent waterpoints. Most of the girls and very young boys take care of the small stock. Men and boys - and sometimes girls

and young women to make shelters - are moving around with the non-milk herd, accompanied by a few lactating cows to give milk for direct consumption. Extended mobility during dry seasons is called 'resource exploitation mobility', not in the form of a regular transhumance, but in the form of 'epicyclical movements', which follow no well-defined annual or seasonal pattern (see Gufu & Lusigi 1987, pp.10-11). The mobile herders reside in temporary shelters which are easily dismantled and moved (see Tully 1985, p.175). When there is a camel herd, other men and boys take care of this herd. Donkeys are normally accompanying the cattle, sometimes to protect the cattle against predators. They are browsing on the fringes of the herd and therefore the first to be victims (Tully 1985, p.178). Normally the distances between dry season camps and the homestead are not as large as among Turkana and Karimojong; for part of the study area, dry season camps are not even a regular appearance. But during droughts, far away areas of more permanent water availability and reserve grazing, riverine areas or highlands, are used by the 'dry herd', despite the higher vulnerability to animal disease there. These areas are called 'drought fallback areas' by Grandin & Lembuya (1987) in a Maasai context. Migration to these areas is called 'escape mobility', by Gufu & Lusigi (1987, p.10). During droughts, extra animal feed is secured by breaking branches from certain trees and use it as fodder. During severe droughts rescue operations are organized to save the homestead herd. Then e.g. almost all people from lower Sook and Kipkomo used to move to the Kanyangareng area in Uganda (Upe-Karimojong boundary) or to the Mnagei highlands in former times. Part of them still do. In these periods herders and livestock move up to 80 km away, following certain grazing routes along more or less reliable water points and occasional salt licks or 'salty grass' (ng'ilet in Pokot language). Everywhere within Pokot society, one is amazed by the network of information which assists in finding the least threatened grazing areas, but which also functions as a link between the mobile herders and the family members back home. Especially the movement leaders spend a lot of time 'gossiping', which is in fact a most valuable management activity, and indispensable for herd survival. For most herders, no 'modern' practices are available to improve the herd mobility, maybe with the exception of purchased industrial salt. In theory, however, the stock could be moved by road to reserve grazing areas. Also in theory, additional fodder could be bought to relieve stress from drought, or hay might be stored during periods of surplus grass.

If we look at the Pokot practices of herd mobility, we can include their 'pastoral farming system' under 'semi-nomadic pastoralism', using Ruthenberg's classification (1971); however, within the Pokot lowland economy, a great variety of mobility patterns can be found, both in space and in time. Flexibility is very large, although one household can afford to be more flexible than another. In a fascinating attempt to apply Hagerstrand's 'time-geographic model' to 'pre-industrial societies', Carlstein (1982, esp. pp. 103-146) has convincingly proved that mobility can be very time consuming in 'nomadic pastoralism'. Mobilization of labour power to enable adequate mobility is one of the most strategic elements of the pastoral survival strategy. Because of fusion and fission of herds, day to day management and labour units are constantly changing (Ibid, p.121).

Herd mobility and herd diversity are only possible when there is enough adequate labour power available. A herd owner normally uses the labour power of his own kin. But he can add the labour power of other members of the community, or even of wage labourers. Among the Pokot, the adoption of relatives from other areas and of refugees is widespread and increases the available labour power. Especially older, polygamous men, with many grown up children and from large families themselves are in a favourable labour position. Polygamy increases the number of related households and the chance to get a large offspring and hence a large stock of labour power.

The organization of labour among Pokot men was and still is socially defined by an age-grade system, formed by eight circumcision sets, each set divided into a senior and a junior set. Within each circumcision period of about ten years, each cohort has defined labour duties (and consumption and other rights). Peristiany (1951, p.280) gives a clear example for the most junior age set: "when participating in a raid, (they) are employed in the same auxiliary capacity. They are the baggage-bearers, the cooks and the messengers, who sleep at night by a common fire and who receive a common reward to be shared amongst them after a raid (...) its members are integrated into a distinct and corporate social unit which will preserve in later life some degree of cohesion and of social solidarity, seen at its clearest in the duties to share food and shelter with travelling members of the sub-set (...)". On top of this system, a definition of authority depends on membership of 'sapana sets', following a twenty-five year period roughly and dividing all adult men into two sapana-sets, the seniors and the juniors, alternatingly called 'Tukoi' (Zebras, wearing brass ornaments) and 'Nyimur' (or Rocks, wearing copper ornaments) (Peristiany 1951, pp.295-297).

With a large number of labourers, all with defined duties, the separation of herd and flock in various herding groups becomes a possibility. One of the effects is herd dispersal, extending the overall mobility which increases the available animal feed and reduces the chances of overall loss when disaster strikes. Herd dispersal, however, can also be reached by other means.

A common practice in many pastoral societies is stock associateship, a method to distribute part of the herd among 'economic friends'. In Pokot society this practice is still widely used and known as 'tilia' ('tilia' or 'thelia' means friend, Beech 1911). A cow is exchanged for a steer and herded as part of another herd. The steer is used for a ceremony; the milk of the cow is for the caretaker; the offspring is for both (in dealing with tilia among the Pokot, Livingstone - 1977, p.216 - wrongly gives a much too rigid definition, suggesting that the receiver of the cow only has the right to use the milk). In times of stress, the original owner of the cow can always ask the caretaker to return the original animal and/or part of the offspring. 'Tilia' works as a system of social insurance. Splitting up the herd and spreading animals over a larger territory under different management means a further decreased risk that the herd will be killed by disease or by drought or by raids all in one. Also the ownership of the herd becomes more or less multi-personal; several people may have a share in the ownership of a particular herd.

In case of loss by theft or raiding, several owners are injured, and may form a party to regain the shared property. Shared ownership of cows and calves also means that herders who manage a particular herd, can not dispose of these easily. In particular the sale of cows and calves needs the consent of various people involved, often far away from each other.

A sixth type of livestock-related survival strategies has to do with herd management. First there are the animal health aspects. Pokot possess detailed knowledge of herbal treatments for sick or injured animals (Tully 1985, p.169). They also spend a lot of effort to detick cattle. On top of that they participate in vaccinations if these are offered and also some dips have been built and are used by a minority of the lowland herders. Animal drugs are used by even the most remote pastoralists, if these drugs are available.

A related strategy, all over semi-arid East Africa, is the selective breeding of drought adapted stock. Before colonial times the Maasai acquired Boran bulls for breeding, through trade with Samburu and Somali herders and so improved their Zebu stock. Currently institutional development strategies also try to 'upgrade' local stock (e.g. by introducing Sahiwal bulls, Dorper rams or Galla bucks), mostly with the intention to increase meat or milk yields, but sometimes to improve the stress resistance of local animals. Pokot herders do not seem to have used Boran cattle or other external breeds. But they certainly apply a breeding strategy within the Zebu-type of cattle. Strong, healthy bulls are adored and specifically used for breeding. Animals that survived from droughts and their offspring generally are very well adapted to environmental stress. From generation to generation the breeds with the highest survival chances remain, although these are often not breeds with high milk or meat yields. In breeding strategies, yields have a low priority.

The pastoral diet is another element of a flexible survival strategy. In general the animal part of the diet consists of cow's and goat's milk mostly. This is consumed in a fresh form and in a preserved form, using local techniques of preservation (charcoal, urine, herbs). Because of the different lengths of cow's and goat's pregnancies and the seasonality of most conceptions, the period of fresh cow's milk is at its maximum during the May - September months. Fresh goat's milk has a minor production peak in May - June and a major peak in November - January, when cow's milk is usually very low (Dahl & Hjort 1976, p.235). Combination of cattle and goats gives a more continuous supply of milk during the year.

Cattle meat is not often eaten. When there is no environmental stress, meat is in fact only eaten during feasts (e.g. circumcision, marriage, sapan) and that follows prescribed rules. During the rainy season, additional 'animal' food is the flying ant (when the rains start, a valuable source of protein), honey (in July - August mostly) and various types of wild animals: birds - especially guinea fowls and doves - rodents, an occasional dikdik, duiker, impala and gazelle. During the dry season, animals might be bled (in Pokot society both cattle and small stock) and goats can be slaughtered for food. Also larger game will be killed for food (bush bucks, elands, buffalos even, and in some years

in the past, elephants). In this case occasional hunting parties are organized, but also here social rules apply. The hunt of large game is generally regarded as a bad omen and only organized during very bad years.

When goats or sheep die, everything (including blood, brains, the soft part of the bone) is eaten by the family members of the owner. Sheep are especially appreciated because of their fat. When cattle die from disease, hunger or thirst, old age or an accident, there are particular rules, which result in a quick, wide distribution of the remains through the community. Only the head and the backbone part is for the owner, further any person can come and eat, although the heart, ribs and tongue are particularly reserved for the men.

Pokot, even if they are fully pastoral, are flexible enough also to eat non-animal food. Preserved milk and goats, honey and in some areas eggs, may be exchanged for grains (and sniff tobacco) or for grain products (e.g. beer). Wild relishes, berries, fruits, roots and cactus pods are also part of the pastoral diet, especially during times of food shortage.

The cultivation of some sorghum or millet among the Pokot sections with a lot of animal food, should not in the first place be seen as additional food. Brewing of beer on the basis of grains and honey - during times of excess food - gives part of the food basis for rituals, ceremonies and feasts, together with the ceremonial slaughter of a few animals. By sharing food (meat and beer) among 'social relatives' of various families and environments, the economic bonds are strengthened and a guaranteed system of mutual aid in the future is secured. In this system of mutual aid livestock plays a major role.

A following type of livestock-based survival strategies is the management of the environment. This demands considerable skill and knowledge. In Porter's words (1979, p.34): "One must know a great deal not only about the ability of the animal to withstand physiological stress, but also about environmental management: which grass to save for late grazing, where and when to establish dry season wells so that the stock will be able to withstand the rigors of the daily journey between water and graze".

University-trained civil servants managing livestock departments and dealing with pastoralists - or peasants in general - tend to downplay local knowledge and local management practices. In the words of Jungerius (1986, p.13): "It is easy enough to denigrate the peasant as an illiterate ignoramus who runs his enterprise with obsolete techniques and irrational methods, and foolishly ignores the valuable advice given to him by western-trained experts. It is also possible to characterise him as an intelligent person who uses a survival strategy based upon centuries of knowledge of the precarious ecosystem in which he functions".

Particular forms of grazing reserves are traditionally used by the Pokot (e.g. in Batei as discussed by Schneider 1953 and in Kapchok as described by Hartley 1985). The senior men of a community still decide about the periods in which these grazing reserves may be used. They also impose livestock fines for trespass (see Widstrand 1973, p.48). Grazing rules can be very precise. In the lowlands of Sook, Pokot herders have shown us particular hills which are reserved for calves, other hills for

pregnant cows and hills for lactating cows.

Water resources are also regulated. Water rights are in the hands of sections or clans even, and although the water is not exclusively used by the 'owners', non-owners cannot use it without permission and, usually, payment of one or more goats.

Besides these traditional forms of environmental management, institutional innovations have also been applied in the Pokot area, like 'grazing schemes' (with paddocks). It can generally improve the quality of the grass and the length of the grazing period. Institutionally introduced environmental management, however, differs considerably from Pokot indigenous management. The institutional methods bring a restricted number of animals to a particular, large, paddock where the animals stay during three or six months, while the closed paddock remains closed during the whole period. The Pokot methods can be called 'holistic resource management', a form of range management as practised by Savory in Zimbabwe as a break with all 'range management rules' (see Walter/Journal of Soil and Water Conservation 1984). Animals are crowded together for one or two days on a small area, where all vegetation is totally consumed, and then they move on to the next small area. According to Savory this method of 'time control of grazing' could produce much more and much better animal feed per ha than the institutional method, provided there is a regeneration period which is long enough.

The controlled use of fire is another grazing management strategy, traditionally used in Pokot and other pastoral societies, but fiercely fought by institutional agencies. The Pokot claim that fire results in the relative increase of grass and decrease of bush, and hence in a result which is better for cattle than for goats, which is generally seen as desirable. Also bush fires result in the burning of dry impalatable grasses and inedible acacia seedlings, in killing insect pests, in releasing nutrients more quickly than natural processes do and in encouraging fresh edible shoots (see Conant 1982, p.121; Tully 1985, p.120).

In the sphere of livestock strategies two more violent strategies must be mentioned too: livestock might be raided among neighbouring 'enemies' and dry season grazing areas in 'enemy territory' might be conquered. On the other hand, the western Pokot have been victims too.

The history of the Pokot shows a westward move during this century, losing access to the lower Turkwell River and grazing areas in the northeast to the Turkana, but gaining far more grazing areas in the west as well as access to the Suam and Kanyangareng rivers at the expense of the Karimojong. We have seen that this westward movement already started before 1920 (see 1.3). By 1924, the Turkana threat had died down, but the Pokot further pushed to the west. In 1928-29, there was large scale fighting between Pokot and Karimojong, far into Karimojong area. In 1931-32, it was reported that the greater majority of Pokot who lived around Kacheliba in the mid-1920s, had moved to the Mount Kadam area and the area around Karita (West Suk AR 1932; Brasnett 1958, p.120). In 1940-41, major areas along the Kanyangareng River were used by Pokot herdsmen during a drought, areas that had always been exclusively used by the Karimojong. But the Pokot intrusion did not meet with much resistance yet, with the exception of a violent clash in 1946 (Welch

1969, p.115; Calendar of Events for Upe - 1969 Census of Uganda). Hostility increased in 1952-53, when a severe drought drove Pokot as well as Karimojong towards the Kanyangareng River. The result was large scale fighting with thousands of cattle changing hands back and forth, and "in only three months, twelve Karimojong (including Chief Lorika and a native government agent) and eighteen Pokot had been killed" (Dyson-Hudson 1966, p.246).

In annual reports this was described as "the most violent outbreak of cattle theft and fighting that Karamoja had known since the start of British administration" (Dyson-Hudson 1966, p.245). In 1954-55, another five Pokot and six Pian-Karimojong had been killed and - after a pause - in 1958 again fifteen people altogether. More than 4,000 head of cattle changed hands in a number of raids (Ibid. pp.256-247). In 1962 there were two major fights, the 'battle of Aparipar' and the 'battle of Nabilatuk' in which eighty-two people were killed (Welch 1969, pp.130-131). In 1964-65 a drought forced Pokot herders far into Karamoja. The Karamoja annual report of 1964 writes that in Pian and Upe "there have been over 1,000 raids between the Suk and the Karimojong, in which 10,826 cattle have been stolen and forty-eight persons killed. The Suk have had the better of these exchanges, stealing 7,795 head of cattle". In 1965, Karimojong and Pokot elders came together for a ceremonial burial of spears, although this was not the end of all raids (Karamoja AR 1965). A well remembered attack was the killing of twenty old Pokot men at Loroo, in 1966, followed by minor incidents in 1968 and 1969.

In the southwest the Pokot began to raid in Sebei territory in 1952-53 too, according to Goldschmidt (1976, p.29). Between 1957 and 1961, 116 raids were recorded in which 11 Sebei were killed, and 4,548 cattle were stolen. Sebei left their northern grazing lands, resulting in a no-man's land (Ibid, p.69). Around 1973, the tide began to turn, however. In 1973 the Sebei started to raid the southwestern part of Kacheliba Division and Riwa, resulting in a large 'no man's land' in southwestern Pokot from 1977 onwards. After 1976, Karimojong raiding parties, sometimes mixed with Turkana, threatened the northwestern Pokot. In April 1979 the Pokot had organized themselves properly and a large force of Pokot fighters from all over Upe and Karapokot retaliated and defeated fleeing Amin soldiers and Karimojong warriors at a place called Achorichor. In 1980, however, the Karimojong and Turkana began to use the heavy weapons, which they had acquired during and after the turmoil of the final days of President Amin. On July 28th, 1980, there was a very serious raid. Hundreds of Karimojong attacked the area from Nakuyen to Lokichar in the southwest. In an area of 30 km wide, all manyattas were devastated by raiding parties which even came as near as only 4 km from Kacheliba Centre.

The story behind this raid is interesting: in 1953 the Pian Chief Lorika had been killed by Pokot raiders. The British succeeded in suppressing a revenge. During Amin's reign two sons of Lorika, Nabur and Athiyo, had high positions in Amin's government. They were notorious enemies of the Pokot, although Amin could 'postpone' their revenge. In June 1980 in the north, the 'battle of Kongorok' was fought which brought a lot of casualties to the Pokot, who also lost thousands of cattle. As a retaliation, Pokot warriors attacked the home of Athiyo; a machine gun defended, wired fortress, which was nevertheless devastated and raided.



For the Karimojong now all the barriers for revenge were gone and big raiding parties started to terrorize the whole of Upe and Karapokot. Among the Pokot, rumours built up that the aim of the Karimojong was not only cattle, but also to regain the land which they had lost during 1890-1920.

Raids and counterraids were going on well into 1982, when also Pokot had acquired heavy weapons, bought, or bartered or raided from the 'Moroto Barracks inheritance' (see Chapter 2.4). In a paper for the Institute for Development Studies in Nairobi, we have tried to give a detailed account of all the disasters and the struggle in and around Alale (see Dietz & Van Haastrecht 1983). When the disastrous 1979-82 drought was over, the Pokot concluded a peace treaty with the Karimojong. This gave the Pokot the opportunity to raid the Sebei and even large farms in Trans Nzoia, in 1984, very close to densely populated areas. In 1985, severe raids between Pian-Karimojong and Upe-Pokot started again (LWS 1985).

In the northeast hostility increased between Pokot and Turkana during and after the drought of 1965, although one rifle-armed Turkana raid was already reported in 1963 (Upe Safari file, Moroto). In 1967 Karapokot, together with Masol-Pokot "raided the neighbouring South-Turkana at Kaputir, mutilating and murdering innocent women and children to the tune of 33" (WP AR 1967). The Turkana retaliated in the east first, leaving "many of the former stock owners (...) destitute and Masol location virtually abandoned by its rightful inhabitants" (WP AR 1969). In November 1969 the Upe administration received reports that Pokot had killed sixty-nine Turkana as a retaliation for heavy Turkana raids in Upe (Alnwick 1985, p.142; Karamoja MR Nov.1969). During the early 1970s Turkana - Pokot clashes mainly concerned the eastern Pokot in Baringo; in 1976, however, Turkana raids also reached lower Sook (through the Turkwell Gorge) and all over the eastern part of the Chemorongit hills.

Turkana 'ngorokos' were armed with guns instead of spears; stolen cattle was transported to the north, using lorries sometimes; women and children were killed too and also food stores and other property was destroyed. At the end of the 1970s, the eastern plains were virtually empty and the people had either moved to the hills - starting crop cultivation there and hiding their cattle - or to the western and southern plains. Sometimes the Turkana raiders went far into the Chemorongit hills, like in 1978 when people from Kasei were forced to leave, going to even more inaccessible areas or to the Suam River, to start cultivation there. As we have seen, the Turkana joined hands with the Karimojong from 1979 to 1982, becoming a severe threat to Pokot survival all over northern Karapokot. On the other hand, Pokot raiding parties sometimes succeeded to retaliate. After a pause, in 1986, Pokot raiders even succeeded to raid many Turkana camels (with a most bewildering result; see 5.2).

Looking back, it is evident, that raids and general insecurity were strongly related to periods in which two or more consecutive dry years fell upon the pastoralists together with livestock epidemics. This happened in 1917-24, 1950-53, 1964-65, 1973-76, 1979-82. During the 1930s and 1940s and during the early 1960s, environmental disasters were less threatening and also there were not so many raids. 'Tribal relations' in general were more friendly, then, even resulting in

intertribal marriages. During these decades, there were dry years, of course, but there were no periods with two consecutive dry years and livestock epidemics. In general we may say that a one-year drought kills animals, but does not threaten the food base and the wealth of the pastoral society too much. A second dry year is much more dangerous. And the increase of raids and counterraid in exactly those periods, results in the total collapse of security.

#### 4.3 The Exchange of Livestock Products for Grains

Traditionally, lowland households which were short of food, tried to exchange animal produce for grains (as well as tobacco, gourds, beehives and other wooden produce) with highland cultivators. Women were mostly responsible for these oscillating barter activities. In Sook, Riwa and lowland Mnagei these trade networks did not involve too much labour; in northern Karapokot and Upe, distances with grain surplus areas were much larger. Although donkeys were used for transportation, highland - lowland trade has probably never been more than marginal there. Recently, also trading with Mnagei highland farmers becomes problematic: surplus maize is increasingly sold to institutional buyers and lowland produce (e.g. hides and skins) are not needed anymore for private use. On top of all that, droughts in the lowlands can also be paralleled by drought in the highlands with diminished production as a result; with increased population there, surplusses may no longer be available for sale. (Hjort 1981 gives the same story for the Boran; Little 1983 for Baringo).

It is important to look at the exchange of livestock products against grains with more precision. Pastoralists who cannot feed their households with animal products alone and who do not (yet) produce (enough) crops for themselves, can try to get grains, either by barter or by purchase. There have always been barter markets at the interface between cultivators and herders. In western Pokot, Nakwijit market was and is one of these markets. During the recent decades also cash opportunities have increased. Herders can sell hides and skins, they can sell cattle, goats and milk and they can sell honey. Here we will especially discuss the terms of trade of goats against sorghum and maize.

It is completely clear from table 4.5 that during the whole century pastoralists had very good terms of trade with their cultivating neighbours in West Pokot. Pastoralists who exchanged goats for sorghum got at least twice the amount of calories, but mostly a lot more. If they could exchange goats for maize grains, the terms of trade were at least 7:1 and in some periods even close to 20:1. Within barter-exchange networks, the 'normal rate' is rather stable: one he-goat for one 90 kg bag or 5 'debes' (the equivalent of traditional sacks of 15-20 kg) of maize. In really dry years, when there is simply no maize grain supply from the highlands - as in 1980 and 1984 - people nowadays buy maize meal in the shops. Still the terms of trade are favourable, as we have seen, if they first sell a goat to get the money to buy maize meal. Suppose a family of eight (6.8 m.kcal per year) has no other source of food than its goats. If they would eat goat's meat, they would have to kill 313 goats to supply them with enough calories. But if they sell

Table 4.5 Prices of Livestock Products and Grains, West Pokot

Year	Maize		Millet or Sorghum		Goat's meat(1)		Goats	Goats	
	1 kg (K)Shs	1000 kcal	1 kg (K)Shs	1000 kcal	1 kg (K)Shs	1000 kcal	Maize	Sorghum	
1916(2)			0.2	0.07	0.4	0.3		4	
1923			0.2	0.07	0.4	0.3		4	
1928			0.2	0.07	0.5	0.4		6	
1950s	0.35	0.11			0.8	0.6	5		
1967	0.28	0.09			1.4	1.0	11		
1969	0.26	0.08	0.5	0.17	2.0	1.4	17	8	
1970	0.30	0.10	0.5	0.17	2.4	1.7	17	10	
1971	0.32	0.10	0.57	0.19	2.4	1.7	17	9	
1976	0.55-0.66	0.18-0.21	1.49-1.75	0.50-0.58	5.1	3.5	17-19	6-7	
1977	0.70	0.23	2.12-4.50	0.71-1.50	5.3	3.7	16	2-5	
1979(3)	0.78	0.25	1.75-3.25	0.58-1.08	1.7-6.0	1.1-4.1	7-24	1-7	
1980(4)	1.00	0.32	2.00-3.75	0.67-1.25	6.0	4.1	13	3-6	
1981	1.00	0.32	5	-5.6	1.67-1.87	6.0-8.0	4.1-5.5	13-17	2-3
1982	1.00	0.32	5	1.67	6.0	4.1	13	2-3	
1983(4)	1.40	0.45	5	1.67	5	-7	3.4-4.8	8-11	2-3
1984(4)	1.70-2.00	0.55-0.65	5	1.67	10	6.9	11-13	4	
1986	2.20	0.71			10	-13	6.9-9.0	10-13	

- (1) assuming that 1 goat gives 15 kg of edible meat; prices are for 'average he-goats' during the peak season (after the harvest of grains in the highlands, when there are food shortages in the lowlands);
- (2) the original value was given in Rupees. 1 Rp = 2 Shs;
- (3) a disastrous goat's epidemic brought down the prices of goats.
- (4) all maize prices are based on maize grains in 90 kg bags (1 kg of maize grains = 3100 kcal); maize grains bought in small quantities are more expensive; recently people also buy 'UNGA' maize meal packets. 1 kg was 2.8 KShs in 1980, 3.4 KShs in 1983 and 3.8 KShs in 1984. These are official prices, which are generally adhered to. Of course if people sell goats and buy UNGA the caloric terms of trade are much less favourable, although still not bad: in 1984 those who sold a goat for 150 KShs could still buy 6 x as much maize meal calories with it (if we take into account that 1 kg of maize meal has 3600 kcal). On top of that people do not have to use calories/money on grinding.

Source: West Suk and West Pokot ARs; own surveys.

goats (say for 150 KShs each) and buy maize grains (2.2 KShs/kg for instance) they only need to sell 32 goats to get enough calories. To have 313 goats is beyond the wealth of even the richest pastoralists, but to have 32 goats available for sale is not exceptional. With a 25 to 33 % 'stationary' offtake rate it means a flock of 96 - 128 goats. The example is, of course, extreme, but it makes the favourable position of pastoralists abundantly clear.

If we regard the goats - sorghum exchange to be normal for the early part of this century, and the goats - maize exchange for the more recent period (until the 1950s, highland maize was hardly available), it is also clear from table 4.5 that the relative position of the pastoralists has further improved during this century.

The same exercise for cattle meat - for which the 'institutional trade' is too much of an intervening factor - and for milk - for which less detailed figures are available - comes to results which are slightly less favourable compared to the exchange rate for goats. As with goats,

prices for cattle plunge down during an epidemic. In Alale, in 1980, a local trader even got one head of cattle for one bag of maize grains and 20 - 40 KShs!

Lowland households are increasingly forced to buy food. Early during this century - but then mainly to get tax-money - selling shoats, hides and skins to institutionally acknowledged (and licenced) traders were the basic things to do. We have already seen that selling shoats and buying maize has always been a transaction with very good terms of trade for a Pokot pastoralist. This is true for the barter market; it is true as well for the institutional market, although during droughts, price levels for lowland produce drop below the average and grain prices increase. There is a clear relationship between droughts and sale of lowland produce. The highest (official) sales in West Pokot were always recorded in or immediately after drought years: 7,000 to 14,000 shoats per year, against 4,000 to 6,000 shoat's sales in other years (WPARs, without Kacheliba; figures for 1957-1975). As the sale of a goat or sheep gives an equivalent of approx. one bag of maize, the sale of 10,000 shoats during a dry year means enough maize to feed 50,000 people for one month each. In practice, the unrecorded sales will be more important even, further stressing the importance of 'relief sale' of shoats for the inhabitants of West Pokot during a drought. Per item, hides and skins are less lucrative. Prices may be extremely low and buyers not always available when there is an excessive supply of hides and skins. For a hide one can generally buy twenty to forty kg of maize, for a goat's or sheep skin, two to five kg, during a drought. With ten head of cattle dead and forty shoats less, a household of eight people can at least feed its members for one to two months on the proceeds of hides and skins alone. One should not overestimate the 'hides and skins' business, though. Tully (1985, p.97) writes: "the majority of such sales were neither an industry nor an index of Pokot monetary sales, but rather a by-product of disaster".

Traditionally, Pokot were not eager to sell cattle during droughts (or in general). Cattle play a major role in cementing internal socio-economic relationships. Bridewealth is paid in cattle mainly; during most of this century above a level of twenty head of cattle per marriage transaction (bridewealth payments vary with the availability of stock, the wealth of the groom's family and the location; occasionally payments of 60 head of cattle occur; see Livingstone 1977, p.215-216). If we look at the western lowlands alone, and if we take 1 % of the population as the estimate of nubile women, the western lowlands had between 700 and 1,000 marriages per annum, in recent times. It would not be exaggerated to estimate that 15,000 head of cattle change hands every year. In addition to marriage payments, tilia exchanges probably also affect thousands of animals, and various types of ceremonies are not complete without the killing and eating of cattle.

When cattle sales were introduced in West Pokot in the 1940s, they were compulsory and when an auction system replaced the quota system at the end of the 1940s, the level of sales rapidly deteriorated. The reintroduction of compulsory sales after 1954 increased the cattle export from a level of 1,000 to 2,000 per year to 8,000 to 10,000 per year in West Pokot, which meant an increase from 1 to 2 % official offtake rate to almost 10 %. After 1960, cattle exports went down rapidly again (below 2,000 per year in the 1964-66 period, despite the

1965 drought), but up to 6,000 in the dry years 1969 and 1973. On top of that, 3,000 to 6,000 head of cattle were officially registered to be sold within the district during dry years after 1968 (WPAAR 1950-1982; the reports are very chaotic and often inconsistent concerning official cattle sales; after 1975 the figures are almost useless). Figures about official cattle sales in Upe, including Kacheliba, between 1948 and 1968 (Karamoja District Plan 1958 and Moroto Archives, Veterinary Files) show more clear fluctuations with rainfall. When cattle markets were functioning (1950s and early 1960s) official sales' levels reached 3,000 to 4,000 during droughts and 1,300 to 2,500 in other years. Still, official offtake rates during droughts were below 4 percent. To know the relative importance of the officially recorded sale of shoats, cattle, hides and skins, we will compare the sales' figures for a number of recent drought years. We will also estimate how much maize could be acquired with income from animal sales. For the last twenty-five years, one can expect pastoral food problems in 1961, 1965, 1969, 1973, 1976, 1981 and 1984 to be most serious. Unfortunately, data for 1965, 1976 and 1984 were too unreliable to be used. Table 4.6 shows a comparison between 1961, 1969, 1973 and 1981.

Table 4.6 Official Sale of Cattle, Shoats, Hides and Skins during Droughts, West Pokot

	Cattle		Shoats		Hides		Skins		Total m.Shs	Total per capita	
	nr x1000	m.Shs	nr x1000	m.Shs	nr x1000	m.Shs	nr x1000	m.Shs		Shs	kgmaize
1961	6.4	0.6	10.0	0.2	8.0	0.1	7.1	0.0	0.9	15	75
1969	11.0	2.5	7.1	0.2	4.4	0.0	10.7	0.0	2.7	32	128
1973(*)	9.0	2.5	5.5	0.2	6.8	0.1	16.2	0.1	2.9	24	62
1981(*)	3.9	3.2	8.8	1.0	14.8	0.7	37.4	0.3	5.2	31	31

(\*) includes Kacheliba

Shs = Shs or KShs

Source: WPAAR 1961, 1969, 1973, 1981 (and others, as well as Rift Valley Province Annual Agricultural Reports to check average price levels). All figures - except probably 1961 - include 'trade within district', as far as this was officially registered.

Table 4.6 shows the predominant position of cattle: it can be derived that more than 90 % of registered livestock income in 1969 and 1973 came from cattle sales, 67 % in 1961 but only 57 % in 1981. The table also shows that the animal sales in 1969 were enough to cover almost half a year of maize supply for each (average) person in West Pokot, if we assume that an average person needs 850,000 kcal, or - with 3,100 kcal per kg of maize - 275 kg/yr. In all other drought years the situation was worse: in 1981 only 1.5 months of maize needs per capita could be earned by selling cattle, shoats, hides and skins. The figures for hides and skins for 1981 show the magnitude of the disaster during this year: before animals could be sold, they died in large numbers (although a

higher proportion of hides and skins were probably offered for sale, compared to former dry years: because of the rapid changes in clothing, hides and skins were no longer needed that much as basic material for making clothes). If we know that in 1981 there were about 30,000 households in West Pokot District, table 4.6 shows something else too: it is possible that each household did earn some money by selling a goat's skin or a hide, but at best only 40 % of all households did get money by selling an animal, through official channels. In 1961 and 1969 more animals were officially sold, than there were households; access to livestock income was definitely better during the droughts of the 1960s compared to the later ones. It meant that during the recent droughts there was a more acute need to find additional sources of income to buy food.

#### 4.4 The Inhabitants of Western Pokot and their Animals

##### 4.4.1 Population Growth and Distribution, 1920 - 1986

As in many areas of the Third World, the population of western Pokot increased considerably during this century. Before presenting any population figures, it is necessary to stress that population censuses never were reliable here. Not every household is always counted, due to isolation, bad organization and enumerators who do not know or do not want to know of their existence. Also households may hide themselves if they do not want to be counted, especially when 'head counts' are associated with taxation or labour recruitment or when people are on the run for 'the government'. Within households not every member is always counted. In Pokot society young children especially should not be shown to strangers and part of these children will not be included. The pastoral mobility across the border may also result in underrepresentation, especially of young men. The age of people is mere guesswork in many cases, especially around the age when 'children' become 'adults'. Despite all these shortcomings the trends are probably reliable. We have avoided too much detail. We give estimates in thousands for relatively large areas together. See table 4.7. Figures for western Pokot are combined with those for other Pokot areas, and for West Pokot as a district (with present-day boundaries).

If we look at the estimates for all Pokot together, we may conclude that the annual growth rate must have been between one and two percent from 1926 to 1948 - if we regard the upper 1926 figures as the most reliable ones. After 1948 the growth rate increased to almost 2 % per year and after 1962 it further increased to more than 3 % per year. For the semi-arid research area, these annual growth figures were first a bit lower (below 1 % in the 1926-48 period and below 2 % in the 1948-62 period). Between 1962 and 1979 the population growth was very high: almost 5 % per year. The growth rate between 1962 and 1969 is particularly high in Upe and in Central Pokot.

In Central Pokot the high growth between 1962 and 1969 can be explained partly by refugee migration, here mainly from Baringo-Pokot who were threatened by Turkana raids after 1967 and who mainly moved to eastern West Pokot but also to Central.

Table 4.7 Population Estimates Pokot, 1926 - 1979

Regions	Appr. Area km <sup>2</sup>	1926 -----	1948 -----	1962 ----- x 1000	1969 -----	1979 -----
<b>Research Area</b>						
Upe	1700	?	7-9	10	18	22
Kacheliba	4000	6-8	8-10	13	16	33
Central Pokot	1800	7-18	17	18	24	36
Total	7500	>13-26	34	41	57	91
<b>Pokot elsewhere (*)</b>						
Eastern WP	2300	9-13	19	26	33	45
Nginyang Baringo	4400	15	15	20	18	27
Southern WP	900	2-6	9	10	18	22-24
Trans Nzoia	...	0	?	2	1	5
Total Pokot	15300	39-60	77	99	128	190-2
% in research area		33-43%	43-46%	41%	45%	47%
Non-Pokot in WP		0	1	6	9	20-22
West Pokot Distr.	9100	24-45	54-56	73	100	159

(\*) We exclude Pokot inhabitants of Pian and Matheniko Counties of Karamoja District.

Sources and definitions of areas: appendix 4.2 (also for table 4.8).

In Upe the growth can probably be ascribed to Pokot who were driven out of their frontier positions in the Pian and Matheniko parts of Karamoja, after Uganda became independent in 1962 and especially after the increase of tribal warfare in the drought year 1965. If we look at the 1979 estimate for Upe (and the very high increase for Kacheliba between 1969 and 1979) we can conclude that the most western sections of the Pokot were further pushed to the east.

What happened after 1979? Between 1979 and 1982 Upe probably depopulated considerably. A census done by the Catholic Mission in 1985 counted 11,642 people only, while there had been over 22,000 inhabitants in 1980. After renewed unrest in early 1986 (see Ch.5), more than 80 % of the remaining people had fled to the east too. Even (1986) estimated only 1,600 people in the whole of Upe in August 1986. Almost nothing was left of Amudat as a centre (personal communication Brouwer, Amudat). Again, many Upe-Pokot must have settled in Kacheliba Division or even in the southern highlands. Within Kacheliba and Central Pokot, the 1979-81 and 1984-85 disasters resulted in a drastic redistribution of the people: towards the hills and the Suam River and also out of the lowlands to the southern Pokot highlands and Trans Nzoia.

#### 4.4.2 Actual Population Densities: Figures and Interpretation

In table 4.8 the population densities are given, for the same regions as in 4.4.1 and for the same years. These density figures are, of course, rather rough.

Table 4.8 Population Densities Pokot Territory, 1926-1979 (per km<sup>2</sup>)

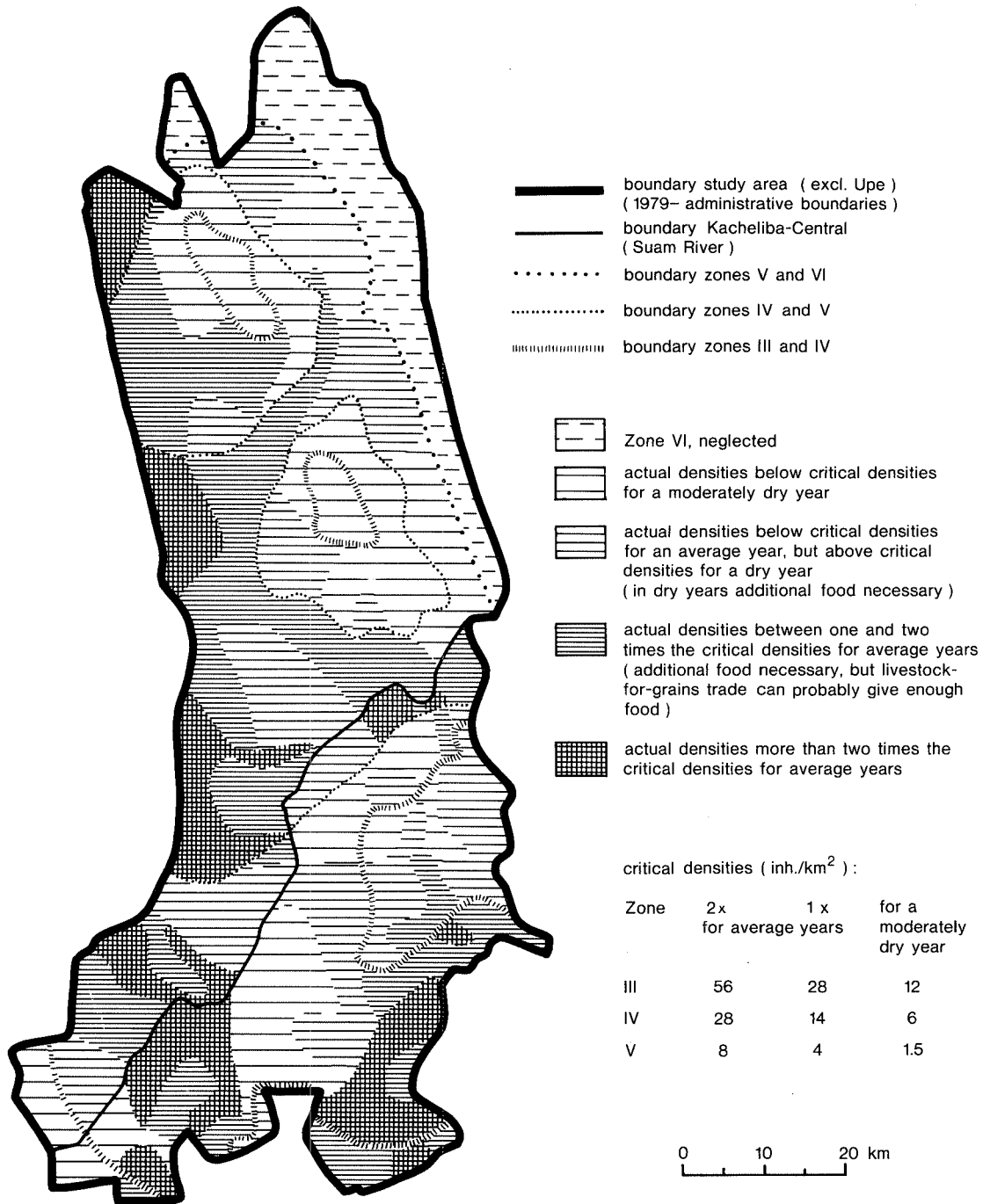
Region	1926	1948	1962	1969	1979
Upe	?	4-5	6	11	14
Kacheliba	1.5-2	2-2.5	3	4	8
Central WP	4-10	9	10	14	20
Eastern WP	4-6	8	11	14	20
Nginyang Bar.	?	?	5	4	6
Southern WP	2-7	11	18	30	49
W.P. District	3-5	6	8	11	18

In chapter 4.1 we have seen that, for standard years, the calculated critical density on the basis of livestock food alone would be 11/km<sup>2</sup> for Upe, 7/km<sup>2</sup> for Kacheliba and 16/km<sup>2</sup> for Central West Pokot. In all three areas these critical densities were reached - on average - between 1969 and 1979. Critical densities during moderately dry years (five for Upe, three for Kacheliba, seven for Central) were reached before 1948 in Central and around 1960 in Upe and Kacheliba. We have discovered, however, that pure pastoralists could and can gain considerably by not eating their animal offtake, but exchanging it for grains, and especially for maize. In table 4.9 the differences are given in terms of possible population densities, assuming that all animals are goats, that the critical goat's density for standard years has been reached; that the calorie exchange rate with maize is 1:12 and that all 'offtake goats' are indeed bartered for maize grains.

In practice, goats are a minority of the total number of stock units, critical stock unit densities for standard years might not be reached yet, not maize but sorghum might be bartered - with lower exchange rates - and grains may not be available in large enough quantities or not at all. Nevertheless, the figures show that much higher population densities are possible on the basis of pastoralism with exchange of animals for grains. For the research area as a whole, the 1979 census figures suggest that the population could - on average - live on animals alone, theoretically, if there are possibilities to exchange animals for grains. An other conclusion is that they could do so for a long time to come.

Within the research area, however, there are large differences in actual population densities. With the exception of Upe, we have detailed population data for our research area (enumeration area figures and maps) for 1979. Actual densities differed from below 1/km<sup>2</sup> in the northeastern parts of Kacheliba Division, to 80/km<sup>2</sup> near Chepareria. Figure 4.1 gives an interpretation of actual population densities in 1979, compared with critical densities for average and moderately dry





Source : unpublished enumeration data 1979 census ( from Van Haastrecht and Schomaker 1985, p 24 ), compared with KSS 1982 agro-climatic zones

Figure 4.1 Western West Pokot: Actual Population Densities 1979 Compared with 'Critical Densities' on the Basis of Pure Pastoralism

Table 4.9 Possible Population Densities; Pure Pastoralism and Pastoralism with Goats-for-Maize Trade

Zone	inhabitants/km <sup>2</sup>					
	in an average year		in a moderately dry year		in a disaster year	
	offtake 21 % goats eaten (*)	goats exchanged for maize grains	offtake 30 % goats eaten	goats exchanged for maize grains	offtake 75 % goats eaten	goats exchanged for maize grains
III	6	74	8	106	22	264
IV	3	37	4	53	11	132
V	0.8	9	1	13	3	33
VI	0.2	2	0.2	3	0.6	7
Research area	2.3	28	3.1	37	8.5	102

(\* in an average year goats also produce milk (which is in fact more important in terms of caloric value).

years, on the basis of livestock.

Figure 4.1 gives a lot of interesting details. It also allows a number of conclusions. First: the more humid areas have actual population densities which are below or even far below critical densities on the basis of pure pastoralism. The only exceptions are a small area near Kanyarkwat in the southwest, an area near Chepareria in the south and an area near Chepyal in Sook. We should keep in mind, though, that most of the more humid areas have mountainous soils which can easily be eroded by livestock use. The animals might also be more prone to particular diseases for higher areas, a major reason for lowland pastoralists to avoid these areas if they can choose. Second: many more people could be fed on the basis of livestock in the southwestern, central and northeastern parts of western West Pokot. Partly these areas were deserted in 1979 because of insecurity. Third: there are a number of areas, where the actual population density probably gives problems if the economy would still be a livestock economy alone. In that case most food should be bartered or purchased there. These areas are situated in the northwest (Lokitanyala and Kiwawa), in the West (Kunyao, Kodich, Kacheliba), in parts of Lower Mnagei and Riwa (especially Kongelai), in the area north of Chepareria and in the gold area of Korpu. In all the western areas many refugees from Upe had settled, just before Aug.1979.

#### 4.4.3 Livestock in Western Pokot, 1920-1986

For a long time, livestock production indeed was the predominant economic activity all over western Pokot. However, detailed livestock

data are almost impossible to find. We only have reliable stock data at the locational level of West Pokot District for 1952. Estimates for West Pokot District as a whole are available for 1925-27, 1933, 1942-43 and from 1970 onwards.

In the early colonial times, "it was the practice for many years, simply to ask a man at the time he paid his hut tax, how many cattle he had. Some District Commissioners, realizing the futility of this procedure, did not even bother to take such figures for many years" (Schneider 1953, p.182). The only careful livestock census in the history of West Pokot was done in 1952 - a period when Kacheliba was administered by Uganda and hence excluded. "Crushes were established ... and all the cattle, sheep and goats were rounded up and counted. Stock, after being counted and inoculated for rinderpest, were marked by shaving off a bit of the hump hair, so that for more than a month after being counted, this mark showed. In this way, and after forcing the people to comply, the government obtained an extremely reliable count of stock" (Schneider 1953, p.186).

The general figures for the District as a whole show between 150,000 and 210,000 head of cattle during the 1920s (Annual Reports West Suk); 240,000 in 1933 without 'Karasuk' and 320,000 for 'all Suk' (Kenya Land Commission, quoted in Schneider 1953, p.183). In 1943, during a severe drought, only 50,000 cattle were estimated (excluding Kacheliba).

The detailed 1952 Census shows a total of 112,000 cattle, 113,000 goats and 38,000 sheep for West Pokot District (without Kacheliba) (Agricultural Gazetteer West Suk). An animal census in 1956 counted the very high number of 165,000 cattle and 99,000 small stock in Upe, including Kacheliba (District Plan Karamoja, 1958). After the 1960-61 drought the number of animals in Upe + Karasuk had gone down to 104,000 cattle and 56,000 small stock in 1963. Also 6 camels had been counted (Moroto Archives File, Vol.2 II). Estimates for West Pokot, including Kacheliba, during the 1970s are between 150,000 and 250,000 head of cattle, 'about' 70,000 sheep and 'about' 280,000 goats, but these are mere 'guesstimates' (even for 1980 the figure of 280,000 goats was used, despite a severe goat's disease in 1978-79 that killed most of the goats; see WP AR 1980).

In 1975 a rinderpest campaign covered 133,000 head of cattle 'in the range area', which was estimated to be 70 % of all mature and immature cattle in West Pokot District (WP AR 1975). A cattle census in Upe (no longer with Karapokot) counted 103,000 cattle in 1975, as well as 32,000 goats, 19,000 sheep and 1,600 donkeys (Upe 1982).

Recent figures prepared by the West Pokot Ministry of Agriculture and Livestock Development for the 1984-88 District Development Plan, give an estimate of 92,000 cattle, 67,000 sheep and 149,000 goats. These figures reflect the situation after the disastrous 1979-81 years. The Kenya Rangeland Ecological Monitoring Unit (KREMU) gave statistics based on aerial sample counting as follows: zebu cattle 168,908 (1977) and 53,569 (1981, that is less than a third), goats and sheep together 96,921 (1977) and 41,436 (1981). A complication is that KREMU appears to have used the old boundaries (changed in 1970) so excluding Kacheliba Division. On the other hand their statistics claim to cover 9,090 km<sup>2</sup>, which would again include the whole of Kacheliba Division. In the words of the District Atlas West Pokot (1985, p.68): "All in all the numerical information about traditional livestock is far from satisfactory". On

top of that the District estimates cover both the semi-arid lowlands (including those in eastern West Pokot) and the more humid highlands. For the recent years the proportion of animals in the semi-arid areas of western West Pokot is locally estimated to be 60 % of the District figures.

For the District as a whole we calculated the stock units (of 300 kg). The results are presented in table 4.10 (note the differences in area).

Table 4.10 Estimated Stock Units West Pokot District, 1926-1983

Year	Area (*)	Last severe drought	Cattle (**) ---- x 1000	Shoats (***) x 1000	SU ----	SU/ km2	People x 1000	SU/cap	Source
1926	W+K	1918-23	210	220	191	21	24-45	4-8	1
1952	W	1950	112	152	108	21	46	2-3	2
1956	K+U	1952-53	163	99	134	24	20	7	3
1963	K+U	1960-61	104	?	73+	13+	23	3+	4
1970	W+K	1965	150	320	169	19	100	1-2	5
1975	W+K	1972-74	190	350	203	22	130	1-2	6
1975	U	1972-74	103	51	82	48	20	4	7
1977	W	1976	169	96	137	27	120	1.1	8
1981	W	1979-81	54	41	46	9	130	0.4	8
1983	W+K	1979-81	92	216	107	12	190	0.6	9

(\*) W = West Pokot District without Kacheliba (5,080 km<sup>2</sup>); K = Kacheliba (4,010 km<sup>2</sup>); U = Upe (without 'Karasuk') (1,700 km<sup>2</sup>).

(\*\*) Disregarding 'grade' cattle in the highlands: in 1981 approx. 3,000; one head of cattle = 0.7 SU (1 SU = 300 kg).

(\*\*\*) Disregarding woolsheep in the highlands; in 1982 approx. 30,000; one sheep or goat = 0.2 SU.

Sources:

1. based on tax counts; AR West Suk 1926
2. detailed and compulsory animal census (Distr. Agric. Gazetteer; nd.)
3. 1956 data Upe, including 'Karasuk' (in District Plan Karamoja 1958, and Evans-Jones 1960, Appendix IV)
4. Baker 1967, pp. 6-7, wet-season census
5. MoALD estimates West Pokot District; 6. rinderpest campaign and MoALD estimates WPD
7. Upe 1982
8. KREMU head counts based on aerial sampling (Distr. Atlas WP 1985)
9. DDP estimates, based on MoALD, WP District (Ibid.).

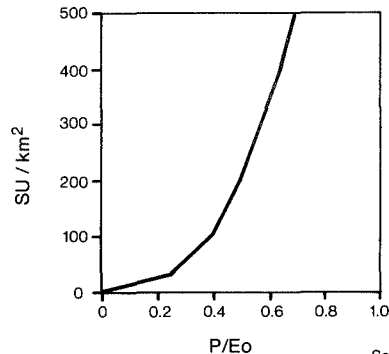
Although the individual estimates must be treated with suspicion, the 'stock unit per capita' trend is clear: it goes down from a level, which can give the inhabitants most of their food through livestock products to a level which covers only a fraction of food needs. If we calculate the food production of one stock unit of cattle in an average year to be 105,000 - 132,000 kcal and of goats 115,000 kcal (see tables 4.1 and

4.2), and if one average human being in this area needs 850,000 kcal per year, then an average person roughly needs at least seven stock units to be able to live on livestock products alone. If we bring in the animals-for-grains trade again, this figure can be (much) lower, although considerable risks are involved.

The stock unit density figures pose severe problems of interpretation. For West Pokot including Kacheliba, the stock unit density in 1970 is below the 1926-level, going up to a bit above this level in 1975 and plunging down in the early 1980s. The estimates for West Pokot without Kacheliba show more dramatic ups and downs. One can assume that the stock density in West Pokot - including the highlands - was above 30 SU/km<sup>2</sup> during the late 1920s and the 1930s (probably the 1930s show the highest stock densities during this century, which was drastically reduced during the 1940-44 disasters). In the early 1950s the density level for 'small' West Pokot was a bit above 20 SU/km<sup>2</sup>. In 1977 it had increased to 27 SU/km<sup>2</sup>, to come down to the extremely low level of 9 SU/km<sup>2</sup> in 1981. If 60 % of the animals in West Pokot including Kacheliba can be found in the western lowlands, as is the MoALD estimate for the 1970s - an area of approx. 5,000 km<sup>2</sup> - the animal densities in this area were 20 SU/km<sup>2</sup> in 1970, 24 SU/km<sup>2</sup> in 1975 and 13 SU/km<sup>2</sup> in 1983. In Upe both the animal density and the number of stock units per capita were considerably higher in 1975. Although this is the only measurement for Upe (without 'Karasuk') we may safely say that Upe had a high degree of 'subsistence pastoralism' during the whole of this century until 1979 (see Baker 1967, p.23). After 1979 the large majority of the animals died, were raided or were brought to eastern refuge areas. The actual livestock densities during the whole century are much below the potential critical livestock density during a standard year, which was calculated to be 60 SU/km<sup>2</sup> in Kacheliba Division (see table 3.9; it is probably above 70 SU/km<sup>2</sup> in Central West Pokot and in Upe). The difference between theory and practice is too large to be pushed aside.

To understand the danger of working with 'standard' years and the need to rely on dry year experience much more, we will use a 1 km<sup>2</sup> reference area in Kongelai: a Zone IV area (without 'ngoroko' problems which would have made the situation even more complex).

First we need to make a model of the expected carrying capacity with varying rainfall ( and hence varying P/Eo figures) for a particular area. For different zones, Braun's carrying capacity estimates have been given in Chapter Three. Although the ecological reality is much more complex, we will use the zonal estimates for particular P/Eo levels in our reference area. See figure 4.2. Our reference area has a median P/Eo level of 0.43 and hence a median potential animal density of 120 SU/km<sup>2</sup>. If we look at the actual rainfall-evaporation ratio during the recent decades, some years allow a very much larger number of stock units (e.g. 1975, 1977-78, 1981). Other years, however, only allow a third of the 'average' animal density. One of those years was 1972. If there is a direct correlation between actual P/Eo and carrying capacity, in this year, not 120 but only 40 stock units could be fed locally. This was exactly the animal density measured when the Kongelai Group Ranch began, although followed by animal deaths in 1973. Between 1973 and 1979 rainfall was never as low as in 1972, and the (female) herd could theoretically recover with an annual growth rate of 10 % females and 10



Source: KSS 1982, p 47

Figure 4.2 Carrying Capacity for Different P/Eo Levels

% males (Dahl & Hjort 1976, p.61). Depending on the 'normal' and deliberate mortality rate of male animals, the total herd growth rate could be anything between 10 and 20 %. Let us take 15 %. In that case the herd would have reached a density of 90 SU/km<sup>2</sup> in 1979. In practice, the 1972-73 casualties probably meant that rebuilding the herd could only start in 1974, from a lower level, e.g. 35 SU/km<sup>2</sup>. With the same growth rate, 70 SU/km<sup>2</sup> could have been reached by 1979. In that year, the rainfall would only allow a maximum density of 60 SU/km<sup>2</sup>.

'Overstocking' is evident for that year, and in practice the animals were very sensitive to disease epidemics, which indeed killed many. According to Yadeta's 1979 estimates for this area, the animal density was 50 SU/km<sup>2</sup>. Further animal deaths in 1980-81 probably resulted in a drop to 30 SU/km<sup>2</sup> by 1982. In 1982 and 1983, the animal density could increase again to almost 40 SU/km<sup>2</sup>, when the 1984 drought (with a maximum animal density of 50 SU/km<sup>2</sup>) again resulted in stagnation or even herd decline. We may safely conclude that herds never got a chance to reach the carrying capacity levels for so-called standard years. In Zone IV areas with an average potential population supporting capacity on the basis of livestock of 17 inh/km<sup>2</sup> (each person needs 7 SU to get enough animal produce for complete self sufficiency), the actual population supporting capacity will never be beyond an average level of 5 inh/km<sup>2</sup>, with occasional high exceptions of 8 inh/km<sup>2</sup> after more than five consecutive years of rebuilding the herd. But these relatively high densities will be cut down again during the inevitable drought which will follow sooner or later. In figure 4.3 our argument is illustrated. We may fear that the situation described for Kongelai is also true for other areas.

Pokot herdsman never had a chance to build up herds and flocks to the potential density for 'standard' years. Droughts and diseases checked the animal growth regularly and contained it to levels considerably below the 'potential density'. This also means that 'overstocking' is only a relevant issue during droughts, in this area. For most of the years, 'overstocking' is not relevant at all, despite the 'general feeling' among generations of civil servants.

This does not mean that there have never been places where critical livestock densities were reached during some periods. We will therefore look at more detailed evidence, starting with the 1952 data.

Again the critical livestock density calculated before, for a standard year, is considerably above the actual densities of 25-40 SU/km<sup>2</sup> found

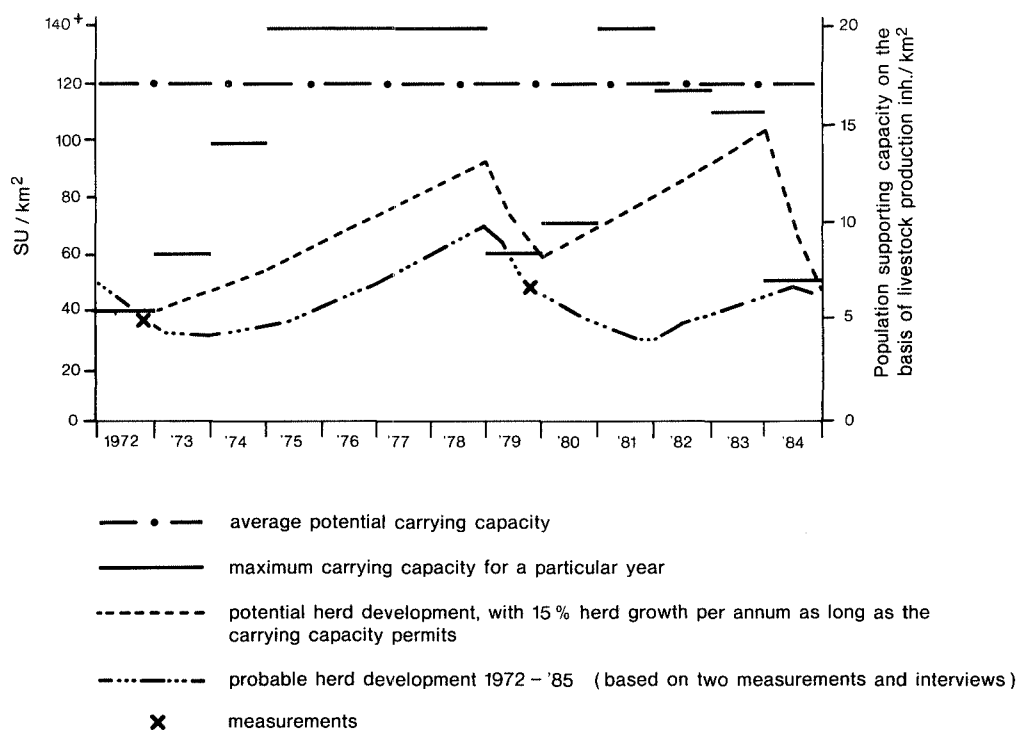


Figure 4.3 Animal Densities in Kongelai: Models Compared with Reality

Table 4.11 Stock Units Counted in 1952

Location	Area (km <sup>2</sup> )	Pop. 1948 Census	Cattle 1952	Sheep (x 1000)	Goats	SU x 1000	SU/km <sup>2</sup>	SU/cap	Cattle/all animals (in SU)
Mnagei	430	7315	20	6	4	16	37	2.2	88%
Riwa	500	3592	15	4	6	12	25	3.4	85%
Sook	490	4736	19	3	17	18	36	3.7	76%
Kipkomo	410	6872	18	5	14	16	40	2.4	77%
W. Pokot	4760	45013	112	38	113	109	23	2.4	71%

Source: Agricultural Gazetteer West Suk, not dated (approx.1955); own calculations (1 SU = 1.4 cattle = 5 shoats).

in 1952. During a drought, however, there were clearly too many animals, especially in Kipkomo. We can also conclude that in Riwa and Sook, during standard years, livestock production could supply half of the

food needs of the inhabitants; in Kipkomo and Mnagei, less than a third. It is clear that in 1952 in all areas not so much the livestock carrying capacity was a limit to a complete livestock base of food production, but lack of animals. And lack of animals mainly resulted from recurrent droughts and livestock epidemics, aggravated by an adverse government policy, as we will see.

What about later periods? For some specific areas (grazing schemes, group ranches, a survey), there are detailed figures available. These are presented in table 4.12.

Table 4.12 Livestock Densities in Selected Areas West Pokot

Area	km <sup>2</sup>	Year	Pop.	Cattle	Shoats	SU	SU/ km <sup>2</sup>	SU/cap
Riwa Graz.Scheme	105	1955	600	2500	4000	2550	24	4.3
Same	193	1957	1100	3564	4124	3320	17	3.0
Same	193	1959	1300	4031	5553	3933	20	3.0
Kongelai Gr.Ranch	222	1972	2700- 3200**	7323	15964	8318	37	2.6- 3.1
Kongelai survey	113	1979	1400*	5605	7394	5403	48	3.9*
Chesera Gr.Sch.	92	1958	700	1905	1915	1717	19	2.5
Kipkomo Gr.Sch.	172	1958	1400	2194	4416	2419	14	1.7
S.Kipkomo survey	97	1979	2300*	8270	5594	6908	71	3.0*

\* Yadeta's population figures are considerably below the figures which we expect by using the enumeration area figures of the 1979 census: these suggest a population two to three times higher, and hence much lower SU/cap. Yadeta's study is full of figures which are most doubtful.

\*\* Livingstone (1977, p.220) uses 2,000 people here, as residents; we think this estimate is too low.

Source: West Suk AR 1955, 1959, WP AR 1972; Yadeta 1985 for 1979.

With the possible exception of southern Kipkomo in 1979, all these figures confirm the general conclusion that nowhere critical livestock densities for standard years were reached. For all areas it is also evident that people cannot live from livestock production alone, not in the 1950s and not in the 1970s. They either have to barter or to buy additional food or they must grow crops to produce additional food for their own consumption.

The foregoing is contrary to the opinions of many preceding authors and civil servants. They have suggested that critical livestock densities had been reached in many areas of western Pokot and they used erosion as proof of 'overstocking'. In the District Atlas West Pokot (1985, pp.28-29) large areas in the southwest and northeast are classified as areas with 'severe erosion' and with the exception of some very dry areas in the extreme northeast "the eroded parts (...) suffered mainly from man-made erosion". For the plains, overgrazing, trampling as well



as burning are given as causes. It can not be denied that in some areas in some periods too many animals were crowded together. This is especially true for 'livestock refuge areas' during and after periods of heavy raiding which make it impossible to graze the threatened areas. But this has to do with a socio-political problem, not with critical livestock densities per se. I am not convinced of the 'man-made' (livestock caused) reasons for heavy erosion. An area with such huge escarpments and hills can be expected to show heavy erosion anyway, especially because rains pour down in torrents once in a while. And erosion is not necessarily always a bad thing: soil material from the humid highlands is transported by and deposited along lowland rivers, resulting in very fertile riverine soils. Only when soil is deposited in lakes or seas or when siltation of artificial lakes for hydropower plants is an economic threat, erosion processes are economically dangerous, as can be expected to happen with the Turkwell Gorge Project, currently under construction. One may fear that in a decade to come the Pokot pastoralists will be blamed and the issue of 'overstocking' and 'bad livestock management' will crop up again. The fact that the theoretical 'critical densities for standard years' could never be reached in western Pokot, raises doubts about the reality of the 'carrying capacity model' suggested by Braun/KSS. There seem to be lower thresholds in practice. The impact of droughts on livestock numbers, and the impact of often related livestock epidemics, is more decisive than the potential 'dry matter production' during standard years, so it seems.

#### 4.5 Intensification Theory

The relationship between a population and the resources of an area is a complex one. A number of human geographers have specifically dealt with this problem, for instance Grigg (1976 and 1982), Brookfield & Brown (1963), Bernard & Thom (1981) and - for part of our research area - Yadeta (1985), to mention a few. Partly they are inspired by well known authors like Boserup (1965; 1981) and Ruthenberg (1971). Most of these studies deal with the 'intensification' or 'packing' process: because of rising population densities, changes in agriculture are forced, which enable a higher local food production. When a 'critical population density' is reached (the limit of local food selfsufficiency, given a certain type of land use and technology under certain natural conditions), theoretically a number of solutions to counter food deficits can be distinguished: rising mortality, outmigration, food import and local agricultural intensification (as well as colonization of new lands).

Local agricultural intensification from a situation of pure pastoralism can either mean the intensification of livestock production or the change from pure pastoralism to forms of mixed or combined agriculture (see Jaetzold & Schmidt 1983, pp.192-195). Various methods are possible to intensify livestock production.

In the sphere of livestock, the yields are a result of primary food production, and secondary food production. Primary food production is determined by the quality of the range. Secondary food production is determined by food habits (not milking sheep; bleeding cattle; eating

offals), by socio-economic decisions (offtake rate, livestock composition and herd composition), by animal husbandry (e.g. guarding against predators, additional fodder during times of stress), and by the quality of the livestock. All this can be manipulated to get higher food yields. Primary food production can be improved by removal of unedible plant species, by sowing more nutritive grasses and shrubs, by soil improvements, by eradication of tsetse flies, by eliminating competitors (e.g. wild animals, termites) and by grazing management. Even fodder production and (temporal) zero-grazing might be solutions (on the basis of hay storage, not to speak about imported feed). A controversial possible improvement is the use of controlled fire. Secondary food production can be increased by a changed livestock composition (e.g. cattle instead of sheep), a changed herd and flock composition (improved Zebu cattle; Sahiwal or Boran breeds; Dorper sheep; Galla goats). Also changed food (and labour) habits might increase the food intake: e.g. milking sheep. Higher offtake rates - and a connected breeding strategy with adequate disease prevention - and the prevention of food losses (eradication of wild animals, better food storage techniques) are important too. One should always keep in mind, though, that herders in semi-arid circumstances will be very reluctant to accept methods of intensification that increase risks. Also, some methods of intensification might require levels of labour input and labour flexibility that are beyond the reach of most households.

Often, it is much more easy to change from pure pastoralism to combined forms of crop and animal production, than to intensify livestock production. Combined agriculture does not necessarily mean a decrease in the number of animals in the area. For pure pastoralists it may simply mean the adoption of very primitive forms of 'take a chance' agriculture (Hjort 1981, p.137), e.g. sowing finger millet here and there and come back after four months to harvest. For semi-pastoral people it may mean a change to forms of more intensive agro-pastoralism. Gradually even mixed agriculture might develop, with animals for traction and production of manure, and part of the crops as animal feed.

As a result of more cultivation activities the production of food values per ha can increase considerably. For areas that are not too arid, the difference in food productivity per ha between livestock keeping and arable farming has gained a large acceptance, not only among scientists who deal with current development problems, but also among historians. In an interesting introduction about agricultural systems as eco-systems, Grigg (1982, pp.68-80) concludes that "it takes a far greater area to produce a given calorific value from animal products than from most food crops" and "it should be noted that food crops also produce more protein per ha than livestock does" (Ibid, p.70). It is important to quantify this statement as precisely as possible for our research area.

Three major questions should be answered:

1. How much land can be used for arable farming compared with animals?
2. What is the difference in food values that can be produced, using this land?
3. How much food does a certain population need?

The literature provides 'easy answers' for each of these questions. Especially these 'easy answers' play an important role in planning-

oriented discussions. One simply compares one ha of cereal production with one ha of cattle production, using the 'available evidence' for estimating yields. The yields are converted into food values (calories, protein). 'Average consumption needs per capita' and population estimates complete the exercise and an assessment of 'over-'(or 'under') population is derived.

Let us give an example from semi-arid West Pokot, a Zone IV-area. In 4.1 we have seen that cattle may produce 13.2 m.kcal and 692 kg of protein during an average year. That is 132,000 kcal and 7 kcal of protein per ha. Suppose one ha produces 1050 kg of maize. One kg of maize has a food value of 3630 kcal, but it is more realistic to deduct 15 % for seed, storage and milling losses. This leaves us with approx.3100 kcal. One ha of maize gives 3,255,000 kcal, is our conclusion. In terms of proteins, it would be 89 kg of protein.

The conclusion seems obvious: maize gives 25 times the caloric value of cattle, in this situation, and 13 times the protein value of cattle. If we use our estimate that an average Pokot needs 2340 kcal per day (that is 850,400 kcal per year) we may conclude that one ha of maize could feed 3.8 people and one ha of cattle only 0.16 people. Per km<sup>2</sup> it would mean a 'critical population density' of 380 people if everything would be used for maize and a 'critical population density' of 16 if all is used for cattle. A very bad maize harvest of only 43 kg of maize per ha gives the same food value as the cattle products!

As soon as we look behind 'easy estimates', theoretical and empirical problems make it very difficult to arrive at any straightforward conclusion. We have already seen (in 3.1) that the 'possible arable land per annum' is mostly only a fraction of the total land area, and that seasonal and interannual variability in rainfall results in large fluctuations in yields of crops. For Zone IV in Kacheliba Division (see table 3.7) we have calculated a possible rainfed arable use per annum of 10 % on average. With 'average year' harvests of 1050 kg/ha, this means that an average km<sup>2</sup> can only feed 38 people, and not 380 people, as suggested above. In 'good years' and 'bad years' or with other crops, the 'critical densities on the basis of arable farming' cover a wide range. Table 4.13 gives a few situations in Zone IV.

In Boserupian terms we can expect areas with arable potential to change from livestock use to agro-pastoral use and later - if possible - to arable use with rising actual population densities. In Zone IV areas, possible arable yields in 'average' and 'good' rainfall years are above or even far above possible livestock yields for all soil types, as one can see by comparing table 4.13 with table 4.4. For the riverine soils, possible arable yields are far above possible livestock yields in case livestock is exchanged for grains (compare table 4.13 and table 4.9). But also arable production (with the currently used technology) has its 'critical densities', although these have been reached in only a few pockets of semi-arid West Pokot so far (see Van Haastrecht & Schomaker 1985). If these 'critical densities' for arable farming - with a certain technology - are reached, further agricultural intensification is necessary. All our calculations were done with the current yield levels of semi-arid western Pokot in mind. These yield levels are perhaps high compared to actual yield levels elsewhere in semi-arid Africa, they are considerably below the technical possibilities for semi-arid lands.

Table 4.13 Food Yields per km<sup>2</sup>; Various Situations in Zone IV

Soil	PAUPA	Rainfall	Crop	Yld/ha	kcal/kg	kcal/km <sup>2</sup>	Prot/kg	
KgProt/				(kg)	(*)	(m.) (**)	(grms) (*)	km <sup>2</sup> (***)
A8	0.64	average	maize	1300	3100	258	85	7072
F13	0.15	average	maize	1000	3100	47	85	1275
M11	0.06	average	maize	1000	3100	19	85	510
all IV	0.10	average	maize	1050	3100	33	85	893
all IV	0.10	good	maize	1500	3100	47	85	1275
all IV	0.10	average	millet	700	2800	20	51	375
all IV	0.10	poor	maize	300	3100	9	85	255
all IV	0.10	poor	sorghum	400	3000	12	88	352

(\*) 15 % loss has been deducted; 'yield' is yield of dried grains (Renqvist c.s. 1986, p.14);

(\*\*) x 1.18 gives possible population density (needed 850,000 kcal/cap/year);

(\*\*\*) x 0.09 gives possible population density (needed 11.6 kg protein/cap/year).

Yield levels are determined by the land that can be used, the required fallow periods, the availability of moisture, the type and quality of the seeds and crop husbandry. Farmers can start to use steeper areas, with or without terracing and other soil conservation works, they can chemically treat saline or sodic soils, they can rehabilitate eroded areas and they can irrigate the land, or use water harvesting techniques.

Farmers can also reduce the fallow period by introducing leguminose crops (beans, peas, which have a positive effect on soil nutrients), or by fertilizing the soil, either through a (better) symbiosis with animals or through adding manure or artificial fertilizers to the fields. Of course farmers can also decide to 'mine the ecology' with increased yields on the short run and decreased yields on the long run. Farmers can use crops or varieties with a higher yield per ha (e.g. maize instead of sorghum, hybrid maize instead of local maize) or they can combine various crops (e.g. maize and beans) with a higher combined yield/ha.

Finally there are many possibilities for improved crop husbandry: more early planting, better spacing, more weeding, better guarding, more careful harvesting, better storage, more careful milling.

Also here, farmers will always judge the increased yields against the risks involved, risks that may be related to the variability of rainfall, but also risks of a socio-economic nature (e.g. the availability of inputs). Finally farmers are often constrained by labour problems, at least during part of the season. A general strategy is to spread the agricultural work over a longer period. In that case the total available labour input can be increased and hence the yield (more acres, better husbandry). Sometimes additional tools (e.g. ploughs,

animal traction or even tractors) are a realistic way out. Boserup's theory suggests that critical population densities and processes of intensification are highly correlated. Stripped of all nuances it means:

- if critical densities are not yet reached, there is no need for intensification. In semi-arid areas with a low population density, livestock keeping will be the predominant land use because of the lower risks involved and because of labour saving (despite higher possible arable food yields during average years);
- if critical densities are reached, intensification is the inevitable way out. Further population growth will force a new round of intensification measures etc.

Boserup's theory has received quite a lot of criticism from geographers (e.g. Brookfield 1972; Grigg 1976, 1980, 1982; Yadeta 1985; also see Dietz 1987, pp.98-102): intensification is not the only 'solution' to 'population pressure', 'rising population densities' are not the only causes of intensification; 'critical population densities' vary a lot given the variations in the environment. Here we add a major criticism which is especially important in semi-arid areas.

We have already indicated that in semi-arid areas the critical population density based on livestock production is highly variable. Drought and diseases tend to keep actual livestock numbers considerably below 'possible numbers during standard years'. Critical population densities on the basis of livestock can better be based on dry years. Drought or livestock diseases do not immediately cause food problems, though. Animals can be exchanged for grains from elsewhere, at favourable terms of trade, as we have seen. Dead animals can be eaten: animal food changes from milk to meat. Only a second dry year after a disastrous depletion of the herd during a first dry year means severe food problems. The threat of famine, then, is very real. Famine is also difficult to avoid if herds are raided or if a normal livestock-for-grains trade is blocked.

Droughts are much more dangerous in case of arable farming. A harvest failure means no food at all. It may even mean that the seeds for next year's season are wasted. The chance of harvest failures is much higher than the chance of large scale animal deaths. In chapter 3, the chronology of disasters speaks for itself, as well as the analysis of harvest possibilities in Kongelai. People who have lost (most of) their animals and who concentrate on arable farming instead, are faced with continuous threats of famine. Not intensification strategies are needed then, but survival strategies, and people will always try to be more secure, by having at least some animals.

#### 4.6 Crop Production in Western Pokot

Many households who could rely on livestock completely (during an average year) do regard it as a wise strategy to spread risks and also cultivate crops. With the possible exception of households in Upe, Suam and Kapchok, minor crop production of the 'hit and run' type has probably always been part of the land use in semi-arid western Pokot during this century. But more sedentary crop cultivation, dominating household farming systems, started in semi-arid lands north of

Chepareria during the 1960s. It remained the exception for a long time. During the 1960s and 1970s, the cultivation frontier in West Pokot moved east (from humid Mnagei to even more humid Lelan) and south (from the area of indigenous irrigation in eastern West Pokot uphill into the same Cheranganis). Major changes in land use in the semi-arid parts of the district had to wait until the late 1970s and the 1980s. As a result of insecurity and droughts, many people started rainfed maize cultivation along the Suam and Kanyangareng Rivers and in the Chemorongit hills. For the district as a whole, Figure 4.4 presents a tentative history (also adding some findings for Upe).

For the semi-arid area there are no separate crop production estimates. But there are figures for specific lowland crops, and in 1980 the MoALD estimated the total cropped area per division (Standard Guidelines, WP, 1980 and MoA WP AR 1980). For that year in Kacheliba Division, the cropped area was estimated to be 147 ha of sorghum, 135 ha of fingermillet and 20 ha of maize, of which 12 ha was intercropped with beans, a total of 302 ha, or less than 0.1 % of the total area. In Chepareria and Kapenguria divisions, the lowland crop fingermillet was cultivated on almost 800 ha, sorghum only on 63 ha. Also here this would mean a very tiny proportion of the total semi-arid area: less than 1 %. It is most probable that these are underestimates; MoALD functionaries were hardly ever visiting the lowlands during these days, and especially they did not visit areas which no car could reach.

After 1980 the semi-arid cropped area increased rapidly, especially in Kacheliba. In our surveys for the locational development profiles, made for the ASAL Programme, we estimated the cropped area during the 1982-season to be 700 ha of maize and 500 ha of sorghum in Alale (Alale LDP 1982, Dietz & Van Haastrecht 1983, pp.24-25), 150 ha of maize and 250 ha of sorghum in Kasei and Chemorongit locations (Kasei-Chemorongit LDP 1982, p.22), and at least 400 ha of maize along the Suam River. In Kipkomo, the area north of Chepareria Centre must have had more than 300 ha of maize in 1979 already (Yadeta 1985, p.92, p.129) and it had increased to at least 450 ha in 1982. This is the only area where fertilizers are used now, as well as some tractors. In lower Sook at least 150 ha of sorghum must have been cultivated, in northern Kipkomo 150 ha of fingermillet and sorghum, and in lower Mnagei maybe another 100 ha of maize. Together semi-arid western West Pokot must have had close to 3,000 ha under cultivation. Still it was less than 1 % of the total area. Most of the farmers were inexperienced and crop husbandry levels must have been very low. On the other hand, 1982 was a year with very good rainfall. If the average yield would have been 1,000 kg/ha, the total yield could probably feed 11,000 people on grains completely. That would be less than one-sixth of total food needs of the inhabitants in the area, however. Crop cultivation in semi-arid western Pokot is still in its infancy.

Very tentative estimates for Upe (Amudat, MoA-file) gave a total of 295 ha under cultivation in 1981 (90 % sorghum) and 285 ha in 1982 (80 % sorghum, 15 % maize). Food for Work projects, started in 1982, resulted in clearance of 110 ha near Loroo and south of Amudat. For 1983, other schemes were planned, too, especially in the Southwest (Loporokocho). People also wanted to go back to an area of traditional cultivation in the Northwest of Upe, Achorichor, an area that was deserted after the 1979 war (Upe, 1982).

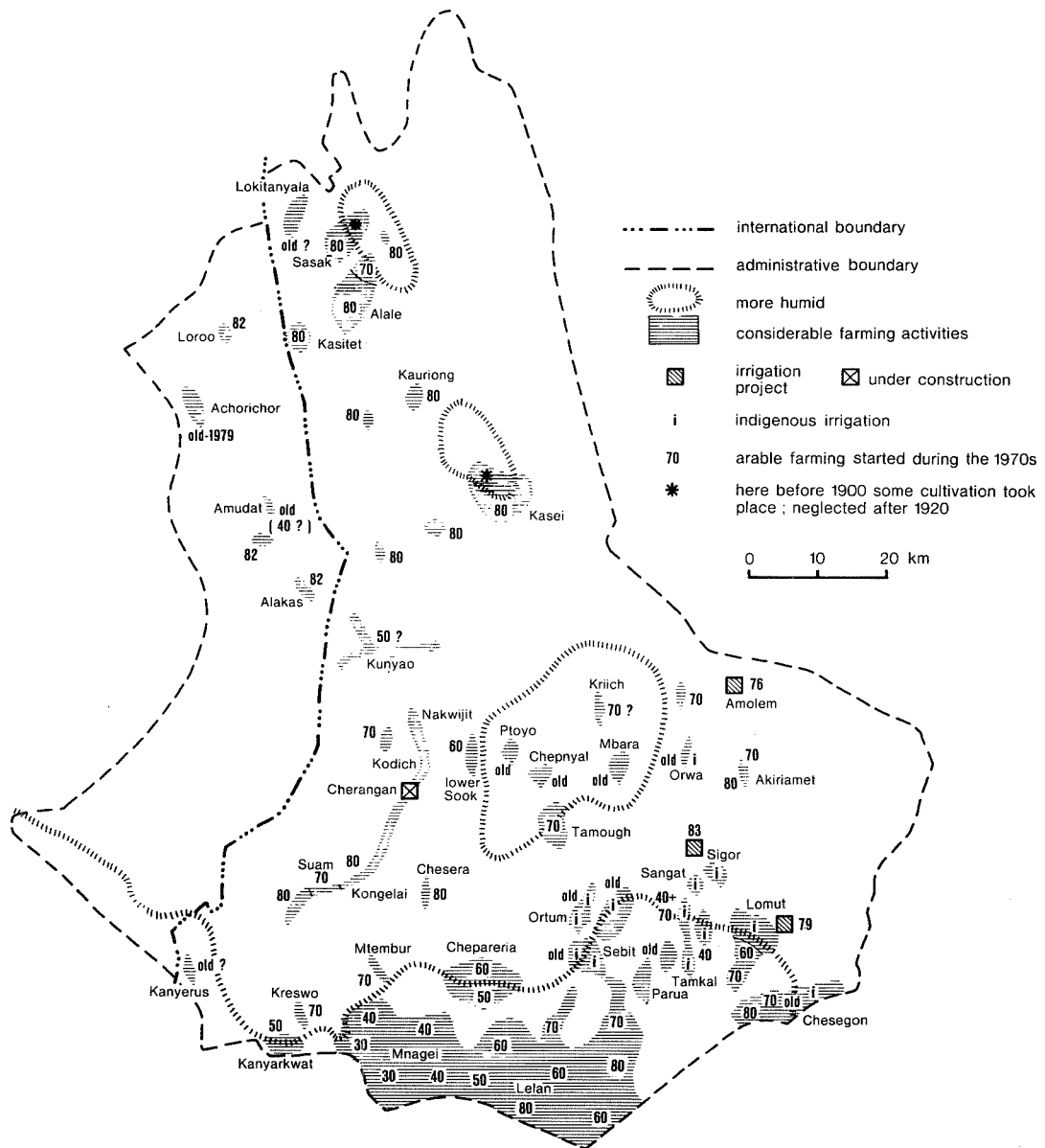


Figure 4.4 Start of Considerable Farming Activities: West Pokot and Upe

#### 4.7 Survival Strategies Related to Food Crop Production

Crop cultivation as a major occupation is relatively new to most of the people of western Pokot, although the cultivation of fingermillet or sorghum has always been of some importance for most families in this area. Unlike the 'hill Pokot' of Batei Location and Sigor Division, with a long history of crop related livelihood strategies, there are no well established modes of survival based on crops, yet. Most farmers in western Pokot are still very much experimenting with this new way of life, which fell upon most of them in the late 1970s or the early 1980s. If crop cultivation is there to remain - although its relative importance may become less again - we can expect some of the survival strategies of the 'hill Pokot' to be applied in western Pokot too. That's why we will pay some attention to crop related survival strategies which are possible, but which are not yet practised in western Pokot, besides strategies that are already common coin in western Pokot.

The most obvious way farmers in the semi-arid zone protect themselves against climatic risks, is to select crops and varieties which are adapted to the drought prone conditions of the locality. Which crops and varieties to plant, when to plant these crops and where, and how large an area to plant become key elements in the farmer's agricultural plan (Porter 1979, p.36). If possible, many farmers will try to combine various crops and varieties. For instance sorghum varieties are planted which need long and which need shorter growing seasons, some which can endure stress better than others, some which are strong enough to withstand downpours of rain. On top of that, farmers will mix more bitter and more sweet varieties, longer and shorter varieties, all to be recognized by a particular colour and shape of the seeds. Monoculture of only one variety may give excellent yields in some years, it may result in a total loss in dry years. Schneider (1953, pp.169 and 170) found six varieties of sorghum and ten varieties of fingermillet in Batei (east of Kipkomo). In lower Sook we found seven varieties of sorghum in one harvest, in 1986.

Farmers are continuously experimenting with particular varieties and they also exchange seeds among each other. The best part of the harvest of each variety is always kept as seed for the next season.

We will briefly give some advantages and disadvantages of three crops that are widely grown in western Pokot nowadays: fingermillet, sorghum and maize. We will add information about two crops which could do well, but are not so much cultivated yet (many other possible crops could be added; see 3.2.1).

Fingermillet (Eleusine Coracana) needs a growing season of 120 days mostly, and 350 - 410 mm of rainfall during this growing season; it accepts poor soils; it is the only cereal not attacked by insect pests during storage (Rowland 1985, p.36). An additional advantage is that it is very good for making beer. Disadvantages are the low to very low yields, even during years with good rainfall. Also, during the first two months, the crop needs sustained rainfall. Before the harvest the crop needs four tiring weeks of birdscaring. Weeding, harvesting and threshing are labour consuming too. In a second year of cultivation on a particular field, weeds are terrible, reason to start new fields



continuously.

Sorghum (*Sorghum Vulgare* or *Sorghum Bicolor*) needs a growing season of 110 to 150 days, depending on the variety. It has an efficient, well branched root system and the roots resist collapsing in dry soil. The plant can reduce transpiration during periods of water shortage by rolling its leaves. When there is moisture, there is a rapid response. Weed growth is suppressed. Yields on impoverished soils are satisfactory, higher than finger millet, but below maize, except in dry years. After the first harvest the plant may produce a second (ratoon) harvest. Disadvantages are that yields are relatively low when there is abundant rainfall; the plants are susceptible to a lot of diseases and pests (Rowland 1985, p.25-30); the grains are very prone to bird damage; threshing and winnowing are labour intensive and most varieties are hard to grind. The stores are vulnerable to pests.

Maize (*Zea Mays*) is rapidly gaining importance in semi-arid environments. Most varieties need 100 to 150 days to mature and 300 to 400 mm of rainfall; specific varieties for the drylands, like 'Katumani'-maize, need less water. If the rains are well distributed, even 175 mm can be enough. Maize generally has higher yields compared to finger millet and sorghum, and the taste is more sweet. Brewing beer from the grains is possible. Maize also has the advantage that the grains are not easily eaten by birds, unless the cobs are very mature. On the other hand hornbills eat the seed, winds may damage the plants, jackals eat cobs, termites attack water-stressed plants, and plants and stored grains may be easily attacked by stalkborer, armyworm and other pests. Maize requires the soil to be ploughed deeply. Another disadvantage is that grinding by hand is very difficult. The Katumani-variety, which was the first variety specifically developed for the lowlands in the 1960s, has the disadvantage that yields are depressed when it is intercropped with sorghum - and intercropping is a general strategy - while it does bad on impoverished soils. Also more labour and more precise labour is necessary. Later developed lowland hybrid varieties (like H511) give higher yields but have the drawback that if harvest-seeds are used as planting materials, the yields are extremely low. The latest drought-adapted variety, Coast Composite, is drought and heat tolerant, but it needs a long growing season and cannot be planted in the higher parts of the drylands (Acland 1971, Wisner 1978, Porter 1979, Critchley 1979, Rowland 1985).

Cowpeas (*Vigna Unguiculata*) can be easily intercropped with grains (with maize, if planted a few weeks later). The plants are very drought resistant, have a good ground cover, which suppresses weed growth, produce peas as well as edible leaves and enrich the soil. The disadvantages are that it stores poorly and that bird damage can be considerable.

Cassava (*Manihot Esculenta*) is generally referred to as a 'famine crop' for dry areas. It needs very little labour, it can be uprooted and consumed when necessary and hence is a good insurance against hunger. Its disadvantages are that the food is not very nutritious, porcupines can cause considerable damage and when not treated well, the food can be poisonous.

There are other crop related survival strategies, too. Scattered fields is another important one. Micro-variations in rainfall, soil type

(fertility and available water capacity for plants), altitude and position towards the sun can have a large impact on yields and crop survival during droughts. Households try to spread fields over various possibilities, although a clayish valley bottom or a riverine area is generally seen as the most important site, if these sites are available. Even if a household has more than enough fields of its own, if they lack fields with specific good qualities, the household will always try to get access to these particular fields. If these are no longer free, those fields may be 'begged' or 'hired'. By making use of a variety of fields, farmers increase the chance, that at least somewhere the harvest is successful. Of course labour is a major constraint, often. Households do not necessarily have to rely on their own fields only. A social network with kin and clan members, spread over a large area, can give access to additional food from households that do have surpluses in a particular year, while other households face deficits. 'Begging food' is widely practiced. A man with two or even more wives generally tries to settle them in different areas, to have a higher chance of an adequate total harvest. With large differences in agro-climatic zones and altitude - like in western Pokot - to have fields in different zones and heights not only increases the chance of a harvest, it also increases the range of crops that can be grown and the total harvest period. Farmers in Alale Location in Kasitet harvest sorghum and finger millet in July and August, those in Amakuriat harvest sorghum and maize in September, those in Sasak in October-November, those in Kalapata harvest maize in December-January. The same pattern was described by Porter for Weiwei-Mwino, in Sigor Division. Here the micro-political institutions ('korok') are all organized to ensure access to different micro-environments, from lowland to highland. In Porter's words (1979, p.41): the micro-political entity is "usually a ridge or hillspur, bounded by streams on either side. Several environments (...) enable Pokot to grow a variety of crops and to spread work of planting, weeding and harvesting over a nine-month period". He adds: "it is better - all other things being equal - to marry a second wife from an area whose harvest comes at a different time from that of the first wife's village" (Porter 1976, p.138). In western Pokot, arrangements are not yet so well organized, but it is already clear that many families try to have access to harvests from a variety of sites within western Pokot.

Important adjustments to dry conditions are those which improve the soil moisture storage. First of all, theoretically, irrigation can have this effect, both the sophisticated types of irrigation, like sprinkler irrigation and pump irrigation and the less sophisticated types, like gravity irrigation and flood retreat irrigation. In western Pokot until now only one gravity irrigation scheme is under construction and a few cultivators practice well irrigation near the Suam River. Prospects, however, are considerable (see 3.2.4).

Theoretically another major technique of soil moisture improvement is water harvesting: the use of 'runoff' or 'overland flow' of water (often a result of high storm intensity and poor infiltration of water in the soil). Runoff water harvesting structures trap runoff water from outside the cultivated area and lead it to, and impound it in the cultivated area. To guide the water, earthen bunds are made and strengthened with

grass. In the cultivated area the bunds are made according to the contours, with or without spill ways. Normally a differentiation is made in macro- and micro-catchments (see BPSAAP 1984, pp.17-18). A lot of labour is needed, however. Contour ridging, strip cropping, terracing and stubble mulches are related techniques to improve moisture distribution with the secondary (or often primary) advantage of good soil conservation.

Moisture needs can further be decreased by adequate spacing, by early and frequent weeding and thinning (limiting unnecessary evapotranspiration) and by intercropping, which results in a good soil cover, limits weeds and makes all evapo(transpi)ration useful for farm yields. It also has the advantage that erosion risks are lowered, while the intermixture of particular crops keeps insect populations and plant diseases at low levels. Intercropping or mixed cropping also stimulates good root growth, since all plants have to compete with all other plants (see Gwynne 1981, p.19). The development of a plant's root system can also be stimulated by eliminating phosphate deficiency (by adding phosphate fertilizer).

A following type of drought adjustment is related to the planting schedule. 'Dry planting' (preferably one week before the onset of the rains) is recommended everywhere. Planting time experiments in Machakos showed that a week's delay after the start of the rains reduces the crop yield by more than a third (Porter 1979, p.40). Especially the phosphorous and nitrogen flush in the soil, which occurs when dry soils are wetted by the first rains, are partly lost. Also insects are less disastrous yet. On the other hand, late planting (e.g. in May) means that land preparation is much more easy and also that crops are still small and do not transpire moisture so much when there is a dry spell, as is notorious in West Pokot in June. Dry planting is more labour intensive and seed wastage, when the rains are late, can be considerable. Only those farmers with enough labour power available and with reserve seeds to replant after failures can afford the risk. Spreading planting over various weeks, before and after the onset of the rains is a general practice in dryland agriculture.

If the dry planting strategy is followed, it becomes the more important to know when the first rains will come. Traditional rain watchers are used sometimes and religious activities may surround the 'rain appeasing' activities in the pre-rain period. In Pokot society this does not seem to be very important. Theoretically, meteorological forecasting could be important. It seems that meteorological forecasting on the basis of former statistical evidence does not lead anywhere, due to the unpredictability of the rainfall pattern in semi-arid zones. Some prediction seems to be possible, however, based upon experiences in other places: when the rains have started in the southern part of eastern Africa, one can expect them to 'move north' during the weeks afterwards. Careful monitoring and dissemination of the results (radio broadcasts, newspaper reports) is required though, and one must hope that - in that case - the educated few in Pokot society will continue to play an important part in the rapid diffusion of knowledge about everything and everyone.

Finally, an important method of surviving droughts is to improve the storage of good or even bumper harvests. In general however, damage by pests can be considerable, especially with maize. Care must be taken to prevent the spreading of storage pests to areas where these are not yet a major threat. Theoretically pesticides can be important. When long term storage is not a viable option, farmers may try to sell food crops and save the money for future deficit years (however, with the probability that sale's prices are low and purchase prices will be high).

#### 4.8 Survival Strategies Outside Food Production

When drought strikes and there is not enough food available, agro-pastoralists will try to find sources of food outside agriculture. Traditionally, farmers react by hunting, fishing or poaching (e.g. ivory, rhinohorn or leopard skins); by raiding food stores from 'enemies' in more successful environments, by collecting bush foods and by eating wild products, also those that are normally regarded as unedible. When famine approaches even the seeds may be eaten and in general the family food intake is diminished, to the point of systematic neglect of certain members of the household: the old, the very young, the women. In his grim narrative about the 'Mountain People', the Ik or Teuso of northeastern Uganda, Turnbull pictured a dramatic story of this system of selective starvation (Turnbull 1972). As far as we know, the Pokot never had to use such drastic methods of collective survival by deliberately giving up particular individuals.

Less dramatic demographic methods can be applied, though. Pokot use the strategy to send away unproductive mouths to kinsmen elsewhere, or - a modern variant - to boarding or other schools with free food or to famine relief camps. As we will see in the Rukiey story (4.8) the 1965 drought indeed resulted in the breakthrough of education for boys in lower Sook - as the 1979-82 drought did all over Karapokot for boys, but also for girls. The Rukiey story also reveals that during and after droughts 'marrying away' daughters to husbands in better areas can be a very important survival strategy: the parents have one mouth less to feed; they also receive a bridewealth, consisting of cattle and goats which are partly given immediately and partly are promised for the future. The girl who is married away during a drought is not very important as part of the labour power: her most important jobs, milking cattle and cultivating the land, are not possible at that moment. In her new place - if it is in the highlands - she can immediately do a lot of work: building a hut and assisting the parents-in-law in an area less influenced by the drought.

To acquire additional food does not necessarily mean that household members are sent away. Famine food may be collected from governmental or church-based famine food campaigns. Three forms have been relevant in western Pokot: provision of food to shops in famine areas - especially during Colonial times - , provision of free food and provision of food for work, as payment in kind for labour services (e.g. building roads, irrigation furrows, churches, schools, dispensaries).

Famine food will also be provided by relatives with food reserves ('begging') and during food shortages in the lowlands, these are mostly found in the highlands. In addition, food will be bought in the highlands; either directly or via casual contracts paid with food. Especially harvest contracts from November to February are important sources of food nowadays: the casuals are fed during the harvest work and they receive their payment in the form of grains.

To buy food, people need money. As far as this is not available by selling animal produce, other sources of money are needed. Minor sources of money are the charcoal business, firewood and handicrafts (in Pokot society headrests, sniffboxes, spears and ornaments are occasionally sold to tourists on their way to or from Lake Turkana). Also, with ups and downs, miraa leaves are collected from Chemorongit or Mount Kadam forests for sale to (Somali) traders. (Miraa is a stimulant, resembling Arabian qat). Precious stones are available too. But the outstanding way of earning money, recently, is by digging and selling gold.

Because of its importance we will deal with gold more thoroughly. During the 1950s a South African gold prospector had mined alluvial gold at Korpu, assisted by Turkana labourers. He left in 1962. In 1979, during the famine, some Pokot started to look for gold again in Korpu. Soon success stories reached the famine ridden area and many people decided to try their luck. In a situation of hunger, 'ngoroko' insecurity and strife between gold dealers, an outlaw culture developed. Hungry people in rags suddenly became rich and some of them succeeded to become gold dealers themselves. Between June and October 1981 gold was also found in Alale. In 1982 gold digging was a real fever because of the very high prices. As in Korpu, Pokot themselves bought the gold. Although outsiders - Turkana, Karimojong - were accepted as gold panners, they, or others, were not accepted as gold dealers, with the exception of some established Somalis.

In 1984, during the new drought, a new gold place was discovered in the southwest, just at the other side of the border, in Chepkarerat. According to local informants, thousands of people were together there. The necessary supply of food and other consumer goods meant a 'gold mine' for traders from Kunyao, Kacheliba, Makutano and also Kitale. Because most prices were double the 'official' (Kenyan) prices, a lot of goods were transported to this 'Gold Town', so that in established market centres shortages began to be a problem. Because of large scale insecurity Chepkarerat was deserted from July 1985 onwards (Even 1986).

During the 1980s, also many smaller gold places could be found: Kriich in eastern Sook, Nasolot and Sarmach south of the Turkwell Gorge and other places in eastern West Pokot and in southern Turkana. A survey done in April 1983, for the ASAL Programme, showed that at least 6,000 Pokot were panning gold during that peak month, that there were fifty gold traders who bought at least 50 kg in 1982 (for 5 million KShs) and that all types of small businesses developed around the gold places. Panners mainly came for a few weeks, most of them with a target of 500 or 1,000 KShs in their minds. In the isolated centres (like Kriich, Korpu) panners were mostly men; near population centres (Alale) women and girls were the majority. Until the good harvests in August-September

1982, gold money was very much needed to buy food. Later, people continued because of the very high prices of those days. Gold traders, however, could get much more even in Nairobi (prices above 300 or even 450 KShs per gram were mentioned) where Indians were prepared to exchange shillings for gold in case the political situation after the 'August 1' coup would deteriorate. In 1980-81 gold prices for Pokot panners had been much lower (5 to 10 KShs per point, that is 50 to 100 KShs per gram) despite the fact that the world market price of gold was at its peak then: it had increased from 200 \$ per ounce in 1979 - that is 70 KShs per gram - to more than 600 \$ per ounce in 1980-81 - that is 210 KShs per gram (NRC-Handelsblad Aug.12, 1986).

Compared to gold income, all other sources of cash are of minor importance. Gold income even outrivaled proceeds from cattle sales. What about the income from 'cash crops'?

In western Pokot very few people have started the cultivation of 'cash crops' with high rewards per ha (although not always per labourer): products like cotton, sisal, groundnuts, chillies or green grams. Also, unlike the area of indigenous irrigation, the production and sale of cassava, bananas, sugarcane and mangoes, is non-existent yet. In theory, the production of some cash crops could give so much money per ha and per labour hour worked, that with the money earned, much more food could be bought than could be produced on that same ha or with the same hours of work. In theory; because the marketing of exactly these dry area cash crops is most unreliable. And cotton can not be eaten, if nobody wants to have it. More successful is the recent attempt to collect and sell honey on a commercial basis (at Kodich). In Chepareria, a growing number of 'commercial' maize farmers sell maize to the National Cereal and Produce Board.

Food shortages hit some households harder and earlier than other households. In Pokot society there are all types of social mechanisms to redistribute food. Beside the indigenous practice of social security (assistance to the old and the handicapped) there are various types of casual jobs ('contracts') to be done for the more wealthy members of Pokot society: assistance in herding, in building huts, stores and fences, in taking care of the children. Nowadays also contracts are done for civil servants who live in the area (mostly teachers). Also labour parties (especially among the women, building huts and digging the fields) can be seen as potential forms of redistribution. Contracts and labour parties are normally paid in food (beer mainly) but gradually monetary arrangements become more general. People generally regard the 'institutional local contracts' (Food for Work, Road Building and Maintenance) as a welcome addition to indigenous contracts. During recent droughts these institutional local contracts were in abundant supply here and there, especially in places where various missions and the government were competing agencies. In Kodich for instance, in 1985, the digging of an irrigation canal as an EEC sponsored Food for Work project, could only be done if the Project was willing to spend the equivalent of 40 KShs a day as payment - while the official rural minimum wage was 18 KShs only - even a reason for highland non-Pokot job seekers to come and offer their labour assistance (it was a workspaid arrangement, and the payment per cubic metre was determined on the basis

of a very difficult type of soil which was only a minor part of all the earth that had to be removed).

Recently, Pokot who accumulated wealth (mainly by trading in gold or cattle), started businesses all over the lowlands, as well as in highland centres. Most of these businessmen regard shops, beerhalls, tea-hotels, butcheries and maize mills as a way to spread risks; with a bit of exaggeration we may call it the survival strategy of the local elite. Pokot businesses are a relatively new phenomenon, competing with mainly Somalis, Kikuyu and Luo businessmen, with a longer experience. Only during the 1920s Pokot-owned shops were of some importance: according to Schneider (1953, p.281) there were twenty-four Pokot shops in 1928, exchanging minor items for hides. When the prices of hides and skins fell during the 1930s, Pokot businesses were closed. Afterwards only a few Pokot were mobile traders, buying and selling hides and skins, veterinary drugs and wildlife products.

The recent history of Pokot petty trade can be illustrated with the history of Kacheliba trading centre. In 1950 there were two retail shops, one tea-hotel and one buzaa-club (maize beer) in these former district headquarters. Gradually the number of retail shops increased to seven, with an additional wholesale shop, two butchers, two tea-hotels and the buzaa-club in 1970, when Kenya took over. Kacheliba was made the new Divisional Headquarters and also a Roman Catholic Mission station was built: the number of shops, catering for the influx of non-Pokot people related to these institutions, increased to twenty-five in 1979. In July 1982 only four of these shops were owned by a Pochon. Most of the shops were owned by Luos, Luhyas and Kikuyus and when these immigrants were too eagerly celebrating the radio reports of a coup d'etat against President Moi, August 1 1982, all their shops were looted and the owners chased away (the Pokot regarded President Moi - a fellow Kalenjin - as an ally). Gradually most shops were reopened, by a Pochon, this time. After a while a number of them approached the owners - most of whom had fled to Makutano - and arranged to rent the shop (only one Pochon bought the shop). The monthly rent was 100 to 300 KShs; when interviewed during November 1982, most Pokot traders had an average turnover below 500 KShs per month and they probably worked at a loss. Only three Pokot traders had a turnover above 2,000 KShs per month. Gradually the majority of the Pokot traders lost interest in the business and in 1984 former non-Pokot traders were reinstated by the District Officer.

It is interesting to look at the background of these Pokot shopkeepers. The first Pochon to open a trade in Kacheliba was a cattle trader who settled in Kacheliba already in the 1940s. He later opened a butchery. He was later joined by a person who was a trader in Chesegeon (Sigor Division) and who shifted to Kongelai, to become a Councillor there and to open two shops, a retail shop in Kongelai and a butchery in Kacheliba. The most important Pokot trader is the only wholesaler in Kacheliba. This man started as a road constructor in Ugandan service during the 1950s, started a butchery in Kanyerus in 1959 and a wholesale shop in Amudat in 1963. He built up a wealthy position, but lost almost everything in 1979 when his shop in Kanyerus was looted by Sebei raiders and when he was forced to leave Uganda during April, when Amin was chased away. He said to have lost 1.5 million Ugandan Shs (the

equivalent of approx. 20,000 US\$ during that time). He still owned some animals and these he sold to buy the Kacheliba wholesale shop from an absentee Arab owner, who lived in Makutano. The fourth Pochon who owned a shop in Kacheliba before August 1982 had only just started. He sold some oxen to build and stock the place.

Fourteen Pokot shopkeepers started between September and November 1982. Seven of them sold animals to be able to stock the shop, four had accumulated wealth by selling gold, two used a salary, one as a civil servant and one as a church worker; finally one used shop profits from Kanyerus, from where he fled in early 1979. Among this group of fourteen, three had been in government service before: one was an ex-Chief from Suam, one a former Assistant Chief from Alale and one an ex-Chief in Upe. Of all the Pokot shopkeepers, three had a farm in the highlands.

Table 4.14 Shops in Western West Pokot Lowlands, 1977-1982

Centre	1977	1979	1982
Chepareria	11	18	78
Chepkopech	0	1	1
Mtembur	2	1	4
Serewa	2	1	5
Kongelai	3	4	6
Kacheliba	21	25	18
Kanyerus	5	6	0
Kodich	4	6	5
Kunyao	3	7	8
Nakwijit	1	1	1
Lossam	0	0	3
Kiwawa	0	0	1
Kimpur	0	0	1
Alale	0	0	4
Amakuriat	0	0	3
Nauyapong	1	1	1
Total	53	71	139

Source: 1982: own surveys November - December; shops or kiosks which were closed for more than a month, were not counted.  
1977 and 1979: County Council Licences West Pokot, checked with local interviews.

The establishment of shops in our research area, partly with Pokot owners or renters went very fast between 1977 and 1982, as a response both to the strongly increased needs of maize meal and other shop goods, and to the very rapid increase of money circulation, because of gold and because of the increased number of civil servants and paid road workers (see Ch.5). Table 4.14 gives some details. In 1977 a small minority of the shopkeepers was a Pochon, in 1982 the majority. Unfortunately, comparable details for Upe are lacking. We only know that in 1966,



twenty-four shopowners were licenced to trade in Upe, against only nineteen in 'Karasuk' and less than ten in the lowland areas of then Kapenguria Division. In early 1986, only one shop in Amudat still functioned, shops in Karita and Lokales had closed in 1979, the ones in Loroo in 1982. In mid-1986 there was not a single shop left in Upe.

The recent proliferation of non-agricultural sources of income in western Pokot, both of a wage labour and of a petty character, presents us with the same type of interpretative difficulties as elsewhere in Kenya (or in rural development studies in general). It does not seem to be useful to analyse the small scale non-agricultural activities as parts of an 'informal sector in the countryside' besides an 'agricultural sector' (as Poyck 1985, Ch.5 suggests). It is also not very illuminating to regard the growth of (casual) labour as a sign of proletarianization. It is even less apt to speak of 'marginalization' (as most people engaged in these activities become more instead of less incorporated in market networks, and as some non-agricultural activities are very rewarding and not 'marginal' at all). Instead of applying one broad category, it is more useful to analyse all these activities as part of a diversified household economy.

#### 4.9 Migration to the Highlands as a Way Out

Victims of drought may decide to leave their home areas and go to the Pokot highlands, to large farm areas in Trans Nzoia (or even to Kericho tea estates) or to Kitale Town. Labour migration as a survival strategy has always been of minor importance in western Pokot. During the early Colonial times, when labour recruitment in 'African Reserves' was the official policy to supply White Farmers with sufficient seasonal labourers, the Pokot were very reluctant to be recruited. When the British labour recruitment-drive reached 'West Suk' (1924) a period of severe drought was virtually over, which meant that labour recruitment was very difficult. Only in 1927-28 - during a dry year - an average of 500 Pokot worked at a go, of which 200 in Trans Nzoia and most of the others for the government in West Pokot. Because the average work periods were four months, this means that approximately 1500 Pokot men must have had some form of paid labour experience in that year. That is between 10 and 20 % of the estimated number of adult men (WSAR 1928). This is far below the levels reached elsewhere (Stichter 1982) and it was soon over, when the Crisis of the early 1930s resulted in a collapse of the Kenyan labour market. According to officials during the 1920s, labourers mostly went because of the food rations received and not so much for cash payment. It is not so clear where the Pokot labourers came from during the 1920s. Because of the fact that Kacheliba was the district headquarters, it is not impossible that many labourers came from the western parts of West Pokot. When during and after the 1940s labour migration and squatter migration increased again, western Pokot was probably left untouched. The more densely populated areas in Sigor Division supplied most of the labour migrants then. Labour migration was more directed to the southern Pokot highlands from there than to Trans Nzoia, however (see Reynolds 1982, p.106), especially after the 1965 drought and famine. Labour

migration out of western Pokot had to wait until the 1979-82 drought, when female harvest migration to the Mnagei and Trans Nzoia highlands became widespread, while many men from the western lowlands flocked in Makutano and Kapenguria now and then being on the move continuously, from gold place to gold place.

The demographic history of the southern Pokot highlands is important to understand the history of the semi-arid lowlands. Before 1920 the southern Pokot highlands - and even part of Trans Nzoia - were used as a drought refuge grazing area by Pokot pastoralists from Central Pokot. After 1920 some pastoralists settled there and started cultivation. After 1930, when the District headquarters was established here, more forests were burned to make room for arable farming and permanent livestock keeping. Also the first non-Pokot immigrants settled. Between 1948 and 1960 the annual growth rate was 4 %, considerably higher than in the semi-arid Pokot areas. Between 1962 and 1969 the annual growth rate increased to 8 % . The inhabitants themselves had a very high rate of natural growth (probably above 3 % per year) but immigration was also large now: about 5,000 Pokot must have come from elsewhere, mostly from eastern West Pokot; 1,000 Pokot must have returned from Trans Nzoia farms where they had worked for White farmers who had left in the early 1960s (these Pokot labour migrants were mostly coming from eastern West Pokot originally); and about 2,000 non-Pokot, predominantly Kikuyu and Abaluhya must have settled. Between 1969 and 1979 the population of the southern highlands increased from 27,000 to 44,000, an annual increase of 5 %, most of it a result of natural increase. By this time about 5,000 Pokot had left the district to occupy former large farms in Trans Nzoia or to settle in Kitale Town. Part of these outmigrants came from southern Riwa. On the other hand the Pokot migration from eastern West Pokot and now also from Central Pokot to the southern highlands probably intensified. The population of Lelan increased from 4,400 to 11,100 between 1969 and 1979. Here the immigrants were almost all Pokot. In highland-Mnagei there were also many immigrants from other parts of Kenya, mostly Luhya (from 1,300 in 1969 to 5,300 in 1979), Kikuyu (from 1,400 to 4,100) and Luo (from 300 to 1,400). It is also interesting to note that the group of Europeans and Others (Americans) increased from 17 to 100 during this decade, most of them related to missions. After 1979 the lowland disasters probably led to further increased migrations to the Pokot highlands and to Trans Nzoia. Especially the remaining forested areas of the Cheranganis are rapidly turned into 'slash and burn' cropland, with landowners claiming (and registering) large areas, and allowing destitute 'squatters' to clear the land, reap the first harvests and move on to a further spot. It is a practice which has been vividly described by Reynolds (1982) for the Mnagei highlands, but which is now also widely applied in Lelan.

Migration patterns can be nicely illustrated by family life histories (see Hägerstrand 1978; Van der Wusten 1982). We studied one 'family tree' of five generations, with a 'founding father' who was one of the pioneer pastoralists in lower Sook. In total the family tree consists of 133 persons, 123 of whom were still alive in 1985. We will call them the Rukiey lineage (see fig.4.5).

## The Rukiey lineage

The founding father was born around 1860 in the lowland area of northern Sekerr. It was a time when Pokot herders had acquired a lot of animals, but were threatened by Turkana and Samburu pressure. Around 1880 the founding father moved with his two elder brothers and their large herds and flocks to the lower Suam and further upstream to the foot of the western Sook escarpment. Most probably they were complete pastoralists. The founding father had two boys with very different life histories, with most interesting migration consequences. His eldest son went to the newly established district headquarters of Kacheliba in the early 1920s and did all types of jobs there. He also learned how to read and write and was later selected as the Chief of Sook Location. He and his two wives moved to the Sook highlands, where he also married a third wife. During the late 1940s he was appointed Chief of Mnagei, in the southern Highlands, later even Senior Chief. His wives and five children accompanied him and started farming there. Nowadays his offspring (36) are highlanders, with the exception of one son who is a lowland goldpanner and three children of this son's Turkana wife, who left him and went back to Turkana, taking the children with her. An interesting characteristic of highland life is that of the eligible offspring only one (a girl) did not go to school. Another characteristic is that all are members of a Christian church (mostly the Anglican Church of the Province of Kenya).

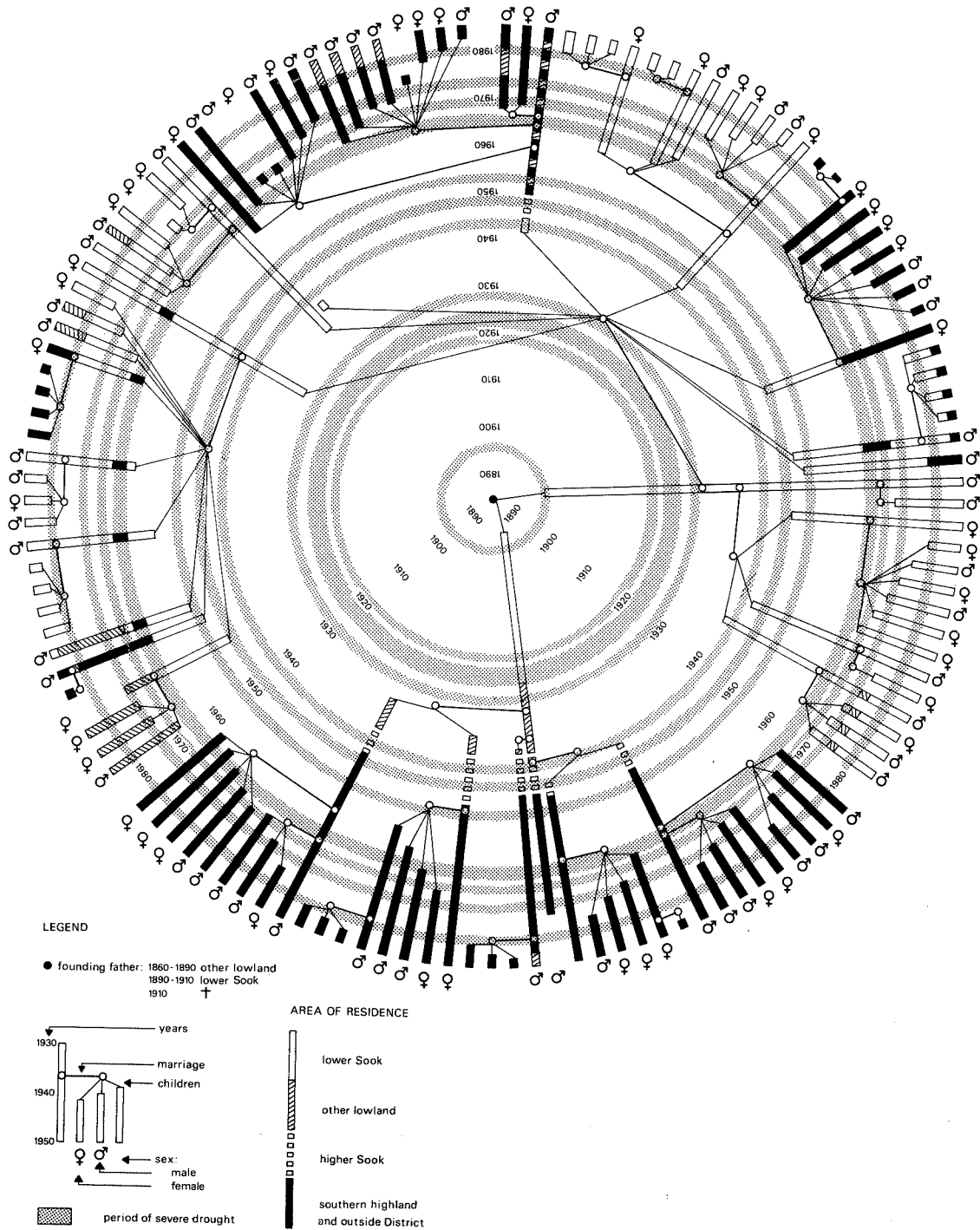
The history of the second son of the founding father is completely different. He stayed in lowland Sook all of his life as a pastoralist, moving with his animals ever further into Karapokot and later Upe during the more severe dry seasons, but always coming back to lower Sook. His three wives also did some cultivation there, almost exclusively sorghum. Later five of his eight sons followed his lifestyle. None of them was educated and all are herding animals with lower Sook as the base camp, combining this with cultivation of sorghum fields by their wives and daughters, who also take care of the milch herd and the small stock. Two of his daughters were locally married and have the same type of life. A third daughter, however, was married away to Mnagei. Her husband works for the Government and all their children are educated now. Three more sons also had a migration career.

It was decided that the second son could go to school (in Ptoyo, highland Sook and later in Kapenguria). After finishing school he got a Government job at Kongelai and started a farm in the Mnagei highlands. He sent all his children to school, five of them to boarding schools in the lowlands, and a girl to a school for higher education in far away Nakuru. One son got a job with the Police (in Northeastern Province even). All the other children assisted in farming or became highland farmers themselves. This migration career is a clear example of migration following education.

His younger brother went to a boarding school in Amudat, Uganda, in 1965 and later decided to migrate to the highlands, in Lelan where he works as one of the 'squatter farmers'.

The third migration career of the third generation sons shows that also without education men can decide to go away. In this case the man's wife died and he moved to Kapenguria, to do all types of casual jobs there.

Figure 4.5 The Rukiey Lineage: Genealogical Graph and Migration Histories



The fourth generation shows three cases of schoolboy migration: these boys were sent away to boarding schools outside lower Sook, but not too far away. Four other migration histories are available: two uneducated girls who were married away (one to a lowland area in southern Riwa, one to the Mnagei highlands), and also two educated sons. They are all children of the first born girl of the third generation.

The 1965 drought was decisive for this household. The mother and her children fled to her brother in Mnagei. The eldest son, a grown up boy then, decided to follow the example of his follower, who had gone to a primary boarding school in Ugandan administered Karapokot. When Kenya took over in 1970, education became much more expensive. The second son soon gave up and spent the following decade with all types of lowland trading jobs before returning to lower Sook to become responsible for the family herd. The first son was adopted by the Catholic Mission and continued education in Uganda up to a high level. Later he did some work in the lowland and in 1983 he became a civil servant in the highlands.

Of all the offspring of the second son of the founding father (87 alive in 1985), half still live in lower Sook, ten had moved to other lowlands (although most to go to boarding schools in nearby Karapokot), thirty had settled in the southern Pokot highlands and four were living outside

Table 4.15 The Rukiey Family, 1860-1985

gene- ration	born in	nr.of persons	nr.of wife- centr. households	born in lower Sook total	of whom moved away	born in high- lands	born else- where
1	1860	1	1	-	-	-	1
2	1892-96	2	7	2	1	-	-
3	1931-71	17	20	12	4	-	5
4	1949-now	86	16	31	7	52	3
5	1967-now	27	-	13	-	10	4
total		133	44	58	12	62	13

Table 4.15 contd.

gene- ration	eligible children going to school/all boys	children school/all girls	percentage in lower Sook (gen. 2-4 and all)						
			1930	1940	1950	1960	1970	1980	1985
2	0/2	-	50	50	50	50	50	100	100
3	5/9	0/7	-	50	54	60	47	44	44
4	35/48	21/38	-	-	100	80	31	30	29
all(1-5)	41/60	21/47	50	50	56	59	41	33	35
all(n)			2	8	18	22	59	94	123

outside the district. All marriages were within the Pokot ethnic group, although partners came from all over Pokot-land. Of all the offspring who still live in lower Sook, only one had (a few years of) education; only this one was converted to Christianity.

More systematic information can be acquired from table 4.15. Out of the total of 133 persons born in this lowland lineage, 58 or 44 % were born in lower Sook. Out of them, 12 or 21 % moved away. In generation 3, boys started to go to school, in generation 4 also girls. Of all the eligible boys, 68 % ever went to school, of all the eligible girls 45 % . In the highlands almost all family members went to school. In the lowlands none of the 17 girls and only 7 out of 26 boys. Out of these seven educated lowland boys, six are no longer living in lower Sook and the seventh has been away during most of his adult life. Education and outmigration are highly correlated.

But outmigrants are not only the educated people, as the migration stories prove: out of the 12 people who left lower Sook three were uneducated girls who were married away and two were uneducated boys who tried their luck on the labour market elsewhere. All outmigration was related to periods of drought. The pioneer migrant left lower Sook after the terrible drought of the early 1920s. One migrant was sent to school as a very young boy after the 1943-44 drought, five persons migrated from lower Sook during the 1965 drought, and four persons left the area during the 1979-81 drought. Sending away boys to boarding schools and marrying away girls to partners elsewhere can be regarded as important survival strategies, but with the result that almost no one returns.

#### 4.10 Mobility, Flexibility and Diversity as Key Strategies of Survival: an Example

Again the Rukiey family will be used as an example. Nothing is more revealing than the story of a family that has 'had it all'. Here we will look at the survival economy of part of the lineage. The story is about the family of the eldest daughter of the second son of the founding father, the part of the lineage that remained in lower Sook, cultivating sorghum and mainly relying on cattle, goats and sheep.

This eldest daughter married in 1948, at the age of about seventeen years old. The husband came from lower Sook too and inherited a considerable herd. When he married, he was about twenty-two years old. He could afford to marry two more wives, in 1953, who built their homesteads in other places in lower Sook. During the relatively prosperous 1950s, the head of the household had eighty cattle and by 1960 his three wives had given birth to one daughter and six sons. Three other children had died. In 1960-61, the drought caused problems and in 1961 three quarters of the herd died because of black water fever. In 1965 the herd had been rebuilt to thirty animals, and by 1965 also three more girls and three more boys had been born. During the 1964-66 drought there was a total harvest failure and the whole family uprooted when the stores were empty, and moved to Uganda, where the head and his eldest sons were already looking for grazing. In 1966 rinderpest killed twenty cattle so that only ten were left. When the rains had started in 1966 the family moved back to lower Sook, where the small herd was left to be herded by the grown up boys. Lack of food forced the mothers to go to

relatives in highland Mnagei, together with the eldest daughter and son and the small children. The eldest daughter was soon married away, the eldest son of the second wife went to a boarding school, the first one in the family to go to school. His example was later followed by the two eldest sons of the first wife, one going up to Standard 3, one up to post-secondary level, both adopted by the Catholic Mission in Amudat and both converted to christianity. The head of the household had left lower Sook in 1966 to trap leopards and sell their skins. He bought goats with the proceeds and later sold part of the offspring and bought cattle. This was so successful that by 1970 he had fifty cattle again, one hundred goats and a few sheep. By 1975 his wealth had increased to ninety head of cattle. Between 1965 and 1975 two more boys and two more girls were born, giving a total of seventeen children. Then, in 1975, the head died.

The fourth-born son was left in charge of the herd and had to deal with two scourges. In 1976 Turkana raiders came to the area for the first time in history. Pokot herdsmen were unarmed and many of them were surprised and lost their animals. The Rukiey family was lucky enough not to lose any animal, because the herd manager fled to Karapokot in time. The second scourge had more serious results. After the death of the father, many stock associates had come to claim animals. After the Turkana raid this intensified. In 1977 it was decided to split the family herd among the three sub-families, leaving the family of the first wife with twenty cattle only.

By that time the eldest son of the first wife studied in Moroto, Uganda; the eldest son of the second wife had joined the Uganda Police and the second son of the first wife was engaged as a labourer for a gold prospecting company in Sekerr. He already had a hectic career behind him: in 1971 he had left Kodich Boarding School. When Kenya took over the administration over Karapokot from Uganda (1970), education suddenly became more expensive: from twelve Uganda Shs per year to one hundred KShs per year. He did not want to pay that money and also he did not want to go to a Uganda school, unlike his elder brother. He started to sell animal drugs and with the money earned he opened a shop in Nakwijit, the second shop there, besides a Somali owned 'duka'. He had no licence, however, and health officials told him to close in June 1972. He decided to follow the example of his father to go for leopard skins, to be sold to Somali traders, who always find their way to Nairobi and abroad (the trade is illegal). With the proceeds, elephant's tusks were bought and other leopard skins. During the 1973-74 drought also the hide and skin business was good enough to try. The illegal part of the trade was directed to Uganda, where a few Pokot people had got a trading business in Kampala. (When President Amin had chased away the Indian shopowners, in 1972, the warehouses were given to businessmen from all over Uganda. Four Pokot owners of very small 'dukas' in Amudat were chosen to be the managers of one of the largest warehouses in Kampala.) In 1974 our businessman went to Kampala too, to get his money, but he failed. He decided to join an African owned mining company, looking for gold in Sekerr.

In 1979-82 most of the cattle and goats of the family died, leaving only a few animals. When the food situation during this drought was dramatic, famine relief was acquired in Chepkopegh. Also four sons were sent to a boarding school and two daughters were married away, one to a gold

trader in eastern West Pokot, who later settled in highland Mnagei. The eldest son of the second wife, the one who was a Uganda Policeman, could no longer send 'gifts' to his family, because after the fall of Amin, he had to leave the Uganda Police. He came home without any money and later went back to Kampala to get his 'accumulated pay'. The only thing people heard of him was the news of his death in 1985. Also two other children died: the first born daughter because of a snake bite, the first born son of the third wife because of a disease. Both of them died in 1982. The second son of the first wife in the meantime had left the mining company and started to be a gold trader himself, in 1979-81 in Korpu, later in Chepkarerat. Also the first born son temporarily became a gold trader, after coming home from his studies. He did some local contracts later and joined the civil service in 1983.

Thanks to money income from gold and jobs, animals could be bought, to increase the very small herd to a more respectable level. In 1984, during the drought, some of the animals died, but more serious was the attack by the 'Army Operation' to find guns. By some cunning tricks the 'askaris' could be scared away and the herd was recovered. In 1984 some famine relief could be acquired, this time from Nakwijit. In 1985 and 1986 good harvests and good pasture increased the wealth of this family, but there was still a long way to go to restore the herd size of the 1950s and the early 1970s.

If we are allowed to generalize from this example, we may conclude that pastoralism is the mainstay of survival, but most families in semi-arid environments will try to combine various options. Their economy of survival is an economy of diversification. Against the conventional wisdom of his time, Schneider (1953) has convincingly proved the related pastoral and arable livelihood strategies of the Pokot. In government circles however, a conception has always been present "of a rigid herding/farming dichotomy (which) obscures the reasons behind Pokot patterns of settlement and movement, ecological adaptation, and economic choice" (Tully 1975, p.164). A successful family in the drylands will have animals and crops, both of them as scattered as possible. Over time a large flexibility is necessary, over space a large mobility. Households will try to have access to grazing in very different areas, from plains and riverine areas in the lowlands to reserve grazing areas in the highlands. Also access to fields in various agro-ecological zones is important for survival. A successful family will also try to establish a large network of 'economic relatives' all over the ethnic area, or even beyond. Exchange relations with people with surplus harvests is one of the possibilities. Off-farm income is another one. Gold, miraa, local contracts, labour migrant remittances, income shares from businesses are all part of a flexible answer to disaster. By studying households at a certain point in time only, one gets a distorted and incomplete picture. By studying households for a few years during and after a period of disasters gives more valuable information about survival strategies. Most valuable types of research, although most difficult too, are the reconstructions of life histories, not of individuals or households alone, but of communities (spatial entities) and lineages (social entities). The Rukiey family example is a modest attempt to reconstruct one lineage history. In the case studies of chapter 6, community histories will be presented.



#### 4.11 A Rearrangement of Survival Strategies

In this chapter four 'sectors' of survival strategies were analysed: related to livestock, to arable farming, to non-agricultural activities and to migration. In Chapter 1 survival strategies were distinguished in a more theoretical way:

- a. 'physical' survival strategies to get enough food during and after crises, and to stay alive;
- b. survival strategies to rescue as much of the animal wealth as possible during a disaster, and preventive measures to be prepared for 'capital survival' if disasters strike;
- c. survival strategies to remain pastoralists as far as possible, which is clearly seen as a cultural ideal and an agro-ecological 'optimum' in terms of economic security.

We will call these strategies 'physical', 'capital' and 'pastoral' survival strategies. In this section we will rearrange the various survival strategies according to this classification.

Physical survival strategies to stay alive during crises (a) have a health and a food aspect. Health related survival strategies are both curative (acquiring medicine, surgery after violence) and preventive (vaccination, diet, hygiene, avoiding contaminated water). Survival strategies to secure enough food during and after crises are partly based on livestock: those strategies are related to:

- herd accumulation (a large herd gives a lot of food during high mortality);
- animal diversity (sheep give a lot of calories; cattle and goats have different periods of milk recovery);
- a flexible diet (avoiding too many food taboos, and adapting to a changing diet);
- the preservation of animal food;
- bleeding animals;
- eating dead animals;
- slaughtering animals for meat, blood and offals (partly related to ceremonies);
- barter animals for grains.

Some survival strategies are related to increased hunting and gathering:

- organizing hunting parties to get food;
- eating a variety of wild foods (relishes, termites etc.).

In the arable sphere the effects of drought may be minimized by:

- cultivating drought-adapted crops and varieties;
- combining or even intercropping crops and varieties;
- cultivating larger areas than needed during years with standard yields (more labour or even oxen and tractors might be needed);
- having scattered fields in various agro-ecological zones, if possible also in more humid highlands;
- the choice of a variety of soil-types, including soils with a high moisture retention capacity and if possible soils along rivers;
- 'moisture harvesting'; and, if possible irrigation;
- sowing at various moments;
- adequate spacing, weeding and thinning;
- improved storage;
- including at least some (good storing) fingermillet;

- and by organizing beer parties during good years to cement networks which can give emergency food later.

Other food acquisition strategies are those where (unproductive) mouths are sent away to relatives, to (boarding) schools or are married away to (highland) husbands. Also, begging food from relatives, first the lucky few nearby, later especially those living in the highlands, is widely practised. Recent additions are begging food from missions or church members, as well as collecting famine food, with or without work obligations. Joining labour parties and ceremonies can also give additional food as well as doing local contracts for food.

Food can also be bought. The money can be earned by selling animals, selling hides and skins, selling gold, miraa, ivory, precious stones, leopard skins, wood, charcoal, handicrafts, honey, crops, vegetables and fruits, beer, and by doing paid local contracts or engaging in petty trade or prostitution, by doing migrant labour jobs elsewhere (e.g. harvest work in the highlands) or by getting a job with government institutions or missions, sometimes with a possibility to add 'informal' income (e.g. 'blood money corruption', harambee-money pocketing, famine relief food selling). If people have money, it is of course important that they can buy food (and that money income is not spent on non-food items too much). If food is not for sale locally, people go to the highlands or even to Trans Nzoia to buy it there. Stealing food, or stealing money to buy food is of course a possibility too.

Capital survival strategies (b) are those related to:

- herd mobility beyond the normal dry season grazing areas;
- defence against predators, who are more aggressive during droughts;
- fodder production (hay storage or the use of branches of trees);
- herd dispersal, for which enough labour must be available (labour adoption or wage labour may be chosen as a solution);
- herd dispersal via stock associateship or 'loaning' of animals;
- indigenous animal health care, as well as vaccination, purchase of drugs and curative work;
- selective breeding to get drought and stress adapted animals;
- management of the environment to get more animal feed out of the land during a drought: e.g. rotational grazing in grazing reserves, water production and better access to available water, use of fire, better organization of pasture committees;
- defence against raids, and
- conquering 'enemy' grazing land or getting permission to use it;
- adding formerly inaccessible areas to the 'fall back areas' during a drought (e.g. via tsetse eradication, access to enclosed areas).

Pastoral survival strategies (c) have three aspects:

- rebuilding the herd and flock after a disaster, so that dependence on non-livestock sources of food diminishes. The availability of 'quick recovery' animals (goats and sheep) is important here, as well as the possibility to claim stock from stock-associates ('tilia-partners') and from bridewealth debtors. New bridewealth contracts are an additional possibility as well as raiding animals, buying animals and receiving animals as gifts (new tilia-arrangements) or as relief (e.g. institutional restocking campaigns);
- if the stock-unit/ha goes beyond the carrying capacity of the land,

intensification of 'primary food production' (the quality of the range) can be a way out. If the stock-unit/capita becomes too low to supply more than half of the food needs, intensification of 'secondary food production' may be possible. These two forms of 'pastoral intensification' are often more labour dependent; in 4.5 we have given a variety of possibilities:

- a. - removal of unedible plant species;
  - sowing more nutritive grasses and shrubs;
  - eliminating competitors;
  - eradication tsetse fly;
  - soil improvements;
  - grazing management;
  - fodder production and zero-grazing;
  - controlled fire.
- b. - changed livestock composition, changed composition of types;
  - changed food habits;
  - more intensive food production (e.g. milking sheep) and food storage;
  - breeding strategy to enable higher offtake rates (more meat);
  - prevent food losses.

Because of increased labour dependence, particular labour availability strategies may be applied: in the short run by labour adoption and wage-labour arrangements, as well as herd management dispersal; in the long run by high fertility, e.g. by polygamy;

- If there are possibilities for a lucrative livestock-for-grains trade, a change from 'subsistence pastoralism' to 'commercial pastoralism' is a major possibility to extend pastoralism as the backbone of the lowland economy. Four preconditions should be fulfilled: animals should be available for sale, buyers should be willing to buy, grains (or any other type of food) should be available and the terms of trade should be reliably good for livestock.

The three groups of survival strategies are geared to three different goals: staying alive, rescuing the animals and safeguarding a way of life. These goals can be contradictory: selling a cow to get money for grains drains animal wealth and possibly attacks the basis for rebuilding pastoralism. Rescuing animals can mean starvation. Intensifying pastoral labour demands may threaten non-pastoral alternatives. Pastoralists regularly have to make far reaching decisions between contradictory goals. During a crisis, they constantly have to decide which combination of options gives the least threatening results. It is clear that semi-arid (agro-)pastoralism, threatened by natural disasters and enemy neighbours, demands considerable managerial qualities, both in the very short run (which we may call the 'tactics' of survival) and in the long run. The mobility, flexibility and diversity which are prerequisites for success, can only be organized within households, micro units with a substantial autonomy. There is a deep-rooted tension between these households and any institution which tries to impose its authority on them. We will study the institutional interventions in Chapter 5.

## Appendix 4.1 Human Food Requirements in Western Pokot

Energy requirements depend on:

- the sex and age distribution of the population;
- the average body weight of men and women;
- the activity pattern;
- the temperature.

Normally a reference 'man and woman' of 25 years old and doing light work are used for general calculations. In the tropics men of 50 kg need 2445 kcal/day, women of 40 kg, 1696 kcal/day, and an 'average population' needs 1994 kcal per caput per day (FAO 1965, p.43). To arrive at the 'average population' a standard population pyramid is used, as presented in column 1 of table 4a.

The sex and age distribution of West Pokot differs considerably from the standard distribution for the tropics (see column 3 of table 4.A). If we use the actual requirement scale of the standard population in the tropics, the West Pokot average per caput requirement would not be 1994 kcal but 1887 kcal/day, or 95 % of the requirements for the standard population.

However, for three reasons it is questionable whether we can use the 'standard formula' for the tropics:

- Especially the pastoral Pokot are rather heavy: the 'reference man' probably weighs 60 kg instead of 50 kg, and the average woman 50 kg and not 40 kg. This gives an energy requirement (adjusted for temperature) of approx. 16 % above the standard population - for all persons above 15 years of age (in West Pokot, 50.1 % of the population) or 8 % for all people. For the pastoral study area in West Pokot (Kacheliba Division, Riwa and Kipkomo Locations and Nakwijit and Serewo sublocations) it is probably even more: here people above 15 years of age were 54 % of the total population of 60,306 people in 1979.
- By no means the work of Pokot men and women can be regarded as light. Very tentatively we present a 'weighted' labour calendar for the semi-pastoral Pokot (including some cultivation work). It is mainly based on our surveys in Riwa in 1982-83, with additional information from Jaetzold & Schmidt 1983, pp.225-226. See table 4.B.  
Probably the workload is especially large for men and women between 16 and 45 years old. Above that age the workload rapidly diminishes and even becomes relatively light. For 40 % of the population of West Pokot the relatively heavy work during part of the year (especially December to April) means an increased energy requirement of 25 % . For the population as a whole it means an extra 10 % per capita.
- In 1979 in West Pokot there were 33,500 women between 15 and 45 years old and 11,000 children between 0 and 2 were counted, which is probably an underestimation of 20 % at least, if we look at the base of the population pyramid - Pokot tend to hide their babies for strangers. In addition, at least 2,000 children will have died before they reach the age of two (Correspondence J. Broer, medical doctor Kapenguria 1987). We may estimate the annual percentage of women (15 -45) giving birth between 20 and 30 %. Due to the high incidence of miscarriages and still births, pregnancy may be above 30 % even. An AMREF survey (Kogi 1982) showed an average lactation period of almost two years, which means that 40 % of all women (15 -45) were probably breastfeeding. With such a high occurrence of pregnancies and breastfeeding, the 'normal' corrections for pregnancy and lactation are no longer adequate. For a pregnancy 40,000 kcals are needed, or 150 kcal/day, for lactation 1000 kcal/day or 365,000 kcal/yr. If among the fertile women (20 % of the population), 30 % is pregnant and another 40 % is lactating, 9 kcal/day extra are needed per capita for pregnancy and 80 kcal/day per capita for lactation. This is far above the 120 kcal/day per infant, which is normally regarded as a good approximation; this would only give an extra 4 kcal/day/capita.

We conclude: compared with the standard population in the tropics, as used by FAO 1965 - for which an average daily need of 1990 kcal/day per capita is estimated if we deduct the standard requirements for pregnancies and lactation - in West Pokot:

- an extra 8 % is needed for weight adjustment;
- an extra 10 % is needed for relatively heavy work;
- 5 % less is needed because of the population distribution;
- an extra 90 kcal/day are needed per capita because of the very high incidence of pregnancies and breastfeeding.

Together this means an average energy requirement of 2340 kcal/day per capita, or approx. 850,000 kcal/yr.

Table 4a Food requirements of the sex and age groups

Age groups	Standard Population		Actual Requirement Scale standard population (tropics) (kcal)		West Pokot Population (1979)		
	M	(%) F	M	F	M	(%) F	F
0 - 1		3.3		1090+120(*)		3.4	
1 - 3		7.2		1203		11.6	
4 - 6		7.3		1573		10.7	
7 - 9		7.3		1943		8.7	
10 - 12	3.7		3.5	2313	2220	4.4	4.2
13 - 15	3.6		3.3	2868	2405	3.6	3.2
16 - 19	4.3		3.9	2751	1753	4.1	4.2
20 - 29	9.6		8.7	2445	1686	7.7	9.1
30 - 39	7.6		6.2	2372	1635	4.7	5.3
40 - 49	5.5		4.1	2298	1585	3.2	3.2
50 - 59	3.0		2.4	2115	1458	2.2	2.2
60 - 69	1.1		0.9	1932	1332	1.4	1.1
70+	1.9		1.6	1687	1163	1.0	0.7
	100 %		av: 1994		100 %		

(\*) additional requirements for pregnancies and lactation

1 kilocalorie (kcal) = 0.24 Kilojoule

Sources: FAO 1965, p.43 and Kenya Population Census 1979, p.233.

For protein requirements we want to be less detailed. The World Health Organization (1965, p.22) gives protein requirements for various age groups. If we adjust their data to the age distribution in West Pokot, and if we add requirements for pregnancy and lactation, WHO norms would lead us to a minimum requirement of 7.9 kg/year and 'safe' requirements of 11.6 kg/year per capita.

Table 4b Weighted labour calendar for semi-pastoral western Pokot

Month	Men/Boys	Work load (*)	Women/Girls	Work load (*)
January (dry)	water livestock cut branches look for pasture make beehives	c	get water and firewood build huts	c
February (dry)	water livestock cut branches look for pasture (near rivers) clear bush	c	get water and firewood trade	c
March (dry)	water livestock look for pasture	c	get water and firewood trade land preparation	c
April (start of rains)	back to central plain's manyattas gather termites fence fields	c	sowing milking trade	b
May (rains)	herding near central manyattas	a	milking some weeding	a
June (dry spell)	same	a or b	renew homes milking build small huts in fields some weeding	a
July (rains)	herding near central manyattas social visits cattle breeding collect and sell honey	b	milking move to the fields birdscaring start of fingermillet/sorghum harvest	a
August (rains)	herding near central manyattas ceremonies	a	start of maize harvest milking selling milk and harvest produce ceremonies	a
September (inter-mediate)	gradual increase of movement of cattle	b	milking trade renew home stores harvest ends	b
October (dry)	to dry season pastures social visits	b	brewing beer firewood (storing harvest at home)	b
November (some rain)	looking for pasture	b	brewing beer firewood (work in the highlands)	b
December (dry)	looking for pasture 'social month'	b or c	firewood water 'social month'	c

(\*) workload: a: light, lot of rest  
b: average, quite a lot of walking  
c: heavy work, lot of walking or strenuous jobs.

Not the working hours as such are important, but the total energy consumption by the body (a 'social month' with feasts may look a holiday; in terms of energy consumption it can be very taxing).

men: 4c, 1b or c, 4b, 1a or b, 2a;  
women: 4c, 4b, 4a.

## Appendix 4.2 Sources of Population Estimates Pokot area

1926:

Political Record Book West Suk DC/WP/1-3-26 MASOL (Kenya National Archives); West Suk AR 1926, 1927. The first figures are all from this source. The second figure has been calculated by multiplying the first figure with the 1948/1943 index (see 1948). For Kacheliba the second figure is the 1932 estimate, when the area was handed over to Uganda (Brasnett 1958, p.120).

1948:

Census results according to the West Suk Agricultural Gazetteer (approx.1955). Figures for Kacheliba and Upe are estimates, derived from the total figure of 17,000 as given by Cox (1972, p.50). The 1948 Census was the first one where enumerators went to the huts. From 1926 to 1947 all population estimates were based upon 'tax counts', where probably not all heads of households were included and where the number of 'other household members' was probably grossly understated. If we compare the 1948 Census results with detailed tax-based estimates for 1943, the mostly sedentary population of eastern West Pokot was underestimated by 30 %, the mostly pastoral people of Central Pokot with 50 %, and the Southern Highland population with 60 %. Probably even the 1948 Census itself was an underestimation.

1962:

Kenya Population Census 1962, Vol.1+3 (and Annual District Report West Suk 1963); 1959 Uganda Census (Moroto Archives); according to the 'tribal analysis', 20,661 out of 23,303 (Upe including 'Karasuk') were 'Suk'. On the other hand, a few thousand Pokot were elsewhere in Karamoja.

1969:

Kenya Population Census 1969, Vol.1; Uganda Population Census 1969.

1979:

Kenya Population Census 1979, Vol.1; for Upe: Population Census 1980 (Moroto archives; Even 1986, p.8).

The regions:

Upe:

Upe County, Karamoja District, Uganda (in 1959 and 1969 without the Kacheliba parishes).

Kacheliba:

1959 parishes: Kanyerus, Lokitanyala, Alale, Nakujiit, Nakuyen, Kunyao, Karrkou, Cheporrpau and Mbarru (spelling as in Census); known as 'Karasuk'.

1969 parishes: Lokitanyara, Kunyao, Kasei, Cheprupoch, Cholio, Kacheliba, Kodich, Kanyerus.

1979: Karapokot as a whole.

Central Pokot:

Riwa, Kipkomo, and Sook Locations, Serewo Sublocation, belonging to Mnagei Location.

Eastern West Pokot:

Sigor Division and Batei Location.

Southern West Pokot:

Lelan Location and Mnagei Location without Serewo. These are the Highlands.

Nginyang:

Nginyang Division of Baringo District.

West Pokot District: includes Kacheliba/Karapokot/Karasuk.

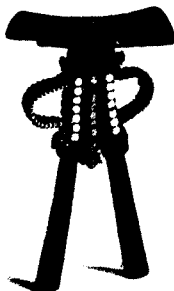
Non-Pokot in West Pokot:

1948: figure from Pattersson (1948, p.42): "1350 non-Pokot immigrants, especially in Mnagei, where they formed 25 % of the inhabitants by that time".

1962: 6,000 non-Pokot according to the 'tribal statistics' in the Census;

1969: 9,000 non-Pokot;

1979: 18,000 non-Kalenjin. The large majority of these non-Pokot can be found in the southern West Pokot highlands.



## 5. EXTERNAL INTERVENTIONS BY GOVERNMENT INSTITUTIONS AND MISSIONS

### 5.1 Introduction

The variability of rainfall in semi-arid western Pokot induced a large number of indigenous survival strategies, as we have seen in Ch.4. This enabled a more or less successful adaptation to harsh natural conditions, with a fluctuating emphasis on animals, crops and non-agricultural possibilities to secure a living. Prior to 1900 the Pokot were never confronted with external agencies, interfering in their way of life. The only external influences were neighbouring tribes, raiding or - marginally - trading, and an occasional Arab-Swahili caravan, passing by and trying to buy ivory and provisions (see 1.3). After 1900 the penetration of external institutions gradually increased: agencies of the British colonial administration, and the postcolonial state, missions and in addition a few private entrepreneurs. What impact did these external interventions have on the lives, and especially on the survival strategies of the western Pokot? How did the Pokot adapt to these additional challenges? To be able to answer these questions, it is necessary to be specific about the contents of these external interventions.

In this chapter, three general types of interventions are distinguished (see 1.1):

- interventions, to incorporate western Pokot in higher order politico-administrative frameworks,
- missionary interventions to convert the inhabitants of western Pokot to various brands of Christianity, and
- government as well as missionary interventions to 'develop' the land and the people, and to assist during and after periods of disaster.

We will systematically try to find out what the penetrating organizations looked like, what they were planning and what they were doing. In this chapter, we will neglect the few examples of foreigners establishing businesses (gold, gemstones) in the area, as their activities were marginal and very little information could be found.

### 5.2 Incorporation in Colonial and Post-Colonial Politico-Administrative Frameworks

After 1900, the area and the people of western Pokot were incorporated in the colonial and later independent administrations of Kenya and Uganda. Situated in a border zone of two administrative territories, the demarcation of the two jurisdictions proved to be a cumbersome affair. We will start with this question of boundaries, and the confinement of people (and animals) within these boundaries. Separate sections will be devoted to the organization and strength of the civil administration, to the political representation, to security, law and order, to taxation and labour recruitment, to the accessibility of land and changes in the status of land ownership, to the control of trade and attempts at commercialization and finally to roads and communications. These are all part and parcel of the incorporation of the area in administrative frameworks, that had their roots and power centres elsewhere.



### 5.2.1 The Demarcation of the Two Jurisdictions

In 1894 Buganda became a British Protectorate; in 1895 the area east of the Rift Valley was also declared a British Protectorate, the East Africa Protectorate (a.o. Were & Wilson 1984, pp.117-123). The status of the area in between was as yet unclear, except that it was regarded as a part of the British sphere of influence.

For the Pokot, to be included in a European sphere of influence, did not mean anything yet, with the exception of a few visits by European traders (Thomson 1883, Jackson and Gedge, 1890; see Ravenstein 1891) and explorers (the Austrians Teleki and Von Hoehnel 1888, see Von Hoehnel 1894). In 1898 a military expedition from Kampala, led by Austin, the eastern column of the Macdonald-expedition to the Sudan, visited Pokot (see Austin 1903), even concluding a 'treaty' with them (Gray 1952, p.48). On paper, the area of the Karimojong and the Pokot was regarded as part of the Uganda Protectorate from 1900 onwards. The area west of the Suam/Turkwell River was to be administered as part of the Ugandan 'Central Province', the area east of it as part of the Ugandan 'Eastern Province'. In 1900, Johnston, the energetic 'Special Commissioner' in Uganda, decided to build a government post in the area of the eastern Pokot (Ribo, near present-day Kolloa) as the beginning of an advance of British Administration towards Lake Turkana and to check the activities of Arab slave traders and Swahili ivory traders (Barber 1968, p.25). This station was attacked by joined Pokot and Turkana fighters and - after a punitive expedition - withdrawn in 1901 (Ibid, p.29). In 1902 'Paper Colonialism' made most of the Pokot change hands: the areas east of the Suam/Turkwell River were transferred to the British East Africa Protectorate. In practice, nothing happened until about 1910, when British Colonial officers became worried about the imperialist activities of the Ethiopian emperor, who claimed all the land north of Mount Elgon, including the Pokot area.

In 1909 the District Commissioner of Baringo District, Beech (1911, map), built a Government Post at the Kerio River - east of present-day Amaler - among the eastern Pokot. In 1912 a District Headquarters of a new 'Turkana and Suk Reserve' was built at Ngabotok, near present-day Kaputir, in south Turkana. In 1915 it moved to 'Maerich', near the pass which separates the Cherangani and the Sekerr mountains. The year afterwards Kacheliba, a centre of Swahili-activities along the Suam River, was chosen to be the administrative headquarters, first of the 'Turkana and Suk District', from 1918 onwards of 'Kacheliba' or 'West Suk' District. (The British persistently called the Pokot 'Suk', as they were called by Maasai.) The choice of Kacheliba was a peculiar decision of the District Commissioner Crampton: it was outside the territory which was recognized as being part of the East Africa Protectorate! Crampton deliberately did this to strengthen his administrative claims over all Pokot, including those in the Chemorongit Hills (the 'Turkwell-Suk') and those who penetrated ever further into Karimojong territory (see 1.3). It lasted until 1918 before the District Commissioner of Karamoja, Turpin, strongly rejected this move. He even proposed to evict all the 'Uganda-Pokot' by force and bring them to the east bank of the Suam River (see Turpin 1948; he regarded all Pokot as invaders). The dispute became a matter for the Protectorate Governors in 1919, who decided to include the 'Karasuk' area west of the Suam/Turkwell River in

British East Africa, an arrangement which was formalized in 1926 (1). At that time the British East Africa Protectorate had become Kenya Colony (1921).

The de jure Kenya-Uganda boundary in Pokot territory remained an inadequate one, though. According to Kabwegyere (1974, p.63) one administrator referred to this boundary in the following terms, in 1931: "it consists of cleared tracks, heavily marked trees, native tracks and a cairn of stones - an artificial complicated and thoroughly unsatisfactory boundary". This boundary was a compromise between proposals done by the District Commissioners of West Suk and of Karamoja, in 1919, for an interdistrict boundary between 'Rudolf Province' (including the Chemorongit Hills) and Karamoja District (see Figure 5.1). With the 1926-arrangement this became the de jure international boundary, which it still is today.

Persistent struggle between Karimojong and Pokot west of the Suam River soon resulted in renewed discussions about the administrative status of 'Karasuk', especially after hostility flared up during the 1927-28 drought. The District authorities of both 'West Suk' and Karamoja became convinced that 'proper government' could only be realized by joining Karamoja and 'Karasuk' under one authority. The Border Police and the King's African Rifles, who had to patrol the border since 1928, were hindered by administrative uncertainty and by the fact that they had to use a road which was situated in Kenya up to Kunyao, in Uganda to Lokitanyala and then in Kenya again (Cox 1972, pp.23-24).

In 1931 the governments of Kenya Colony and Uganda Protectorate decided to bring 'Karasuk' under Ugandan (Karamoja-) administration, although the area still had to be regarded as belonging to Kenya. Between 1931 and 1935 there was some discussion about joining Karamoja, Turkana and Pokot to be one Province under Kenya or Uganda, but both governments were reluctant because of the financial consequences (Brasnett 1958, p.120).

As a result of administrative uncertainty and conditions which were regarded as unhealthy by the British officers in Kacheliba, the District Commissioner decided to build a new District Headquarters in Kapenguria in the southern Pokot highlands, not far from the pleasant company of newly settled White farmers in Trans Nzoia. The DC and his staff left Kacheliba in 1930. The status of Kacheliba Town was rather unclear afterwards. It lasted until 1936 before this centre was brought under Karamoja-administration too, like the rest of Karasuk. During the 1930s the Colonial officers of both sides were generally happy with the de facto situation.

In 1931 also the Pokot-Turkana boundary was formalized. Despite complaints by Pokot elders, not the Turkwell River, but instead a line 20 km more to the west was made the interdistrict boundary, recognizing the Turkana conquest of large areas east of the Chemorongit Hills, between 1917 and 1924 (see Kerio Province PRB and West Suk Safari Diaries 1931 in Misc.Corr.; Kenya National Archives). Also in the south, boundaries of 'West Suk District' were not very favourable for the Pokot: after boundary arrangements with Trans Nzoia District, Pokot households were even evicted from their southernmost area (1923, 'Kwenda').

In practice the Pokot were divided now over three administrative units in two countries: in Kenya they were inhabitants of 'West Suk' and

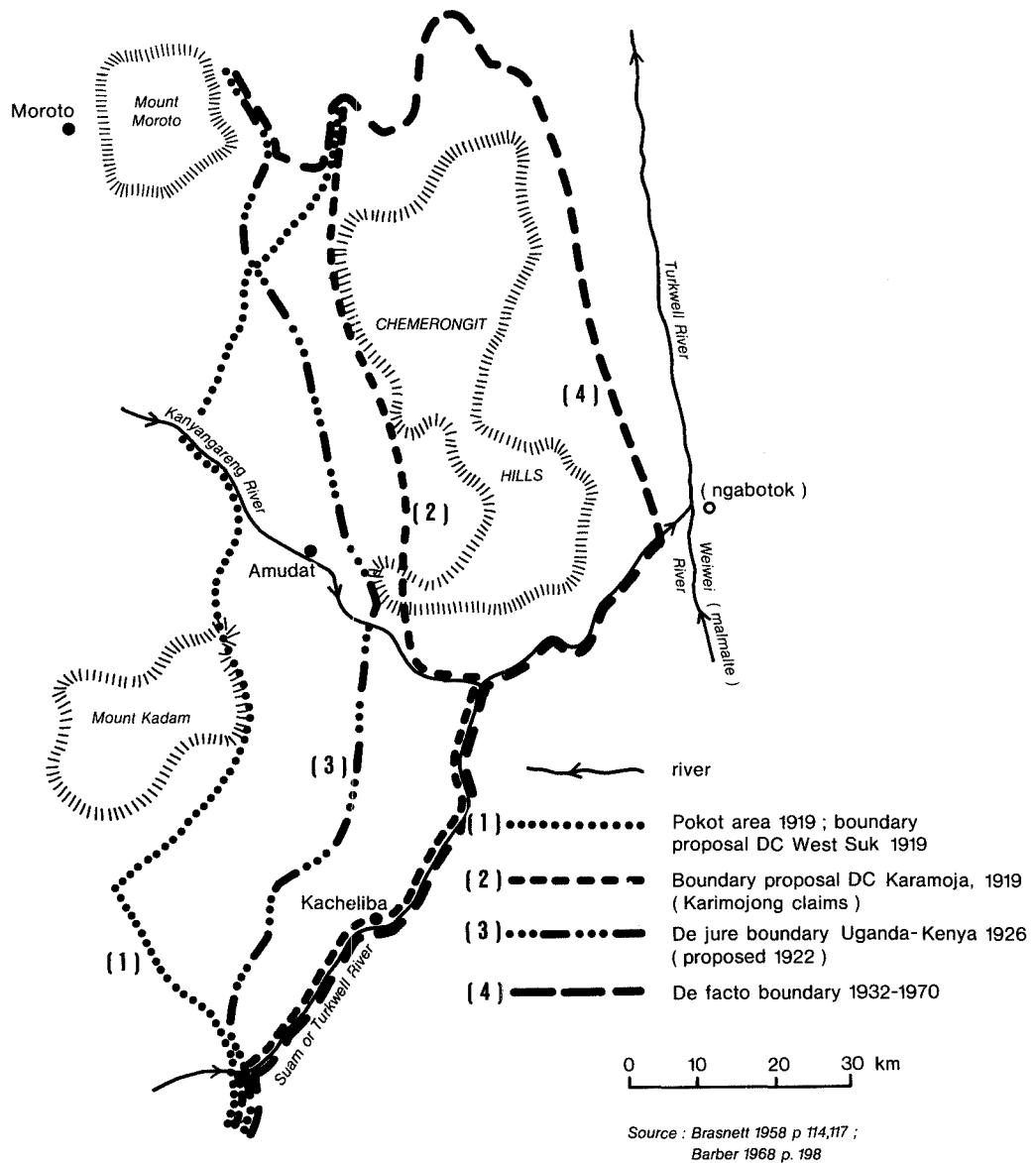


Figure 5.1 Kenya-Uganda Boundary Proposals 1919; De Jure Boundary 1926 and De Facto Boundary 1932-1970

'Baringo' Districts (in Baringo together with Njemps/Il Chamus and Kamasia/Tugen ethnic groups); in Uganda they were administered as part of Karamoja District. From 1937 onwards they had their own 'Upe County'

within Karamoja District. Upe County included 'Karasuk'. This administrative situation lasted until 1970, even though Uganda Protectorate had become an independent state in 1962 and Kenya Colony had become an independent state in 1963. Increased Karimojong-Pokot tensions during the 1950s and 1960s resulted in Pokot requests to return the administration of Karasuk, and possibly Upe as a whole, to Kenya. It lasted until 1969 before the two governments came to an agreement, which took the 1926 boundary as the de facto boundary again, leaving western Upe in Uganda, to the regret of the most western sections of the Pokot.

### 5.2.2 Territorial Confinement

In an attempt to end tribal hostility, 'tribal areas' were proclaimed while colonial and 'national' boundaries also enforced forms of territorial confinement. Tribal boundaries were declared around 1920. This meant that Pokot settlements were no longer tolerated near the lower Turkwell River - in Turkana - and also that Pokot families were evicted from part of the southern highlands, to make room for White settlers there. On the other hand, Pokot pioneer settlement in Upe, during the 1920s, was sanctioned by the Ugandan authorities, and Pokot 'temporary' settlements further in Karamoja were officially allowed in 1927, 1941-42, and 1957 (Dyson-Hudson 1960, p.257; Kar.AR 1957). In 1960, however, it was recommended "to guarantee Karimojong boundaries and push the Suk back" (Evans-Jones 1960, introductory letter, p.2; elsewhere, p.4-5, he writes: "the Suk should be made to withdraw from their more recent territorial acquisitions", and " the western boundary of the Suk should be defined as a line following the Lodwar Road (...) to Amudat and thereafter a line from Amudat to Karita and from Karita to Greek River").

'Tribal boundaries', or a 'tribal reserve' policy in Kenya meant that the 'Suk Reserve' was reserved for Pokot settlement alone. Like the Northern Frontier Province, the Pokot were 'protected' by an additional factor of isolation: West Suk became a 'closed district'. All 'aliens' could only enter or leave the reserve with an official permit, in theory. The 'Suk reserve'-policy came under pressure during the 1940s, because of increasing immigration by non-Pokot to the Mnagei highlands. In 1948 the Administration decided that non-Pokot 'squatters' should "become Suk or get out" (WSAR 1948). In 1951-53 indeed many 'intruders' were expelled. But immigration continued, and again in 1957 'aliens', who had refused to be initiated according to Pokot customs, were thrown out. After Independence, this type of administrative harassment was stopped. The end of a policy of tribal confinement (1963) and the end of a 'closed district' approach (1968) opened the door for many immigrants. The large majority went to the southern highlands, however, and the lowlands largely remained a Pokot domain.

During Colonial times confinement was not only restricted to settlement. In some years, colonial officers tried to confine the movement of people and animals too, and the crossing of the international boundary became a matter of concern.

In a mobile, pastoral society, it is almost impossible to control the movement of people and animals. Despite this obvious fact, during some

periods, government officials tried exactly to do this. In the early 1920s, all inhabitants were listed on tax rolls by location and forbidden to move between these locations, without government permission. When it was clear enough that nobody asked permission, the whole idea was abolished. After the take-over of 'Karasuk' by Uganda, in 1932, the Kenyan government wisely insisted that it was "vitally necessary to permit of the free movement of persons and livestock between the West Suk and the Karasuk" (Kerio Province PRB, nd, approx. 1939). During the late 1950s the opposite policy was introduced, however. In 1958, passes were issued which made it possible to keep Uganda- and Kenya-Pokot on 'their' side of the administrative boundary. In order to "stop mass movements in either direction" (to and from Uganda) "42 men were arrested" and "mildly punished with fines of 100 Shs each" (WSAR 1958). This resulted in a dispute with the Karamoja District Commissioner, who wondered how people could be fined who went to Kongelai Dispensary from 'Karasuk', a dispensary that was in Kenya, but partly financed by Karamoja. In October 1958, the Karamoja DC gave in and agreed that no Pokot from West Pokot were allowed to enter Karapokot "because the area was already overpopulated, both in terms of people and stock" and no Karapokot should go to West Pokot "because of the grazing control in that area". British government officials in Kenya were really thinking that they could check stock movements and restrict stock within grazing scheme boundaries. Normal animal routes were suddenly termed 'trespassing into enclosures' and, for example, a group of Karapokot herdsmen was fined twenty-five head of cattle, because they were trespassing in the Riwa grazing scheme during the 1957-58 drought with 5,000 head of cattle. Increasingly 'intertribal raids' resulted in the administration sticking to the boundaries. In March 1959 the DC Turkana wrote to the DC Karamoja, demanding that the Turkana-Karapokot boundary line had to be adhered to: "no crossing for grazing or water, except in times of dire necessity and with specific permission" (all: Moroto Archives).

After Independence the concept of 'tribal boundaries' was no longer used, and 'passes' were abolished, but the 'illegal crossing of international boundaries' was a matter of concern every now and again. In 1972, for instance, the remaining Pokot in Upe were ordered to "choose between going back (to Kenya) or staying: if they stay: pay taxes to Uganda, to have cattle branded with a Uganda brand, to observe all bylaws and regulations, accepting all the government policies" (Karamoja District Administration, Minute Paper 1972, Moroto Archives). These were all threats without practical consequences. There were only one or two border posts, and even these were sometimes unguarded.

The idea of livestock (and herder) confinement within boundaries was not always restricted to tribal or national territories. During the mid-1950s and mid-1970s some civil servants were obsessed by the idea that livestock should stay within 'grazing schemes' or 'group ranches'. A method of area-confined livestock movement would have been the branding of all livestock with area-specific brands, as had been attempted between 1954 and 1956, and the confiscation of all livestock found outside their 'reserve' or 'ranch'. For the first activity, continuity of branding - covering every head of cattle - is needed, which could never be organized. For the second activity a military occupation would

have been necessary, for which funds were lacking and for which the issue was not regarded to be sufficiently important.

### 5.2.3 Civil Administration

During the first years of Colonial administration, the British tried to work through hand-picked local elders, but unlike the situation in the Uganda Kingdoms and in Nandi, Pokot leadership was neither authoritarian nor hierarchic. Beech (1911, p.36) already noted: "the Suk have no chiefs, but merely a system of 'ki-ruwok-u', or advisers. If a man disobeys the 'adviser' and will not listen to reason: well, he has got the better of the 'adviser' (...). Advisers are chosen by general consensus of opinion: the choice being based on the wisdom and wealth (chiefly the latter) of the 'candidates'. Naturally there are no laws as to successors and no insignion of office - there being no office. Judgement is passed in accordance with the opinion of the majority of the elders and warriors". The idea of 'Indirect Rule' was soon abolished. In 1918, when 'West Suk' became a separate administrative entity, no longer joined with Turkana, twelve 'headmen' were appointed for 'Locations' in West Pokot. Later they were called 'Chiefs'. In our research area there were four of them: in Suam-Riwa, Mnagei, Kipkomo and Sook. In 1922-23 three more 'Chiefs' were appointed for Locations in the Chemorongit Hills. In 1923 each Location got its own Tribunal to deal with minor offences, and in 1925 each Location was represented in a form of local government at the District level: the Local Native Council. Government officers in West Pokot were soon very disappointed with these institutions. For the 1920s, Tully (1985, p.93) writes: "it was only with the utmost persuasion, largely composed of threats, that an administrative officer could prevail upon a respected old man to become a Chief (...). Their eagerness to return to private life meant that the administration could not threaten them with dismissal for failure to support government interests". Also "the Local Native Council failed repeatedly to support government proposals" and the Councillors were "developing a style, which the British condemned as apathetic". In 1930 the Locational Tribunals were dissolved. At the end of the 1930s the District Commissioner of 'West Suk' decided no longer to appoint old men as Locational Chiefs, but young educated Pokot, out of the few Pokot who had studied at a Government African School, which had started in 1927 in Kacheliba and which was transferred to Kapenguria in 1931. "The government hoped to create a new elite, able to manage colonial institutions and to teach others to do so as well" (Tully 1985, p.112). It was no longer necessary for a Chief to originate from the Location; during the 1950s and 1960s - when there were serious social-religious troubles ('Dini ya Msambwa-cult', 'Yomut-cult') - Chiefs were even preferably chosen from elsewhere in the District. All Chiefs as well as their Sub- or Assistant-Chiefs were always appointed by the District Commissioner and they were paid a salary. In some periods a Chief had a 'Clerk' and mostly a separate 'Tax Collector'. Some Chiefs even managed to build their own Chief's Office building. In Kenya, Chiefs (of Riwa, Sook, Mnagei and Kipkomo) were directly under the authority of the District Commissioner until 1957, when a separate Divisional level was introduced, with a District Officer in charge. The

western lowlands were administered as part of 'Kapenguria'- or 'Boma' Division, with its headquarters in the Mnagei highlands. The eastern parts of West Pokot District were constituting 'Sigor' or 'Lower' Division. In 1979 Sook and Kipkomo Locations became part of a newly formed 'Chepareria Division'.

In Uganda, the area of the 'Suk' - including Karasuk after 1932 - was administered as part of Pian County until 1937, under a Karimojong Chief. It is unclear what happened to the existing Chiefs of 'Karasuk' when Uganda took over. In 1937 Upe County was formed as a separate divisional unit for the Pokot, under Karamoja District. At the same time four 'parishes' were formed, the equivalent of the Kenyan 'location': Amudat, Karita, Loroo and Kacheliba. Later Kasei was added. These parishes were headed by Chiefs. The five Chiefs were assisted by a total of fourteen 'headmen'. The Chief of Amudat was made a 'senior Chief' with a County-wide responsibility. In 1955 a separate (British) Assistant District Commissioner was appointed for Upe.

In the course of time, the Chief's tasks were increasingly intensified. First the major duties were taxation, road building and road maintenance and - during the 1920s - labour recruitment. During the 1940s Chiefs had to gather cattle for quota-deliveries. During the 1950s they had to impose grazing and soil conservation rules. From the 1960s onwards fund raisings ('harambee') had to be organized, parents had to be pressed to send their children to school, stolen cattle had to be detected, herds to be gathered for inoculations, people had to be convinced to 'dress properly', famine relief had to be distributed and all types of 'development activities' had to be broached. Despite the increased duties, salaries of Chiefs were never more than those of trained primary school teachers, salaries of Assistant-Chiefs below those of untrained teachers.

The Chief's tasks were very much complicated by the fact that the actual power to make decisions was (and mostly still is) in the hands of all elders, holding corporate political office. This means that all men above 25 or 30 years old in one way or another participated in decision making. We have already noted that Beech observed this as early as 1909. Pokot was a segmentary society, without any central authority, with largely autonomous kinship groups, and in the kinship group a strong, but flexible, position for male elders, whose power seems to have been less than in other segmentary 'lineage modes of production' (e.g. Geschiere 1985; Schneider, 1979, relates the 'equality' of the East African stateless societies of the 19th Century to the livestock base under harsh natural conditions; there is an extensive debate about this, see Dyson-Hudson 1980). For British officials the Pokot system of decision making was almost impossible to understand, recruited as they were from a background of British Colonial elitism, credentialism, proceduralism, paternalism and secrecy (see Brown 1977, p.169, p.179). It lasted until the 1950s before an anthropologist (Schneider; e.g. 1953) studied Pokot decision making in one small area. He found a complex system of political gatherings along kinship, clan, section and neighbourhood lines, with different composition and scales for different problems to solve and with unanimous decisions as of utmost importance. Dyson-Hudson's observation for the Karimojong is as valid for the Pokot: "the position of the appointed Chief (...) represented the antithesis of every feature of the (...) (indigenous) political system" (Dyson-Hudson

1966, p.12). Also for a Pochon, a government official was regarded as 'a person to avoid' (Ibid.; Cox 1972, p.52). A late-colonial attempt to surround Chiefs with 'Location Councils' (1959-61) was only successful in the southern highlands. It remains doubtful if a very recent attempt to form Locational Development Committees will succeed to merge government and indigenous forms of decision making.

Until the 1950s the administrators had to manage with superficial and often wrong or very site-specific observations by government officials like Dundas (1910), Beech (1911), Barton (1921), Chaundy (1943) and the Annual Reports, Handing-over Reports and other documents prepared by very many District Commissioners: between 1913 and 1954 there had been at least 51 DCs in 'West Suk' and only one of them stayed longer than three years (WSARs). Only during the 1950s the District Commissioners became more interested in the Pokot way of life. One DC, Shirref, ruled for five years (1954-59) and used to spend half of his time in the field, on horseback. In 1982-83 he was still remembered by many Pokot in isolated spots, as the one and only DC who had ever visited them. During the 1950s also more knowledge was gathered by anthropologists (Peristiany 1951; Schneider 1953) and by missionaries (see 5.3).

Until the 1950s, the DC's apparatus was very small. The senior staff consisted of himself, one District Officer, one Prison Warden, a Police Officer, a District Treasurer, a District Clerk and an Assistant District Clerk, altogether seven people. A few hundred people were employed as subordinate staff. Including the DC's senior staff and their families, missionaries and traders, the total 'foreign' presence in West Pokot stood at thirteen Europeans, eight Goans and seven Indians at the end of the 1930s (WSAR 1938). In 1958 the number of senior officials had increased to eleven, with the addition of a forester, two agriculturalists, two veterinary technicians and an additional Police Officer. In 1962 the Census revealed that the total 'foreign' presence had gone up to 50 Europeans, 49 Asians and 25 Arabs (Kenya Population Census 1962, Vol.IV, p.82, p.90). After Independence, the senior government staff increased a bit, to seventeen (WSAR 1971). All except one were Africans now. By 1983, the administrative strength had very much increased: there were sixty-seven Senior Officers, among them three 'expatriates' (DAWP 1985, pp.50-51). The total number of government employees increased from less than 800 in 1963, to over 3,500 in 1983. Total government salaries in West Pokot increased from 1.5 m.KShs in 1963 to more than 40 m.KShs in 1983 (see table 5.1). In real terms, this is an increase of more than seven times the 1963-level. The relative importance of the government salaries for the cash economy in West Pokot can be illustrated by comparing it with the total commercial agricultural sales, handled by Cooperatives and the National Cereal and Produce Board, which was not much above 2 m.KShs. in 1982 (DAWP 1985, p.62, p.72). Government salaries are also much more important than cash income from the sale of gold (between 6 and 10 m.KShs per year). During the 1950s, the increased government activities in West Pokot were mostly implemented by the African District Council (ADC), the successor of the Local Native Council, that was dissolved in 1950. In the ADC a rift was clearly visible between conservative councillors and progressive educated Pokot, nominated by the government. At the end of the 1950s, however, both groups turned against colonial rules and



Table 5.1 Government Employees in West Pokot and their Salaries

Year	Nr of people in wage employment (public sector)	Total earnings in m.KShs	Breakdown of Public Employment			
			Agr/For.	Constr.	Water	Services*
1963(1)	771	1.5	..	..	..	..
1967(1)	682	1.6	105	55	14	508
1973(2)	1376	6.5	434	29	6	907
1975(3)	1365	8.6	213	40	24	1088
1978(4)	1703	16.8	353	178	12	1160
1983(5)	3513	40.5	347	650	75	2441

- (1) CBS: 'Employment and Earnings in the Modern Sector 1963-67', Nairobi 1968. Public sector figures are not given; estimated to be 85 % of total wage employment; Karapokot is excluded.
- (2) CBS: 'Employment and Earnings in the Modern Sector 1972-73', Nairobi 1976. Earnings were not given for the public sector, but estimated to be 95 % of total earnings.
- (3) CBS: 'Employment and Earnings in the Modern Sector, 1975, an analysis', Nairobi 1977; of the total of 1557 wage earners in West Pokot, 200 were casual labourers; 273 were women (18 %).
- (4) CBS: 'Employment and Earnings in the Modern Sector, 1978', Nairobi 1980.
- (5) District Atlas West Pokot 1985, pp.50-51, 114, 116; earnings are estimated; security personnel and employees of parastatals are excluded.

\* mainly Education, Health, Culture and Social Services, Administration

demanded the 'Pokotization' of internal affairs (including land ownership and retail trade). The activities of the Local Government were drastically reduced when the political power struggle between the Kenya African National Union - favouring centralized government - and the Kenya African Democratic Union - favouring decentralized government - ended with the national electoral victory of KANU in 1961 and again in 1963. In 1963 the 'West Suk ADC' was made an 'Area Council' only, under the 'Sirikwa County Council', which included Trans Nzoia, Uasin Gishu - both large farm districts - as well as Keiyo Marakwet and Nandi. During the 1960s, function after function was transferred from the Council to the district branches of national ministries. Legislative power had been concentrated in the National Assembly, with elected members representing constituencies - two for West Pokot - and some nominated members. Local councils lost most of their regulatory power. When, in 1970, the Sirikwa County Council was dissolved, and West Pokot got its own County Council, its financial, rulemaking and executive powers were very limited. Elected councillors (one for every location) spent a lot of time talking about their 'institutional disability' (see Reynolds 1982, p.124). In Uganda, the political disputes had the same outcome. Here, in 1949, Karamoja had been included in the Local Government Act, in which the

powers of the District Commissioner were curtailed and the power of the local 'District Councils' strengthened (Welch 1969, p.123). In 1958 the DC's position in Karamoja was restored with the 'Special Regions (Karamoja) Ordinance Act' (Ibid., p.119). In 1962, the Independence Conference in London decided that Karamoja was to be excepted from the rest of Uganda and to be considered a 'special area', without District Council elections and without a District Constitutional head. The Uganda Parliament was soon very critical about the 'special area' treatment. In 1963 an 'Administration (Karamoja) Act' was passed, in which a District Council for Karamoja was ordered (with forty-four members, seven appointed by the DC, nine ex-officio members and twenty-eight elected members, four per County). The Minister of Regional Administration succeeded to check the powers of this Karamoja Council considerably: he could dissolve the Council at any time, the choice of Chairman and Deputy had to be approved as well as all Council Resolutions, and all Council expenditure was subject to approval and inspection (Ibid., p.131). In 1965 the 'Special Powers' of Central Government interference in Karamoja were extended and in 1966 the internal struggles in Uganda, which resulted in the abolition of decentralized government, had the result that the type of government which was 'special' for Karamoja, became 'general' now for Uganda as a whole. For Upe all this did not mean much. In the Karamoja Council, Upe-representatives were a small (and 'enemy') minority. Upe was completely neglected, especially after 1964, when its administrative future became uncertain. Between 1966 and 1970 Upe/Karasuk was mentioned not even once in the Karamoja District Council Minutes. And the Karamoja District Reports were only mentioning Upe as a County where no investments should be done, given its unclear status, and where Chiefs were warned "that they should be clean and are not supposed to start drinking during office hours". That was all (Moroto Archives; DC touring report Upe, 1966).

After the loss of Karasuk in 1970 the parishes in Upe were reshaped, with three Chiefs in Amudat, Loroo and Karita. Karamoja District attention for the remaining part of Upe was virtually nil. Missionaries were in fact taking over government duties here (see 5.3).

In 'Karapokot' however, Kenyan administration was energetically imposed. Before 1970 two Chiefs and eight sub-Chiefs had been present in 'Karasuk' (as well as three Chiefs and six sub-Chiefs in the rest of Upe). In 1971-72 Karapokot was made a separate Division with four and later five Locations and fourteen Sublocations. 'Karapokot Division' was later renamed 'Kacheliba Division'.

For the northern part of Karapokot (Alale and Chemorongit) we studied the background of the new Chiefs and Assistant-Chiefs, appointed by Kenya. All together there were eleven functionaries, from 1971 until 1984, all local men. Seven were still in function in 1984, three had been sacked (on allegations of supporting raids or gun dealing) and one had been killed by Karimojong raiders. All of them were appointed when they were between thirty and thirty-eight years old, which is young compared to local elders. All but one had reached at least standard six; three had even been in secondary school. Most men had their education in Uganda (mainly at Amudat). If we look at their work history, nine men had experience with paid employment before: six in government service and three in Church jobs. Two people had worked as cattle traders. The

large majority of the jobs had been in Uganda and it is striking that four men had jobs with repressive functions (Police, Administrative Police, Prison askari) before becoming Chief or Assistant-Chief.

At the end of the 1960s there were ten government officials in Karasuk (and a few teachers, see 5.4); in 1983 there were 412 civil servants present in Kacheliba Division (excluding Army and Police personnel; DAWP 1985, pp.50-51): 92 teachers and three senior, 69 intermediate, 125 junior and 123 'other' functionaries. In Chepareria Division (Kipkomo and Sook Locations, but also Batei Location, outside the research area) the number of civil servants increased from less than 30 in 1970 to 531 in 1983 (out of which 232 were teachers). For the remaining parts of the research area (Upe, Riwa and Lower Mnagei) detailed data are lacking. In addition to the localized civil servants there are functionaries in Kapenguria (and Moroto) who partly deal with the research area. It all points towards a very strong increase in government penetration. From a government presence of one functionary per 1,000 inhabitants in 1970, the West Pokot part of the research area experienced an increase to 12 functionaries per 1,000 inhabitants in 1983, and probably above 16 in 1986.

Increased officialdom is not the only change worth mentioning. The administration also became more sophisticated. The pace of turnover of District Commissioners in West Pokot slackened from ten months per average period in 1913-53 via sixteen months in 1954-62 to twenty-eight months in 1963-86 (West Suk, West Pokot Archives). The number of ministries working on the District and Divisional levels increased. More vehicles meant an increased field orientation. Communication within and between ministries improved. The implementation capacity of the local level gained strength, and the 'development orientation' became more outspoken. In section 5.4.1 we will give more evidence. Here a warning is appropriate against overestimation of the impact 'on the ground'. If we look at the characteristics of the staff in the Pokot lowlands, all the senior and intermediary civil servants as well as more than 50 % of the teachers were non-Pokot in 1983. They do not understand the Pokot language, while many Pokot lowlanders do not speak Kiswahili. The overwhelming majority of the government employees are men. If they are married, many have left their families behind. The senior and intermediate staff is part of a highly mobile civil service, every now and then receiving an order to go and work in another district. The Nairobi/homeland orientation, the communication barriers, the heat, the primitive living conditions, the insecurity and the cultural distance with the Pokot often result in an attitude of minimalism or even neglect of duty. Many non-local civil servants regard a lowland posting in West Pokot as a stroke of bad luck, despite a 30 % 'hardship allowance'. (Of course there are also dedicated civil servants of high quality with a genuine interest in the lowland Pokot.) Sandford (1983, pp.255-294) shows that these points are general for civil servants working in pastoral areas.

Despite these problems, the increased strength of the Kenyan government machinery at the 'grassroots level' means a much more tangible government presence. In Geschiere's words (1986) the Kenyan government is clearly busy to extend its 'hegemonic project' to remote areas, including West Pokot. Recent government pretensions are far ahead of

government practice, however. The government would like to interfere in many economic and political fields, but also in health care, education, sports, youth and women's groups and churches, It claims authority over parts of consumption (e.g. demanding 'proper' clothing, and forbidding home made beer). And it claims the responsibility over defence and juridical matters. The wide gap between pretensions and practice is loaden with potential conflicts, and with opportunities for non-governmental organizations to fill the gap, each one with its own 'pursuit of hegemony' (see 5.3). It all means a much more intense interference with people's lives, and with people's survival strategies; at least potentially.

#### 5.2.4 Political Representation

In 5.2.3 we have looked at the penetration of the colonial and national civil service in western Pokot. Here we look 'bottom-up': the representation of the western Pokot on higher political levels. When the British allowed political parties to operate in Kenya, in 1955, the interest of the Pokot in political participation, was hardly roused. At the 1957 Legislative Council elections, only fifty-five people in West Pokot voted. In 1960, however, the perspective of an African ruled Kenya - and especially the widely discussed fear that Kikuyu people would take their land - had profound effects. A branch of the KADU party was established, a party in favour of decentralized government and anti-'Kikuyu and Luo dominance'. The number of registered voters rose to 3,284 of which 80 % actually voted (WSAR 1960), which is between 10 and 15 % of all adults at that moment. KADU won the elections in West Pokot with a large majority; KANU, the party of Kenyatta, lost locally but won nationally. In 1963, the elections for a 'Rift Valley Regional Assembly' in Nakuru - dissolved in 1964 - and for the House of Representatives again resulted in a victory of KADU candidates. The Senate seat for West Pokot went to a KANU candidate (in 1964, KADU and KANU merged; in 1966 the Senate and the House of Representatives formed one Parliament). Nowadays, western West Pokot forms one constituency, 'Pokot West', with the exception of Kipkomo Location which belongs to 'Pokot East'. Let us look at the background of the four Members of Parliament elected in 'Pokot West': Jacob Pkerio Lorema: 1963-1966; James Lorimo: 1966-1969; Francis Loile Lotodo: 1969-1984 and William Kanyongu Sindano: since 1984.

Lorema, the first Pochon MP, member of KADU, was twenty-five years old when he was elected to the House of Representatives (unopposed). He came from the Mnagei highlands, had been to a Teacher's College and taught at the Government African School in Kapenguria from 1960 to 1963. Like all KADU-members he crossed the floor to KANU in 1964. In 1966 he joined the radical Kenya People's Union. There was a KPU-KANU mini-election and Lorema was defeated by Lorimo. He never joined politics again. He resumed his teacher's position and was later employed as a Divisional Adult Education Supervisor for the Special Rural Development Programme in Kapenguria. In 1978 he became an Assistant Adult Education Officer in West Pokot and was transferred to Turkana District afterwards. Before going into politics he got a 40 ha piece of land near the Lelan

highlands. He also inherited his father's 7 ha plot in Mnagei. He did not get tangible profits from his political career. Lorimo was the second MP for 'Pokot West', but the first one from the lowlands (Riwa). When he was elected, in 1966, he was thirty-three years old. Like his predecessor, he had his primary education in Kapenguria and his secondary education outside the District, at Kapsabet, in Nandi. In 1954, twenty-one years old, he had become the secretary of the African District Council. In 1963 he failed to get the Pokot seat for the Senate; in 1966 he won the parliamentary seat for Pokot West. He was defeated by Lotodo in 1969. From 1972-74 he worked at the County Council of Pokot; later he became the district KANU-secretary. He owns 10 ha of land in the Mnagei highlands.

Until 1969, Pokot-West parliamentarians were 'backbenchers', with very minor positions in national politics and not successful at home. This last characteristic changed, when Lotodo was elected. He came from the lowlands too (lower Sook) and was twenty-seven years old when elected. Discovered by Roman Catholic missionaries at Tartar, he went to Kapenguria upper primary school and to a secondary school outside the district. In 1963 he left Kenya and got a job as a clerk of the Karamoja African Local Government in Uganda. In 1964 he returned and became a government clerk at Kapenguria, later a clerk with the African Court at Kitale. His 1969 election was the start of a long parliamentary career. He was reelected in 1974, 1979 and 1983. In 1979 he was the first Pochon ever to become Assistant Minister, first for the Ministry of Energy (although not resulting in electricity for Kapenguria: this District Headquarters is one of the very few still without electricity, in 1986), later for the Ministry of Lands, Settlements and Physical Planning, and finally for the Ministry of Information and Broadcasting. With a large backing from the western lowlands, and especially from Kacheliba Division, he was blamed by the government for not stopping the 'ngoroko menace' (raids, insecurity), sacked, arrested, charged for some minor offences and imprisoned for more than a year. The western Pokot had lost their potentially most influential spokesman in national politics. For Pokot standards, Lotodo had become a rich man. Before joining politics he already had a piece of land of 40 ha near Lelan. Later he built a big house there, started a canteen and a poshomill, bought a tractor and a few cars. He has grade cattle and woolsheep and a personal dip. At Makutano he bought a few plots and built a hotel, rental houses and a shop. In 1982 he was given more than 20 ha of land in Trans Nzoia District.

In October 1984, after Lotodo had been sacked and ousted from the KANU party, mini-elections were organized. Sindano was elected, but the Pokot feelings at that time can be illustrated by the number of voters: 5,960 (Sindano 65 %), against 17,400 at the 1983 elections (Lotodo 75 %, Sindano 23 %). Sindano has a different background compared to the others. He was thirty-nine years old when elected. Born in Kipkomo, he went to school in Chepareria and Kapenguria and got a scholarship to study for four years in the USSR. Coming back, he first worked with the Prison's Department and later, at Kitale, with the Ministry of Transport and Communications. Like Lorema and Lotodo, he has a plot near Lelan (58 ha). In addition he has a residential plot at Kapenguria and a commercial plot at Makutano. Sindano's position in parliament is still one of a 'backbencher'.

We may conclude that all four members for Pokot-West constituency were relatively well educated and all went to school outside the district. All had had a civil servant job before. With the exception of Sindano all were very young when elected. Although three MPs came from the lowlands originally, all were well established in the southern highlands, before going into politics. For no-one lowland livestock was an important part of their wealth.

If we look at western Pokot influences on the Kenyan national level we must conclude that these have always been minimal with the exception of the period between 1979 and 1984 when a Pochon had reached the position of Assistant Minister, albeit of unimportant departments. Unlike other semi-arid districts (Baringo: the President, the Akamba-districts: top army men and an important minister, Kajiado: a heavy weight minister) Pokot influencing of national decision making within parliament and army has been meagre. It is suggestive, however, to note that the large increase of government attention for West Pokot, after 1980, coincides with the only period when a Pochon leader had gained a position of at least some national status. Many observers tend to downplay this relationship, however, and I agree with them.

In the Pokot-West constituency itself, political mobilization has never been more than some minor election fever, with low election participation: the highest participation (in 1983) was still below 30 % of all adults of the constituency. Maybe the rejuvenation of the (only) party, KANU, with the establishment of a more influential grassroots organization after 1984, could in the long run mean more general political mobilization, at the local level. Lowland Pokot mistrust in the state - especially after the 1984 and 1986 military operations (see 5.2.5) - is probably a powerful barrier for mass participation for the time being.

In Uganda, no Pochon ever played any role in national politics. The few educated Pokot were mostly Catholics, with Democratic Party allegiance, which meant political obscurity in UPC-protestant dominated politics (when that was important: 1962-69 and 1980-85). Only in 1980 a Pochon almost won a parliamentary seat (Lawrence Kakuko Titekete, who lost against a Karimojong, Edward Asiyo). Upe was simply too small to bear much weight in the Southern Karamoja Constituency. Under Amin's rule, his Karimojong allies prevented any Pokot influence. After 1985 there were few Pokot left in Upe to try and gain political weight in Kampala, under Museveni.

#### 5.2.5 Security, Law and Order

Being a border region is one problem; being a pastoral area with recurrent cattle thefts is another problem; combined they have resulted in outbursts of government violence, sometimes 'solving' insecurity, often adding another serious threat to the security of the western Pokot. In Chapter 4 we have seen that Pokot-Karimojong, Pokot-Turkana and Pokot-Sebei raiding and fighting had been severe during 1917-1924, 1952-1958, 1962-1969 and 1973-1982. We have suggested that severe droughts and livestock epidemics played an important role in the

intensification of fighting. For the administration it has always been a clear policy goal to end all raiding. When this did not succeed, responsible officers often felt embarrassed and in some cases reacted with an overdose of force. Let us look at the various government responses to raids and 'tribal warfare'.

In the first government report about the area (Turkana AR 1912-13) Turkana-Pokot raids were already mentioned as a serious threat to tribal peace. The government reacted by imposing a 'collective punishment' and by stationing fifty policemen in Kacheliba, forty elsewhere in the District and small groups of soldiers at four military posts. In 1914 and 1916 also raids by the Karimojong reached the records and the DC suggests that he successfully prevented the Pokot to recover their property (AR Turkana and Suk, 1913-14; Brasnett 1958, p.117). When in 1916-17 heavy Turkana raids were reported, government officials began to feel rather uneasy. On the one hand "the Suk have been assured that justice will be done in due course, provided that they remain quiet and obey orders" (W.Suk AR 1916-17), on the other hand "it having been found that to take a number of cattle from the Turkana to compensate the Suk, simply meant heavier raids by the Turkana" (W.Suk HOR 1919-20). It was not until April 1919 that harsh measures were taken. At that moment the Turkana were placed under military administration. Pokot were recruited to become part of punitive expeditions - involving a few hundred Pokot 'warriors' - and the "Suk were compensated with 2,000 head of cattle" (W.Suk HOR 1919-20). In 1917 alone, the Pokot were said to have lost 15,000 head of cattle to Turkana raiders (Barber 1968, p.164) and in 1918 the Pokot had been driven right out of the Chemorongit Hills by Turkana forces which were armed with rifles, obtained from Ethiopia. It is doubtful whether the Pokot felt sufficiently compensated.

In 1917-18 the Pokot had been forced to look for refuge among Karimojong near Mount Kadam, where they "were allowed to remain, but quarreled over grazing and water with the result that unrest became general" (W.Suk HOR 1919-20). Part of the Pokot had also fled to a southern refuge area, but were expelled by government force in 1919 because this area was planned to be the White farmers settlement area of northern Trans Nzoia. The British sent those Pokot back to the Chemorongit Hills and to the area along the Kanyangareng river. To avoid further Turkana-Pokot trouble, the Pokot were forbidden to graze their animals further east than the summit of the Chemorongit Hills, although the British realized that the whole area around these hills was "admittedly Suk" (W.Suk HOR 1919-20).

As a result of Turkana and Government activities, the Pokot were forced to look westward for expansion. However, in that area the Karimojong were approaching also. This was partly a result of Ugandan government policy to scatter the Ngipian section over a larger area to have labourers for road works at more places. As a result, Ngipian grazing became dangerously close to Pokot grazing (Dyson-Hudson 1966, p.16). This resulted in continuous troubles, in which the Ugandan administration grudgingly favoured the Pokot, to avoid trouble with the Kenyan Government (Cox 1972, p.15, p.132, p.150).

In October 1920, British officers organized a large peace meeting at Lokales, attended by representatives of Karimojong, Turkana, Sebei and Pokot. "The delegates agreed that inter-tribal feuds and fighting should end and that old claims should be forfeited. Contact between the tribes,

including inter-marriage, was to be encouraged, and a council to settle inter-tribal disputes was created with the District Commissioners on both sides of the borders to act as arbiters in any unresolved disputes" (Barber 1968, p.199). A traditional ceremony concluded the meeting. Police posts in southern Karamoja, Kacheliba and Kiwawa were vigilant to check any breach of the pact. After this peace meeting, and until the 1927 drought, only a few incidents were reported involving Pokot, Sebei or Karimojong. Turkana-Pokot trouble lasted longer. Pokot claimed that in 1922-23 the Turkana had raided 1,300 head of cattle. The Police could not recover any, and decided to confiscate fifty camels instead, which were given to the Pokot as partial compensation. In 1924, Turkana raids increased (2,100 cattle raided; at least thirty-four Pokot killed). The King's African Rifles established an extra police post at Lokitanyala and built a waggon road, using prison labour and paid Pokot labour, which was not difficult to get after the drought (WSAR 1924). This waggon road dropped down the escarpment in Mnagei and traversed the western Plains via Kacheliba to Lokitanyala. From 1925 onwards, Turkana-Pokot raids were no longer reported (WSAR 1920-30). It seemed that British 'diplomacy', police strength and - perhaps most important - good rainfall in 1925 and 1926 made an end to 'intertribal warfare', as it was repeatedly called. The disappointment among officers was large when during the 1927-28 drought, new raids flared up between Pokot and Karimojong. The police in Moroto and Lokales reacted with a lot of force, especially hitting the Karimojong.

In general, the Pokot were eager to abide with the government rules. This is not strange: they saw the new masters as powerful allies against Turkana pressure on one side and in favour of territorial gains in Karamoja on the other side. The loss of the southern grazing lands to White settlers was a blow, but it was more than compensated by westward expansion.

Although occasional raids were reported after 1928 (1946, 1949), in general, the British officers regarded raiding as something of the past. Police posts were gradually dismantled. When fierce Karimojong-Pokot raids erupted during the 1950s as well as minor Pokot-Sebei clashes (see Goldschmidt 1976, p.29), the Uganda government was shocked, but military actions against the raiders were not started. Instead of punitive or recovery expeditions, collective fines were imposed, which were "announced at barazas - meetings - and accepted without protest" (Kar.AR 1953). In 1953, for instance, the people of Upe were fined three head of cattle per taxpayer and the Ngipian one head, giving the government a welcome booty worth 700,000 Shs (Ibid.). When the Pokot tended to suffer from the raids more than they gained in 1957-58, the Uganda Pokot became worried and approached the West Pokot African District Council with the request to reunite all Pokot under one civil authority and defend Pokot interests. Nothing happened from the Kenyan side, with the exception of issuing passes to Kenyan Pokot and sending the Administration Police to check whether 'Ugandans' were 'illegally' entering Kenya. (The AP was a locally recruited police force, assisting the DC to deal with civil disturbances.)

In southern Karamoja, a new policepost was established in 1958 to discourage raids (Welch 1969,p.117). After violent clashes in 1962, even a full batalion was sent to Karamoja, which soon took part in heavy fighting, during which sixty people were killed. Fines were



institutionalized: so-called 'blood money committees' were formed, dealing with cattle theft and manslaughter claims. 'Blood money corruption' was soon reported, as claims were easily inflated and officials wanted their share. A lot of money was involved: from Upe alone, in 1966: 345,000 Shs (Moroto Archives).

In 1964, extra security forces were deployed in the area of Pian and Upe. Assisted by a 'dusk to dawn curfew', they were soon showing force and recovered a third of the stolen stock in 1964 and 60 % of the stolen stock in 1965. A policepost was established at Achorichor and in 1965 "72 miles of security tracks were completed in North-West Upe" (Moroto Archives, Kar.AR 1965). In 1964-65 the 'Operations' were already more vigilant to recover stock from the Pokot than from the Karimojong. The Pokot were also ordered to surrender their spears. In 1966 the Uganda Army, together with Sebei raiders, started to "seize Suk cattle" and in 1968 "towards the end of the year, Uganda Police and the Army mounted a successful operation against the aggressive Suk" (Kar.AR 1968). For the Karamoja administration and Police and Army - no longer curbed by British late-Colonial hesitancy - the Pokot were an easy target for military practice, in combination with welcome booty. The handing over of Karapokot to Kenya in 1970 was greeted with relief there. Immediately Kenyan police posts were established in Kacheliba, Kunyao, Nauyapong and later also in Amakuriat and Lossam. Until 1979 they were successful to prevent Karimojong (or Uganda Army) invasions. In the southwest, however, Sebei raids were very violent (there were many Sebei in the Uganda Army) and the Kenya Government decided to send the Stock Theft Unit, and later to station the General Service Unit of the Army in Kanyerus as a preventive force.

In Upe increased difficulties were expected after 1970 (many people had fled to Kenya) but the Amin-government did not want border problems with Kenya. The Army and Police forays were more or less checked (or better: redirected towards more rewarding parts of Uganda) and the Karimojong became less interested in raids, which could be answered by unpredictable and possibly very violent Army actions. In 1979, when Amin's government was toppled and Amin's soldiers fled to the North, inevitable chaos resulted in unprecedented Karimojong-Turkana-Pokot clashes, also on Kenyan territory. Heavy arms were used during raids and the Pokot begged the Government of Kenya to allow them to defend themselves. In 1980 the government agreed and (100?) guns were distributed among Pokot 'home guards'. Individually, the Pokot also acquired more heavy weapons and ammunition by raids, barter and trade (ten, later twenty head of cattle for an automatic weapon). In the North, the indigenous defence activities by armed Pokot succeeded to restore faith in their survival; in the South the General Service Unit also had this effect. In 1982, a peace treaty was concluded between Pokot and Karimojong sections and, assisted by good rainfall, raiding died down. Not for long, though. In early 1984, a large number of Karapokot boys had raided and killed Ugandan Sebei, dangerously close to densely populated areas in Uganda and during a period when the Ugandan and Kenyan governments were just trying to restore mutual cooperation again. Even more serious was the fact that in Trans Nzoia large African landowners - including at least one high ranking military official - had been raided in 1983-84, and they began to feel uneasy with Pokot neighbours who were said to be armed with at least 3,000 modern weapons

(probably a very inflated estimate). Some Pokot leaders were also thought responsible, and the Member of Parliament for the area and some of his followers - said to be 'Pokot nationalists', people who agitate against non-Pokot immigration into Pokot land - were arrested. A young Pochon, calling himself 'General Mwaua' was arrested as the leader of a government-invented 'Pokot Liberation Organization'. Many months later he was released from detention because of lack of evidence. His arrest, however, was not the only sign of 'overreaction'. The Kenyan and Ugandan authorities decided that the weapons in Pokot and Karimojong hands were a continuous threat to peace. In February 1984 both armies launched a military action to force the people to surrender all their guns, including the ones given by the Kenya Government in 1980. The government recovered more than 300 firearms.

To achieve this goal, many heads of cattle were confiscated as 'hostages' and packed in Kacheliba. According to local informants, about 8,000 head of cattle were driven together in the main camp at Kacheliba. Part of it was sold in Kitale, part of it eaten by the military but the majority of the animals died because of starvation and lack of water (it was during a severe drought). Most animals were butchered by Turkana from the small Turkana camp at Kongelai. Pokot women from around came to beg part of the meat. In June the stench of the dead animals was so unbearable that cadavers were burnt. After the Operation, only 1,000 animals were returned to the owners (Jihadhari 1984, also see Kodich case study, 6.3). People were killed too, among them an Assistant-Chief. Even bombs were thrown from helicopters, setting fire to fields and huts.

The Pokot did not fight back and the state of violence died down during the following months. The results were disastrous: many Pokot herders had lost all the cattle, that had not yet been killed by drought or disease and that were not yet raided. In the areas where - despite the 1984 drought - some food could have been produced, work in the fields had been made impossible, as most people were hiding in caves and other hiding places in the Chemorongit Hills. Missionary assistance, so valuable during the 1979-81 disasters, could hardly be acquired: most missionaries were only allowed to pay occasional visits. Only the Roman Catholic missionaries were allowed to stay in Kacheliba. The Operation (or 'Lotiriri' as it was called by the Pokot, after the noise of the helicopter, which was used to round up cattle and to find hiding people) had an additional result: the experience with the Uganda Army and Police had made Pokot suspicious of armed state functionaries. Their experience with the Kenya Police had as yet not been so negative. Most Pokot looked at police boys not with fear but with compassion. The 1984-Operation showed that the Kenyan armed forces could be enemies of the Pokot too, and especially the Police and the Administration Police were accused of mere looting. Ugandan Pokot already had experience with military raiders ("In 1982-85 it was not rare to see a military lorry ferrying raided cattle for sale to Kampala, Jinja and to military supplies units" Ocan 1986), now Kenyan Pokot were afraid that this would be their fate too. Pokot looked at the stationing of a large group of soldiers (500?) in Kongelai/Kacheliba with ambivalence. Partly they were seen as a welcome defence partner against Karimojong and Sebei. Pokot were very worried about the fact that after the toppling of Obote's regime in July 1985, hundreds of Karimojong and Sebei ex-soldiers went home with their

weapons. On the other hand the soldiers were regarded as a possible addition to insecurity.

In July 1986 a second military operation was launched, both in Karamoja and in Karapokot. In Karamoja it followed upon a mass attack of Karimojong on Teso cattle (see 2.4). Rumours of renewed army terror and sinister trade arrangements of cattle and arms could be heard. In August the Uganda Army was hastily withdrawn and sent to the troubled North. The Kenya Army now operated on both sides of the boundary. Started as a minor Kenya Army action to trace stolen camels and cattle, raided from the Turkana, soon a large scale Operation was launched when Pokot started to fight back. Again many cattle were rounded up - as well as most of the Pokot camels. In October 1986 also this Security Operation, which could have developed into a major Pokot-Army battle, was gradually petering out and animals were returned after the personal intervention of the Provincial Commissioner of Rift Valley Province. Despite this result, Pokot west of the Suam River now feel surrounded by enemies, who all are eager to steal their major property: cattle.

Up to this point we have dealt with the most prominent parts of government activity in the sphere of security, law and order, those concerning raids and intertribal violence. Government activities in the sphere of law and order are of minor importance in other fields, although it is useful to mention a few aspects. In the early years of Colonial rule, the government tried to integrate the judicial activities of local elders in a 'tribunal' setting, a kind of locational court of law. Hardly any cases were dealt with, though, and in 1930 the locational tribunals were replaced by one Court, with the DC as the magistrate (in Kapenguria). Civil disputes hardly reached the Court. In Kapenguria there was a Prison Warden and a Police Inspector, but both officers and their very small staff were not very occupied since the raids had ended. During the 1950s things changed rather dramatically. Kapenguria Prison became an outstation for Mau-Mau prisoners - even Jomo Kenyatta spent some time there - and a local religious sect was regarded as so dangerous that its members were arrested ('Dini ya Msambwa', a millenarian cult, one of the fanatic religious sects that abounded in Kenya during those days and one which was regarded as very dangerous by Colonial authorities as it was seen as an 'anti-White and 'anti-modern' uprising, especially after the killing of three Europeans in 1950: the battle of Kolloa, see Patterson 1969, pp.35-41; Kipkorir 1973). In addition to these two categories of prisoners, the new wave of cattle thefts during the 1950s resulted in prisoners too. In 1958 there were 221 prisoners in Kapenguria and in work camps established east of Kapenguria. To deal with increased insecurity, about fifty 'tribal policemen' had been recruited, who worked under the responsibility of a police inspector and about ten policemen (WSAR 1958). In 1960 most prisoners were released. The police force - including what was called Administration Police now, whose membership was no longer confined to Pokot only - remained at about fifty for West Pokot District as a whole. In the research area east of Suam there was only one small police post at Kanyarkwat and a patrol base at Kongelai. Around 1970 the number of prisoners went up again (to 306 in 1969), while the strength of the AP increased to more than eighty. Unfortunately, further details for West Pokot are lacking, as well as all details for Upe. What is clear,

however, is an increased level of compulsion, especially during and after 1979, and probably an increase in imprisonment and fines as a result. In 1979, 'changaa' and beer brewing for commercial purposes were forbidden, education was made compulsory (for what that is worth) and Pokot east of the research area were harshly forced to 'dress properly'. In 1983 alone, approx. 200,000 KShs were gathered as 'court fines', for more than 300 cases, most of them dealing with cattle- and other theft. During the 1980s 'the law' was also more prominently visible in army barracks (Kanyerus, Kongelai-Kacheliba), police posts (Kanyarkwat, Kacheliba, Kunyao and Nauyapong) and police bases (Nakuyen, Lossam, Alale and Amakuriat) (DAWP 1985, p.93; interviews).

#### 5.2.6 Taxation

One of the first administrative measures after the establishment of a government machinery in western Pokot, was the introduction of a tax system. Each Pochon man had to pay three Rupees (6 Shs), when taxation started in 1913; the equivalent of one goat, or one hide or twelve goats' skins. In 1914-15, 3,800 Pokot could be persuaded to pay tax, 40 % of them living in the Chemorongit Hills, an area that was regarded as by far the richest among the Pokot (Turkana and Suk ARs 1913-15; Dundas 1910, p.58). In 1916-17 more than 7,000 Pokot men paid their tax, probably the large majority of all adult men (WSAR 1916-17). During the 1918-24 disasters the number of tax payers decreased, however. The tax burden increased to 12 Shs (the equivalent of two goats or three hides). From 1924 onwards the tax 'coverage' was probably above 70 % again (WSARs). In 1918 a goat's market had been established in Kacheliba to enable taxes to be paid in money. From 1910 to 1930 the inhabitants of West Pokot - which still included 'Karasuk' - paid a total of 1.1 m.Shs, the equivalent of between 150,000 and 200,000 goats (Kerio Province, PRB,nd). In terms of colonial control of a largely pastoral, remote area, this is a remarkable success. The Pokot "in return received very little assistance from any service (...) inaugurated for their benefit" (WSAR 1930). It is beyond question that funds raised in West Pokot, during this period, were invested elsewhere (see Tully 1985, p.157). In 1926 there was not a single school, nor hospital, not even missionary activity. Only one or two Pokot were regarded as more or less literate. For the Pokot, taxes drained approx. 40 % of their registered money income; the rest was mainly spent on cotton cloth, beads (for jewelry) and wire (for jewelry and weapons) (WSAR 1928). During the 1930s, taxation caused problems. Prices for animal produce had dropped considerably - and labour migrants were hardly needed anymore in the crisis-stricken large farm areas of the White settlers. In 1932 the District Commissioner even started labour advertisements in a settler newspaper to get employment for Pokot tax defaulters (Tully 1985, p.106). Although the tax was decreased to 9 Shs during the 1930s - which was still the equivalent of four goats at the price level of that time - many Pokot men went to Uganda, where tax levels were lower, 7 Shs. Pokot headmen in Uganda, who collected the tax, tried to induce Pokot from Kenya, to migrate into Uganda, because they received a percentage of the tax collected, a practice that, officially, did not exist in Kenya (West Suk Misc. Corr.; Safari Diaries. October 1939).

Until 1945 the tax revenues in West Pokot fluctuated from 45,000 Shs in dry years to 65,000 Shs in good years. Expenditure levels were mostly 25,000 Shs per annum, with the exception of years with major road building activities (1928-31, 1939, 1945) when the Public Works Department paid more than 20,000 Shs per annum on worker's payments alone (Patterson 1969, pp.24-25; WSAR 1928). In other years West Pokot was drained, to the dismay of government officials stationed there. 'Nairobi' was regarded as very greedy. Within the District there was no money for a doctor, or to repair the so-called hospital. The Local Native Council had to support its few schools alone, as one of the few LNCs in Kenya. The Public Works Department did not get funds to extend the Kapenguria-Morobus road to Ortum until 1939 and to Sigor until 1945: civil servants had to spend ten tiring hours on horseback to reach Sigor from Morobus (WS Safari Diaries 1940, 1942).

During the 1950s nominal tax requirements rapidly increased, both to the local Councils and to the Central Government. Just before Independence it reached the level of 20 to 25 Shs. Goat prices had gone up to this level too, so that the goat equivalent of tax requirements was far below the level of the 1930s. Marketing opportunities and migrant labour wages had improved considerably, further decreasing the 'real' tax burden. In West Pokot taxation was no longer the dominant source of revenue for the African District Council: in 1958 a newly introduced 'graduated personal tax' only brought 16 % of total revenue - 137,000 Shs -, the rest being supplied by school fees, sale of services, cesses and licences. Also central government grants were not unimportant (WSAR 1958). During the 1950s government expenditure in West Pokot was gradually overtaking government revenue from the district. During the 1960s subsidization further increased: after 1961 it was difficult to collect direct taxes. According to Soja (1968, p.124) the 'graduated personal tax' for Africans was only approx. 70,000 Shs in 1962-63, in West Pokot. In 1964 it was only 30,000 Shs (WPAR). When the tax collection recovered, after 1964, it never reached the level of the 1950s and certainly not the level of the 1930s (measured in goat equivalents), despite the increase in potential tax payers. In 1971 the 'graduated personal tax' was totally abolished below a certain threshold. On the other hand, there was an increase of government expenditure, albeit with a changing responsibility from the local level to the central level.

In Upe, the opposite was true: taxes increased from 25 Shs in 1963 - the equivalent of one goat - to 55 Shs in 1968, the equivalent of two goats. Women above fifteen years of age also had to pay tax now. Government expenditure for Upe was low, though. From 1965 onwards, many Upe-Pokot refused to pay tax or went to Kenya "to evade Uganda taxes" (Kar.AR 1967): in 1966 only 61 % of the 'expected taxes' were collected; in 1969 probably less than 5 % (Moroto Archives; File Adm.14/66). In 1970 the tax system was drastically changed - as in Kenya. Less than 20 % of the Upe and Karapokot households were regarded as rich enough to pay graduated tax (Kar.AR 1969).

In practice, both in Kenya and Uganda, tax payments to the Central Government virtually stopped. 'Harambee' contributions to donation campaigns for general or specific targets became more important, although District Commissioners often complained that the 'harambee-spirit' among pastoral Pokot was so low. For West Pokot District as a whole the harambee contributions were 134,000 KShs for an average year

in the 1967-69 period; dropping down to 104,000 KShs in the 1973-78 period and strongly increasing to an annual level of 908,000 KShs on average in the 1979-82 period. In this recent figure 'voluntary' deductions from teacher's and other civil servant's salaries probably made up a large proportion (unpublished data Dept. of Social Services, Kapenguria). DCs were very much urged to reach 'harambee' targets for district-specific or other development projects, especially in cases where the President himself was a 'guest of honour'. Direct taxes were not all abolished. The County Council still had its own 'area rate', although this was very difficult to collect after the end of the tax collection for the Central Government. In West Pokot the 'area rate' dropped from a level above 50,000 KShs per year in the late 1960s to virtually nothing in 1974-76. Only from 1978 onwards, the area rate contributions increased again. After the introduction of road checks it even reached a level of 250,000 KShs per year (the value of the Shilling had fallen considerably in the meantime) (Pokot Area Council Annual Reports). One can see that 'County Council' tax revenue was always below the registered harambee contribution (and there were non-registered harambees too).

If we look at the level of County Council taxes and 'harambee' contributions during the early 1980s, the average revenue was around 1.1 m.KShs per year. That is 28 KShs per adult man (above 15) or 38 KShs per average household, the equivalent of less than a third goat. This is far below the tax-burden of colonial times. On top of taxation the County Council received 0.5 m.KShs as payment for services; the Central Government received about 1 m.KShs as water charges, boarding fees, fines and licences. Compared with government expenditure (salaries of civil servants at least 40 m.KShs; County Council expenditure 1.3 m.KShs in 1981; development budget 10 m.KShs in 1983-84 and 24 m.KShs in 1984-85; see table 5.4, later), direct government revenue from West Pokot was only a tiny fraction of governmental expenditure. During the 1950s West Pokot had turned from a 'drainage' district to a 'subsidized' district. In the 1970s and especially the 1980s, the gap between revenue and expenditure had become enormous, in favour of West Pokot. As the most important current source of national government revenue is indirect taxation (World Bank 1986, p.224) the 'real' gap must be smaller though. Part of the government 'development expenditure' flows back to the Treasury because it is spent on materials, which are sometimes heavily taxed. The consumer goods which are bought by the inhabitants of West Pokot, include a proportion of taxes too. One can understand why the government is eager to 'commoditize' consumer habits in areas which are normally as self supporting as western Pokot. Although other reasons are perhaps more important - and we do not want to defend a conspiracy theory - the pressure on the Pokot to 'dress properly' (that is: to buy industrially produced clothing, which also necessitates the buying of washing powder) definitely has the effect to increase government revenue through indirect taxes. The pressure to change the consumption of local brews to bottled beer and 'sodas' has the same effect, as it is also rather profitable for the Treasury that Pokot consumers buy industrially produced cooking fat, instead of using the sheep fat from their own animals. Increased mobility, by using heavily taxed public transport, is another welcome Treasury catch. Despite these forms of indirect tax revenue, it is beyond doubt that West Pokot is heavily subsidized.

### 5.2.7 Labour Recruitment and Labour Market Integration

In the literature about Colonial Kenya, taxation and labour recruitment are usually mentioned together (Stichter 1982). For the area of the Pokot, however, the relationship is not so clear. The possibility to sell shoats, hides and skins to pay their taxes, prevented the Pokot from becoming labour migrants to a large degree. White settlers in Trans Nzoia looked south for labour supply: to the area of Luhyas and Nandi. Because it was done everywhere in Kenya, the District Commissioners of West Pokot also recruited some labourers in the period 1924-32. But in 1928, probably the top year in Pokot labour market participation - a lot of demand for labour and a severe drought - only an average of 500 Pokot worked at a go (of which 300 in the District itself and 200 in Trans Nzoia). Because average work periods were four months, this means that in 1928 1,500 Pokot or 15-20 % of all adult men must have had jobs. An average salary for four months work was about 33 Shs; three times the individual tax requirement. But for the Pokot as a whole, it was estimated that wages were only 12-15 % of total cash income, which was thought to be less than 400,000 Shs per annum (WSAR 1928). Labour opportunities dropped considerably during the 1930s and - with the exception of 1932 when the DC placed 600 'tax-defaulting' Pokot in settler coffee fields - the government did no longer play a role in securing labourers for settlers. Most Pokot who got a job, found employment in their own district, constructing new roads, the new district headquarters and the like (after 1945 also a small asbestos mine in Riwa recruited Pokot labour).

In the 1940s, when labour became scarce again in Kenya, labour migration was stimulated anew. But Pokot were reluctant, especially to be recruited for army-service. In 1944 - during a drought - the DC threatened that he would refuse famine relief food if the Pokot did not go out to work. Also a registration system was started. In 1947 about 550 Pokot were working in Trans Nzoia; 400 in West Pokot itself; together that was about 6 % of all Pokot men altogether (Tully 1985, p.158). Trans Nzoia employers, however, were not keen on Pokot labour: "they were considered poor workers who stayed for a short time, left if they felt they were not being treated fairly, and refused work until their own crop and animals were cared for" (Ibid, p.125). The idea was that Pokot labour for Trans Nzoia should come from the pastoral areas - seen as 'labour surplus areas'. In practice they came from agricultural areas (in Sigor Division mostly), where labour recruitment was seen to endanger food production. During the 1950s army recruitment intensified (in 1955 for instance 155 Pokot were recruited), Pokot could join the 'tribal police', and the number of registered 'outside workers' increased to more than 800 per annum, attracted by increased wages. Within the district, 'Dini ya Msambwa' detainees provided a lot of prison labour on roads, afforestation etc. Also 'communal' - unpaid - labour duties were reintroduced, to be organized by Chiefs (grazing scheme work, terracing). To retain enough workers for these duties, (among other reasons) a pass system was introduced in 1958 (Tully 1985, p.131).

In Upe, labour recruitment never played a role. In West Pokot, after 1963, government interventions in the labour migrant market were minor. A 'labour office' in Kitale did some recruitment and dealt with labour

conflicts. Within the District, the detested labour duties for government projects were abolished, to be replaced by 'workspaid' arrangements and - especially during the 1980s - by 'harambee' labour contributions. For the District as a whole in 1983, 846 'workspaid' and 'casual' jobs were done for the government, 470 of them offered by the 'Rural Access Roads Programme'. In our research area there must have been 200-300 of these job opportunities for government projects, during 1983 (DAWP 1985, p.51). A minority of the permanent government jobs were also done by Pokot, as well as approx. 140 untrained and a few trained teacher jobs (DAWP 1985, p.108, p.114; Van Haastrecht & Chizupo 1983). Although there have never been so many local job opportunities in western West Pokot, their relative importance is still meagre. Even if there were 500 Pokot with local government jobs in the research area, in 1983, this was only 3 % of all adult men (there were virtually no Pokot women with government jobs). Nevertheless, the impact of the wages on the local economy was considerable, as we have seen before. For Upe we can be short: there have never been more than a few local jobs for Pokot.

#### 5.2.8 Access to Land and Changes in Land Ownership

Traditionally, land is 'owned' by sections of the Pokot. In the pastoral lowlands these sections have always been loosely defined (e.g. the Riwa section, the Kipkomo section) and in practice use rights of land were more tribal than sectional. In Colonial times this 'communal ownership' was formalized by vesting the ownership of the land in the Local Native Council, later the African District Council. The Pokot 'ownership' of Upe was recognized in 1937 by the Karamoja Administration: the Pokot got their own 'County'. The councils made no further arrangements, with the exception of declaring a game reserve (in southwestern Upe, 124 km<sup>2</sup>) and forest reserves (in the Chemorongit Hills, 438 km<sup>2</sup> and in the southern highlands), both in 1958 (Karamoja Development Plan, 1958; WSAR 1958). In 1964, these regulations resulted in the eviction of 'intruders', from Kachagalau Hill in Alale, by the Karamoja Administration. During the 1960s discussions started in the Pokot Area Council about private landownership in the southern highlands, which was generally seen as an important prerequisite for commercial agricultural development. Because of the 'non-Pokot' or 'alien' problem nothing was done yet (Reynolds 1982, pp.101-120).

In 1973, as part of the Special Rural Development Programme, 'land adjudication' was suddenly forced upon the district, under the responsibility of the central government. Highland portions were adjudicated as 'smallholdings', lowland portions as 'Group Ranches'. "The process itself consists of three phases. An area is first declared adjudication section. People claim their (traditional) rights on certain pieces of land, an area is set aside for public purposes, then surveyors measure and map all land (...) After publication of the preliminary boundaries people may raise objections, which are then settled. A section is finalized when all disputes are settled" (DAWP 1985, p.54). In 1976 the Riwa and Kanyarkwat Group Ranches had been finalized, in 1979 Group Ranches in Chesera and Lower Mnagei. In 1981, parts of the southern highlands were ready and in 1983, Nakwijit Group Ranch had been



'published', four group ranches in southern Kacheliba Division had been 'declared' and the semi-arid and sub-humid area around Chepareria had been declared a smallholders area. In 1983, the seven finalized group ranches consisted of 695 km<sup>2</sup>, the six finalized smallholders sections of 224 km<sup>2</sup> for 2,180 owners. Kipkomo was still to be finalized; in Kacheliba Division land adjudication officials had to be withdrawn because of stiff local opposition. The idea behind group ranches is a collective liability for credit, and collective management of land and animals, within the confines of the group ranch boundaries. A group ranch committee was to be the responsible body (see Ch. 2.3.5). In practice, the group ranches in West Pokot briefly worked as a tool for better land management only (see 5.4.6 and 6.4) and they became 'dormant' with the disasters of 1979-82.

#### 5.2.9 Control of Trade and Attempts at Commercialization

When the British established their power over the Pokot, an important trade had already died out, the trade in ivory, simply because most elephants had been killed between 1880 and 1910 (Barber 1968, pp.91-106; Tully 1985, p.68). At the end of the ivory-era, no longer beads but cattle (and firearms) were the goods in demand.

The British prevented the trade in firearms and they tried to control the livestock trade for two reasons: to enable tax payments in money (e.g. the Kacheliba goats' market, 1918) and to prevent animal diseases to enter the 'White Highlands' (quarantines; controlled cattle markets in the southern highlands: Keringet 1924 and again started in 1932). According to Tully (1985, p.95) a third reason was to keep African cattle from undercutting the settlers' meat market. In Uganda (Upe/Karasuk) this reason never played a role, though, and cattle from West Pokot 'illegally' entered Karamoja to profit from increased marketing opportunities there after 1933 (during the War Chiefs were even forced to abide to a minimum delivery quatum). In West Pokot the increased prices during the War also resulted in a higher sale of cattle.

After the War, cattle market interventions between Upe/Karasuk and West Suk differed. In Uganda the Karamoja Cattle Scheme (see 2.4) bought cattle on an estimated weight and quality basis, transported the cattle to a large quarantine area via 'closed stock routes' and sold them to urban butchers afterwards. In chapter 4 we have seen that during dry years the government purchases of Upe cattle were between 3,000 and 4,000 head; during other years between 1,300 and 2,500 head. Baker (1967, p.17) points at a major problem: the KCS market places, Kacheliba, Amudat, later also Loroo, were situated in wet season grazing areas, while the highest offtake possibilities invariably were during dry seasons and especially during droughts, when most animals were far away from market places. In Kenya, cattle marketing after the War was organized via an auction system, which attracted only 1,000 to 2,000 cattle during the early 1950s in West Pokot. A minimum quota system, introduced in 1954, and cattle branding, resulted in a strong increase: to 8,000-10,000 head of cattle per annum for West Pokot. These animals were all exported, after testing and vaccination at District-boundary quarantine centres. Both in Upe/Karasuk and in West Pokot cattle sales

made a steep drop after the 1961-62 drought: in Upe/Karasuk because of a change towards an auction system; in West Pokot because of abolition of locational quotas. The responsible Councils were too weak to organize and stimulate the cattle trade (and the goats' trade was left to Somali traders completely, after the 1950s).

After the collapse of government organized cattle marketing during the 1960s, the Special Rural Development Programme in West Pokot envisaged an integrated livestock marketing plan, accompanying the Group Ranch approach of land management (see 5.4.6). Cattle sale yards, holding grounds (a major one in Kacheliba) and fenced stock routes - from Alale and from Kamunono to Kunyao and from there to Kacheliba and the Trans Nzoia/West Pokot boundary - were all part of this 1973-plan to lead Pokot and Turkana cattle to fattening-ranches in Trans Nzoia and later for sale to urban consumers. In their SRDP-evaluations, the Institute for Development Studies of the University of Nairobi already criticized the idea, because the breeding, the 'natural' task of semi-arid lands, is the most labour intensive and most risky, but also least rewarded part of the cattle marketing enterprise (IDS 1973, 1975). Of this plan, only the acquisition of Kacheliba Holding Ground succeeded. It has been used only a few times. The institutions involved in marketing, the County Council, the Livestock Department and the Livestock Marketing Division were far too weak to organize more than 'paper auctions'.

Interference in the sale of lowland produce was not restricted to animals. During colonial times, the interference in the (minor) sale of grains, tobacco (both to Turkana mainly) and gold was negative: all transactions were deemed 'illegal' and in the annual reports a few cases of confiscation are mentioned. After Independence there was no more interference until recently: in Chepareria the National Cereal and Produce Board began to buy maize (and the 'commercial farmers' there were stimulated a lot, see 5.4.7). The government, however, could never control the trades that rapidly became the most important ones in the district, after 1979: gold and miraa. The more or less illegal miraa trade from Kadam and Chemorongit to Lodwar, does not seem to attract any government interest. The trade of gold does. A dreamy civil servant wrote that "if all went well", gold prospecting could yield "some 115 million (K)Shs every year, out of which forty- three million Shs could go to the Government as revenue" (WPAR 1981, p.87). An official mining licence was sold to the 'Korpu Gold Buyers Cooperative Society', with a head office in Makutano and Pokot gold buyers in Korpu, Alale and Chepkarerat. The licence costed a lot of money, but was mainly bought to avoid officially backed competition from others, and especially from outsiders. In practice, almost all gold dealings never enter the books of the Cooperative, although the large majority of the gold buyers had become a member, in 1983. In Sekerr, another Pokot-managed gold cooperative exists, the Lalua-Marich Mining Cooperative Society. They could not secure an official licence yet, which does not mean that their 'members' are not buying and selling gold.

Government interference in commercial transactions is not restricted to the supply side. The purchase of commodities is influenced too. At the end of the 1940s the government began trying to channel all buying and selling through controlled market places: 'commercial plots' were assigned, shops needed a licence and in some years government officials

even determined inventories and prices. District Commissioners favoured Indian shopowners, who agreed to stock their shops with the 'right' goods (flour, sugar, cloth and farm implements) and who had sufficient capital. Most shops in the lowlands, however, continued to be owned by Somalis, who traded in animals, hides, miraa and gold, who offered beads, wire and tobacco and who had no desire to be controlled by anybody. As a result, their trading activities were gradually restricted, after continuous accusations of smuggling. When cattle auctions were organized by government officials, Indians, and not Somalis were allowed to bring in trade goods (Tully 1985 pp.123-131). Licensing of shops in the lowlands was not started until the 1960s. In Upe, for instance, - including Kacheliba - in 1966 five places were accepted as 'trading centres', thirty-five licences issued (specific ones for selling 'European' beer, and for butchers) and eight applicants were refused (Moroto Archives). At the end of the 1960s, just before the administration of Kacheliba was handed over to Kenya, Ugandan custom officers invaded Kacheliba 'to check if shop owners there did not import goods from Kenya' (Ibid), with the effect that they confiscated a lot of shop goods, which were said to be bought in Kitale instead of Mbale (interviews shopowners, Kacheliba 1982).

We have already seen that during the 1970s and 1980s trade flourished in West Pokot, and contracted in Upe. In the western lowlands of West Pokot, in 1983, 68 retail shops, 63 tea hotels or kiosks, five bars, three poshomills and eight butcheries had a licence, which was the large majority of the existing shops. Somalis were no longer dominating the shops; Pokot shopkeepers were gaining importance. County Council licences, market fees and Public Health checks were relatively well accepted. One type of business had even been effectively pushed aside by government action: the selling of local beer in 'buzaa clubs', which were all closed in 1979 (although women are still brewing and selling at home and in backyard premises).

#### 5.2.10 Roads and Communications

In the research area until the mid-1970s, very few roads have been built with the intention to stimulate commercial development. The reasons behind the building of new roads were either to open up areas for improved government control or, in recent periods, to link minor service centres (a school, a dispensary, a borehole) with more important centres. After the mid-1970s, a tarmac road traversing the southeastern part of the research area had the intention to stimulate the commercial fish industry in Turkana (which failed completely) and a Kenya-wide feeder road development programme - the Rural Access Roads Programme, with the intention to stimulate small farmer commercialization - was 'adapted' to West Pokot needs, to create further administrative links (in practice without any commercial crop development and virtually no enhanced commercial livestock development as a result; the commoditization of consumption needs, however, was certainly stimulated). The building and maintenance of roads went hand in hand with ups and downs in general government interference. We see major road building activities in the western Pokot lowlands in 1912-18, 1924-25, 1928-30, 1939, 1945, 1950s, 1971-73 and after 1978. In these years

(except 1912-15) roads dominated the investment budget. Relatively large scale road building activities meant an increased demand for labour. The methods to recruit and remunerate labourers for road works, however, were very diverse in the course of the century. When the Colonial government established an administrative centre at Ngabotok, the 'natives' were simply 'instructed to cut tracks' and to maintain these tracks. Between 1912 and 1918 more than 200 km of these tracks were made: from Ngabotok to 'Swahili Boma' (Kacheliba) - following the existing caravan route -, from Kacheliba to Marich, and from Kacheliba to the Mnagei highlands. In the years 1915-17 recruited Pokot labourers were paid: in the top years 1916-17, 707 people, with average work periods of six months and average total payments of daily food as well as Rp 30 (that is 60 Shs or the equivalent of ten goats in those days; WSAR 1916-17). The dwindling of Arab and Swahili trading caravans, and the choice of Kacheliba as the District Headquarters, resulted in the neglect of most of the tracks from east to west, and in more emphasis on north-south links. In 1924-25 the King's African Rifles built the Kacheliba-Lokitanyala 'waggon road', to control Karimojong-Pokot raids in the West. This time 100 Pokot labourers were recruited, for wages which had gone down considerably: to 5 Shs per month plus food (WSAR 1924).

There was another wave of road building in 1928-30 around Kapenguria - the new headquarters - but it died down during the Crisis. It lasted until 1939 before a road was built from Kapenguria to the east, first to Morobus and in 1945 further to Sigor. At last a sixteen hour's ride on horseback was shortened to a few hours by car. In 1943, Italian prisoners of war had been used to make a better road down the escarpment from Mnagei to Kacheliba. In the beginning of the 1950s, other prisoners were used to open up the Lelan forests and Sook; this time the slaves of the state were Mau Mau detainees and imprisoned 'Dini ya Msambwa' converts. At the end of the 1950s, Pokot labourers were recruited again to work for wages: with ALDEV-funds a lot of tracks were cut in grazing schemes, with a primary function of block creation and hardly used by cars. In northwestern Upe tracks were cut for military purposes. This was repeated in 1967.

In the 1950s road maintenance became more thoroughly organized than before, e.g. with a maintenance camp at Kongelai. Minor roads were all maintained by the African District Council. During the late 1960s this resulted in a breakdown of maintenance, when its successor, the Pokot Area Council, had such severe financial problems, that "Pokot road gangs, regrettably including those with long services, were laid off" in 1969. Also most 'administrative roads', to be maintained by the Public Works Department of the Central Government, "were last maintained in 1963 by colonialists" and "now reverted to deep gullies" (WPAR 1969).

The bad road situation changed in 1971, when the Special Rural Development Programme in Kapenguria Division (see 5.4.1) decided to fund labour intensive road works, e.g. resulting in a Kanyarkwat-Mtembur link - unfortunately washed away soon -, improvements on the Chepareria-Sook road, and various roads in the Mnagei highlands.

The experience with labour intensive road building was so good that a 'Rural Access Roads Programme' was launched in many Kenyan districts, followed by a 'Minor Roads Programme' later. Both programmes were meant

to connect farming areas with existing roads, making maximum use of local labour. In West Pokot the criteria of the programme were "interpreted quite generously" to include "several roads of considerable length (...) in marginal areas" (DAWP 1985, p.89; see Figure 5.2; all recent roads in Kacheliba Division and in Riwa). "The costs to construct one kilometre of rural access road was in the order of 40,000 (K)Shs on average, in the period 1976-82. To provide the road with a hard surface of compacted laterite (murrum) costed another (K)Shs 50,000 per kilometre" (Ibid). In total, 321 km of roads were constructed in West Pokot: 70 % of it in the western lowlands. Together, 100 km were surfaced with murrum. Between 1976 and 1983 the total expenses must have been close to 18 m. (K)Shs, of which 60 % "ends up in the local economy through salaries earned by local people, employed during its construction" (Ibid). An average of between 200 and 300 people got local jobs this way. On top of that, local persons were contracted for the maintenance of these RARP-roads: each one responsible for 1.5 km. Road maintenance labourers are supposed to work three days every week and they are paid monthly, after establishing that the job is done satisfactorily. Payments were in the order of 200 KShs per month per worker, which means an annual sum of more than 350,000 KShs to more than 150 people in the western lowlands.

A completely different project, from 1976 to 1983, was the construction of a tarmac road from Kitale via Kapenguria and Marich to Lodwar, a road originally built to provide links for the commercial fish industry near Lake Turkana to the railhead in Kitale. The Norwegian aid agency NORAD supplied the money and Norwegian contractors were in charge of the road building project, that must have costed close to 1 m.KShs per kilometre. The project employed 700 permanent labourers, during 1982, with 100 of them stationed at Chepareria and 300 at the main camp in Marich, east of our research area. Very few labourers of this capital-intensive project were Pokot. Labour costs were 25 % of the estimated 75 m.KShs in 1982, including 'contingencies' (read: theft). The labourers in Chepareria alone must have had more than 2 m.KShs at their disposal in 1982, with undoubtedly large indirect income effects for all types of businessmen and -women, Pokot and non-Pokot alike. Chepareria rapidly expanded (interview Mr. Kristianson, Oct.1982; Kipkomo LDP 1986).

Chepareria also grew fast because of the increase in traffic as a result of the tarmac road and the diversion of Lodwar bound traffic, formerly using the Kacheliba-Amudat road and now using the Marich-road. A survey in May 1986 showed that, on an average day, 76 vehicles were passing Chepareria: 39 % busses and matatus, 25 % lorries (almost half of them going to or coming from Turkana), 24 % private vehicles and 11 % government vehicles (compared to former days this is a lot; compared to 'cost-benefit' assessments for tarmac roads, however, it is considerably below an 'economic' use). The increased communication opportunities undoubtedly resulted in increased mobility: a household survey in 1986 revealed that average heads of households near Chepareria went to Makutano thirteen times a year before the road was tarmaced and thirty times a year in 1986 (Gallé, in Dietz, Owiti & Van Haastrecht 1987, p.15; Vermaat & Gallé 1986, p.50).

In 1972-77, the Ministry of Works built a road from Kunyao via Alale to Lokitanyala. With this road the old road via Amudat, in Uganda, could be avoided, now that Karapokot Division was 'Kenya Mpya'. Both of these

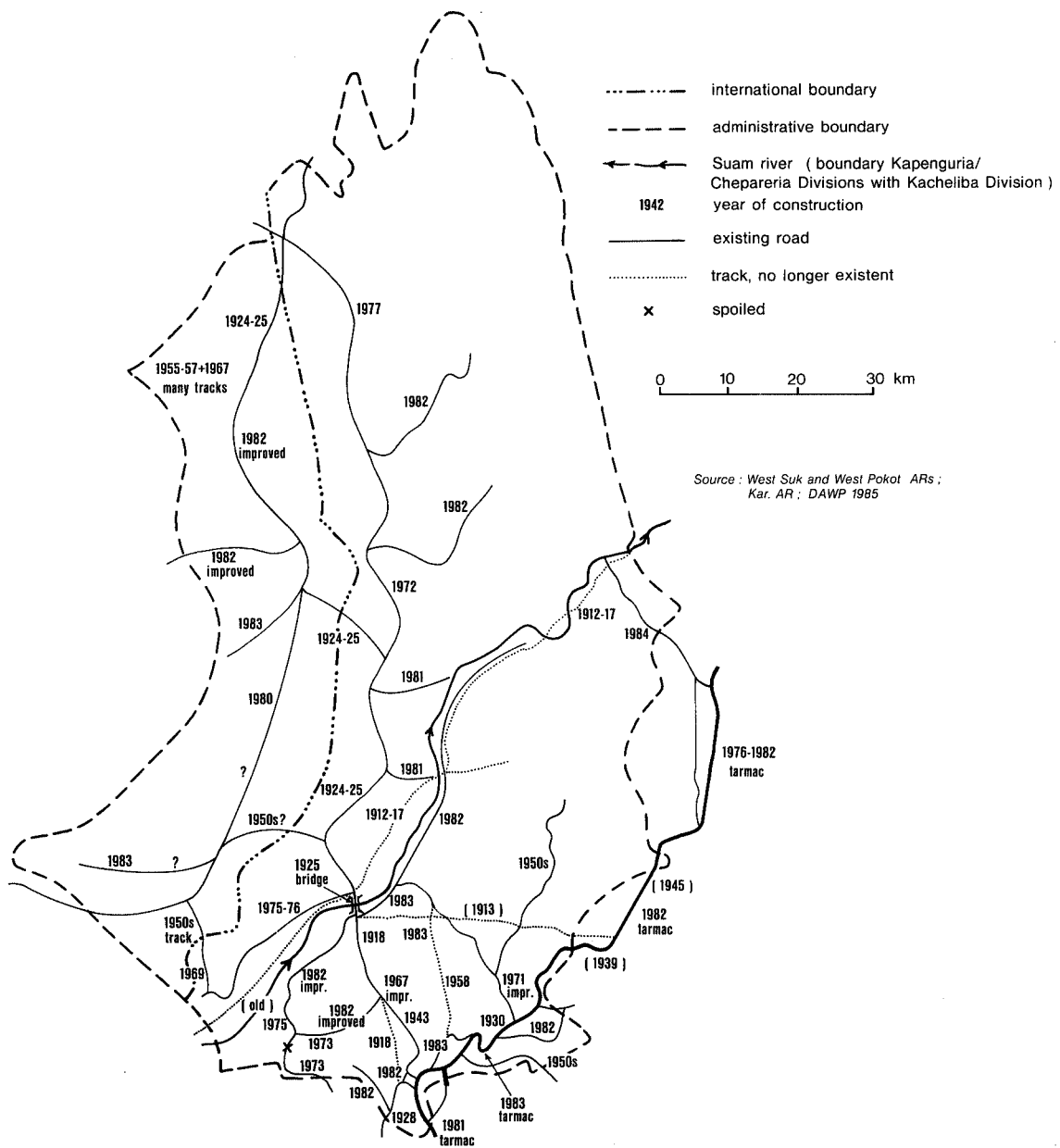


Figure 5.2 Western Pokot: Development of the Road System

roads functioned as the major through-roads from Kitale to Lodwar and further to the Sudan, until 1979, when drivers began to regard the area as too dangerous. Especially Somali shopowners in Kunyao made good business with the few trucks and landrovers that passed every day. From the late 1960s onwards Kunyao was also the last centre to be reached by public transport: first the 'Tom Mboya' bus service, later a matatu. Frequent (private) matatu-services developed recently between Makutano and Kacheliba and between Makutano-Kapenguria and Chepareria: in 1983, fifteen to twenty-four times a day. An irregular matatu-service started between Chepareria and the goat's market at Chepkopegh. A fare from Kunyao to Kacheliba costed 30 KShs, from Kacheliba to Makutano 10 KShs and from Makutano to Chepareria 12 KShs in 1983; with an official minimum wage of 18 KShs per day this is a lot of money (DAWP 1985,p.91). The communications in the northern part of Kacheliba Division were not only improved by the construction of a through road in 1972-77 and of other roads later (to Kasei, Kauriong, Sasak, Lokitelawoyan and Kasitet), but also because of increased missionary activities, resulting in increased road traffic, in helicopter and small airplane services and in radio communication. Missionaries in Kiwawa and in Lokitelawoyan made their own airstrips and access roads, using Food for Work arrangements in 1979-82. Missionary and Red Cross Food for Work donations were also used to build a road from Kodich to Cherangan and, in Upe, from Amudat to the South and further to a promising agricultural area in the Southwest (see Figure 5.2).

### 5.3 Penetration by Missionary Institutions

Missions are currently very active in western Pokot. It took some time, however, before they got established. Before 1930, no missionary society was working among the Pokot. In 1931 the Anglican 'Bible Churchmen's Missionary Society' bought the old government buildings in Kacheliba and started religious, but also rudimentary health and educational activities there. In 1936 they left for the Mnagei-highlands. In 1943 the Roman Catholic Mission established a station, at Tartar, also in the Mnagei highlands. The lowlands were hardly touched at all. This changed in the early 1950s. The Dini ya Msambwa cult had caused widespread alarm among White administrators (see 5.2.5). The District Commissioner of West Pokot asked the highland missions to extend their work to the lowlands; a new Roman Catholic missionary station was established at Ortum - with a hospital - and in 1953 Anglicans and Roman Catholics were invited to work in Karamoja. They established stations at Amudat and the Anglicans even started a hospital there. At Independence religious successes had been very limited, though. According to Patterson (1969, p.30) the BCMS produced their first 'bonafide convert' in 1957 "after twenty-five years of dedicated work", during which period they did not relax their condemnation of alcohol, nudity, polygamy and circumcision. The Roman Catholics had been slightly more successful, "especially because the Fathers tolerated drinking", which played such an important socio-economic role in Pokot society. After Independence, the established missions further dispersed their activities. In 1964, for instance, they got permission from the Karamoja-authorities to build churches in seven minor centres in Upe,

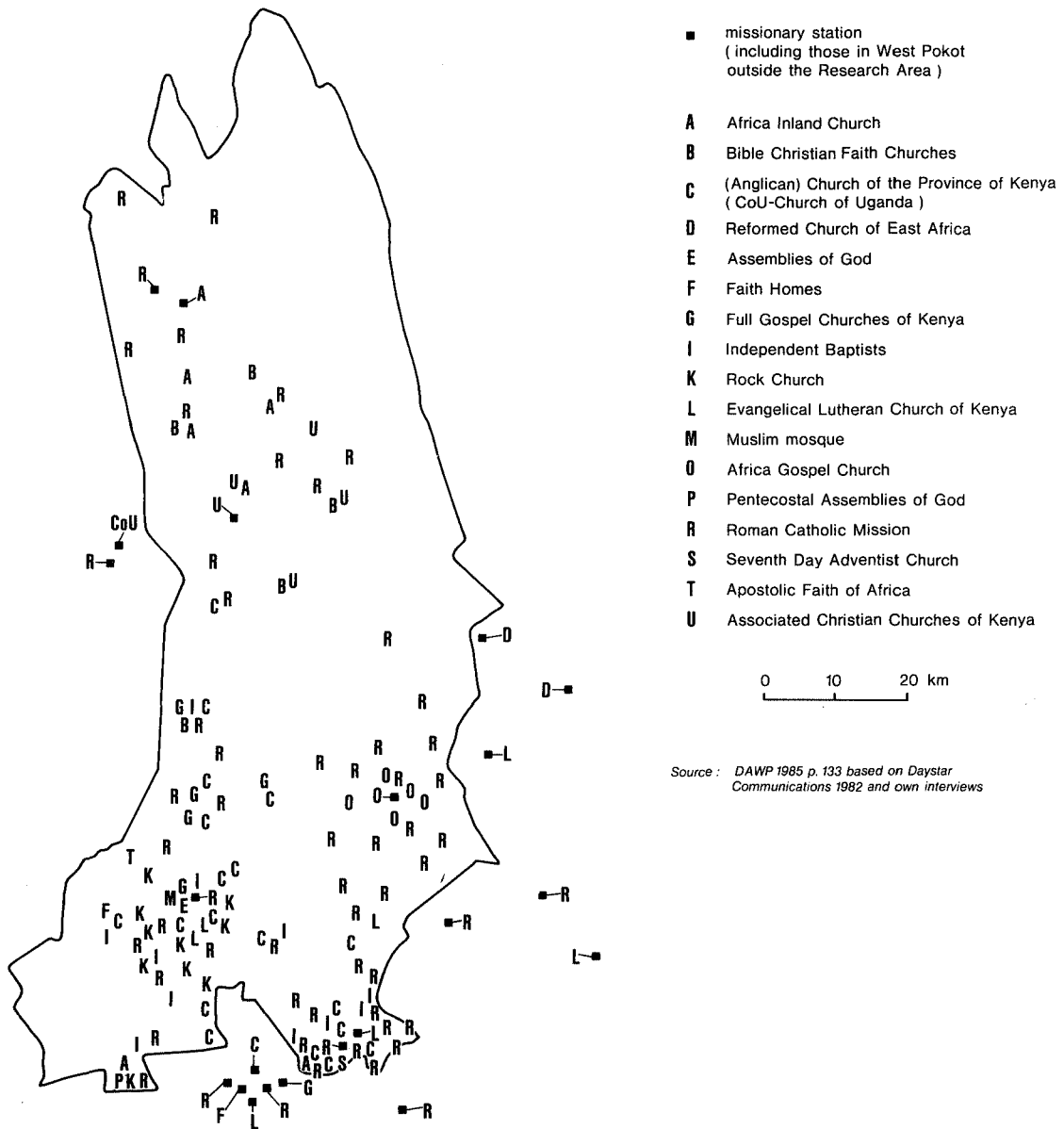


Figure 5.3 Western West Pokot: Mission Centres and Congregations, 1983



outside Amudat, together with missionary schools. A few bright Pokot lowland boys were even sponsored to go to a secondary school (in Moroto). Missionary activities really showed a take off after 1973. An Italian Roman Catholic Mission was established at Kacheliba and an Irish R.C. Mission at Chepareria. In 1977 the Anglican Church of the Province of Kenya started a centre at Kodich. In 1978, an American fundamentalist group, the 'Associated Christian Churches of Kenya' built a large centre at Kiwawa. In 1982 another American mission (the Reformed Church of America, related to the Africa Inland Church) started near Alale and in 1984 Italian Roman Catholics opened a missionary station at Amakuriat. Also the Norwegian/Icelandic Lutheran Church, the Swedish sponsored 'Faith Homes', some minor church groups and an Islamic group started activities. All those groups tried to establish congregations among the lowland Pokot. Western Pokot was full of missionary zeal by 1985. Figure 5.3 shows the location of 'congregations' and missionary stations in 1982. Most of these had not been there in 1977. The expansion is impressive. However, in terms of conversion, results were meagre. A survey done by 'Daystar Communication' (a US-sponsored, Nairobi based fundamentalist group), combined with our interviews, indicated that in 1982, the average attendance at (weekly) church services was between 3 % (Alale) and 20 % (Kipkomo) of all inhabitants above five years old. Table 5.2 gives some details.

Table 5.2 Missionary Presence and Religious Success, Western West Pokot, 1982

Location	Nr.of Denominations	Nr.of Congregations	Total av. attendance (*)	Estimated population >5 years old	Attendance (%)	Most important denomination	
						1 (%)	2 (%)
Alale	2	6	210	7,300	3	AIC :52	RC :48
Chemorongit	4	6	210	5,700	4	AIC :62	ACCK:29
Kasei	4	12	530	3,200	17	ACCK:79	RC :17
Kapchok	5	18	430	5,700	8	RC :60	CPK :19
Suam	6	10	560	6,400	9	RC :54	FH :18
Riwa	8	27	1,430	8,900	16	Luth:28	Rock:27
Sook	2	24	1,520	8,100	19	RC :61	AGC :39
Kipkomo	7	25	2,660	13,000	20	RC :60	Luth:15
Total	14(**)	128	7,550	58,300	13	RC :46	Luth:11

Most important denominations:

RC: Roman Catholic Mission (background: Italy, Spain, Ireland)

AIC: Africa Inland Church (background: USA)

ACCK: Associated Christian Churches of Kenya (background: USA, in 1986 called ACC of East Africa)

CPK: Church of the Province of Kenya (Anglican)

FH: Faith Homes (sponsored by Sweden)

Luth: Evangelist Lutheran Church of Kenya (background: Norway, Iceland)

Rock: Rock Church (breakaway church from Faith Homes, some funds from the Netherlands)

AGC: Africa Gospel Church (no foreign funds)

(\*) average attendance at sunday masses or services, including children above five years old (many attendants are primary school children), as given by missionaries and evangelists. Of course, this can only be an 'order of magnitude'.

(\*\*) number of denominations active in western West Pokot

Source: Daystar Communications, 1982; own interviews, 1982-83.

The literature provides us with quite some speculations about the relative failure of missionary work among pastoralists (e.g. Barrett 1973). A very surprising view is presented by Rigby (1981) in his article about "pastors and pastoralists", a daring attempt to apply Althusserian Marxism on the Maasai. According to him, 'ideology' is the 'dominant instance' in the 'pastoral form of a 'Germanic' (domestic) mode of production'. Worldviews, ideas and values are exactly those aspects which missionaries hope to change: they fight against the core of the social formation. He may be right, but more prosaic explanations are perhaps valid too: the fluidity of settlement, and the fact that christian values are potentially undermining crucial parts of the pastoral survival strategies. Missions know that not their ideas, but their material assistance are in demand. They know that 'conversion' is crisis-bound (and attracts the most desperate people, generally). This presents them with a major dilemma: to bind converts, they have to offer them continuous material rewards, but exactly those rewards might be accumulated to enable a renewed entry into pastoralism, and generally out of the church.

Missions, in general, try to change many cultural characteristics of the Pokot, although there are differences between the 'gentle' approach of Roman Catholics (accepting alcohol, tolerating polygamy, but firm on matters of family planning), and the 'harsh' approaches of fundamentalists, who demand a complete cultural change (see Visser 1982). A breach with Pokot culture - and its value for survival - may succeed if missions offer a new 'safety net', binding converts together in a new social unit of mutual assistance and with additional assistance from missions. Missions with abundant funds from abroad are in a better position, of course.

Missions are not happy with a fluid situation of mobile converts. Most of their development activities have the intention to concentrate people in and around (church-) centres. Reliable waterpoints at population clusters are a case in point. But also the stimulation of sedentary agriculture, boarding schools, health centres, famine relief centres and church-based women groups are important in this respect. Missions in western Pokot are active in numerous fields. Table 5.3 gives the details.

In many fields, missions can be regarded as 'semi-states'. As soon as the local government in West Pokot or Karamoja gives permission to build a missionary station (they have to hand over a piece of land) and as long as the central government gives residence permits after registration of the organization, the freedom of action is virtually unrestricted in practice. Missionary lines of communication and authority follow completely different paths from those of the government. Missionary funds are predominantly foreign, without district, or even Kenyan/Ugandan state interference. Part of the funds comes from foreign states (as 'development assistance to non-governmental organizations', circumventing the Kenyan and Ugandan governments).

Missions decide where to drill boreholes, where to start health facilities, where to sponsor schools etc. During droughts, their famine relief activities give them a lot of influence. In a few cases government departments succeeded to coordinate their plans with those of missions (e.g. famine relief 1980-81, health care since 1983). In other

Table 5.3 Missionary Development Activities in Western Pokot, 1980-1986

Mission (*)	Development activities (**)
R.C.	Dispensaries, mobile clinics, famine relief, primary school assistance, secondary schools, borehole drilling, tractor hire, seed distribution, agricultural experiments and demonstration, women groups, linguistic work, in Upe even: organization of a census.
C.P.K.	Famine relief centres, Food for Work, primary schools assistance, world vision-child sponsorship, adult literacy, village polytechnic and livestock improvement centre, experimental ranch, agricultural extension, attempt to construct irrigation canal, road building.
A.C.C.K.	Health centre (with doctor and helicopter transport), famine relief, orphan aid, aid to destitutes, primary schools, world vision-child sponsorship, adult literacy, borehole drilling and rehabilitation, seed distribution, mission shop.
A.I.C.	Dispensary, famine relief, primary and nursery schools, water project, agricultural and forestry extension, seed distribution, sale of agricultural implements, road and airfield construction
Luth.	Dispensary, primary health care, primary school assistance, women's classes
A.G.C.	Dispensary, primary school assistance.
Rock	Child sponsoring.
F.H.	Family development, adult education, daycare centre, primary school assistance.

(\*) For abbreviations see table 5.2.

(\*\*) Resp.: health, famine relief, education, water, livestock, crop development, other.

Source: own interviews 1982-83, 1984, 1985, 1986; annex to the District Development Plan 1984-85, 1985-86, 1986-87.

cases hardly any information is communicated between missions and the government. Relations are not always cordial, to say the least. An extreme case is worth mentioning: the Associated Christian Churches of Kenya, with a registered aim of "spreading the Christian Gospel and establish God's Kingdom in Kenya", had succeeded to establish at least a 'Grand Duchy' in Kasei, northern Kacheliba Division, after 1977. In 1983, a Nairobi Special Branch officer objected to its continued registration on three grounds (albeit without effect): "The first was that its proposed officers were not of good character and standing in the Community, the second that the registration was likely to offend other registered organizations and the third that it was likely to cause friction between different groups within the community", all signs of strong inter-religious squabbles; or -in the eyes of administrators- signs of disorder. In 1986, this ACCK was suddenly in the limelight because it had illegally imported "air rifles, toy guns and crossbows for sport", according to the missionaries and "lethal firearms, (...) rifles, shotguns, pistols, machineguns and military uniforms", according to press reports. Immediately after the report, the missionaries threatened to withdraw their financial assistance, e.g. a US\$ 5 million grant from World Vision International, to drill 500 waterwells over a five year period in West Pokot (more information in Weekly Review, Oct.3, 1986, pp.5-7). The matter was covered up, but the Kenyan public wondered whether these 'mission lords' were even planning to become 'warlords' in the violence-stricken Pokot area.

Currently, missions are of considerable financial importance. In 1982 and 1983, missions spent between four and six million KShs a year on development and religious projects in the western Pokot lowlands. That

is between 50 and 75 KShs per year per soul, and probably a quarter of all external investments. Alale-Amakuriat, Kiwawa, Amudat, Kodich, Kacheliba and Chepareria have rapidly become the major Centres of Faith (and religious strife). It is important to stress that in 1970 hardly anything was going on. The number of expatriate missionaries and mission-related volunteers in the western Pokot lowlands increased from two in 1970 to about twenty-five nowadays. In West Pokot District as a whole, the number of Whites has never been so high: increasing from twenty-seven in 1969 to 128 in 1979 ('Europeans', 'Kenyan Europeans' and 'Others' (= Americans) according to the Census for 1979, p.174). After 1979 it further increased. For the pragmatic Pokot the sudden missionary attention meant ample opportunities to add important new elements to their survival strategies, especially during the disaster years 1979-1982.

#### 5.4 Development Activities

##### 5.4.1 Introduction: the Plans and the Money

Until 1950, the colonial authorities were happy with no more than 'caretaker rule' as it is called by Patterson (1969, p.11, p.21). It was widely felt that there was nothing in the area of interest to anybody but the Pokot (Schneider 1953, p.45). After the 1940s, 'development' gradually became a more important element of government policy. The 'African Land Development Board' (ALDEV) included West Pokot in her activities after 1953, probably investing 200,000 Shs in the District as a whole. In Uganda, a 'Karamoja District Plan' was formulated in 1958, following UNICEF-activities to drill boreholes, and the first missionary attempts to start schools and health facilities in Upe/Karapokot. In 1964, Kenya formulated a 'Seven Year Development Plan' for West Pokot - full of activities that were never implemented. In 1970, Kapenguria Division - still including Sook and Kipkomo Location - was selected to be one out of six Kenyan areas for a 'Special Rural Development Programme' (1971-77). This programme had the intention to experiment with 'integrated rural development', across a range of social and economic sectors, by an extraordinary concentration of funds and technical assistance. A Dutch and a Kenyan Programme officer coordinated the expenditure of approx. 10 m.KShs. Kapenguria Division was chosen as an example of a marginal, remote area, and livestock development had to be the core of the experiment. In practice, SRDP-Kapenguria concentrated on work in the Mnagei and Lelan highlands. As far as the lowlands were concerned, road building consumed most of the funds, which were granted by the Netherlands. In the sphere of lowland livestock development, group ranches were the most important activity (see Reynolds 1982, p.100; IDS 1973 and 1975; archival material Kapenguria). In 1974, each Kenyan District had to present a 'District Development Plan' for a five year period. The first one for West Pokot was a meagre document without much practical relevance. The second one - 1979-83 - was far more detailed (130 pp.) and more realistic. It included proposals of a specific 'Karapokot Development Plan', written in or about 1976. In 1979 a District Development Officer (DDO) was at work and a District Development Committee, chaired by the District Commissioner,

was to lead all development activities. The DDO began to implement specific 'Rural Development Fund' projects. In 1982, West Pokot was integrated in the Arid and Semi-Arid Lands Development Programme (see Chap. 2.3.6). Dutch support meant experiments with the 'Programmatic Approach', an open-ended, multi-sectoral, participatory strategy for rural development (Hendrix 1981). In practice a lot of emphasis was put on the strengthening of government logistics to deal with the lowland areas. ASAL-West Pokot spent 13 m.KShs in 1982-86. When the Third District Development Plan (1984-88) was launched, development budgets for district specific projects had grown considerably and the planning, implementation and 'monitoring' of development, was to become more sophisticated. For example, the 'Annex 1985-86 to the West Pokot District Development Plan' is a 107-page document, with 224 projects, all with accomplishments, description of targets and budget information. For the first time, it is possible to get more or less reliable information about the budget importance of various sectors of 'development'. Table 5.4 shows the data for projects implemented so far.

Table 5.4 Costs of Implemented Development Projects, Western West Pokot, 1983-85 (\*)

Sector	Government of Kenya		Non-Government Organizations (**)	Total	%
	alone	donor funds			
----- x 1000 KShs -----					
Health care	40	8,617	805	9,462	27
Education	100	1,012	1,403	2,515	7
Water	1,375	1,635	4,373	7,383	21
Land	184	623	310	1,117	3
Animals	176	43	0	219	1
Crops	0	808	?	808	2
Other:					
administration	4,387	0	0	4,387	13
roads	80	7,671	100	7,851	23
miscellaneous	7	0	949	956	3
Total	6,349	20,409	7,940	34,698	100

(\*) includes the humid parts of Kacheliba Division, Riwa, Sook and Kipkomo (of minor importance);

(\*\*) mainly missions; includes Swedish (SIDA) and Norwegian (NORAD) funds.

Sources: Annex to the DDP WP 1984-85 and Ibid 1985-86; interviews.

The development funds have never been so high, and are in the range of 500 KShs per capita per year for the people in the western lowlands. More than 80 % of the development budget is funded by foreign donors. Health care, roads and water development lead, followed by

administration and education. Productive development, and especially livestock development, gets considerably less funds. If we look at the sectoral data for the three types of funding, we see that the large part of 'GoK alone' finances go to administration (which includes the building of police posts). Missions are remarkably active in the sphere of water development and education. Foreign GoK-funds lead in health care, roads and land and crop development. Livestock funding is very meagre, and mostly left to be financed by 'GoK alone'! Among the missions four of them are most important: ACCK, RCM, AIC and FH (see 4.3). Faith Homes succeeded to attract Swedish (SIDA) funds; the Roman Catholics, together with ACCK, spent a lot of Norwegian (NORAD) money. Together, the NORAD and SIDA funds were 5 m.KShs. The foreign donors who funded projects via the Government of Kenya were the Netherlands (14 m.KShs), France ( 5.6 m.KShs) and the EEC (0.7 m.KShs). All donors, except the French, gave grants. Peculiar arrangements are sometimes made to circumvent the cumbersome Donor/Nairobi Treasury/Nairobi Ministry/District Ministry/Project-link. In the case of the Dutch funded ASAL-Programme, most of the donor money was long sent to a programme bank account in Kitale (via the Netherlands Embassy) with the Dutch programme officer (and a few Dutch stand-ins) as the sole person with access to the account. Procurement and payment was - in practice - very much controlled by one expatriate. This 'direct payment' construction - used by many donors in Kenya - came under severe attack by Nairobi officials in 1985. The fast implementation of ASAL projects - in connection with District ministries - made many district heads of departments plea for a continuation of 'direct payment' (see Owiti e.a. 1985).

Development investments are only part of the picture. The government also has a recurrent budget, of which salaries of civil servants form the major part, probably over 85 %. Using data for Kacheliba and Chepareria Divisions in 1983, and assuming an average salary of 30,000 KShs a year for senior jobgroups, 20,000 KShs for intermediate jobgroups, 10,000 KShs for junior jobgroups and 5,000 KShs for casual labourers, we arrive at an estimate of 10.8 m.KShs (see table 5.5). Education is most important, followed by roads, administration, land adjudication and land development (mainly forestry workers). Development of arable farming and livestock keeping gets a meagre share of less than 7 percent. But also health care and water are not important. We may expect that the strong increase in development investments will lead to large recurrent costs, especially regarding maintenance. Recently, ever more maintenance activities are in fact financed from the development budget, and donors are prepared to extend their funding to include 'running costs'.

The impact of development and recurrent expenditure is difficult to assess. It is useful to look at it in terms of forward and backward linkages and in terms of primary and secondary effects. The money which is brought into circulation, is used for materials, transport and wages mainly, in the case of development projects, and spent on consumer goods and remittances mainly, in the case of recurrent expenditure. The large majority of these funds leaks away almost immediately, to the highlands and further, only having a local impact - sometimes - because of intermediary roles played by traders and transport businessmen. Even a programme like ASAL, in which it is tried very much to make the local

Table 5.5 Recurrent Budget Estimates for Kacheliba and Chepareria Divisions, 1983

	Type of Officers				Estimated total salary x 1000 KShs	%
	sen.	int.	jun.	other		
Health care	1	23	9	-	580	5
Education	-	164	162	82	5,310	49
Water	1	1	8	-	130	1
Land	-	17	33	33	835	8
Animals	-	14	13	-	410	4
Crops	-	11	8	-	300	3
Administr.	3	23	30	-	850	8
Roads	-	20	86	91	1,770	16
Miscell.	-	11	9	54	580	5
Total	5	284	358	260	10,765	100

Source: DAWP 1985, pp.50-51, p.108, p.114; police and military personnel are excluded.

backward linkages as large as possible, had to accept that probably over 75 % of its expenditure had its backward linkage in the highlands, most of it outside the district (see Dietz a.o.1987; 17 % of the 5.1 m.KShs spent in 1982-85 went to local labour). Local backward linkages can become important aspects of a survival strategy, though; percentage-wise, local labour wages may not be large, in terms of local income opportunities they can be important. Indirectly, wages paid to civil servants and to casual development labourers will result in a larger market for local agricultural produce, in further casual labour opportunities, in bridewealth payments even.

Forward linkages have to do with the use of implemented projects. Good projects work as a catalyst for rural development and enhance the income and wealth of the inhabitants or at least of part of them. Potential negative effects should not be overlooked, although they may only become evident in the long run: health care almost certainly results in large population increases, which could lead to land scarcity; water development now may result in water shortages later because of changes in groundwater level, or it can lead to an increase in animals beyond the carrying capacity of the pasture; education may result in outmigration of particular segments of society. As far as it is relevant to understand the impact on survival strategies we will discuss this problem further on.

Not only the increases in development and recurrent budgets are important. Changes in the organization of 'development decision making' have a far reaching impact too. Prior to 1984 the District Development Committee began with more coordination of the activities of sectoral ministries at the level of the District. The implementation of the 'District Focus for Rural Development' in 1984, strongly increased local financial decision making under a new 'District Treasury'. The local implementation capacity of sectoral ministries was improved. Horizontal

communication between separate departments was streamlined. Instead of sectoral or functional development, territorial or 'area-based' development was boosted (see Gore 1984, Ch.5 for a discussion about these concepts). A District Executive Committee was installed, consisting of the heads of all major departments and chaired by the DC. Monitoring of departmental activities in the field became more systematic. The 'District Focus' also had the intention to increase local participation. Divisional, Locational and in some places even Sub-Locational Development Committees were formed, all with appointed members. In the higher-order committees, ex-officio members - almost none a Pochon - were the majority; in the lower-order committees 'local leaders' (mostly Pokot, but missionaries were also regarded as such). All committees are almost totally a men's affair.

The 'District Focus' is a vigorous attempt to decentralize (see Makhoka 1984). Decentralization of government does not mean 'Localization' of government though. The role of the County Council was and is marginal; local 'leaders' are appointed, not elected; screening of local leaders by officials of a rejuvenated KANU-party prevents the voicing of strong opposition views. Decentralization means more bureaucratic efficiency and less communication barriers; it does not necessarily mean more popular participation. The attitude of most officials to prefer 'office work' and 'landrover visits' to field trips on foot or on horseback - as in the 1950s - in practice still means a severe centre- and roadside bias and lack of awareness of problems of more remote areas.

#### 5.4.2 Health Care and Famine Relief

In a sectoral approach of development activities we will first deal with external activities to improve the physical well-being of the western lowland-Pokot. Two aspects are important here: formal health care and famine relief during disasters.

##### Formal health care

Not much is known about so-called 'traditional medicine' in Pokot society. The District Atlas West Pokot (1985, p.128) refers to survey work done by Nyamwaya in one area in the eastern part of West Pokot district, showing that the Pokot have developed many ways to restore their sick to health, including surgery, the use of herbs, leaves, roots and shrubs as ingredients for medicine, the use of ointments and creams, and psychiatric treatment. The Pokot have five types of traditional healers as well as traditional midwives, who also practice mother and child health care. It is unclear how general traditional health care is. Israel (1982) suggests it is still widespread.

In the lowland areas of the Pokot, malaria has a high occurrence. Frequent diseases are also dysentery, gastro-enteritis, measles, eye infections, tuberculosis, sexually transmitted diseases and kala azar (see Cox 1972). In 1980, a serious epidemic of cholera raged in Upe and Kacheliba. Injuries from violence fluctuate with the security situation. During droughts, famine deaths occur, and infant and child death rates are generally high. As can be expected (see Chapter 4), malnutrition is



mainly caused by energy deficiency, not so much by protein deficiency.

When a Colonial administration was set up, one 'dresser' was posted to the District Headquarters (1916, Kacheliba), especially to take care of civil servants and policemen. In 1927 a 'hospital' was built, but "as a general rule, only those Suk, who are in employment, have recourse to the hospital for treatment" (WSAR 1928). With the move to Kapenguria, medical facilities in the lowlands ceased to exist. It was not until 1944 that a dispensary was started at Amudat, followed by dispensaries at Karita, Kongelai and Ptoyo, each with one patient attendant and some drugs. The Karamoja Administration agreed to pay part of the annual expenses for Kongelai Dispensary, because a considerable number of patients were expected to come from 'Karasuk'.

During the late 1940s and the early 1950s, many Pokot joined a millenarian cult ('Dini ya Msambwa'). 'Modernization' of health care (and education) was seen as a solution, both by Ugandan and by Kenyan authorities. Both governments invited missions to set up facilities in the area of the Pokot. In 1953 an Irish Roman Catholic Mission started a hospital at Ortum, east of our study area, but accessible for inhabitants from Kipkomo. In 1957 the Bible Churchmen's Missionary Society from England started a 'medical mission' (with a small hospital) in Amudat. Both facilities received an annual grant from the government, covering part of the expenses. Both facilities had the service of one, expatriate, medical doctor and of one or more expatriate nurses. Unlike all other missionary facilities, the one in Amudat decided not to ask for treatment fees ("fearing that, if it does, the Suk will refuse to come forward for treatment", Kar.AR 1966). Soon, a lot of outpatient work was done too, especially in the Chemorongit Hills. During the early 1960s, local dressers were posted in Loroo, Katabok, Lokales, Kasei, Kauriong, Kunyao and Alale, all supervised by the Amudat Mission Hospital. These were people with a few month's medical training who also had to teach reading and writing in small schools (Cox 1972, p.99, p.102). Proposals to start government dispensaries at Kodich and Kacheliba, to be sponsored by Oxfam, were turned down, for reasons worth mentioning: "Kodich is well inside Karasuk, which is Kenya. In the event of the possible future determination of the border, it would be reasonable to suppose this sub-dispensary would then be in Kenya and in consequence lost to Karamoja. Would it not be advisable that any development to take place, to be within our known border? I well remember in the past it was declared that the school at Kodich was built in error" (Superintendent of Works, Karamoja District Administration to DC Moroto, who agreed; Moroto Archives file NAF3). During the late 1960s, dispensaries (Loroo, Karita) and sub-dispensaries were mostly without drugs - a government responsibility - and by 1970 they had in fact ceased to function. When Kenya took over in 1970, Karapokot was virtually without formal medical care. From 1965 onwards, the Karamoja Administration had also failed to pay its share of the Kongelai dispensary. Deliberate neglect, is the best word to describe the Karamoja attitude towards Upe and Karapokot after 1965.

In Kenyan administered western Pokot, medical care improved during the 1960s. In 1958, Kapenguria and Ortum hospitals had started mobile health services. In 1959 UNICEF had donated a lorry with milktank to supply milk to children (WSAR 1959). In 1965, treatment in governmental health

facilities became free of charge, which resulted in a quick twofold increase of patients in Ptoyo and a threefold increase in Kongelai (Sirikwa County Council AR 1965, 1967). In 1968 Ortum was included in the Flying Doctor's Services and the same year, in Ortum, a midwifery training started. In 1966 the Ortum mission had also started a dispensary at Chepareria. By 1970, severe cases could be treated in Kapenguria Hospital (sixty beds), Ortum Hospital (forty beds) and Amudat Hospital (twenty beds). Especially Kapenguria Hospital was very much overcrowded, with an average daily bed occupancy rate of 2.3 to 3. All hospitals included maternity facilities, with total hospital deliveries of approx. 200 a year (less than 5 % of total births). Minor cases could be treated in four lowland dispensaries (Loroo, Karita, Kongelai and Chepareria) and in one dispensary nearby (Ptoyo). The three hospitals had 'outpatient' departments too. Outpatient cases had increased from about 36,000 in 1958 to more than 100,000 patient cases in 1968, or close to one visit per average person (Annual Reports; this includes all Upe and West Pokot: Upe including Karapokot: 38,000; West Pokot: 62,000; excl. Ortum).

When Kenya took over from Uganda in Karapokot, a government health centre was started in Kacheliba, a dispensary at Nauyapong, and a Catholic Mission got permission to start medical work in Kacheliba too. At the end of the 1970s the Netherlands government donated a considerable amount of money to upgrade the Kacheliba Health Centre and to build new dispensaries at Kanyarkwat, Tamough, Kunyao, Kasei and Kauriong. The District Hospital at Kapenguria was also assisted with a lot of Dutch money. A Dutch medical doctor mobilized additional funds to build dispensaries at Serewa and Chepkopegh. Missionary organizations started health facilities at Kiwawa - a clinic, including a doctor - Lokitelawoyan, and Amakuriat, while there are plans to start facilities at Nakuyen, Kodich, and Chepareria (see Figure 5.4 and table 5.6). In 1985, fifteen health facilities (partly) covered the western Pokot lowlands, five more were under construction. Mobile clinics - mostly missionary ones - occasionally visit other places. Better communications (including radio contact with the flying doctor service) also added to the drastic improvement of formal health care. In 1981 the western West Pokot lowlands alone had 100,000 patient cases; West Pokot District as a whole more than 430,000, or 2.7 visits per average person (District Hospital Kapenguria, Annual Report 1981; DAWP 1985, p.124). The number of beds had increased to 342 (180 Kapenguria, 104 Ortum, 40 Amudat, 6 Kiwawa, 12 government health centres). The number of hospital deliveries had risen to 2,167 in 1982 or about 30 % of all births in the District (interview MoH, Kapenguria). In 1983, the coverage of formal health care further improved with the start of Community Based Health Care, supervised by Ortum R.C. Hospital. In Kipkomo Location, thirty-eight 'community health workers' were recruited in 1985 and trained to visit households and teach better nutrition and better hygiene (Kipkomo LDP 1986, p.58).

The information about West Pokot shows a rapid and manifold development of health care. Undoubtedly the effects on people's health and on death rates must have been considerable. The availability of unprecedented medical care during the 1979-81 disasters kept the death rate low, in a situation that could have developed into a demographic disaster. Indirectly, the medical presence resulted in many governmental and

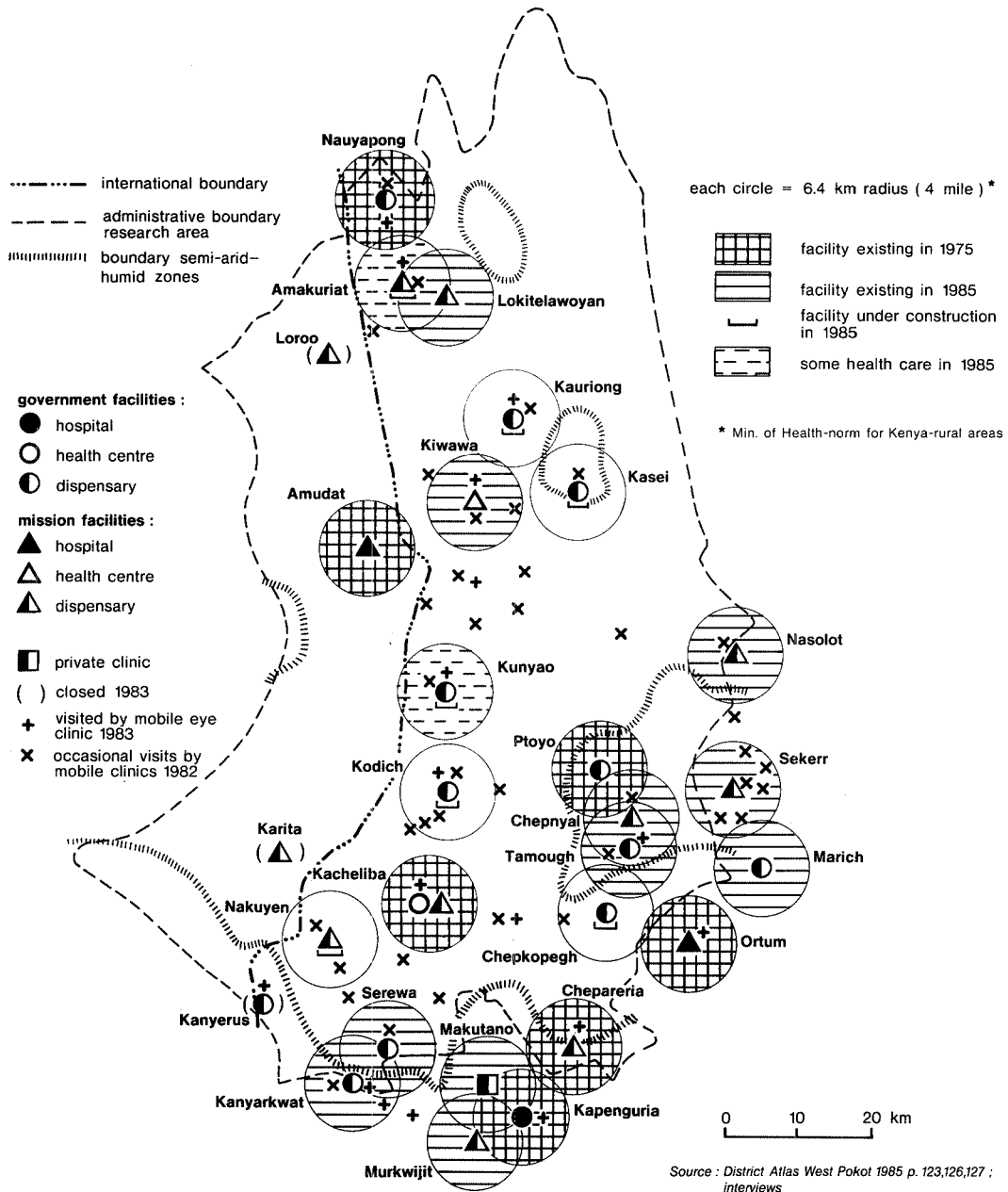


Figure 5.4 Health Facilities Western Pokot

Table 5.6 Health Facilities Western Pokot Lowlands

Place	Status	Started (-Closed)	Sponsor	Investments
Amudat	dispensary	1944-57	BCMS	?
	hospital	1957	BCMS	190,000 Shs (1957)
Karita	dispensary	1946-79	BCMS	?
Kongelai	dispensary	1940s-1972	Pokot local gov.	?
Loroo	dispensary	1963-80	BCMS	?
Chepareria	dispensary	1966	RCM (Ortum)	?
Kacheliba	health centre	1972	GoK/Neth.	7,370,000 KShs (1982-86)
	dispensary	1974	RCM	100,000 KShs?
Kiwawa	clinic	1978	ACCK	300,000 KShs (1983-84)
Kanyerus	dispensary	1979-84	Army (GSU)	?
Nauyapong	dispensary	end 1970s	GoK	?
Kunyao	dispensary	(1980)	GoK/Neth.	600,000 KShs (1984-86)
Kanyarkwat	dispensary	1982	GoK/Neth.	487,000 KShs (1979-82)
Tamough	dispensary	1982	GoK/Neth.	?
Lokitelawoyon	dispensary	1983	RCA/AIC	370,000 KShs (1983-86)
Serewa	dispensary	1984	GoK/Neth.NGO	210,000 KShs (1983-84)
Kasei	dispensary	1986	GoK/Neth.	600,000 KShs (1984-86)
Kauriong	dispensary	1986	GoK/Neth.	600,000 KShs (1984-86)
Kodich	dispensary	planned	harambee	60,000 KShs (1983-86)
Chepkopegh	dispensary	planned	Neth.NGO	200,000 KShs (1985-86)
Amakuriat	dispensary	(1985)	RCM	500,000 KShs planned
Nakuyen	dispensary	planned	Faith Homes	200,000 KShs planned
Chepareria	health centre	planned	7 Day	?

ACCK: Associated Christian Churches of Kenya; BCMS: Bible Churchmen's Missionary Society; GoK: Government of Kenya; GSU: General Service Unit of the Kenya Army; Neth.: Netherlands Government; NGO: Non-Governmental Organization; RCA/AIC: Reformed Church of America/Africa Inland Church; RCM: Roman Catholic Mission; 7 Day: Seventh Day Adventist Church.

Sources: Annual Reports; Annexes to the DDP; interviews.

missionary activities surrounding relief operations. The situation in Upe shows an opposite picture. Medical facilities outside Amudat were closed after 1979. The depopulation of the area resulted in a decrease of patients at Amudat Hospital. The death rate during 1979-81 must have been high, if survey results from neighbouring Kadam County are valid for Upe too (see 2.4). Serious attempts to improve the health situation were started in 1985. The Church of Uganda trained twenty to thirty Pokot health workers in a primary health care project, and their villages were visited by an expatriate doctor even though the security situation was appalling and Upe was gradually deserted (Even 1986; also see Cox 1985).

We have seen before (Chap.4.3.1) that the rate of population growth in the western Pokot lowlands was rather low before 1962 but very high afterwards. Health care, and especially mother and child health care, must have had profound effects on stimulating natural population growth, with the result that the population of the study area more than doubled between 1962 and 1979. With the enormous increase in health care (and clean water) facilities after 1979, one wonders how fast the natural increase will have been afterwards, despite the 1979-81 famine.

## Famine Relief

In colonial times, famine situations, as in 1943, 1950, 1960-61, were dealt with by stimulating traders to sell 'posho' (maizemeal). Sometimes government agents sold food at low prices (probably for the first time in 1933). During the severe famine of 1965-66, again, traders were stimulated to open 'posho shops'. Of one trader in Upe/Karapokot - the major one - it is known that he sold ninety tons of posho during this famine. The most important source of famine food during this famine, though, was the food distributed by missions and - later - by the Oxfam-sponsored 'Karamoja Famine Relief' operation. In Karamoja, this operation was in the hands of a European officer in the Department of Agriculture at Moroto. In Upe/Karapokot alone, at least 550 tons of relief food were handed out. Part of this food was given free ("to the old, the blind and the sick") but most of it had to be earned: "even the rich have pushed their wives to work for food" (although they were under suspicion to smuggle famine food across the Suam River, into Kenya). In early 1967 fingermillet and sorghum seed was distributed to stimulate crop cultivation, at the end of the famine relief operation (Moroto Archives, Touring File Upe County, Adm.9/U). During the 1965-66 drought, at least 30 kg of posho must have been distributed in Upe/Karapokot per capita. For the area east of the Suam River, data are lacking.

In 1968-69 another severe famine did not provoke such a large scale operation. Maizemeal, again distributed by the Agricultural Department of Moroto, only reached Amudat and Loroo. Especially in the Chemorongit Hills, serious cases of starvation were reported (Upe, Monthly Reports, 1969 March; November). The administrative uncertainty of Karapokot was a major reason for sheer neglect. When Kenya took over, at the end of 1970, and a new drought in 1971 resulted in widespread hunger again, the Kenyan state took the opportunity to legitimize itself as a new and better government. The distribution of free food went together with 'border barazas' (meetings), where the New Kenyans were told to settle themselves in sedentary villages, send their children to school, sell animals and become part of the Kenyan money economy. They also heard the good news that they were no longer obliged to pay poll tax. In the remaining part of Upe, a famine in 1973-74 was noticed but hardly any action was taken (Alnwick 1985, p.143).

In 1979-82, famine relief had to feed thousands of people, both in Upe and in West Pokot/Karapokot. In Upe it probably came too late for many. When food arrived, some of it was given free, but most relief agencies introduced 'Food for Work' projects. Trees were planted, shambas (fields) cleared, schools, teacher's houses and dispensaries constructed, an irrigation canal was dug, roads were made and missionary buildings were erected. As part of the campaigns, new seeds were distributed and new cultivation practices taught. Specific food assistance was given to schools and to the aged. In a situation where five missionary organizations, the Red Cross, and the Kenyan Government, all had their famine relief rules and practices - sometimes resulting in strong competition - the Kenyan Government decided that some form of coordination had to be started. The minutes of these famine relief coordination meetings in Kacheliba Division, under the chairmanship of the District Officer, show a territorial struggle between the organizations involved. Famine relief camps (e.g. Timale, Alale, Kodich)

were claimed by particular organizations. More isolated areas were neglected. The length and certainty of food supply was dependent on the organization which claimed the area. In the North, for instance, the Red Cross was very active during an anti-cholera campaign, but when the cholera threat was successfully contained, they did not go on to supply food at the same scale. Soon, in some areas - especially around Kauriong - the food supply was completely inadequate. The people of Suam Location, on the other hand, were lucky to find various missions 'fighting for their souls' in an area that was easily accessible from the highlands (Kacheliba DOs office; file on famine relief). During the 1984-85 drought, things were completely different. The Army Operation made it very difficult for food transports to enter the area, between April and July 1984. Missions were only allowed to start relief operations when the food situation was already very bad. In some areas it even lasted until March 1985 before the first relief food was received. Chaos reigned, and in some areas famine food was still distributed long after the end of famine conditions (e.g. in Kodich in November 1985). Because it was given free, it was jeopardizing the supply of (paid) labour to development projects. We may conclude that famine relief has been very important to prevent large scale famine deaths (or deaths from weakness after a famine) in 1965-66 and in 1979-81. In other famine years, famine relief was not more than a drop in the desert.

#### 5.4.3 The Development of Formal Education

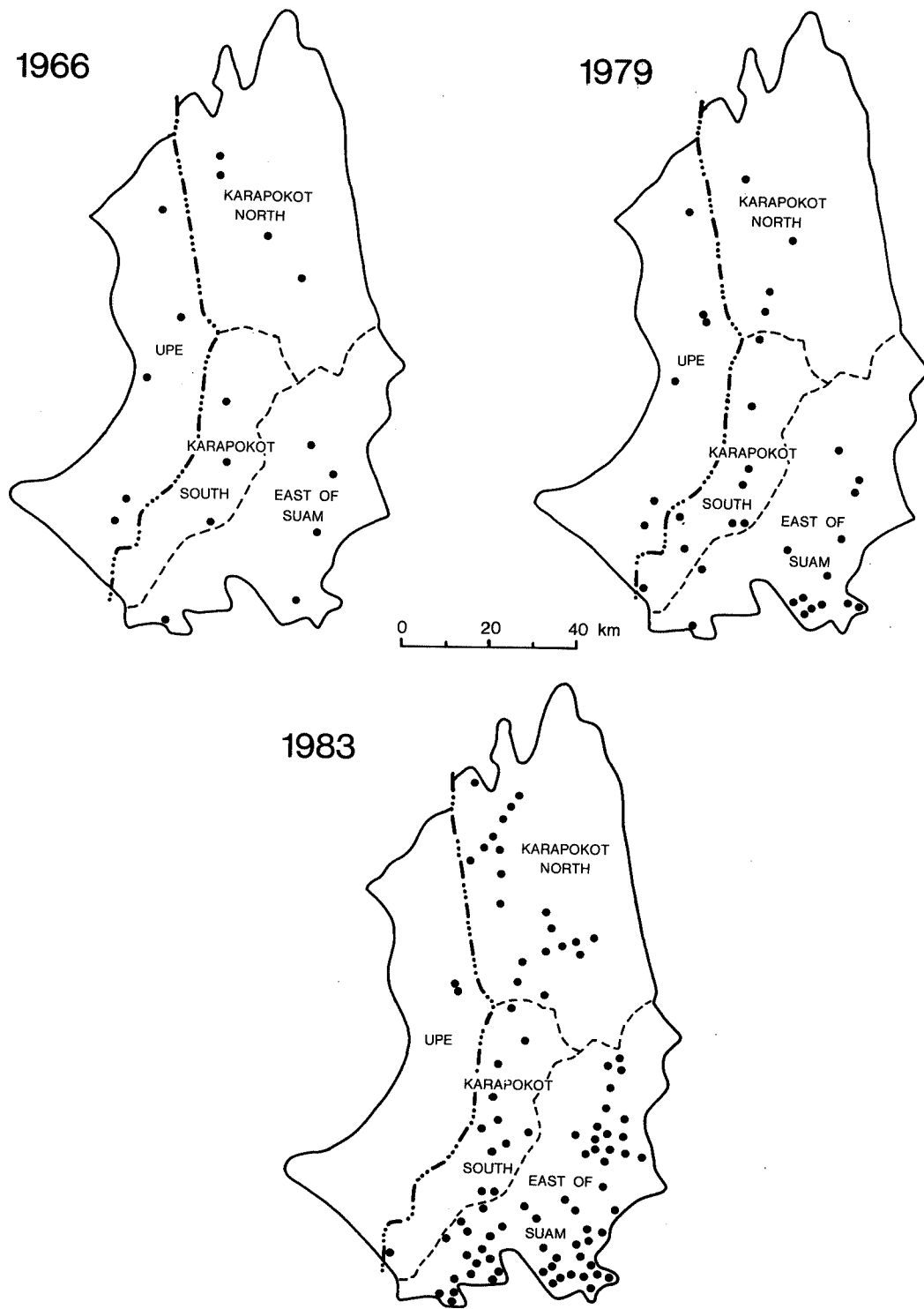
In independent Kenya, formal education is the major tool of national ideological integration. It promotes the use of Kiswahili and English languages, which enhance the communication across ethnic boundaries. Nation-wide exams result in standard curricula, with very little (although increasing) attention for local issues. A white collar-emphasis works as a powerful mobilizer of rural people towards urban areas, and from lowlands to job-promising highlands. The presence of teachers, with completely different cultural attributes (christianized, wearing western clothes, reading books and listening to radios (often powerful enough to receive the BBC World Service and German broadcasts for Africa, alongside the 'Voice of Kenya') and with relatively high salaries, works as an enticement for cultural change. The government and the missions are eager to use education and teachers as tools for both socialization in their respective institutions (the nation and the church) and for 'development'. On a national scale, massive efforts resulted in a very good result: in 1965, 54 % of all eligible children went to a primary school; in 1983, 100 % (World Bank 1986, p.236). In Uganda things worked out differently. Being one of the best educated African peoples at Independence - 67 % of all eligible children were enrolled in 1965 - Amin's anti-intellectual reign and the following turmoil resulted in the breakdown of education. Uganda is the only African country with decreasing school attendance: in 1983 only 57 % of all eligible children went to school. In 1983 there still was a large gap in government attention for education, between Kenya and Uganda, with an education budget of \$ 17 per capita in Kenya and only \$ 1 per capita in Uganda (Ibid, p.222).

Pokot society lagged far behind nation-wide achievements. Formal education was virtually non-existent until the early 1950s. In 1953, the perceived danger of the 'Dini ya Msambwa'-cult urged the colonial governments of both Kenya and Uganda to invite missions to start schools. Most of these schools were located in the southern highlands. In the western lowlands, so-called 'bush schools' or 'outschools' were started at Amudat (1953), Lokales, Karita, Loroo, Kongelai and Chepareria (1954), Kacheliba (1955) and Serewo (1957). Schools received food rations. In 1965, some schools were given boarding facilities. In that same year, also schools had been started at Kodich, Kunyao, Kasei, Katabok, Kauriong and Chepkopegh. The schools in Serewo and Kongelai, however, had been closed. Especially during drought years (e.g. 1960-61, 1965) the food rations proved to be important to attract pupils. In addition, the Upe County Council took a firm stand on education in 1965: "children under 15 years of age should not be allowed to look after cattle, they should be sent to schools" and chiefs were instructed to check (Moroto Archives, Minutes Upe CC 1965). As a result, in Upe/Karapokot, the number of pupils increased from 327 in 1960 via 521 in 1962 to 908 in 1965, 425 of them using boarding facilities. In 1969 the number of pupils had even gone up to 1,300. Not all pupils were Pokot, though (Kar.AR 1960, 1962, 1965, 1969). In 1968 the Karamoja administration also started adult education classes, women's clubs and youth clubs in Upe.

During the 1960s there was educational stagnation in the western lowlands east of the Suam River. Very few children from the lower parts of Riwa, Mnagei, Sook and Kipkomo went to school. In Upe-proper, the school attendance rate in the mid-1960s must have been around 20 %, in Karapokot less than 10 %, in the area east of the Suam probably below 5 % . During the early 1970s the situation probably deteriorated in Karapokot, where parents suddenly had to pay much higher school fees, now that the area belonged to Kenya.

The gradual abolishment of primary school fees during the 1970s, strongly increased missionary activity, school-related famine relief and food distribution - including a school milk programme after 1979 - and the sedentarization of 'destitutes', all resulted in a remarkable breakthrough of education after 1974 in Karapokot and in the area east of the Suam. Now it was Upe's turn to experience educational stagnation. Between 1979 and 1982 all schools except those in Amudat were closed and looted. After a short period of new initiatives by the Roman Catholic Mission, 1986 saw the breakdown of virtually all education in Upe. In July 1986, only 268 children were attending the three schools in Amudat. Most parents and their children had fled to Kenya (Even 1986). We may expect that part of these children were going to school in West Pokot during 1986. Table 5.7 shows some results of a detailed analysis for West Pokot. Figure 5.5 compares the situation in 1983 with 1979 and 1966.

If we compare the attendance figures with the number of eligible children, the situation in 1979 shows that school attendance had reached 35 % in the lowlands east of the Suam River - with a concentration of attendance around Chepareria - 25 % in southern Karapokot, and less than 5 % in northern Karapokot. In Upe it was probably 15 % (Upe 1982). Between 1979 and 1983 the attendance doubled, with a spectacular increase in northern Karapokot, reaching 22 % there, 37 % in southern



Source : DAWP 1985, p. 106 ; Moroto and Amudat Archives

Figure 5.5 Primary Schools in Western Pokot, 1966, 1979, 1983



Table 5.7 Growth of Education in Western West Pokot, 1971-1986

Year	Karapokot South (*)			Karapokot North (**)			East of Suam (***)			All		
	s	p	t	s	p	t	s	p	t	s	p	t
1971	5	269	17	1	2	1	4	388	16	10	659	34
1976	5	872	29	1	19	2	5	905	26	11	1796	57
1979	6	968	26	4	169	5	11	2423	44	21	3560	75
1983	11	1647	59	20	1423	40	30	4227	143	61	7297	242
1986	13	1892	68	16	1172	60	35	5537	200	64	8601	328

s: schools; p: pupils (not all enrolled pupils are always attending classes; the figures give the situation at the beginning of each school year: January); t: teachers;

- \* This includes Kanyerus school, in the more humid southern fringe. This school, which started in 1958, had forty-nine pupils in 1983, but many more before 1979.
- \*\* This includes schools in the humid parts of the Chemorongit Hills. Those schools all started after 1980. In 1983, there were five of them, together with 348 pupils and nine teachers. Karapokot North = Alale, Kasei and Chemorongit Locations.
- \*\*\* Riwa and Kipkomo Locations; this includes two schools in the humid fringe of Riwa and five schools in the humid southernmost part of Kipkomo. In 1983, these seven schools had 1016 pupils and thirty-three teachers. The lowlands east of Suam also include lower Mnagei and lower Sook. These are excluded in the table. In 1983, lower Mnagei and lower Sook had nine schools, with 662 pupils and thirty-one teachers.

Sources: Archives and Correspondence Department of Education, Kapenguria; Van Haastrecht & Chizupo 1983; DAWP 1985, p.108.

Karapokot and 55 % in the area east of Suam. Between 1983 and 1986, the attendance further increased in southern Karapokot and Riwa/Kipkomo (attendance rates 39 % and 65 % respectively). In northern Karapokot there was a decrease (rate: 17 % now). Improved food conditions and probably also a more negative attitude towards external interventions can explain this.

The data for 1986 permit some other conclusions too: 36 % of all pupils in Karapokot-South and 43 % in the lowlands east of Suam were girls against only 26 % in Karapokot-North. Figures for 1971 show the same low percentage in Karapokot-South. Figures for Upe/Karapokot in 1965 show 18 percent. The large majority of the first recruits are boys everywhere, but later girls slowly bridge the gap. In the southern Pokot highlands, where the total participation rate is above 80 % nowadays, girls make up 45 % of total pupils. In the secondary schools of the District, however, again girls are only a quarter of all pupils, in 1983 (DAWP 1985, p.116). Hardly any lowland girls go there yet.

Education is very much assisted by missions. In West Pokot six missions were active in the education of the western lowlands, in 1983. See table 5.8.

Table 5.8 Missionary Sponsorship of Schools, Western West Pokot Lowlands, 1983

Mission	Nr. of Schools	Nr. of Pupils
Roman Catholic	31	2,998
Faith Homes	8	1,022
Church of the Province of Kenya	5	686
Associated Christian Churches of Kenya	4	430
African Inland Church	6	274
Lutherans	1	265
No missionary sponsor (District Education Board Schools)	2	871
Total	57	6,546

These are figures for the lowlands proper (this explains the difference with table 5.7).

Source: DAWP 1985, p.108

Missions assist with school buildings, teacher's houses, school equipment, school books and - last but not least - the logistics of distributing school milk and school food. Teacher's salaries (for the western lowlands proper more than 2.2 m.KShs in 1983) are fully paid by the government nowadays if schools are recognized. Recruitment of teachers is a government responsibility too, although missions try to influence recruitment. Especially new schools which are started by missions with 'denomination proof' teachers retain them when the government agrees to take over. Some tension is likely though. Both the Roman Catholic Mission and the CPK have started primary boarding schools. In 1983, 20 % of all western lowland pupils went to eight boarding schools. Missionary assistance also goes to daycare or nursery centres, to secondary schools (two in Chepareria, since 1983 resp. 1986), to youth polytechnics (since 1975 in Chepareria; since 1977 in Kodich), to adult education classes (since 1970) and to women groups.

Education is a mixed blessing. Parents lose part of the labour power of their children, which is especially valuable for tending small stock, weeding crops, scaring away birds, taking care of small children and panning gold. The fast growth of school attendance during the disaster years 1979-81 can at least partly be explained by the diminished need of child labour: most goats had died, crops had failed, birth rates will definitely have gone down. The lure of school food was strong enough to change parent's minds, now children had become a burden instead of a

labour reservoir. In case parents were still against education - especially for girls - many children went to schools against the will of their parents, and were adopted by missionaries. Costs are virtually nil for parents. Missions use foreign funds - e.g. World Vision sponsorship schemes - to pay for school expenses, and assist needy parents too. Education is also a mixed blessing because of the social and ideological effects. Many pupils are christianized, changing part of their mutual assistance network from lineage to church members, and turning their back to practices like polygamy, which can be important as aspects of a survival strategy. For many pupils, education works as a siphon, encouraging lowland children - and especially the brighter ones - to become migrants to the highlands later. We have seen the example from the 'Rukiey lineage' in Chapter 4. Formal education as it is practised, has hardly anything to do with lowland (especially pastoral) needs for knowledge. School time replaces informal types of education, so that lowland people not only are trained for highland jobs, but also lose the knowledge how to deal with lowland life. The only lowland jobs available for them for which they can use their school knowledge are those of untrained teacher. In 1983 more than 140 educated Pokot had chosen to work as an untrained teacher in the western lowlands. But where do the more than 500 lowland pupils go, who pass the primary school exams yearly?

Of course, if they go to the highlands or even to other districts, most of them will sponsor their families back home, with money, blankets, clothes or even food and with some tobacco for grandfather. They will encourage brothers and sisters to go to school too and they will even pay for their school expenses. For lucky families, remittances from educated children are definitely a welcome additional element in their survival strategy. But remittances also work as a catalyst of changes in consumer habits and in pursued consumption standards well above the standards of the past. Many new consumption needs can only be attained with more money, stimulating an aspiration level that is difficult or even impossible to achieve in the lowlands without revolutionary changes. In this way - and in the long run - education can be a catalyst for depopulation. The population growth which was a result of better health care, disaster relief, more safe water and the like might be undone by another intervention: education.

Recent Kenyan government documents invariably speak about 'human resource development' (e.g. GoK 1979, ASAL-document). They mean: the development of health facilities, school buildings and vocational training workshops. The concept is full of ideology: a more healthy, more formally trained and more numerous population is seen as an economic asset as such. Where there is enough room for expansion this might be true (and in general, African governments regard their countries as far from 'full'). Where the expansion is blocked or the increase of production is not a matter of additional labour alone, 'human resource development' has its dangerous sides, when it is not accompanied by serious improvements in the means of production. We will turn our attention to these means of production now: to water, animals, land and inputs for crop production, a sequence which follows the Pokot priorities for external assistance.

#### 5.4.4 Water Development

People in western Pokot need water for domestic use and for their animals. During the rainy seasons this is never a problem. During dry seasons, distances between human settlements and waterpoints are often long. Women's work to bring water to the homestead as well as men's work to bring animals to perennial rivers and to wells in dry river beds is a tiresome and time consuming affair. To avoid the concentration of too many people and animals around dry season waterpoints, with degradation as a result, external agencies have attempted to drill boreholes and waterwells and to build waterdams, (often with the result of overgrazing and trampling nearby, see Baker 1967, pp.25-28; Cox 1972, p.45). Recently, governments and missions have started to construct piped water supplies to major population centres. All water development activities are summarized in table 5.9.

Activities in the sphere of water development show concentrated efforts in 1952-57, 1975-76 and after 1980. From 1980 onwards, total investments reached more than 12 m.KShs: old boreholes and waterdams were rehabilitated, new boreholes and waterwells were drilled - all with handpumps to avoid overconcentrated use - new waterdams were built; a water maintenance unit was started, piped water projects are well under way and even solar pumping equipment has been installed. More than 5 m.KShs was invested by missionary societies, sponsored by overseas funds. But also the other water development activities are mainly paid from foreign funds. When all current water projects are ready, the western Pokot lowlands are generally very well provided with natural and constructed water supplies. An ASAL-water survey (Hendrix 1983) already found few areas with a severe shortage of water during the dry season. The major task ahead is maintenance.

A major problem is that water is regarded as a 'free good' by all parties concerned. Responsibility for the (expensive) investments is regarded as 'government's duty'. The contrast between public goods and individual needs sometimes meant that metal parts of borehole equipment were used as basic material for weapons (Cox 1972, p.47, p.74; Cisternino 1979, p.27; own interviews). A related problem is the difficulty to find local 'harambee' labour, especially needed to cut trenches and lay water pipes and also needed to make waterdams. The last type of work is mainly organized via 'food for work' arrangements. Maintenance of waterdams and boreholes has always been a headache. In 1963 it was reported that out of 61 boreholes in Upe/Karapokot, the large majority was not working; 27 Uganda hand pumps were repaired. In 1967, 46 boreholes were found to be out of order, of which 38 were repaired (Kar. AR 1963, 1967). In 1980, Norconsult found only eight boreholes working out of 35 in Karapokot (Norconsult 1981); in 1979, out of 34 existing boreholes/waterwells in Upe, only six were working (Upe 1982). The mobile water maintenance unit, set up in Kacheliba with ASAL-funds between 1984 and 1986 still has to prove that it can handle the maintenance of the 54 boreholes in the western West Pokot lowlands which were operational in 1983 after a major NORAD-funded effort (coordinated by ACK-Kiwawa and RCM-Kacheliba), to rehabilitate existing boreholes and drill new ones.

Water development has many indirect effects on living conditions and survival strategies. The availability of clean water means more healthy

people and animals (Cisternino 1979, p.31, even regards it as one of the main causes of the population explosion in the area); it certainly has a sedentarization effect; and water more nearby means less energy consumption to reach it, and less labour time involved, which could be used for other activities instead.

Table 5.9 Water Development Projects Western Pokot

Place	Project	Year	Sponsor (*)	Funds x1000 (K)Shs
Kunyao	2 boreholes	1942,'45		
Upe/Karapokot	35 boreholes Karapokot	1952-57	UNICEF	
	25 boreholes in Upe			
Upe	5 waterdams	1950s	Uganda Protectorate	
Upe/Karapokot	borehole repair	1963,'67	Karamoja D.A.	
East of Suam	7 waterdams	1950,'56	ALDEV	40?
Kanyarkwat	borehole	1972	SIDA	60
Kongelai	boreholes	1975	SRDP (Neth)	200
Alale and Suam	waterdams	1975-82	RDF	200
Karapokot	water survey	1980-81	NORAD	700
various	10 anti-cholera wells	1980	Red Cross	?
Karapokot	b.h. rehabilitation and 32 new boreholes	1982-84	NORAD (via ACCK, RCM)	3,600
Chepareria	piped water (17 km)	(1974)	UNICEF	?
		1980-83	RDF/CARE	591
	extension	1984-85	F.Homes	55
Kanyerus	piped water (2 km)	1980	MoH	?
Alale	piped water (7 km)	1981	RCA/AIC	1,000
Kacheliba	piped water (9 km)	1982-86	MoWD	930
Kanyarkwat	water equipment	1984-86	RDF	102
Riwa,Kodich,Chesira	desilting 3 dams	1982-84	RDF	66
Pkatieny (Kipkomo)	rehabilitate dam	1984-86	RDF	113
N.Karapokot	range dams	1984-87	ACCK	1,650
Kodich	rehabilitate borehole	1982	ASAL	30
all, except Upe	water survey	1983-84	ASAL	35
various	5 handpumps	1984-86	ASAL	238
Kunyao	pumphouse, tank	1983-87	MoWD	428
Kauriong	borehole	1984-85	RCM/AIC	56
Karapokot	water maintenance unit	1984-86	ASAL	1,500
Kodich	solar pumping unit etc.	1985-87	ASAL	1,050
Cheptuya	piped water	1986-87	MoWD/ASAL	1,000
Nasukuta	desilting the dam	1986	ASAL	?

(\*) ACCK: Associated Christian Churches of Kenya; ALDEV: African Land Development Programme; ASAL: Arid and Semi-Arid Lands Programme (Gov. of Kenya & Netherlands funding); CARE: CARE Kenya; MoH: Ministry of Health; MoWD: Ministry of Water Development; RCA/AIC: Reformed Church of America/Africa Inland Church; RDF: Rural Development Fund (GoK & Danish funding); SIDA: Swedish development agency; SRDP: Special Rural Development Programme (GoK & Netherlands funding).

Sources: Annexes to the DDP; District Development Plans; ASAL archives; SRDP archives; interviews; DAWP 1985; Locational Development Profiles.

#### 5.4.5 Livestock Development

Cattle, goats, sheep and a few donkeys and camels are the most important wealth of the Pokot. If the 1983-estimates of the number of cattle, given in Chap.4 are correct, and if cattle can be valued 1,000 KShs per head, and shoats 150 KShs, the inhabitants of West Pokot owned 124

m.KShs livestock wealth alone; that is 650 KShs per capita. It is very remarkable that livestock development is the most underdeveloped part of government intervention in the area, getting a meagre 0.6 % of all development funds for 1983-85 for instance (see table 5.4; plans for 1985-86 and 1986-87 promised a drastic increase, though).

If we look at the period until 1950, livestock interventions were solely confined to control of marketing (vaccinations were restricted to the quarantine centres). Both a plan to produce butterfat (ghee) for the Turkana garrison (1927) and a plan to start a small dairy "to stimulate better milk production among the Suk" (WSAR 1928) never materialized. In 1950 the first minor rinderpest campaign started (in Upe), followed by major inoculation campaigns in 1958-61. A proposal to make rinderpest inoculations compulsory - together with a branding census - was turned down by the Uganda Government (see Evans-Jones 1960, p.37). When a vaccinn was discovered against Contagious Bovine Pleuro Pneumonia, in the early 1960s, a number of Pokot animals were vaccinated in 1966. That Upe was treated as the last of the list, can be illustrated by the vaccination campaign in 1967: CBPP-vaccinations "were done in all counties except Upe. It was the intention to vaccinate Upe/Karasuk, but owner cooperation in other areas was so slow and poor that time did not allow work in Upe" (Kar.AR 1967). In 1970, a large rinderpest vaccination campaign was launched, followed by campaigns in 1975 and 1980-81, the last one including CBPP-inoculation. All these campaigns (1970 in Upe/Karasuk, the later ones in West Pokot including Kacheliba) covered 60,000 to 80,000 animals.

In Upe, six cattle dips were built in 1966-67, against East Coast Fever, a tick borne disease. Harambees were organized to get at least part of the money from the Pokot. It is unclear if these dips ever functioned. In 1971 a dip was funded at Kanyarkwat, Riwa (CARE-aid); in 1975 dips were built in Kongelai and in Kipkomo as part of the Dutch funded SRDP and as Rural Development Fund projects. Many more dips were planned in the 'Karapokot Provisional Development Plan', of about 1976. In 1983 there were two cattle dips in Kacheliba Division, four in Riwa and six in Kipkomo. Only the ones in Kipkomo were functioning. In 1985 the ones in Riwa were rehabilitated as an ASAL-project. There were two spray races, one at the CPK ranch near Pkepoch, the other one at Nasukuta holding ground. Only the Pkepoch one functioned (DAWP 1985, p.69). Regular outbreaks of another major cattle disease, Foot and Mouth, were 'treated' with localized quarantines e.g. in 1962, 1968-70, 1977-78 and 1979-81, during periods of those years. Only the last few years Foot and Mouth vaccination is well funded and other vaccinations are much more systematic than in the past. In 1986 also some curative work was done in the lowlands after the posting of senior veterinary officers.

Other animal improvement projects were limited to a few castration campaigns (1957-60; 1970). Bull camps or artificial insemination never reached the Pokot lowlands. This relative neglect should be compared with the government attention for highland grade cattle, dairy production and wool sheep. In 1983, in the western Pokot lowlands as a whole no senior livestock officer was stationed; in Kacheliba and Chepareria Divisions the intermediate and junior livestock officers were twenty-seven altogether, only 4 % of all staff. In and around Kapenguria, 57 livestock officers were stationed, four of them seniors

(DAWP 1985, p.50). Most of them have district-wide duties, but they do not often visit the lowlands until recently: the livestock department was heavily constrained by lack of transport, lack of fuel, lack of allowances and - one may suspect - lack of interest in Pokot Zebu-cattle.

The livestock departments, both of West Pokot and of Karamoja were completely understaffed to handle the cattle epidemics that killed many animals during 1979-81. They were unable to prevent the large goat mortality in 1978-79. Attention for goats and sheep only developed very recently, partly at the CPK-sponsored Livestock Improvement Centre at Kodich and partly in the ASAL-project to use the defunct Nasukuta Holding Ground for multiplication of upgraded small stock, to be distributed among local people later.

In 1985, an ASAL consultant gave many valuable policy ideas about how to cope with what was seen as the 'Livestock Problem' (Hartley 1985). Group or individual ranches with dips and other modern facilities were strongly rejected in his report. Projects which were regarded as more realistic and more important included fodder improvement; the gradual adoption of Somali/Boran practices of range management (with subsistence camps further away from water, with animals for water transport and with dry herd camps also for goats); marketing of small stock via Stock Owners Associations and better organized auctions; breed improvement; (re-)introduction of camels, also in the southern parts of Kacheliba; CCPP control and paravet services; and the introduction of animal draught power. ASAL already started with the training of Pokot paraveterinary assistants and in 1986 plans were prepared to experiment with some other suggestions.

Finally it is important to mention beekeeping, a general and important activity among the Pokot. In 1980 the CPK stimulated the formation of a honey cooperative at Kodich. In 1986 it was revived with ASAL assistance, selling honey at Kapenguria, where it finds a ready market.

#### 5.4.6 Land Development

The quality of the land was an item of widespread concern among civil servants during the 1930s, the 1950s and the 1980s. After a livestock estimate in 1933, which was later believed to be grossly inflated, officers in West Pokot played their part in the soil conservation fashion of the time and discussed forced destocking, as elsewhere in semi-arid Kenya. Nothing happened, until in Riwa 'grazing blocks' were closed, in 1944, to allow the regeneration of grass. Also the burning of grass was prohibited. In the escarpment zones some soil conservation rules were imposed in the early 1940s: terracing, intercropping, manuring, prosecution of hill cultivators (Chaundy 1939, p.29). These rules had little effect, as African inspectors were generally bribed to overlook violations (Schneider 1959, p.154; Patterson 1969, p.24). Again, around 1950, officers began to describe the Pokot lowlands as suffering from overgrazing and as virtually denuded here and there, this time also in Upe/Karapokot (e.g. Dyson-Hudson 1966, p.246; Cox 1972, p.34). In Upe, already in 1947 and again in 1954, grassland experiments were carried out. It is interesting to note that one of those

'enclosures' was in Kacheliba, but "this was so remote that it is most difficult to administer effectively and (it) has been abandoned" (Evans-Jones 1960, p.53). In 1956, the area between the Lodwar road and the Kanyangareng (called the 'Kanyangareng salient') was closed as an administrative measure without much effect. In 1959, the Pokot use of the 'Kanyangareng salient' was made dependent on the abiding of rotational rules (Ibid, p.44). In West Pokot, grazing schemes were imposed after 1953, with block rotation rules and paid grazing guards (funded by ALDEV). The most important grazing scheme was the one in Riwa. In total, in 1959, 950 km<sup>2</sup> of grazing land had been 'protected'. Grazing control was combined with destocking, as it was felt that "one third of the District's animals needed to be removed to allow the grasslands to regenerate. According to the official census, this amounted to approximately 40,000 cattle and 50,000 sheep and goats" (Tully 1985, p.134). Locational chiefs had to deliver a certain number of animals, but the "Chiefs tended to fill their quotas from the herds of the poor and leave the big herds of the rich and powerful alone" (Patterson 1969, p.33). Official offtakes indeed increased, but the official offtake rate never came above 8 % . In the escarpment zone, colonial measures had more success: prisoners were used there for afforestation work and for soil conservation (terracing). Between 1963 and 1970 government activities in the sphere of land management came to a halt. Grazing schemes were neglected and grazing guards no longer paid. ALDEV waterdams were not maintained, with the effect that none of them could be used anymore in 1970. The release of most prisoners in 1961-64 meant a drastic reduction of prison labour for forest and soil conservation work. The Special Rural Development Programme stimulated rotational grazing again, as part of Group Ranch land management. In 1975-78, minor soil conservation works were started around Kanyarkwat followed by minor reafforestation work along the Suam River and near Chepareria. Later, around Kacheliba, some soil conservation work was done and a 'forest team' of twenty men was stationed in far away Alale (who seemed to be forgotten until they were withdrawn in 1983). The ASAL programme also stimulated some land management activities: in two areas in southern Kacheliba, checkdams were made in gullies, and an 'erosion plot' was started, with checkdams, treeplanting and Rhodes grass experiments. If it is true that 15 % of the 'Turkwell Gorge catchment' can be characterized by 'very high erosion' - 5.7 mm/year on average - and 69 % by 'moderate to high erosion' - 1.5 mm/year on average - (KVDA 1982, Chap. 7, p.3; p.39), soil conservation measures in the western Pokot lands are far too few. One could think of scratch ploughing, or harrowing using donkeys, sowing of grasses, small basins to trap run off water, all measures to restore the vegetation cover of denuded lands. Other measures might spread the pressure of grazing by more widely available waterpoints, by controlled bush fires to increase pasture, by trypanosomiasis drugs or tsetse eradication. One could also think of gully control, field terracing, tree planting and forest protection (KVDA 1982, pp.18-27). One may fear that, in ten years time, when the hydro-electricity works at Turkwell Gorge will be finished, and when a lake has formed behind it with probably a very high rate of siltation, the Pokot will be blamed for 'overgrazing' and 'soil destruction'. One may also fear that the rescue of this multi-million project will be



regarded as much more important than land use by Pokot herders.

One additional type of land development should be described here. Unlike the eastern parts of West Pokot, irrigation was never practiced in the western lowlands. During the 1979-81 drought, the CPK used 'food for work' to dig an irrigation furrow, near the Suam River at Kodich, and to make an access road. Later the Provincial Irrigation Unit adopted this project and the European Economic Community gave 750,000 KShs for this 'Cherangan Irrigation Project' (24 ha). In connection with the ASAL-Programme, a major canal has been dug between 1984 and 1986 and gravity-fed irrigation is soon to begin, by people who are now cultivating rainfed plots nearby, and who are supposed to dig feeder canals as a 'harambee' effort now. In total, the project costs amounted to more than 2.5 m.KShs until 1987 or at least 100,000 KShs/ha, half of it for direct investment costs (Van Klinken 1985 b; interviews). It is difficult to judge these investment figures. Experts in African small scale irrigation use 40,000-50,000 KShs/ha as a rule of thumb (interview District Irrigation Engineer, WP). The direct investment costs of 'Cherangan' are comparable. The project is a typical example of 'subsistence irrigation for destitute pastoralists' (with a lot of labour income opportunities for local people during the construction phase). If the sixty would-be farmers succeed to get two maize harvests a year with a combined annual production of 3,000 kg/ha (value approx. 6,000 KShs now), the production value exceeds direct investment costs in eight years time (if the Scheme works all the time...). Extremely stated, a local production of 3,000 kg/ha 'saves' approx. 150,000 KShs of famine relief in the form of maize grains (market value). A surplus, however, is not produced. Each participant gets 0.4 ha; with 1,200 kg/yr barely enough to subsist. All investments should be seen as a pure grant, with famine prevention as the only goal. For the investing agency no direct benefits accrue from their investments, unless a profitable 'cash crop' is produced, which is not at all likely (indirectly there are backward and forward linkage gains, though). As long as there are donors who are prepared to give grants for these ventures, 'cost-benefit' aspects are not very relevant. 'Cherangan' is an example, however, of donor funds which are only 30 % of total investment; the other 70 % and future maintenance costs are a burden for the Government of Kenya. In that case one wonders about the opportunity costs.

#### 5.4.7 Crop Development

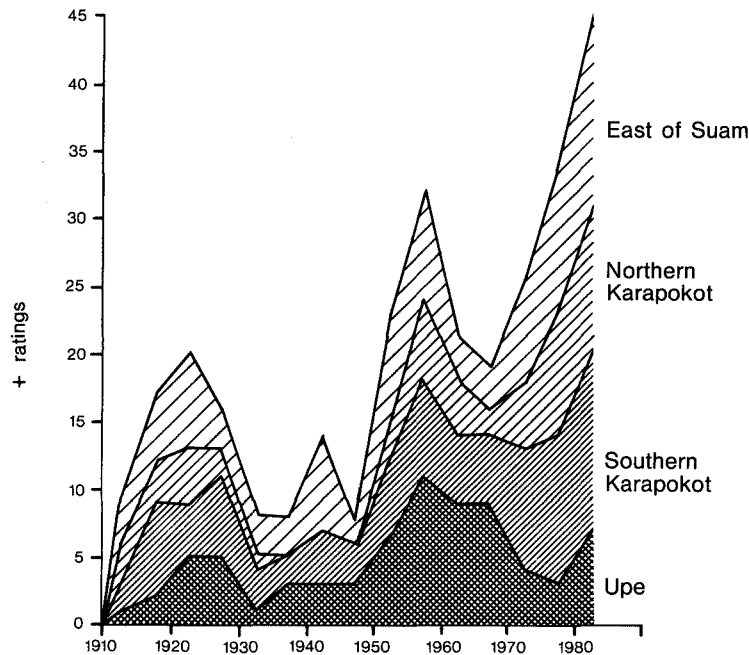
Western Pokot was described as almost completely pastoral, when the first colonial documents were written. Although finger millet and sorghum were probably cultivated, government attention for these 'inferior grains' was negligible. In 1924-25 the DC distributed maize seeds, but the harvest failed completely (WSAR 1925). In 1928 a Government African School was started in Kacheliba, with a "new approach to agriculture which de-emphasized livestock" (Tully 1985, p.110). This school, which moved to Kapenguria in 1931, took pupils from a few 'bush schools', when they were between ten and twelve years old. They got a three year training, among other things on how to manage vegetable gardens. Upon graduation, part of them were placed in charge of 'model agricultural

plots' in various places in the District. In western Pokot these 'demonstration plots' were at Kongelai and Chepareria. Plot caretakers were paid by the Local Native Council; work had to be done on a compulsory basis by residents who were paid in the form of produce. New crops were introduced, especially maize, beans, groundnuts, sesame seeds, sweet potatoes, bananas and vegetables. Although the headmaster Chaundy regarded his results as revolutionary (Chaundy 1939, 1943), the Pokot people hardly adopted any practice. They did also not respond to the strong urge to expand their acreage for increased self sufficiency or even storage for bad years afterwards. Pokot cultivators were very suspicious about why the government took all the trouble. Were the Europeans trying out new crops so that they could take the best land later, as had happened in Trans Nzoia (DAWP 1985, p.61)? The enrollment of the Government African School may seem impressive for those days - seventy-five boys and fifteen girls in 1938 - but there were very few Pokot among them. Most pupils were recruited from 'squatters' (mainly Nandi, Kitosh - original inhabitants of Trans Nzoia - and Elgon-Kalenjin) who had begun to enter the Pokot highlands. After a period of hesitation, these farmers were regarded as the 'progressive force' by the British officers, during the 1950s. This group enclosed their holdings, produced maize and beans and even started the cultivation of coffee and pyrethrum. Some of these farmers could be found in Chepareria. In the meantime, the reluctant Pokot were forced to plant a specific portion of their fields with crops other than finger millet and sorghum, especially 'locust resistant' crops like cassava, and in the highland and escarpment zones maize and beans. This was made a regulation by the Local Native Council in 1942. In the early 1950s, cassava was made a compulsory 'famine crop' (probably effective until the early 1970s; in Upe, cassava was made a compulsory crop in 1968, but probably without any long term effect). After a period of very meagre crop development interventions during the 1960s, the Special Rural Development Programme strongly stimulated crop development in the highlands (hybrid maize, sunflower, potatoes, pyrethrum). The lowlands were neglected, with the exception of Chepareria. Here the old demonstration plot was revitalized and the commercial farmers around Chepareria - most of them Pokot - were stimulated to adopt hybrid maize seed and fertilizers and to form the Chepareria Farmers Cooperative Society, in 1979 (50 members in 1979, 207 members in 1986). This cooperative got loans from the Integrated Agricultural Development Programme and used these loans to buy a tractor and to repair a cattle dip. In 1986 these farmers were assisted by seven agricultural extension officers and by five livestock extension officers. Almost all farmers also started to participate in the newly introduced 'Training and Visit' type of extension (Kipkomo LDP 1986). In the other western Pokot lowlands, government ideas about crop development were meagre. The Karapokot Provisional Development Plan (1976) mentions cotton and maize demonstration plots and it briefly touches on cassava and finger millet production. In Kacheliba, mainly the missions have worked as extension agents: various missionary experimentation and demonstration plots were established after 1974, and during the 1979-81 disasters, some missionary Food for Work projects introduced more adequate field preparation techniques, hybrid maize

seeds, new sorghum seeds and better tools. In 1981-83 the same was done in parts of Upe. Both in West Pokot and in Upe, lowland herders-with-some-crops had no other choice than to become cultivators-with-some-animals. Missionaries stimulated cultivation at Loroo, around Amudat, at Loporokocho, in Alale, Kauriong and Kasei and along the Suam River. The relatively large increase in arable land has been illustrated elsewhere (Chapter 4). From 1983 onwards, in West Pokot, government extension work has further tried to foster this welcome change of mobile herders into sedentary cultivators. In 1982 there were only two agricultural officers in the whole of Kacheliba Division; in 1986 the Department of Agriculture had fourteen people in Kacheliba, five in Kodich, two in Kunyao and even three in Amakuriat (although the large majority were non-Pokot). In 1984 the ASAL-Programme supported a major attempt to assist the cultivators along the Suam River: the Suam River Agricultural Project. Besides the assistance to the Cherangan Irrigation Project - which was seen as an intervention which might prove to be too radical (see MoALD 1983) - this project aimed at improving the knowledge of the 'new farmers' to produce rainfed crops, via demonstration plots, the training of local extension agents and technical assistants, the distribution of seeds of drought adapted varieties, and oxplough training. The project also included attention for livestock, honey and soil conservation. In 1984-86, 1,000,000 KShs were spent, most of the money on houses and vehicles for the increased agricultural staff. In the Kodich case study (6.3) we will further deal with these activities.

## 5.5 Summary and Interpretation

We have presented a lot of detailed descriptive information about a gamut of external institutional interventions. It is useful to conclude with some more theoretical and comparative remarks. The information given per type of intervention will be summarized for each of the four sub-regions, in five-year periods. We will differentiate between 'major interventions', 'minor interventions' and no interventions. These ratings are my own judgements, for the recent years cross-checked with local informants. Table 5.10 gives a summary. The sum of all 'major interventions'-scores per five-year period, gives a graphic overview of institutional interventions (see Figure 5.6). It shows that there is an increase in types of interventions until 1925 (starting approx. 1912), a decrease until 1940, a short-lived increase during the war, and a major increase during the 1950s. The interventions decrease during the 1960s, and strongly increase afterwards, to a level never reached before. This is a picture for the research area as a whole. Generally, the same trends can be seen for each of the four sub-regions with the exception of the increase of interventions during 1940-45 (not in Upe and Northern Karapokot) and the 1970s in Upe (a decrease of attention). Within the research area, the emphasis on particular sub-regions changed during this century: before 1930 the focus was on the area East of Suam and on Southern Karapokot. From the 1930s to the mid-1950s, the area East of Suam gets most attention. During the late 1950s and 1960s Upe is most important. After 1970, Southern Karapokot becomes the spearhead of intervention, joined by the area East of Suam recently. Northern Karapokot has never taken the lead.



Source : table 5.10

Figure 5.6 An Impression of Intervention Width: Western Pokot, 1910-1985

In chapter 2 we presented a history of Kenyan and Ugandan government interventions in their semi-arid zones as a whole. The history of intervention in western Pokot can now be assessed against this background in more general terms.

Kenyan and Ugandan government interventions in their semi-arid areas long showed a similar course. Only around 1970 the two policies started to follow separate tracks. After 1976 the tightening of the grip of government on semi-arid Kenya and on West Pokot strongly contrasts with the disengagement of the government from semi-arid Uganda, including Upe, to the point of complete anarchy. There is some similarity, though, in the way foreign missionaries invaded the areas of the 'unreached peoples' recently. In some semi-arid areas, missions

Table 5.10 A Summary of Institutional Interventions

Where: a = first half of the decade  
 b = second half of the decade  
 + = major interventions  
 . = minor interventions

a: Upe    b: Southern Karapokot    c: Northern Karapokot    d: East of Suam

Table 5.10a Upe:

Type of intervention	1910		1920		1930		1940		1950		1960		1970		1980	
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
Demarcation				+		+										
Control of Settlement			+	+			+		+	.						
Control of Movement			+						+				.			
Civil Administration						+	.	.	.	+	.	.	+	.	.	
Security, Law & Order	+	+	+	+	.	.	.	.	+	+	+	+	.	.	.	+
Taxation		+	+	+	+	+	+	+	+	+	+	+	.	.	.	
Labour Recruitment																
Land Ownership																
Livestock commercialization							+	+	+	+	+					
Control of Trade			.	.	.			+				+				
Roads & Communications			+	+								+				+
Political Mobilization											+	.			.	
Missions									+	+	+	+	+	+	+	+
Health Care								.	.	+	+	+	+	+	+	+
Famine Relief												+		+	+	+
Education									+	.	+	+	.	.	.	.
Water									+	+	+	.				+
Livestock health & quality									+	+	+	.	+			
Land Quality										+						
Crops												+				+

Table 5.10b Southern Karapokot:

Type of intervention	1910		1920		1930		1940		1950		1960		1970		1980	
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
Demarcation		+		+	+	+								+		
Control of Settlement																
Control of Movement										+						
Civil Administration		+	+	+	.	.	.	.	.	.	.	.	+	+	+	
Security, Law & Order	+	+	.	.	.	.	.	.	+	+	+	+	+	+	+	+
Taxation		+	+	+	+	+	+	+	+	+	+	+			.	.
Labour Recruitment			+	+												
Land Ownership															.	
Livestock commercialization	+	.	.	.	.	.	+	+	+	+	+		.	.	.	.
Control of Trade		+	.	.				+				+		+	+	+
Roads & Communications	+	+	+	+			+						+	+	+	+
Political Mobilization											+	.	+	+	+	+
Missions						+							+	+	+	+
Health Care		.	.	.							.	.	+	+	+	+
Famine Relief												+	+	+	+	+
Education										+	.	+	.	+	+	+
Water							+		+	+	.	.		+	+	+
Livestock health & quality									+	+	+		+	+	+	+
Land Quality																+
Crops					+									+	+	+

Table 5.10c Northern Karapokot:

Type of intervention	1910		1920		1930		1940		1950		1960		1970		1980	
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
Demarcation					+									+		
Control of Settlement			+							+	.					
Control of Movement										+						
Civil Administration			+	+	.	.	.	.	.	.	.	.	.	+	.	.
Security, Law & Order	+	+	+	.	.	.	.	.	.	.	.	+	+	.	.	+
Taxation	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Labour Recruitment																
Land Ownership																
Livestock commercialization									+	+	+					
Control of Trade			.	.										+	+	
Roads & Communications	+	+	+	+										+	+	+
Political Mobilization											.	.	.	.	.	.
Missions														+	+	
Health Care											.	.		+	+	
Famine Relief												+	+	+	+	
Education														.	+	+
Water									+	+	.	.		+	+	
Livestock health & quality									+	+	+		+	+	+	
Land Quality										+	+					+
Crops														+	+	

Table 5.10d East of Suam:

Type of intervention	1910		1920		1930		1940		1950		1960		1970		1980	
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
Demarcation			+	+												
Control of Settlement				+												
Control of Movement			.	.	.	.	.	.	.	+	.	.				
Civil Administration			+	+	+	.	.	.	.	.	.	.	.	.	+	+
Security, Law & Order	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	+
Taxation	+	+	+	+	+	+	+	+	+	+	.	+		.	.	
Labour Recruitment			+	+	+		+	+	.	+						
Land Ownership														+	+	+
Livestock commercialization							+		+	+	+		.		+	
Control of Trade			.	+	.	+	.	.	.	.	.	.	.	.	+	+
Roads & Communications	+	+	.	.	.	+	+	.	+	+	.	.	+	+	+	+
Political Mobilization										.	+	.	.	.	.	+
Missions														+	+	+
Health Care									+	.	.	+	.	.	.	+
Famine Relief							+		+	.	+	+	.	.	+	+
Education									+	+	.	.	.	.	+	+
Water														+	+	+
Livestock health & quality														+	+	+
Land Quality							+		+	+	.		+	+		
Crops					+	+			+					+	+	+

substituted most government agencies. Upe and parts of Karapokot are good examples.

If we go beyond a sectoral description of government interventions, it is clear that until the 1950s, 'incorporation' interventions are far more important than 'development' interventions. Incorporation shows a picture of repression (law and order, control, state violence) and 'drainage', extraction (mainly via taxation) without a balancing return of services other than 'law and order'. In other parts of semi-arid Kenya there are attempts to go further, notably in Machakos. There land conservation as well as livestock commercialization are new additions, although not very successful. In western Pokot their importance is marginal. The semi-arid areas in general are far behind standard government activities in more humid areas: the labour recruitment for settler farms in Kenya, the introduction of cash crops - and hence commercialization - in Uganda, and the provision of minor services, although mostly left to missions. In semi-arid districts there were few missions and the revenue of the Local Government was so poor, and budget subsidies were so rare, that hardly any development interventions could be financed. Western Pokot was no exception.

During the 1950s the late-colonial governments of both Kenya and Uganda increased their interventions in semi-arid areas rather dramatically. We see the intensification of an 'extractive approach' (now including the attraction of labour migrants and an increased acquisition of cattle, besides taxation) alongside a strong 'conservationist' approach, with a mania for range and soil conservation. Originally subdued under the 'conservationist' approach, livestock and water development became rather important. An approach of 'cultural modernization' was behind the increase of education and health care, with important roles for missions. Western Pokot got its share. Only labour migration was far less important than elsewhere. During the late 1950s the financial value of government inputs began to exceed government drainage of funds - that would be so for all further decades to come. A lot of interventions were implemented by the local government, with an increased budget.

During the 1960s, semi-arid Uganda, Upe/Karapokot included, had to face a more 'repressive' approach, the abandonment of the 'conservationist' approach and - after 1963 - the breakdown of the 'extractive' approach. In semi-arid Kenya, West Pokot included, the 'conservationist' approach was left behind too. There were attempts to stimulate commercial ranching (but not in West Pokot). In some areas the 'extractive' approach intensified, but mainly indirectly via the growth of labour migration. In many semi-arid areas, including western Pokot, the missionary care for education in the 1950s resulted in movements towards the humid highlands and the cities afterwards, of people looking for employment. Improved health care already resulted in population growth. In relatively densely populated semi-arid areas, like Machakos, this resulted in intensification and another reason for labour outmigration. In western Pokot there was no need for it yet.

For the period after 1970, in Ugandan Karamoja (Upe included, but no longer with Karapokot) repressive and neglective approaches alternated, as far as government intervention is concerned. Here we are confronted with increasing chaos and misery. In semi-arid Kenya, including West Pokot (reunited with Karapokot) intervention very much increased, both with incorporation and with development goals. The central government

had become much more important than the local government. The activities of the central government were increasingly sponsored by foreign donors. In chapter 2 we have seen that there were various reasons for increased interventions: famines, a basic needs ideology, meat shortages in urban centres, the policy to direct migration flows away from Nairobi and large farm areas, the need to expand the internal market, troubled borders and the background of the ruling elite. Looking at West Pokot some reasons are more important than others. Famines - especially in 1979-81 - were the most important points of entry for missions. The destitute situation of former pastoralists asked for a range of development interventions to prevent annihilation. This is a point that strongly appealed to a number of missions and foreign donor-governments. The border situation (not only the Kenya-Uganda border but the Pokot-Trans Nzoia border as well) provoked strong military activity. The importance of Kalenjin among the new ruling elite brought some extra attention for West Pokot (including an urge of cultural modernization). National meat shortages did not play a role yet in practice - livestock commercialization never went beyond Plans. Colonization was also not important for the semi-arid lowlands; but it was important for the southern Pokot highlands. The need to expand the internal market may have played a role behind some measures (e.g. the 'westernization' of clothes), but was not a dominant reason behind increased interference. In Chapter 2, table 2.12 proved that semi-arid districts as a whole received a more than proportionate part of the development budget recently. The same table showed that West Pokot was still a bit behind (1.0 % of the development allocation for 1.1 % of the Kenyan population). Compared with all prior years, however, the absolute and relative attention for West Pokot, including the western lowlands, is unprecedented.

The increased development interventions in western Pokot are implemented by a broad variety of institutions. It is very clear that 'the state' cannot be analysed as a monolith, with unidirectional motives and actions. In practice, state institutions are often digging in each other's gardens, with a different ideology and different tools, or worse, they regard each other as opponents, as enemies even. The multitude of non-governmental institutions should also be carefully differentiated. Among them there is competition. Backgrounds may be very different, resulting in very diverse attitudes. It may sound exaggerated, but the cultural cleavage between Italian Roman Catholic and Norwegian Lutheran missionaries may be as large as between them and Pokot. For the Pokot the various brands of proselytism show a bewildering diversity. One should also take into consideration that most of the missionaries come from cultural minority positions in their own western societies, making it even more naive to regard missionaries as frontier pushers of a uniform process of 'westernization' (Beidelman, 1981, has interesting things to say about the 'anthropology' of missionaries).

Other expatriates do play roles too: foreign donor funding of many state interventions in western Pokot means the introduction of a further variety of approaches, partly embedded in the ever-changing paradigms of the international development congregation, partly in particular donor cultures.



Recent interventions in Kenyan western Pokot show a variety of incorporation and development approaches. "We have to force those Pokot to become law-abiding, properly dressed Kenyans, if necessary by using violence" is an approach which recently had dramatic results. Repression is back again. "We have to force people to finance at least part of our development Plans" is another one; in practice this approach often means an extractive one. "We have to prevent the people to destroy their environment" begins to gain importance again (the 'conservationist' approach). "We have to provide a better material and organizational infrastructure as a necessary and hopefully sufficient condition for productive development and commercial integration" is an example of a 'technocratic' approach. If the local inhabitants and the local institutional structures are the target, we may call it a 'technocratic-reformist' approach - visible in many aspects of the 'District Focus for Rural Development' and in parts of the ASAL-Programme. Some interventions go further: "the area has to be developed despite the people" is an example of a 'technocratic-implantation' approach: new organizations are implanted (e.g. state farms), new people as well (colonists, non-local or even foreign workers). I do have the impression that this approach is in the heads of at least part of the River Basin Authorities (in Pokot the Kerio Valley Development Authority: the Turkwell Gorge Hydro-electricity scheme is an example). "We have to supply the same service-density as elsewhere in Kenya" is an approach which can be heard in health-care and educational circles - one may call it a 'normative equality' approach, if we are allowed to borrow from Tarrow (1977). Questions whether nationally streamlined education programmes and a drastic population increase are beneficial per se or may have negative 'side-effects' are often avoided. "The area has not many development prospects, but we have to keep the people there; we should supplement their low level of living - especially during crises - with external consumption assistance" is an example of a 'distributive welfare' approach. Structural or incidental subsidies are provided then, in the form of famine relief, food for work or casual employment opportunities. It is the approach of the 'welfare state', albeit on a low consumption level. "The area has good development prospects, only the people are so conservative; we have to teach and guide them" is an approach often to be heard in extension circles. If the teaching is a one-way street, we may call it a 'paternalistic approach', if there is more exchange of opinion it may be called a 'participatory' approach. "People should organize themselves and be self-reliant to reach a higher development and prosperity level" is the 'self-help' approach; if economically or politically weak segments of the local society are stimulated to organize themselves (against landowners, cattle barons, merchants, state institutions) it may be called a 'confrontation' approach. "This area is too bad. People should be stimulated or even forced to move to more promising areas" is the 'approach of defeat'. Less crude, one can hear: "people will leave this hardship area anyhow; we better prepare them to have better chances elsewhere, especially by offering education and vocational training". We found all these ideas and approaches among civil servants dealing with the western Pokot lowlands. The 'ideology of interventionism' is most confusing.

It is useful to confront our findings about external interventions or 'penetration' with conclusions drawn by the organizers of a Dutch-Belgian Conference on 'the state and local community' in Africa (Van Binsbergen, Reyntjens & Hesselning, 1986), a conference hosting Africanists with varying disciplinary backgrounds in anthropology, political science, law and public administration. Our findings closely correspond to their conclusions. From a range of studies they conclude that 'state penetration' has been far from mechanical or straightforward; that one needs a long-term historical perspective in which the multifarious elements of external penetration are studied together; and that formal bureaucratic structures and policies reach the local communities in a mediated form, "often at variance with original policy intentions, and transformed beyond recognition" (Ibid, p.375). They are critical at the one-sided pessimist, dismissive view of state penetration, the "profound scepticism bordering on cynicism" (Ibid, p 380), in which all state activity is only interpreted as part of a - malfunctioning - power machinery, to serve the interests of a bureaucratic elite and middle class (or, we may add, 'international capitalism') against the interests of 'the people', who turn their back to the state in response. Also our study shows a multitude of interventions, originating from different and contradictory approaches and from a variety of intervening agents. Confronted with the medley of on-the-ground output, the inhabitants can and often will choose something that suits their requirements. The recent increase in interventions means an increase in opportunities.

The opportunities are not ready at hand in all places, however. Within the research area there are large differences in types and strength of interventions. People are living in concrete environments, and although the western Pokot are conspicuously mobile, their 'space-time options' are constrained. Within western Pokot it is possible to find areas where indeed interventions stumble over each other, and where they may play an overriding role in the survival strategies during the recent crises. On the other hand, some areas seem to be left alone. In chapter 6 we will look at three local communities, to find out how external interventions influenced crises and survival strategies there.

As a link between Chapters 4 and 6, it is useful to end this chapter with a very general, and time- and place-independent summary of probable negative and positive influences of the various types of external interventions on the various types of survival strategies, as they have been categorized at the end of Chapter 4. Table 5.11 gives our impressions.

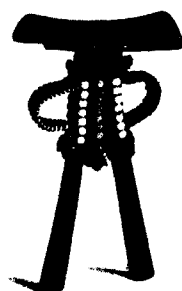


Table 5.11 Interventions and Survival Strategies; a Summary

Type of Intervention	Physical survival					Survival Strategies			
	health	food				Capital surv.	Pastoral surv.		
		1	2	3	4	5	6	7	8
Demarcation				+		c			
Control of Settlement									
Control of Movement	-			-		-	-	-	
Civil Administration				+	+				
Security, Law and Order	c	-				c	-		
Taxation		-			-		-		
Labour Recruitment				+	+	+	+	-	
Land Ownership/Access			-		-			c	
Livestock									
Commercialization		-			+		c	+	
Control of Trade		-			c		-	-	
Roads & Communications				+	+		+		
Political Mobilization									
Missions: Religious					+				
Health Care	+					+		+	
Famine Relief	+			+					
Education				+	+	-	-	-	
Water	+					+		+	
Livestock									
Health & Quality		c				+	+	+	
Land Quality			+			+		+	
Crops			+						

Where:

- 1 = livestock food
- 2 = arable food
- 3 = demographic responses (food by migration)
- 4 = additional food
- 5 = money to buy food
- 6 = rebuilding the herd
- 7 = pastoral intensification
- 8 = pastoral commercialization
- + = positive influence
- = negative influence
- c = ambivalent or contradictory influence

Notes

(1)  
Strangely enough, the area west of the river was made part of the 'Rudolf Province', the area east of it remained part of 'Naivasha Province' (1901-1921), later Kerio Province (1921-1929). Only in 1929 were both areas united under one, Turkana, province (1929-1941). They were subsequently joined with other districts to form Rift Valley Province in 1941 (Survey of Kenya: National Atlas of Kenya 1970, back).

## 6 THREE CASE STUDIES OF SURVIVAL STRATEGIES AND THE IMPACT OF EXTERNAL INTERVENTIONS ON THE HOUSEHOLD LEVEL

### 6.1 Introduction

In Chapter 5 the research area has been divided in four sub-regions: Upe, Karapokot North, Karapokot South and the area East of Suam. Upe has always been administered by Uganda. Karapokot belonged to Kenya, but was administered by Uganda from 1932 to 1970. The area East of Suam has always been part of Kenya. Within Karapokot the southern part is near the humid highlands and near the district headquarters of West Pokot. The northern part has always been far more isolated. We did not have the opportunity to study a particular area in Upe in depth. In each of the other three sub-regions we studied those sub-locations where the external interventions have been most extensive, relatively. Within Karapokot North this is Alale sub-location, within Karapokot South, Kodich sub-location and within the area East of Suam, Kongelai sub-location. (The boundaries are according to the 1983-situation, as given in DAWP 1985, p.47; see Figure 6.1). The three case study areas measure between 147 and 208 square kilometres. All three are completely semi-arid and they all have a current population between 4,000 and 6,000 inhabitants. We will present the three case studies from the most remote area to the area nearest to the economic and political centre. The analysis will be focussed on the period after 1978, in which all three areas were confronted with severe crises, probably the severest crises of the century. The study of the three territorial units will use data gathered within these units, at the household level. Two methodological problems are clear from the outset: the case study areas do not really have a stationary population (which diminishes the value of 'local social analysis') and 'household' is a very difficult concept to operationalize in this type of area. The first problem means that we have to be aware of the fluidity of settlement and land use and of the fact that people's living space is a larger area. The second problem needs some further introduction.

In this chapter, we will deal with the household level. Before starting our fieldwork, we realized that 'households' are a complex social entity (Dietz & Van Haastrecht 1982, p.26-28). Now we know that a 'closed', operational definition is impossible, because households in western Pokot are no closed, well defined socio-economic entities; neither as units for the day to day management of life (e.g. sharing food), nor as labour units, units of income sharing or units of property. Fluidity and flexibility are key concepts to understand Pokot society; continuous processes of fission and fusion are general. Mutual assistance (sharing food, sharing shelter, sharing income, sharing labour duties, sharing wealth even), although more or less socially defined, widely exceeds the bounds of micro units. Hence, network planning is a major tool in survival economics.

The Kenyan census (e.g. GoK 1979, p.16) defines a household as "a group of persons who normally live and eat together, whether or not they are related by blood or marriage". The census format asks the enumerator to include all persons, who stayed "here" on census night. For western

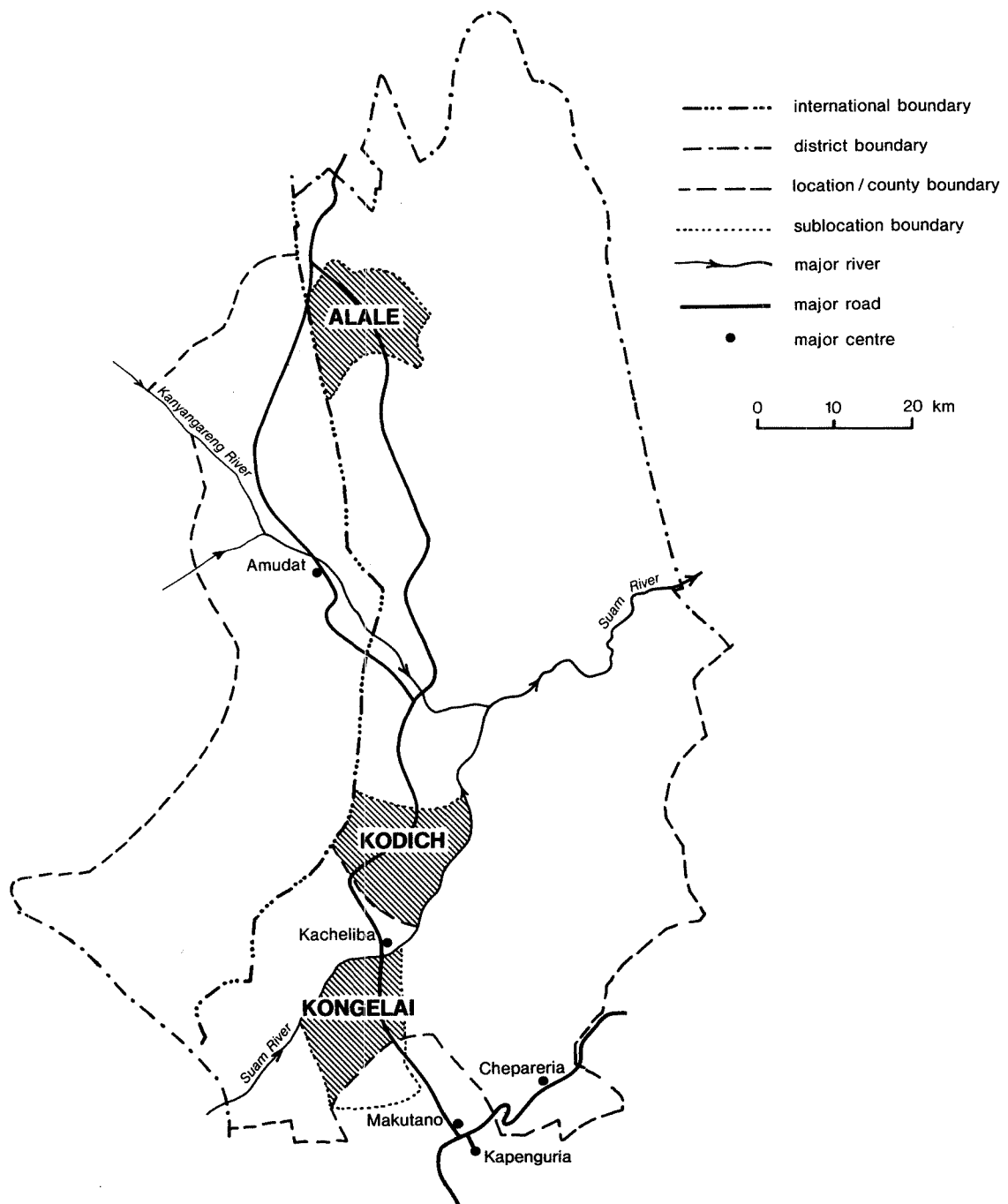


Figure 6.1 Case-study Areas in Western Pokot

Pokot, and for fluid (agro-)pastoral societies in general, both approaches are most inconvenient. Man and wife (wives) are almost never eating 'together'; part of the unit is often temporarily away: herding animals, staying in age-mate camps, doing (casual) jobs elsewhere, or visiting others. In more recent times, temporary absence of household members for part of the year is also related to gold digging and education. The results of the demographic census show a large diversity of household sizes (e.g. Alale 11.3; Kodich 6.8 and Kongelai 4.9; in August 1979), which probably is more an expression of definitional confusion and arbitrary decisions by enumerators, than of real differences in relevant socio-economic micro units.

To be able to do surveys on the household level, we need an operational approach, that fits into the practices of the western Pokot. How do they 'define' a household themselves? Interestingly, a married man will tend to use a much broader definition than his wife (or wives). He will define 'his' household as himself, his wife or wives, all their non-married children (wherever they may be) and all 'adopted visitors', who share their shelter - and mostly also their food - for a considerable period of time. A married woman will define her household as herself, and her children which are at home, and those 'visitors' who depend on her food store (each married woman has her own store, which is regarded as her property). If her husband has more than one wife, she will not automatically include him. 'Visitor' can be anybody, a mother or father, a brother or sister, a stepbrother or stepsister (and these may be younger than her own children or older than her own mother), family-in-law, more distant relatives or acquaintances related via an extended network of social relations, which includes age-mates, (former) neighbourhood friends, stock associates and - a more recent addition -

Table 6.1 Types of Households Participating in the Suam River Agricultural Project, 1984

Type of household	Number of members	Total
man, one wife, no children	3	6
man, one wife, children	185	980 (incl. 18 'visitors')
man, two wives, children	79	722 (incl. 2 'visitors')
man, three wives, children	36	478 (incl. 1 'visitor')
man, four wives, children	10	206
'deviant' cases:		
widow with children	24	123
one woman with children	16	82
two women with children	6	44
man alone	10	10
man alone with children (widower)	34	194
man and 'visitors'	14	45
Total	417	2,890

Source: SRAP file; the number of 'visitors' is so small, because most of them applied as a separate unit.

school mates and members of a church communion. If we follow the Pokot man's definition, those wives and children are included, which do not live in the same compound, manyatta or neighbourhood, and who do not share food, income and labour regularly. For our purposes, it seems wise to define a household in between the man's and the woman's definition, as: a married man, his wife or wives - if they live close to each other, all their non-married children, wherever they may be, and their adopted, long term 'visitors'. In addition, specific micro units exist as a result of death (a widow or a widower) or after divorce. Sometimes two women and their children form one unit; sometimes a man forms a unit with 'visitors'; in a few cases a man is a unit by himself (e.g. a teacher or a civil servant alone).

Our most complete inventory of households, showing the complex diversity of household types, is the list of households participating in the Suam River Agricultural Project at Kodich, listed during March-July 1984. Table 6.1 shows this complexity.

## 6.2 Alale

### 6.2.1 The Case Study Area

Alale sublocation currently covers 147 km<sup>2</sup>. The area has a Zone IV-climate. In the west there are undulating plains; in the east the foothills and escarpment of the Chemorongit Hills can be found. East of the study area three mountain tops dominate the landscape: Kalapata, Kachagalau and Lorosuk. In the rainy season many small streams come from the mountains. In the dry season water has to be fetched by digging in dry riverbeds, especially of Alale River.

In a standard year, livestock use would allow a population of 1,800 people; in a dry year this goes down to 1,000 people or less. The escarpment area should not be grazed because of the erosion hazard; in practice it is used as a refuge area. Herders have cattle, goats, sheep, donkeys and some camels (which are occasionally acquired from the nearby Turkana). Herders use a much larger area than Alale alone. If there are no enemy raids, they may go far into Upe and to the north, into Turkana. In the rainy season, the herds stay near the manyattas in the plains. Most of the area has rather favourable conditions for arable farming. With simple husbandry and sorghum, about 5,000 people could be fed. Higher yielding, but more drought-prone maize, would increase the population supporting capacity to 7,500. Improved farm husbandry may easily give food for more than 10,000 people. In a moderately dry year, though, arable farming can only support less than 3,000 people (see appendix 6.1.a). Currently most people live in the eastern part. Figure 6.2 gives some details about the area, the population distribution in 1979, the centres and roads and the development of the services.

### 6.2.2 Before 1979

Around 1900, the people living in Alale were a refugee mixture of Oropom, Karimojong and Pokot origin. Disasters had forced them to grow sorghum near the mountains and to hide their remaining stock there,

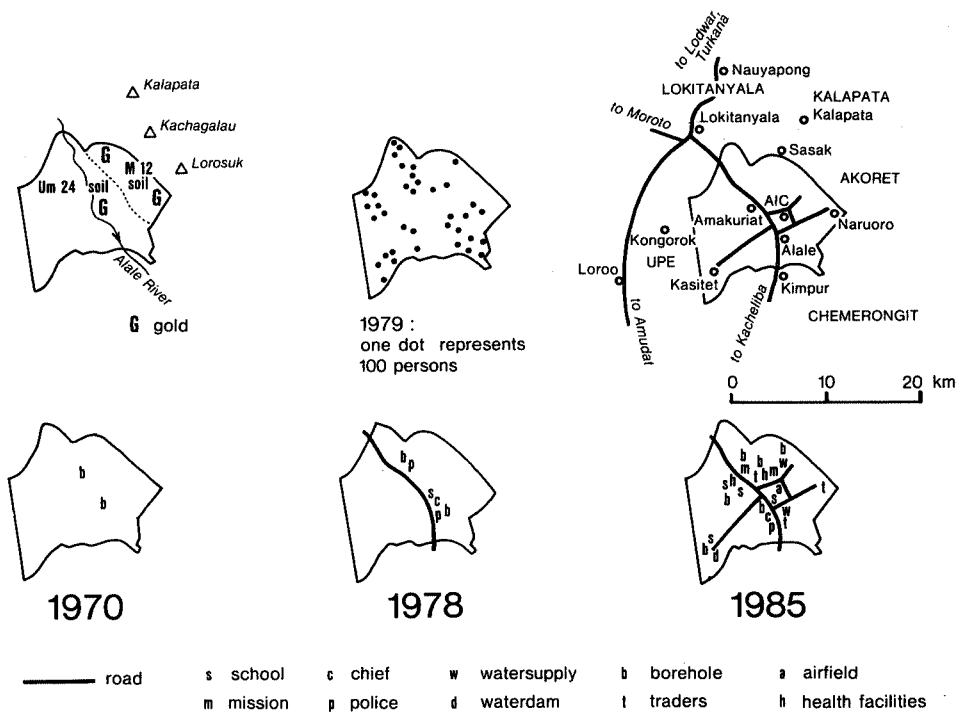


Figure 6.2 Alale

against Karimojong and Turkana threats. During the first part of this century, the people in Alale gradually occupied the western plains and their herds increased. By 1925, the economy had changed from an arable base to mobile herding to a large degree. Probably most settlements were west of the study area, around Loroo. Increasing insecurity after the 1940s probably brought more people to Alale. The first population estimates (1959, 1969) show between 1,300 and 1,800 people in the case study area. The population density must have been around 10 inh/km<sup>2</sup>, although the 'economic region' was larger than Alale alone. Livestock still was the mainstay of the economy: when a few refugee families from southern West Pokot - fleeing imprisonment because of Dini-ya-Msambwa, during the 1950s - settled in Alale, local people claim that these were the only farmers those days. This does not necessarily mean that the local people did not grow any food, but it was probably a form of 'zero husbandry' of sorghum cultivation, of minor importance. External influences must have been minimal. A headman in Loroo had to organize taxation, but his success is most doubtful. A primary school at Loroo (since 1954), had a few pupils from Alale, part of whom got further education at Amudat and Moroto, later. A dispensary at Loroo offered some services, but the supervision centres were far away: Amudat at 35 km; Moroto at 65 km. Some mobile health services were provided in Alale



itself, though, by the Amudat doctor. In the early 1960s, there was a small forestry camp at a place called Odong, and some forest tracks were made. For a few years Odong was a little centre, with 'dukas' (shops) and a minor school. The only important development intervention had been the drilling of three boreholes (1952, UNICEF funds). An attempt to start a cattle market at Loroo (1960-63) was shortlived, because of lack of supply after 1963. During the 1965-66 drought Loroo was also the place where famine relief could be acquired (Food for Work, via the headman).

When Kenya took over, in 1970, in Alale itself there were no roads other than the forest tracks, no shops, no schools, no health facilities, and two boreholes with a poor yield. In 1972, a Chief was installed in Alale but communications with the District Officer at Kacheliba (110 km) were and are very difficult. In 1977, a new road was ready: a shortcut from Kunyao via Alale-centre to Lokitanyala. In 1977, the first primary school started in Alale-centre (like the one in Loroo, with Roman Catholic sponsorship). Also a police base was established.

### 6.2.3 1979-1985: a Chronology of Disasters and Interventions

1979. During the 1978-79 dry season, grazing was very poor. In Upe, severe Karimojong raids forced hundreds of families to move to the east, partly to Alale. The sorghum harvest failed and in June-August most of the goats died because of an epidemic, that had killed the goats in Upe in May-June. The District Officer urged the Chief to form a 'village-famine committee' and some famine relief was given. Children were stimulated to go to school and to get food there. The number of pupils increased from forty-three boys and five girls in 1978 to 154 boys and 11 girls in 1979, in two schools: the Alale school and a new boarding school at Amakuriat (also R.C.). The August-1979 census counted 3,900 people in the case study area, but with a strong female dominance (M/F 15-49 = 0.77): many men were guarding in Upe. Grazing further deteriorated and to avoid a cattle epidemic, cattle were inoculated in November, and again in March 1980, but only a minority of the animals could be reached.

1980. Food was finished, and many people went to Amudat because a major famine operation started there. Again the rains failed and a terrible rinderpest began to claim hundreds of cattle. Cholera reached the area and now the Finnish Red Cross moved in with an anti-cholera campaign and with famine food. They settled at Amakuriat. Also the Roman Catholic Mission and the District Officer (via the Chief) issued food, partly in exchange for work (school buildings, a waterdam and a road to Kasitet). A new school started at Kasitet and total attendance rose to 244 boys and 60 girls (most of them boarding at Amakuriat). In June a large Karimojong force attacked the Pokot at Kongorok, just west of Alale. Pokot claim that 127 of them were killed and 11,000 head of cattle raided. More than 1,000 people left their manyattas and fled to the famine relief centres at Alale and Amakuriat. In July, two raids attacked the area of Kasitet, killing twenty Pokot and stealing a few thousand head of cattle. In October, Amakuriat was attacked and groups of Karimojong and Turkana even went into the mountains, raiding Sasak

and Kalapata. The Kenya Government distributed old guns to 'homeguards'. Pokot men tried to acquire more heavy weapons too. As most animals had been raided, Alale was bypassed later, with the exception of a raid in April 1981 near Alale-centre.

1981. In April, the Red Cross fed 5,000 people in Amakuriat, Alale and Nauyapong. Another famine relief centre existed at Loroo. The boarding school at Amakuriat strongly increased its attendance: to 76 boys and 158 girls. Total attendance rose to 282 boys and 210 girls, probably close to 40 % of all eligible children. The Red Cross had distributed seeds and encouraged people to enlarge sorghum cultivation and to start (hybrid) maize cultivation. This time the harvest was very good. In October, the Red Cross left the area. Miraa had become a major income earner (with a Pokot and a Somali trader as intermediaries to the Lodwar market) and in June gold was discovered at Naruoro, by Alale people who had tried their luck in Korpu first. From October onwards a real gold fever developed. Many people settled on the mountain side. A spontaneous market at Naruoro and seven shops suddenly emerging in Amakuriat and Alale-centre were all signs of strongly increased commercial, monetarized activities.

1982. Gold panning attracted many people. The school attendance of girls dropped considerably (to 61); the number of boys stagnated (270) and absenteeism was large. Encouraged by the good yields of 1981, most households (women and girls) cultivated maize and sorghum now, but the harvest was disappointing: people had clearly spent more time looking for gold than taking care of their crops. Cash opportunities further increased by the arrival of a US missionary - related to the Africa Inland Church - who needed casuals for a lot of activities: a piped water system was constructed (Canadian funds, 1 m.KShs), an airfield was cleared, buildings were erected and dispensary activities began. The missionary also assisted with agricultural and forestry work. The government recruited eighteen forestry workers for its rediscovered 'forest reserve' (which had been declared in the 1950s). NORAD funds were used (by ACCK&RCM missions) to rehabilitate existing boreholes and drill new ones. The only serious blow in the year was a major attack by Karimojong ngorokos in Amakuriat, where five policemen and eleven Pokot were killed. During the same month, June, Pokot boys attacked the AIC mission, an action which was heavily condemned by local elders. At the end of 1982 a peace treaty with Karimojong made an end to a war in which Alale-Pokot had lost most of their animals.

1983. Another year of good rainfall, ample gold money and restored peace made people start to rebuild their herds and flock. Commercial activities further increased: there were fourteen shops now. Cultivators moved further uphill. More and more people burned the forests and cleared plots at Kalapata (northeast of the case study area), where very good yields were produced.

1984. A military operation reached the area in April-May. Cattle were confiscated and people were forced to surrender their guns. Farming activities were seriously hampered. Combined with a severe drought - at the AIC mission station only 174 mm of rainfall was measured in April-

August compared to 403 mm in 1983 and 556 mm in 1982 - it resulted in a complete crop failure. Because of money, commercial food provision and some relief food, famine could be avoided. When the Operation started, all the schools were closed, and hence no school food could be acquired. Only two schools reopened (out of five in 1983) in August. With the beginning of the new school year, in January 1985, the enrollment had dropped down to 205 boys and 43 girls. The new Roman Catholic Mission started a major famine relief campaign, focussing on the schools, in January 1985. They also offered job opportunities. A large Roman Catholic mission station was built at Amakuriat, including a dispensary (investments 1.5 m.KShs). The AIC mission started a daycare centre and craft training, but they began to fear that they would be overshadowed by the Italian Fathers and Sisters.

#### 6.2.4 Income and the Level of Market Integration in 1982

Among our case study areas, Alale was and is clearly the most remote place, where before 1982 no outsiders did any type of research. The recent history of the people, and the type of economy, present considerable research difficulties. We decided to combine two types of research methods. In December 1982 local teachers and one of our research assistants were asked to do fifty interviews (of which thirty-six were done in the area which we later chose as the Alale case study area). In 1985 part of these households were reinterviewed. In January 1983 a so-called 'sondeo' was organized, combining researchers with civil servants and local informants in a one week fieldwork camp (see Ch.1). The sondeo results gave us more background to the interview results. The 'normal' research difficulties in Pokot area (no sample framework; very confusing polygamous household situations; doubtful information about hectarage and yields; livestock numbers which are regarded as a secret, to mention a few) are combined with extra difficulties because of the large number of 'visitors' (refugees) and the fact that 'research' was completely unknown. Also the gold fever in the area made it not easier. However, the fact that the money economy was introduced so recently, so suddenly and with such impact had the effect that most informants could well remember the amounts of money earned and spent in the year before the interview took place; and that information was not at all regarded as a secret. In interpreting the results we have tried to be as careful as possible. E.g. out of the thirty-six relevant interviews, nine are regarded as too confusing and left out. The sondeo check gives us the feeling that the interview information presented here is relatively reliable. The production and income situation for twenty-seven households was combined, and divided by the number of household members to give the total estimated income per capita per household. This information was used to make three groups of households, from relatively poor via middle income to relatively rich. Table 6.2 gives the results.

In Kenya there have been quite a number of 'poverty line' discussions (see Ghai e.a. 1979; Collier & Lal 1980; Lavrijsen 1984). In Collier & Lal (1980, p.2-3) the per capita poverty line was set at 286 KShs per annum in 1974 (rural areas). With a 15 % inflation rate per annum this

Table 6.2 Alale Household Survey

	Low Inc./ capita n=9 -----	Middle Inc./ capita n=9 all income in KShs	High Inc./ capita n=9 -----	Total n=27 -----
household members	75; av.8.3 (1-18)	86; av.9.6 (5-18)	31; av.3.4 (2-12)	192; av.7.1
av.income/cap.	269	897	3041 *	1000
range	0-450 **	478-1425	1670-5640 *	0-5640 *
hh.income	20,155	77,145	94,280 *	192,000
range	0-6420	3520-23,690	3920-20,000 *	
value of food production	8: 10,095 = 50%	9: 22,245 = 29%	8: 16,955 = 18%	25: 49,295 = 26%
gold income	5: 5,800 = 29%	9: 28,400 = 37%	7: 74,000 = 79%	21: 108,200 = 56%
agric.cash income @	1: 60 = 0%	3: 5,500 = 7%	3: 4,000 = 4%	7: 9,560 = 5%
job income	2: 4,100 = 20%	2: 19,200 = 25%	0	4: 23,300 = 12%
trade income	1: 100 = 0% @@	1: 1,800 = 2% @@@	2: ? *	4: large
% cash income		50%	71%	>82% >74%
% external inc.		49%	62%	<79% <68%

\* Two households had a shop with a large turnover but an unknown income; the percentages in the two last columns are without this shop income.

\*\* One household of a disabled man completely relied on food gifts by others. The man had no hut of his own.

\*\*\* Food production in kg was estimated from information in 'debes' (16-20 kg), in 'bags' (90 kg for maize, 80 kg for sorghum) and 'granaries' (big one: 300 kg, small one: 150 kg, if full). Each woman is supposed to have at least one granary. The value of sorghum was set at 3 KShs/kg; of maize at 1.5 KShs/kg; for the five households with cows the milk production was estimated to be 150 KShs/cow; two households were receiving famine relief in 1982, which was not valued.

@ This includes income from selling home made beer. Three households gave information about money earned with brewing beer or other local brews; two others said they did, but refused to give details. Probably income from brewing is higher; miraa and hides and skins will have added some money to some households; probably hardly any money was earned in 1982 by selling animals.

@@ This was income earned by making wooden utensils and arrows.

@@@ Earned by renting a house.

would mean approx. 874 KShs in 1982. Compared with the other case study areas, households in Alale are surprisingly rich, with an estimated value per capita of about 1,000 KShs in 1982. The income from gold, with 56 % of all proceeds, is responsible for that high level. Almost 80 % of all interviewed households participated in gold panning; there were even four gold dealers among them. The value of crop production was considerably less, despite the fact that 1982 was a year with a relatively good yield. In value terms Alale was no longer an

agricultural economy in 1982, with only 26 % of all proceeds produced by agriculture. However, twenty-five out of the twenty-seven households still cultivated crops and five households still had animals. If we look at food consumption we can conclude the same. If we regard small children as half a consumption unit, the group of twenty-seven households had 170 'consumption units'. Total food production was about 21,000 kg of grain and minor additions of livestock food. This is far below the food consumption requirements. Only eight households produced more than they possibly needed. Sixteen households spent at least 38,000 KShs on maize meal (from Kitale) and 5,000 KShs on maize grains (from nearby Kalapata). This probably gave an additional 15,000 kg of food. Together with livestock and wild food this comes close to minimum food requirements (although medical informants speak about malnutrition and very high child death rates).

We roughly asked about other expenses too. Together, the twenty-seven households stated an expenditure of 140,000 KShs in 1982; 31 % of it spent on grains/maizemeal; 26 % on things like 'Kimbo' (fat), 'Omo' (washing powder), 'Coca Cola' and bottled beer; and 16 % on clothing (this last item by twenty-five households, a very remarkable finding in an area where in 1980 hardly any clothes had ever been bought). Changes from round mud and grass huts to rectangular iron-roofed houses could be seen in a few households and in some households there was also purchased furniture or even a radio. The very rapid changes in consumption can also be illustrated on a more general level by looking at the expansion of the shops (from zero in 1980 to eight in 1982) and the growth of the market at the Naruoro gold place with its 'posho', 'Treetop', 'sodas' and a variety of cooked food. Non-material changes are remarkable too: in the interviewed households there were thirty-seven children between five and fifteen years old and twenty of them went to school. Most of these children went to the boarding school in Amakuriat, but their costs were mostly covered by the mission (total educational expenses by the interviewed households were only 1,250 KShs in 1982).

Until now we have dealt with the production and consumption sides of market integration; about two other aspects of market integration we can be short. Few local people were away as labour migrants; among the interviewed households nobody said to have received remittances from relatives with jobs elsewhere, in 1982. Local jobs however are becoming important. In 1982 there were nine teachers in Alale, eighteen forest workers, a few other government officials and some casuals employed by the AIC missionary. Among the twenty-seven households, ten spent a total amount of 4,000 KShs on employing casual labourers; one teacher even employed a permanent land labourer.

Agricultural investments were minimal in 1982: five households had bought their seeds; the others either used left-over seeds or had received seeds from the Red Cross in 1981. Only one household used oxen for ploughing. Nobody used commercial (or other) fertilizers or chemicals. In 1982 buying goats or even cattle was restricted to only a few households (animals were very expensive and difficult to get and the security situation was regarded as too threatening to rebuild the herd and flock again).

### 6.2.5 The Household Survival Strategies

1982 was a relatively good year, but the people of Alale had just experienced the worst disasters in living memory. In June 1981 almost nobody had cattle anymore and the people expanded crop cultivation, assisted by Red Cross famine relief and seeds; after the very good harvest in August-September 1981, many people started to pan gold in October 1981. With the start of the rains in April 1982, gold panning was given a higher priority than crop cultivation by many households and, although both 1982 and 1983 were years with enough rainfall, the harvests were not adequate. The very dry year 1984 brought a severe harvest failure as well as the loss of animals to a military action in April 1984.

Out of twenty-seven households which were studied in 1982, ten were revisited in 1985 to reconstruct their response to the new crisis. Two of these households had low incomes per capita in 1982 (according to the classification used in table 6.2), two had high incomes per capita and the other six had incomes/capita between 478 and 1,425 KShs. It is worthwhile to look at these ten individual households histories. The households are presented from relatively poor to relatively rich (in 1982). See Figure 6.3 (1-10).

1.

The head (46) lived in Upe most of the time before 1981. Together with his two wives they were looking after nine children and forty-five cattle. But most of the cattle were raided in 1980 at Loroo and others died. In 1980 they depended on famine relief. The head went to Kacheliba and Kapenguria to beg for assistance from relatives, but in vain. After returning, he and his wives and children settled in Amakuriat in 1981. There they produced enough sorghum and they also got 2100 KShs from gold. In 1983 gold (4000 KShs) and brewing beer (1500 KShs) had become more important than crop production and they started to rebuild the herd. During the Operation in 1984, the head was killed at Loroo by Kenyan soldiers. The wives joined with others to form a household unit of thirteen people which faced very hard times in 1984 with no harvest and only minor income from gold and beer (1000 KShs). A brother of the deceased head, with a job in Kapenguria, refuses to assist them.

2.

The head (60 in 1982) stayed at Naruoro, panning gold when he was interviewed. His two wives and five children were at Kauriong, where they cultivated millet and maize. In 1979 their fifty goats had died and when in 1980 their harvest failed, they sold three oxen to buy food. Later the head went to Korpu to pan gold (1000 KShs in 1981). During that year most of his cattle died, but he could successfully claim cattle from tilia partners, resulting in a small herd in 1984. In 1982 and 1983, the harvests were abundant and the gold money from Naruoro (1300 KShs in 1982-83) was mostly saved. That money was used to buy food when the 1984 harvest failed completely. Additional food was received as famine relief. In 1984, gold panning was unsuccessful and the household had a very low income.

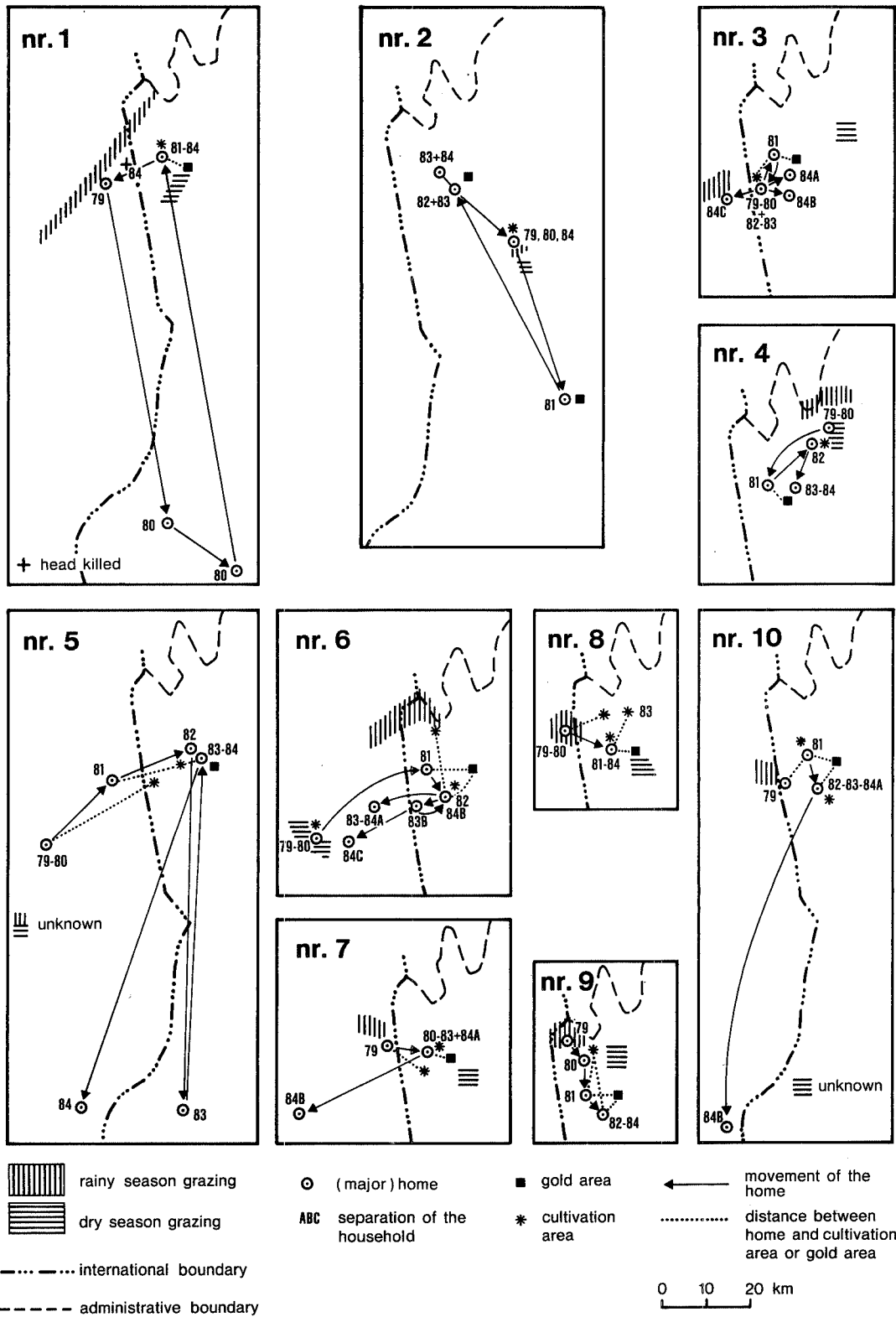


Figure 6.3 Movements of Ten Alale Households, 1979-1984

3.

This household lived at Kasitet in the dry southwestern part of Alale. In 1982, two wives (43, 36) cultivated sorghum there, each on a one acre plot. Together they had ten children, one of whom was married and lived at Kacheliba. Before 1980, the head (50) and his sons herded about fifty cattle, mostly in Upe. In 1979, 150 goats had been killed by the goat's disease and in 1981 most of the cattle had been raided. The family got famine relief at Amakuriat and also they started to collect miraa and to brew beer for sale. In 1981 and 1982 sorghum cultivation (at Kasitet) gave a good harvest which was shared with relatives from Upe. In October 1981 gold panning gave 600 KShs, another 1500 KShs in 1982 and 2000 KShs in 1983. As a result of gold panning, the family did not give much energy to farming and the 1983 harvest was meagre. In 1984 a son became a successful gold dealer (which resulted in a turnover of at least 10,000 KShs). Most of the gold money was invested in goats of which there were seventy-five, before a new goat's disease killed twenty-four in 1984. When in 1984 the harvest failed completely, the family broke up, the head and his first wife joined with the wife of a late brother-in-law at Kimpur, the other wife went back to her family in Alale. The head was at Loroo during the military Operation where he was forced to surrender his spears. When food problems became severe in 1984, some assistance was received from the AIC mission of which the head became a member.

4.

This young household (m:30, w:20, two small children in 1982) had eighteen cattle, which were all raided in 1980, when they were living in an area north of Alale. During 1980 a refugee family from Upe joined them, but all had to rely on famine relief and on collecting miraa in 1981, at Amakuriat. At the end of 1981 they also had their share in gold (3000 KShs). In 1982 they decided to settle in the high area of Kalapata where they had a large harvest of maize (more than 1500 kg from less than one ha). Many relatives (from as far as Kacheliba) came to beg for food and on top of that all the gold money earned in 1982 (4000 KShs) was spent to buy food for these needy relatives. In 1983 the family decided to give up farming and to settle near the gold place, where they panned gold and brew beer (1983: 5000 KShs, 1984: 8000 KShs). With the money, the head married a second wife and also invested in goats.

5.

In 1982 this household consisted of a man (36), his two wives (28, 18), his mother (60) and one child. They used to live in Upe, but had always cultivated a small sorghum field at Kasitet. In 1980 most of their 100 cattle were taken by ngorokos in Upe and another fifteen died. Their 1980 harvest failed and in 1981 they settled around the famine relief centre at Loroo. In 1982 gold panning at Naruoro was successful (1000 KShs) and also a few cows were returned by tilia-partners as the start of a new herd. The gold money was mostly used to stock a shop in Kacheliba (where Pokot had looted non-Pokot shops, August 1st, 1982, which were taken over by Pokot afterwards). With the shop-money earned, the head started to be a gold trader at Naruoro in 1983 (1983 turnover 10,000 KShs; 1984: 30,000 KShs). Additional money was earned by brewing beer and by starting a local 'hotel' at Alale. A lot of money was



invested in building up a new herd (20 cattle and 40 goats already in 1985). The household also strengthened its position by fusion with a brother in law with his four wives, together forming a unit of nine adults and eleven children. During the 'Operation', goods were looted by soldiers. At the end of 1984 the head moved to a new gold place in Southern Upe (Chepkarerat) to expand his business there.

6.

The head (40 in 1982) was very rich before the disasters, but all his 200 cattle were raided in Upe. There his household normally also cultivated plots of sorghum and millet. In 1981 they came to Amakuriat for famine relief and they started gold panning (3000 KShs). In 1982 the head and his two wives (40, 18) and seven children went to Alale, where they cultivated a plot, but they also started a plot at Nasal. Both plots however did not give good yields due to competing gold labour, which brought 7,000 KShs in 1982. In 1983 the family split up, one wife going to Loroo, the other one to Kasitet. Both cultivated sorghum. In 1983 the family was somehow involved in a raid in Marakwet area, where not a Marakwet but a Pochon was killed. A very severe fine was imposed by Pokot elders, which was almost impossible to bear. In 1984 the head went to Uganda with a few remaining animals; the two wives started separated households at Alale and Loroo, where they became dependent on famine relief and on food bought with some gold money (800 KShs in 1983-84).

7.

The head (62 in 1982) claimed to be from one of the families which were evicted from Trans Nzoia by the British during the early twenties. His family moved to Upe. He married three wives (46, 25, unknown) and these had eight children in 1982. The household had also adopted two children of relatives. Already during the 1960s, the head decided to educate his boys. One son even went to Moroto and Meru and later became a teacher in Alale. Although he has his own family, he sometimes supports his parental home. In 1979 all 150 goats died and in 1980 most of the sixty cattle were raided. The six cows which remained, together with five bridewealth cows, were the basis for a new herd of twenty cattle in 1984. In 1979 they had sorghum plots in an area northwest of Alale, but when the harvest failed in 1980, the head decided to go to Amakuriat where the wives started to cultivate bigger plots of sorghum and maize. But these harvests failed too and they had to rely on famine relief. At the end of 1981 gold brought 600 KShs; in 1982, 2000 KShs, in 1983, 3000 KShs and in 1984, 2000 KShs. Brewing beer was a second source of money (1982: 2400 KShs). Also a semi-permanent house was built which was rented afterwards for 150 KShs a month. In 1982 and 1983 the harvest was not bad but in 1984 it failed. In 1984 the family split up and one part of the family went to Upe, which was regarded as safe again, to herd the cattle there during the Operation.

8.

The head (32) lived in Upe most of the period before 1981, adopted by a friend since his father had been killed by Karimojong. The head owned eighty cattle but most died and others were raided in 1980. Until 1980 they used to have a harvest at Nasal but this failed in 1980. In 1980-81

they had to rely on famine relief and in 1981, the head, his three wives his mother and three children settled at Amakuriat where they had a good harvest and also got 200 KShs from panning gold. The head was lucky to be employed as an employee of the Forest Department, which brought him 600 KShs a month, although to get it he or his fellow employees had to go and beg for it in far away Kapenguria. Despite this nuisance, the forestry 'work' did not interfere much with his other activities. In 1983 the family started to cultivate at two places, in Amakuriat and Sasak, where they produced a lot of food. Gold became very important (10,000 KShs in 1982, as a dealer) and his wives earned extra income by selling beer. In 1984 the harvest failed at Amakuriat and was small at Sasak. Now gold dealing and brewing beer (but no longer forestry work) gave enough money to buy food and cattle. Other cows were acquired as part of the bridewealth of the head's sister who got married. The family further increased to seven adults and eight children. During the Operation one cow was shot.

9.

The head (35) must have been one of the richest cattle owners in Karapokot. But his 600 cattle were almost all raided in 1980. He went to Nasal with his two wives but one of them died from cholera and also the harvest failed. The family was dependent on famine relief in 1981 until the head started to buy gold (1981: 5000 KShs). The gold business expanded and in 1982 the turnover was above 20,000 KShs. But a lot had to be spent on food because of a complete harvest destruction by animals. Also relatives demanded money (3000 KShs) and he had to spend money to marry a second wife. In Nasal his wives cultivated four acres and had a good harvest in 1983, while the head expanded the gold business further and also started a shop. Part of the income was invested in cattle (20 in 1985) and goats (100). At his Alale home many people settled: thirteen adults and eleven children were living there during the 1984 drought. Besides the gold and the shop business, now also beer brewing became a lucrative enterprise. The only setback was the Operation, when the police looted his market business at the gold place Naruoro.

10.

A mother and her two sons in their twenties cultivated sorghum at Amakuriat, but their home was at Kasitet as a basis for herding a large herd of 200 cattle. These were all raided in 1980. In 1981 they came to the famine relief camp at Amakuriat and they started gold panning later, which was very successful (5000 KShs). The money was partly given to needy relatives but also invested in extra maize to brew beer. In 1982 they settled at Kimpur, where they started to cultivate a large area of sorghum and maize. Gold soon was the most important activity (10,000 KShs as a buyer) and the cultivation activities got a lower priority (in 1982: 2000 kg; in 1983: 700 kg). Gold money was invested in cattle and goats, which were also received as part of a bridewealth. In 1984, however, for some reason, the son failed in the gold business and later moved to the new gold place in the south of Upe. The family only got 2000 KShs in 1984 from gold and also there was no harvest. They partly relied on famine relief.

These recent histories of ten families reveal a great deal. The first striking finding is, that together these ten households claimed to have 1400 cattle before the raids and rinderpest. At least four households (the ones with 100-160 cattle) must have had enough cattle to feed their (large) families on milk, blood and meat alone. But we also found that even these households - maybe with the exception of the household with 600 cattle - cultivated sorghum, mostly at places far from their cattle manyattas. In the value terms of 1979, 1400 cattle means a wealth of at least 700,000 KShs and an annual production value of at least 300,000 KShs of milk and meat alone. In 1982 hardly any cattle were owned anymore; in 1985 maybe 100 (with a current value of 80,000 KShs). One can imagine that in the eyes of these people they were very poor after 1981, despite the gold income. It is interesting, however, that all the households had animals in 1985, against only three households in 1982! Another striking fact is the very large fluctuation in wealth and in income. The longitudinal data give a strong warning to rely too much on occasional interview years (like 1982) for an analysis of internal differentiation. Wealth and poverty fluctuate, as the histories of nr.5 (middle wealth before 1980, poor in 1981, rich in 1984) and nr.10 (rich in 1979 and 1982, poor in 1984) clearly indicate.

The interviews show a combination of 'old' and 'new' survival strategies. Old strategies are the almost universal practice of polygamy, the old practices to acquire new cattle (tilia, bridewealth, raids), the deliberate fluctuations in household composition - policies of 'fusion' and 'fission' as they are called by Carlstein (1982, p.121)- and begging for food. One old strategy, goats as a storage of wealth which can be easily converted into money, was made impossible by the 1979 goat's disease.

New survival strategies are partly agricultural and partly non-agricultural. The agricultural ones are the cultivation of more than one plot, preferably in different ecological zones - spreading risks and harvest dates - and the cultivation of sorghum and maize. Non-agricultural strategies are: getting money by panning gold and collecting miraa, by changing beer brewing into a commercial activity, by dealing in gold, by starting a shop or a 'hotel', by renting a house; all practices which were practically unknown before 1979, with the exception of miraa after the 1971 drought. It is also clear that the old practice of binding as many other households as possible by tilia, by marriage and by giving away food is now extended and includes giving away money and employing casual labourers, not for beer (as before 1981) but for money. A fourth new strategy is to feed the children by sending them to school, to rely on famine relief (important for all in 1980-81 and for some in 1984) and to join one of the missions.

In 1984, investment in cattle and goats had become a major priority, thanks to gold money. Many cattle were acquired from southern West Pokot. Somali traders play a big role in bringing thousands of goats for sale. These are mainly coming from Turkana. In 1983, some of the food surplus of Pokot households was directly exchanged with Turkana goats. The money economy, which is so important now, is clearly regarded as a method of rebuilding a pastoral economy. In 1984-85, many herders from Alale dared to herd their cattle in Upe again (partly fleeing the military operation).

#### 6.2.6 External Interference and its Impact

Before 1980 there were very few interventions and the government was hardly present. The large increase in institutional penetration after 1980 was mostly related to the disasters, both the drought (famine relief, the establishment of two missions, food at schools) and the raids (police and military action). But unlike the external response (or better: meagre external response) to droughts like the one in 1965 or the one in 1971-73, the post-1979 penetration resulted from a political dedication to integrate also this far away part of 'New Kenya'. In the sphere of production, however, government interventions were contradictory. Although lip service was paid to the idea that arable cultivation was the inevitable future for the population which had drastically increased, no government support was given to arable farming. The Red Cross (seeds) and the missions (hybrid maize introduction, agricultural implements, experimentation plots) were the ones dealing with agricultural innovations. The only government intervention with a possible effect on arable farming, the stationing of a group of forestry workers, was intended to have the effect to stop cultivation in areas with the largest possible harvests (in the short run). But lack of supervision resulted in a minimum of activities. In the field of afforestation it was also the mission which really took the initiative. The only real effect of the government on food availability was the destruction of grain stores during the military action of 1984.

Both the missions and the government did not regard livestock production as the priority sector, against the feelings of the people. The confiscation and killing of cattle during the military action speaks for itself. It is also indicative that the missions did support arable farming but not livestock keeping. Still it is remarkable that despite the anti-nomadic feelings in government circles the only productive investments were done in the field of livestock: two vaccination campaigns and one waterdam. Also the renovation of the boreholes and the drilling of new ones (a missionary initiative with the intention of stabilizing the population settlements) had the potential effect to increase the water availability for livestock and hence to make cattle and herders more mobile - if there had been many animals... The water projects (and especially the piped water supply of the AIC mission) had profound effects on gold panning, in enabling gold panners to continue panning during the dry season, although this was not wholeheartedly supported by the mission, to say the least. Both in government and in missionary circles the three survival strategies of the people which were most important in income terms (gold, miraa, beer) were all identified with illegality, criminality and moral decay. In government circles, the gold panning is regarded as detrimental to agriculture - especially because the peak labour periods coincide - but on the other hand the government would like to have its share too. The idea of a gold cooperative was imposed. Although most gold dealers are formal members now, a very large part of the gold trade does not enter the books of the cooperative. Another indication of the lack of power of the government machinery is the fact that the thriving Naruoro market was completely out of reach of the County Council and its system of market fees and market supervisors.

## 6.3 Kodich

### 6.3.1 The Case Study Area

The second case study area is Kodich Sublocation, currently covering 208 km<sup>2</sup>. Most of Kodich is in Zone IV; the northern part in Zone V. Along the Suam River, in the eastern part, very good riverine soils can be found (A8), although tsetse flies and malaria mosquitoes make life rather dangerous here. In the rainy season no animals are herded in this zone, and people prefer to build their homes at a distance of at least three kilometres from the river. People who use the riverine soils for arable farming do a lot of walking; some live in temporary structures near their fields during part of the rainy season. More inland, we find the bad U119-soil type. Part of it is severely eroded.

In a standard year, livestock use of the area allows food production for about 3,000 people. Due to erosion, this may go down to 2,500 people or less. During a first dry year, animal food production can potentially be enough for 1,500 people. Rainfed arable production, with simple husbandry, may give a standard sorghum yield for 2,300 people, if only the U119-soils are used. When also the riverine soils are cultivated (maize) an additional 4,400 people could be fed in a standard year. With

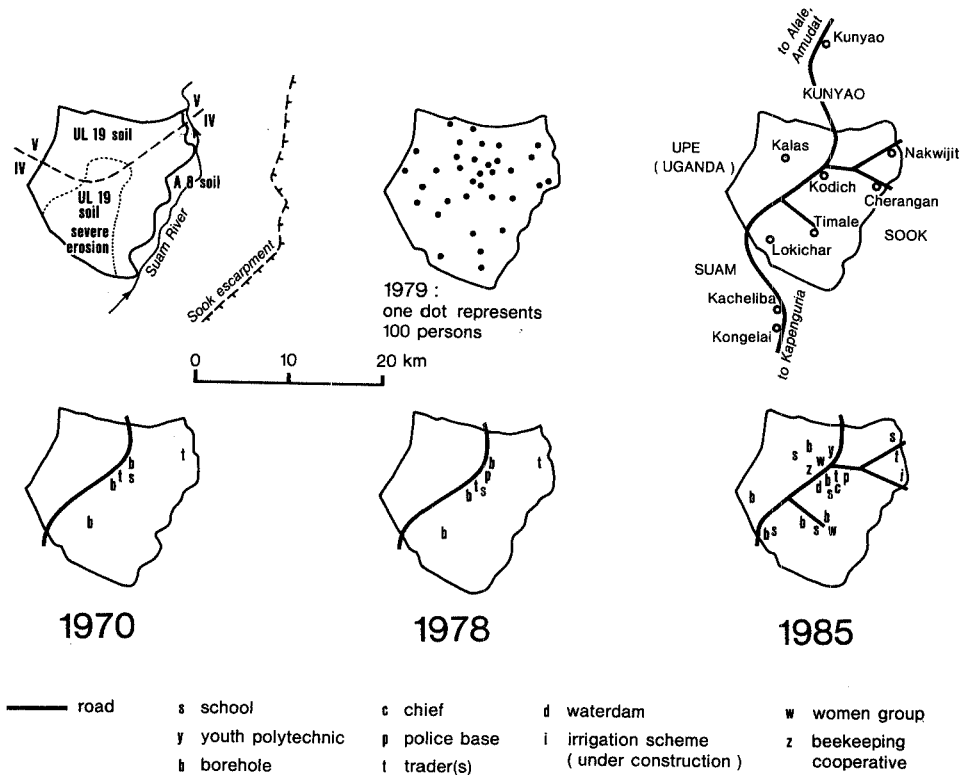


Figure 6.4 Kodich

improved husbandry, this can further increase to 5,000 or even 6,000 people. But part of this area can be flooded. If there is enough water in the Suam River to irrigate 500 ha - allowing two maize harvests in a year with a yield of 1,500 kg each - 4,000 more people could be fed. During a dry year, the harvests in Zone V will fail and the yields in Zone IV will be low: for Kodich as a whole, arable food will then be available for less than 3,500 people. (see appendix 6.1.b). More information about the Kodich case study area is presented in Figure 6.4.

### 6.3.2 Before 1979

Before 1890, Kodich was only inhabited during some dry seasons by mobile Karimojong cattle herders. Between 1890 and 1925, Pokot herders began to use Kodich for their herds. By 1925 more permanent Pokot manyattas had been established. Most probably, cultivation activities were very minimal or even lacking. Herders used - and use - an area much larger than Kodich alone: in the rainy season from Lokales in the south to Kunyao in the north; in the dry season the Suam area was used, and in severe dry years, people and animals moved to Mount Kadam. Between 1915 and 1930, Kodich was not far from the 'West Suk' district headquarters at Kacheliba, at a distance of between ten and thirty kilometres. The few household clusters in Kodich must have been touched by taxation and by labour recruitment for road works. When, in 1932, the 'Karasuk' area, to which Kodich belonged, was handed over to Uganda, and the district administration left Kacheliba, Kodich was suddenly far from administrative headquarters: Moroto was 100 km away; Amudat - the Upe Chief's residence after 1937 - was at a distance of 45 km. External influence was negligible. Even taxation was probably circumvented to a large degree. During the 1950s things changed a bit: UNICEF successfully drilled three boreholes (1953, 1957) and sick people could go to newly established health facilities: Kongelai dispensary or Amudat Hospital. In 1959 a Somali trader opened the first shop in the area, at Nakwijit, a place that had gradually become a barter market place, to exchange goats and milk from Kodich for grains from Sook. Kodich and Sook also became more related because of a developing marriage network. Nakwijit became a 'parish centre', the lowest administrative rank in Upe - under a Kacheliba-based headman. A census in 1959 reveals a population of 1,066 people (42 % children), but the exact census area is not known. During the 1960s, two more shops were opened, at Kodich-centre, near the Roman Catholic outschool, that was started in 1965. The 1969 census counted a population of 2,353 people, in ninety-one household clusters (the percentage of children had increased to 46 %; the base of the population pyramid begins to show a shape, characteristic for natural increase). Part of the increase was caused by immigration, because of increasing tension in the westernmost parts of Upe. The total number of people was still below the standard critical density based on livestock. But cultivation of sorghum along minor rivers and in depressions gained importance.

After 1970, Kenyan administration meant rapid changes. In 1972, Kodich got its own Assistant-Chief (under a Chief at Kunyao, 18 km away, and at 27 km from the new Divisional Headquarters in Kacheliba). Sick people could go to Kacheliba Health Centre now, or be treated by mobile clinic

services; Kodich primary school was extended as a boarding school; waterdams were constructed; boreholes were rehabilitated and two new shops were opened at Kodich-centre. Total investments, however, were low: probably below 70,000 KShs for the 1970s as a whole. The population of Kodich increased to 3,296 people, according to the 1979 census (although administrative boundary-changes makes comparison with 1969 and 1985 difficult). The average population density was 13 inh/km<sup>2</sup>. In Nakwijit and Timale, destitute people from lower Sook and Kasei had settled, who had lost their animals to Turkana raiders. In 1978, the Church of the Province of Kenya (CPK) started to give famine relief there. Most inhabitants of Kodich however, were self sufficient in food production to a large degree. Households, interviewed in 1982, (n=28) told us that they had an average herd of forty-five cattle, fifty goats and fifteen sheep, before 1979. Standard animal food production would give 5.3 m.kcal. Standard food needs - with an average household size of ten - were approx. 8.6 m.kcal. The balance was produced by arable farming, gathering and barter with maize from the Sook highlands.

#### 6.3.3 1979-1985: Disasters, Interventions and Response; a Chronology

1979. The rainfall was inadequate; a goat's disease killed many goats; a quarantine (foot and mouth disease) prevented the sale of cattle. According to CPK estimates, 1,000 people already were affected by famine, including the refugees from Sook and Kasei. CPK further distributed food aid and stimulated people to grow more food. A new primary boarding school at Timale and food at Kodich and Lokichar schools attracted new pupils (from 115 boys and 23 girls in 1978 to 177 boys and 27 girls in 1979; the lack of response by girls is remarkable).

1980. This was a second dry year in succession, with a virtual crop failure (including experimental cotton) and a high cattle mortality. Due to Karimojong raids in Upe, herds could no longer use the drought refuge area of Mount Kadam. Lack of grazing made animals weak and susceptible to epidemics. Especially rinderpest took a heavy toll, despite a major rinderpest inoculation campaign. CPK and the District Officer gave food aid, the last one without return of services. CPK used a World Vision grant of 90,000 KShs to put up a Youth Polytechnic at Kodich-centre. Red Cross money was used to make two waterwells as part of an anti-cholera campaign. CPK opened another boarding school at Nakwijit; the Roman Catholic Mission a day school at Kalas. The number of pupils increased to 300 boys and 59 girls. CPK started women's groups at Kodich-centre and Timale.

1981. Until the (good) rains started, many more cattle died. A CBPP inoculation campaign was too late. The twenty-eight households which were interviewed in 1982, reported that they had lost more than half of their cattle. An average household around Kodich-centre was left with twenty cattle, forty goats, seven sheep and four donkeys. Standard food production would then be 2.8 m.kcal; total food needs more than 10 m.kcal in this particular group of interviewed households with, on average, twelve members per household. It is evident that additional food was absolutely necessary. For households near Nakwijit and Timale,

this must have been even more so. CPK used food aid from the Kenya Freedom from Hunger Council (FFFHC) to start a food for work campaign, encouraging riverine agriculture: assisted by an American Peace Corps volunteer, twenty-five teams were formed, with 300 members, each team responsible for a few acres of land along the Suam River, and for the construction of tracks. KFFHC gave tools, food, seeds, a few ox-ploughs and a maize mill. A minor crop could be harvested. Stimulated by CPK, people had started to dig an irrigation canal, near Cherangan. After a while, the Provincial Irrigation Unit was asked to make a better alignment. After two months of digging, KFFHC no longer provided food and the canal was left incomplete. In April 1981, the District Development Committee decided to request the European Economic Community to fund an Irrigation Scheme here.

1982. Many households increased their cultivated area, although the majority still farmed inland. Despite the fact that rainfall was not bad, many farmers had a crop failure; the others had low yields. In the 1982-interview group (n=28), ten households reported a crop failure; eighteen an average harvest of only 400 kg of maize, sorghum and some beans. Until June, people could get famine relief from the government. Schools further increased their attendance: to 388 boys and 93 girls. A majority of the boys went to school now. Under the wings of CPK, a beekeeping cooperative began to function. ASAL and NORAD (via the Roman Catholic and ACCK missions) began to rehabilitate boreholes - probably spending 471,000 KShs. Some local casual jobs became available: desilting the Kodich waterdam (a Rural Development Project, 22,000 KShs), a Rural Access Road, work for teachers, etc. Groups of women started to go to the Mnagei highlands as casual harvest labourers (November-February). The Rural Development fund and ASAL adopted the 'Village Polytechnic and Livestock Improvement Programme' as it was called now - until 1986 more than 1.5 m.KShs would be spent on buildings, livestock, a tractor and water development.

1983. There was a relatively good harvest. Also, the good rainfall allowed the rebuilding of herds and flocks. The EEC gave a large sum of money (first 500,000 KShs, later extended to 750,000 KShs; total expenditure 1982-86: 2.5 m.KShs, including GoK contribution) for the Cherangan Irrigation Scheme (24 ha, 60 families; later probably more). The Organization of Netherlands Volunteers provided the Ministry of Agriculture with an irrigation engineer, to coordinate the project. The ASAL Programme committed itself to supply funds for a 'Suam River Agricultural Project' (SRAP), with attention for rainfed farming, soil conservation and livestock development (see Van Klinken & Mwirigi 1984). The Netherlands volunteer was put in charge of this project which costed approx. 800,000 KShs until 1987 (Kodich alone). When, in 1984, 417 households, registering for SRAP assistance, were interviewed about their situation in 1983, it appeared that 299 of them had been cultivating in Kodich in 1983, 54 % along the Suam River, the others more inland. CPK encouragement of riverine cultivation clearly had had a major impact. An analysis of household food production and food needs in 1983 (of 236 households which were interviewed in 1984), reveals that 14 % of all interviewed households could live from their animals alone. Their arable activities are a clear example of risk spreading and



accumulating herds. Another 18 % of the households were self supporting by combining animal and arable food. More than 30 % of the households produced less than half of their food requirements. Specific problem groups are 15 households with a widow as a head, 21 households without cattle, among them 8 households without any animals, and 32 large households (these are households requiring more than 6 m.kcal).

1984. In February, a military operation had been launched to force people to surrender their guns ('Lotiriri' as the Pokot call it). Cattle were rounded up and brought to Kacheliba, to show that the government was serious. Herders who fled to Upe, were attacked by helicopters throwing bombs. In April, the SRAP sold maize seeds (hybrid, composite and Katumani), sorghum seeds (serena) and beans. In July this was done again. In total 417 households with 2,890 members bought seeds. Each participant received one bag of maize as food aid from ASAL/Oxfam/CPK. Quite a number of households still had food in store from the 1983 harvest; others sold goats or even cattle to buy food. In June, the Operation was over and some animals were returned. SRAP mid-term review data (July 1984) not only show that a major harvest failure was ahead due to a severe drought, but also demonstrate how serious the Operation had been. Out of 355 households receiving SRAP seeds in April, twenty-five had disappeared in June. Among those who stayed, thirty had no cattle before the Operation. After the Operation, sixty-one households had no cattle. Out of 300 households with animals before February, 105 were not touched, especially households with few animals; the others lost part or all of their cattle. Asked about the number of animals involved, the 195 households who lost animals reported the confiscation of 3,113 animals, or more than 80 % of their herd. Only 654 cattle were returned by the Military. Although unintentionally, most animals had died because of lack of grazing and lack of attention; they had been cramped together in Kacheliba. Also 2,660 sheep and goats were said to be lost due to the Operation. The Operation meant a terrible reduction of people's wealth and a severe reduction of their major source of food. The destruction by the Operation was much more severe in Kodich than in Alale. If we value cattle at 800 KShs and shoats at 150 KShs, a value of more than 2.4 m.KShs was destroyed in Kodich alone. After the Operation, an average project household was left with only five head of cattle. Table 6.3 gives the distribution of cattle before and after Lotiriri.

Table 6.3 Kodich: Distribution of Cattle before and after the Military Operation

cattle/ household (*)	0	1-5	6-10	11-15	15-20	21-25	26-30	31-40	41+	Total
nr. of hh in March	30	113	88	29	26	9	13	13	9	330
in July	61	203	49	9	6	1	1	0	0	330

(\*) normally between March and July the herds increase  
Source: SRAP Mid-Term Review Questionnaires, July 1984

The drought and the disruption of farming activities resulted in an extreme crop failure. Out of 417 project farmers, only 19 harvested more than one bag of grain. Together, 4,700 kg of food was harvested, roughly the same as the amount of seeds used. After August, CPK and the Roman Catholic Mission were allowed to distribute famine food to a desperate population. Many people sold goats in order to buy food, but food in shops was scarce. A lot of inhabitants left the area to look for gold at Chapkarerat, in southern Upe. When the Ministry of Agriculture started to recruit workers for the Irrigation Project, at the end of the year, it was not easy to get them, and payment in food - in total 300 bags of maize - and money had to be rather generous. Future scheme members had to do part of the work on 'harambee' basis.

1985. Until the (good) rains, again animals died because of lack of food. In March, the government started to distribute famine relief on a large scale, first in Nakwijit, later in Kodich-centre. School enrollment rose to 422 boys and 110 girls, who all received school food. Various food for work projects were launched (Village Polytechnic, Nakwijit School, Road Works), besides the casual labour opportunities at Cherangan. When ASAL (SRAP) again distributed seeds, only ninety-eight households from the 417 project households of 1984 participated. On the other hand, ninety-six new participants were registered (see Van Klinken 1985). This shows that the household mobility is very large; few have a fixed shamba and very few regard themselves as 'sedentary farmers'. Traditional mobility, moving with the herds, is only a partial explanation. Very few households were left with herds large enough to support a living. Gold mobility seems to be much more important. Many households will have been very disappointed by the 1984 experience, and gave up riverine farming altogether. Part of them returned to their former 'inland fields' (e.g. Kalas, Krimti). SRAP supplied 2,700 kg of seeds to riverine farmers, enough for about 100 ha, especially at Cherangan and Timale. Most farmers bought maize seeds. To stimulate crop diversification, all farmers who bought legume seeds in addition to maize, were given a bag of famine relief maize. Shop food was difficult to get: in Chepkarerat traders could get more than twice the 'official' price for posho. In August, harvests were good. Also, cows and goats produced milk again. The period of disaster seemed to be over.

#### 6.3.4 Household Survival Strategies during the 1984-85 Disasters

In August 1985, a specific survey was done about survival strategies during the 1984-85 disasters. Sixty farmers were interviewed, who were all practising riverine agriculture: twenty each in Nakwijit, Cherangan and Timale. These farmers all answered a detailed questionnaire. Out of these sixty, ten were already cultivating along the Suam in 1980, twenty started in 1981 or 1982, nine in 1983 and thirteen in 1984. Out of thirty-nine households with a riverine shamba in 1983, seven had a harvest of less than a bag that year, the others harvested 10,000 kg of maize and 1,300 kg of sorghum, or about 350 kg of grain per household. Surprisingly, twenty-five households reported that they had a total amount of 5,000 kg of grains in store between them, in April 1984 (16 m.kcal). According to them, this lasted for an average period of six

weeks. Three households had lost their granary due to the Operation, to plundering baboons or to fire. The harvest of August 1984 was negligible: yielding not more than 3 m.kcal.

An average household had thirteen cattle, seventeen goats and five sheep in early 1984. Compared with the 1982-interview group around Kodich-centre, this shows them to be relatively poor. In a standard year, this herd would have produced 1.6 m.kcal. Due to the Operation, but also to disease and starvation, 500 cattle, 400 goats and 150 sheep were said to be lost. Out of these, people claim that they only consumed a few cattle and fifty shoats. When all the lost animals would have been eaten, an average household would have had 2.5 m.kcal. Now the food value was negligible, although we must reckon with some underreporting here. People did everything they could to save their herds. An average household was left with six head of cattle and thirteen goats/sheep in August 1985. Ten households did not have any cattle anymore, four of them even were without any animals. On the other hand fifteen households had more than ten head of cattle (this sub-group of relatively prosperous pastoralists had 68 % of all cattle and 47 % of all shoats). Twenty-five households told that they spent a lot of work cutting branches from certain trees to feed their animals during the drought. Twenty-one households went to Upe or/and Sook to look for grass and water during the drought and to avoid the Operation. Five households sent some stock to far away relatives for the same reason. Forty-eight households reported the partial ownership of cows/offspring among 147 tilia partners elsewhere. When the disasters seemed to be over, part of them started to claim cattle from tilia partners. Many tilia partners, though, had also lost their animals. In August 1985, twenty-three households claimed that eighty-one cattle - or 22 % of the total herd of the interviewed households as a whole - were related to others through tilia. More mythical reactions to the drought were reported in a few cases: six households asked the assistance of a rainmaker to beg for rain; three households brought additional sacrifices. When the rains came, in March 1985, soon most cows and goats started to produce milk again: until August probably 35,000 litres, or 25 m.kcal.

Local grains, meat and milk provided only between 45 and 60 m.kcal. The sixty households had to feed 463 people. Standard food needs would have been 500 m.kcal, for sixteen months. It is evident that there was a large gap. How did these households try to bridge the gap? We will look at the aggregate of sixty households together.

1. A balance of nineteen people left the households for good, 'because of hunger'; five girls were married away; at least fifty adults left their homes temporarily: most of them went to Mnagei and to gold places. Probably more than 100 children went to school, where they got school milk, school lunches and - for boarders - full board. Although details about school food are lacking, it is not impossible that approx. 7,000 litres of milk and approx. 9,000 kg of maize and beans were acquired in the period March 1984 - August 1985. That gives a total of 35 m.kcal. Together, the 'migration responses' resulted in a considerably lower total food requirement at home. Harvest labour migrants are a specific case (in thirteen households): they not only ate elsewhere; they also brought home one to two bags of maize each. (A problem is transport:

people share the rent of a matatu. Per bag of maize, the transport costs to Kodich may amount to 20 or 30 KShs).

2. Gathering is a widespread response. Forty-three households reported that they lived on wild fruits, vegetables, small animals etc. for a while. However, only one household reported the eating of game meat (although underreporting might be expected here, as it is illegal). Honey was an important source of food for nine households. Thirty-nine households decided to bleed their animals for food. It is impossible to 'measure' the food value of all these forms of famine food. It is probable that their addition to the survival diet is rather large.

3. 40 % of the households reported that they had received 'food from relatives'. In some cases (7) this food came from related shambas elsewhere; mostly from co-wives. In most cases individuals 'begged' for food. Nine households were explicit about this source of food: they received an average amount of 60 kg. Many individuals will use their extended networks of relatives, tibia partners and age mates to 'beg' for food. If they do not succeed to get one or more tins or even a bag of maize, they are at least supplied with visitor's food in most cases.

4. Twenty-eight households reported that they had received ASAL/Oxfam food (one bag each); twenty-five households participated in food for work projects (an average of twenty-one days, receiving an average of 4 kg of posho a day) and nineteen households told us that they received food from churches. Almost all households (57) received government relief food, an average of 200 kg. Total relief food must have been more than 20,000 kg, or 62 m.kcal.

5. Almost all households (55) bought food. Together they reported the purchase of 25,000 kg of grains or posho (78 m.kcal). Most of it was bought at Kodich. One third of it was bought outside the location: at Kacheliba, Kanyerus or Chepkarerat - most of this food coming from Sebei - or in Mnagei. People used donkeys to transport the food. If we exclude one teacher (with 10,000 KShs) the total reported monetary income was more than 35,000 KShs, and almost everything will have been spent on food. Table 6.4 shows that the sale of animals still is very important to get money: 70 % of reported income. We have already pointed at the favourable terms of trade: eating the animals would have provided 7 m.kcal; selling them and buy maize grains provides 50 m.kcal. Income from gold, casual work and money from relatives was important too. Other sources of income were small, possibly with the exception of beer; for women a source of income which may be illegal, but still is an important method to take part in the local redistribution of money. The total amount of reported income only means 600 KShs per household (again excluding the teacher) or less than 100 KShs per capita. Only five or six households earned more than 2,000 KShs during 1984-85.

6. Total reported available food comes close to 200 m.kcal. Even if we assume that temporary absence means that not 500 m.kcal but 400 m.kcal were needed at home, and even if we lower the standard food requirements (850,000 on an annual basis to 600,000 kcal - or 1,650 kcal/day), the reported food was still below the absolute minimum requirement. As it is

Table 6.4 Kodich: Sources of Money, April 1984 - July 1985

Type of income	nr.of households (n=60)	Amount of money
sell goats or sheep 117)	34	12,400 KShs (for
sell oxen, bulls, calves	17	11,500 KShs (for 17)
sell gold	28	at least 5,600 KShs
casual work	34	5,400 KShs
money from relatives	12	1,300 KShs
sell honey	9	600 KShs (*)
sell handicraft	5	100 KShs
sell beer	11	unknown
sell firewood or charcoal	11	unknown (small)
sell clothes	1	unknown
sell tobacco, eggs, chickens, cooked food, miraa, vegetables, most of it not home produced	7	unknown (small)
permanent job (teacher)	1	10,000 KShs

(\*) bees produced very little honey this year.

Source: SRAP survey August 1985

not likely that gathering of food and begging of food gives enough extras to bridge the gap, we can be almost sure that famine deaths will have occurred. As no medical post exists in Kodich, and systematic questions about famine deaths were not asked, we will never know the magnitude of the failure of survival in the most literal sense.

### 6.3.5 From Affluence to Poverty

Kodich is an example of an economy that was virtually self supporting before 1979, with a very low level of formal market integration and a relatively high level of income and wealth. Former droughts had not jeopardized their food supply. On the consumption side, very few items were purchased; on the production-input side, nothing was purchased with the exception of some animal drugs; on the production-output side, cattle, milk and especially goats were bartered for some grains, using informal market networks; on the labour side, no labour migration existed and locally, labour was not paid in money. If we value the household production with 1985 market values, and if we assume milk and meat of a herd of forty cattle, fifty goats and fifteen sheep, 30 kg of honey and 300 kg of sorghum to be the average household production, together, the 1985 value would have been more than 14,000 KShs or -with 10 persons per household- 1,400 KShs per capita. If eleven shoats were bartered for grain, this household produced enough food (see table 6.5). An average household had an animal wealth of more than 40,000 KShs (1985 value).

Table 6.5 Level of Income and Food Production, Standard Household, Kodich 1978

Production	Quantity x Value/kg or l.(*)	Value in KShs (*)	Caloric value m.kcal
cattle milk	3150 l x 1.5 KShs	= 4,725	2.2
cattle meat	5 x 800 KShs	= 4,000	1.3
goat's milk	980 l x 1.5 KShs	= 1,470	0.7
goat's meat	11 x 150 KShs	= 1,650	(0.2)
after barter with maize grains:			3.5
sheep meat	4 x 150 KShs	= 600	0.2
honey	30 kg x 10 KShs	= 300	0.1
sorghum	300 kg x 5 KShs	= 1,500	0.9
hides	5 x 20 KShs	= 100	-
Total		14,345	8.9

(\*) 1985-value estimates, Pokot lowland values.

Compared with 1978, the situation in 1985 is completely different: a high level of market integration and external dependence, severe food deficits and very low income and wealth levels. Kodich seems to be an exemplary case of a change from affluence to poverty (see Persoon 1985). We may fear that 'lotiriri' was most to blame, not so much the raids, droughts or livestock epidemics.

Household food production for a standard household in 1984-85 only provided 15 % of the food needs; 40 % of reported food consumption came from the market, 30 % from relief institutions. Paid casual labour was a source of income for a majority of the households. All seeds were bought. Cash expenses on clothing, schools and groceries had gained importance in 1982-83. The majority of the children went to school. The total animal wealth of an average household, however, had gone down to a meagre 6,000 KShs. If we value all the food at market prices, total annual income per household would be 2,700 KShs or - with eight persons per household - below 350 KShs per capita (see table 6.6).

Even if we take into account that valuations are rather speculative and not always easy to accept (sorghum is valued three times as high as maize for instance; per calorie, animal food is much more worth than maize), the picture is clear: a severe case of impoverishment. Besides more long standing survival strategies (herd mobility, livestock 'famine food', tilia, begging food, gathering), new survival strategies were offered by the market (gold, harvest labour demand, selling animals for money, honey sales, beer sales and private casual jobs) and by external institutions (famine relief, food for work, hybrid seeds, casual jobs for missions or government projects, school food). In terms of relative importance, market sources of food and institutional sources of food were comparable here. The impact of total government interventions has been very ambiguous and, on balance, probably negative. The destruction of animal wealth and hence of the food basis of this society was so

Table 6.6 Kodich: Income Level 1984-85 for an Average Household

Item	Value
1 goat (meat)	150 KShs
400 l milk x 1.5 KShs	600 KShs
grains 15 kg	25 KShs
school food: milk 170 l	250 KShs
maize/beans 150 kg/35 kg	225 KShs
casual harvest income (maize)	50 KShs
relief food 330 kg	500 KShs
cash income table 6.4	600 KShs
honey 30 kg	300 KShs
Total	2,700 KShs

radical, that the various types of famine food and agricultural assistance later, look very meagre. It is striking that hardly any government intervention assisted the people with their highest priority: to rebuild herds and flocks. The very high investments in the area between 1980 and 1985 (more than 3.5 m. KShs or 200 KShs per capita per year) were mostly arising from the ideology of sedentarized, educated agriculturalists with some off-farm income.

#### 6.4 Kongelai

##### 6.4.1 The Case Study Area

The third case study area is Kongelai, an area of 15,400 ha. Part of it is very fertile: the soils along the perennial Suam River and its seasonal tributaries, the Kaiboni, Lomusuku, Konyanga and Kapchemanget rivers. Near the rivers, shambas are liable to flooding. Most of the non-riverine soils are poor, and also severely eroded, nowadays. The carrying capacity during standard years is therefore low: not more than 1,600 people can be fed with livestock products; in a dry year, the population supporting capacity further diminishes to below 1,000 people. Arable use of the non-riverine soils could add 1,600 people in a standard year, but only 1,000 people in a moderately dry year. When also the more difficult riverine soils are cultivated, the population supporting capacity of the arable land strongly increases: to 4,700 people, or - with improved arable husbandry - to 5,700 people. In a moderately dry year it is then possible to produce grains for 2,000 people (see appendix 6.1.c). In Figure 6.5 various aspects of Kongelai are mapped.

Although the physical characteristics are comparable, Kongelai differs considerably from Kodich. Unlike Kodich, Kongelai has been administered by Kenya since the early colonial days. Kongelai was also more near the administrative headquarters: first Kacheliba (on the other side of the Suam River), later Kapenguria (at 33 km; less than an hour's drive by car up or down an escarpment road. In the 1950s as well as in the 1970s,

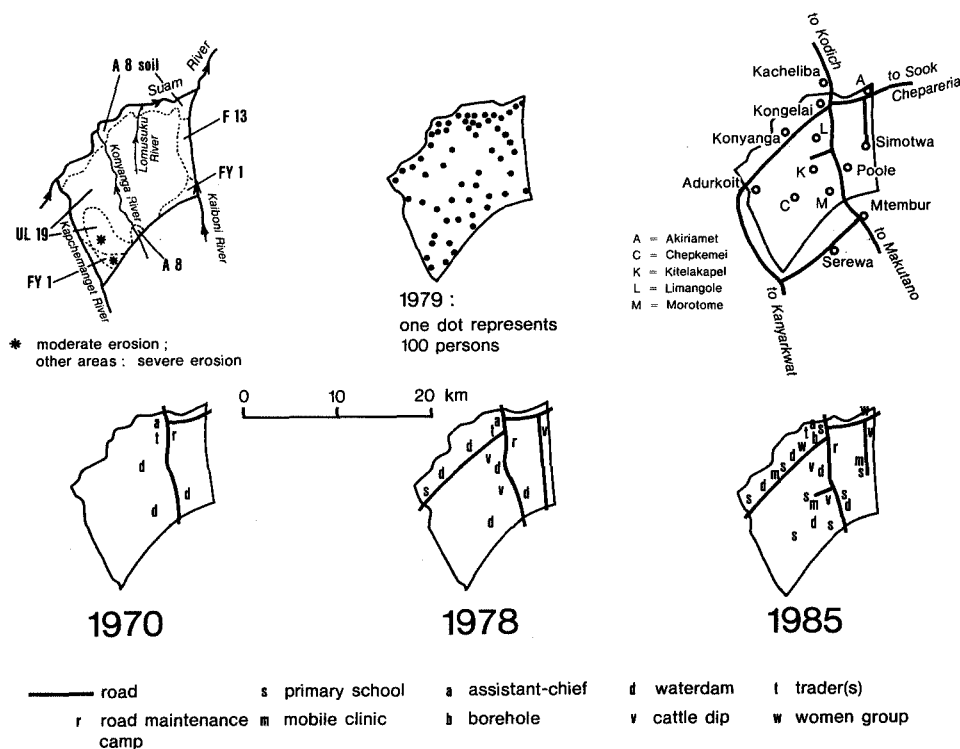


Figure 6.5 Kongelai

Kongelai has been a pilot area for lowland interventions: the Riwa Grazing Scheme (since 1954) and the Kongelai Group Ranch (since 1972) were both meant to be showpieces of range and livestock improvements. In those years, external interference was much more intensive than interventions on the other side of the Suam River. Interestingly, the strong increase of lowland projects in West Pokot after 1980 left Kongelai largely aside. Bad experiences with the Group Ranch in Kongelai resulted in an attitude among civil servants and even missionaries to leapfrog over Kongelai and concentrate on parts of Kacheliba Division instead.

On the one hand this meant that negative external interventions more or less passed by: e.g. the military operation of 1984 was only marginally touching on Kongelai livestock (Kongelai had never been attacked by raiders and there was no need to have guns for defence). On the other hand, the people of Kongelai were much more forced to find their own solutions to livestock diseases and droughts, which made life very difficult in this area too for the original inhabitants as well as for many refugees.



#### 6.4.2 Before 1979

Kongelai was gradually included in the Pokot settlement area during the 1910s and 1920s, administered under a Chief at Kacheliba. Before 1930 there was probably no arable farming. The government demonstration shamba at a place opposite Kacheliba was the first shamba (1933), with some maize, beans, groundnuts and bananas. In 1943 the first people's shambas were reported, with sorghum. The population density must have been below three inhabitants per km<sup>2</sup>, in dispersed manyattas. In 1944 the Chief of Riwa was ordered to close half of the grazing area, for regeneration, and to move all manyattas to the area near the Makutano-Kacheliba road. It is unlikely that he succeeded, but it illustrates an increased external interference, which is also visible in the start of a dispensary, the - shortlived- existence of a BCMS outschool, and the successful recruitment of labourers for work elsewhere in the district. In 1952 monthly cattle and goat's sales were started at Kongelai and the Chief reintroduced a form of grazing control. In 1954 the 'Riwa Grazing Scheme' was started (10,452 ha; in 1956 extended to cover 19,296 ha) as a part of the ALDEV programme (see Ch.2.3 and 5.4.1): a four-paddock rotational grazing system was introduced, grazing guards stationed, participants and animals registered, cattle branded and three waterdams built. Between 1954 and 1957 ALDEV spent almost 100,000 Shs on the Riwa Scheme alone, for the 1950s a remarkably high investment. In 1955, seventy-five stock owners had been registered, with 2,500 head of cattle and 4,000 shoats; in 1959 participation had increased to 167 stock owners with 4,000 head of cattle and 5,500 shoats (which meant a stock unit density of 0.2/ha, and an average livestock wealth of twenty-four cattle and thirty-three shoats per stock owner). Interference with the lives of the Scheme population was large: the animals could graze or browse in each of the four blocks for four months; afterwards the block was rested for a full year (the 'sehemu-system'); manyattas had to be moved too. A grazing committee, assisted by ALDEV-paid grazing guards, got powers to deal with 'trespassers' and 'grass poachers'. To give this 'pilot scheme' a fair chance, Riwa was excluded from destocking quotas which were introduced elsewhere in West Pokot. Riwa cattle got their own brand. Another change of some importance was the start of a small school at Kongelai.

The droughts of 1957-58 and 1960-61 resulted in large scale 'intrusions' (in early 1958, for instance, 100 men from Karapokot were found in Kongelai with 4,000 cattle; they were fined 30 Shs each). On the other hand, 'tax return figures' of late 1957 show that 38 % of the registered tax payers were in Uganda (with their cattle) and 10 % elsewhere in West Pokot. Another 10 % of the adult men were working in Trans Nzoia as casual farm labourers. Herdsmen and animals were much more mobile than grazing scheme rules supposed them to be. On the whole, the population of Kongelai and the number of animals using the Riwa Grazing Scheme increased. In 1962 there were probably seven inhabitants per square kilometre (between 1,000 and 1,200 in current-Kongelai).

After Independence, and especially after the severe drought of 1965-66, the Scheme virtually ceased to exist. Government interference became negligible; even the school in Kongelai closed. The population further increased to twelve inhabitants per square kilometre, by 1969 (2,000 people; 164 km<sup>2</sup>). In 1968-69, some form of internal organization was

reestablished with a 'harambee' to build two dips. In 1971, Kongelai was the first area in West Pokot to apply for Group Ranch adjudication. In 1972, the registration accompanying adjudication showed that 402 adult males and 10 widows applied for membership with 7,300 head of cattle and 16,000 shoats. In 1974 the Group Ranch officially started (with 22,221 ha), although the title deed was only acquired in 1979 and an expensive registration fee had not yet been paid in 1985. Compared with the 1950s, the figures show an increased human population and increased stock numbers and hence a decreased area per stock unit: in 1972 there were almost 0.4 SU/ha (in 1959: 0.2 SU/ha). Compared with 1959 the number of cattle per owner had decreased from 24 to 18; the number of shoats, however, had gone up from 33 to 39.

In 1975-76, the Special Rural Development Programme spent 150,000 Shs on Kongelai: a four-paddock system was reintroduced (but without movement of manyattas and excluding shoats); bush control measures were taken; a grass reseeding programme started; four dams were (re)made; two dips built and a lot of road works carried out. In 1978 more soil conservation measures were introduced, and 'illegal' charcoal burners were prosecuted. The government reports about (again) this 'pilot' project were generally enthusiastic, although the (elected) group ranch committee was not found very active and civil servants had to do most of the work. Also, the idea to get credit for facilities and for a 'livestock marketing enterprise' was not yet materializing. In 1979 the rotational grazing system collapsed because of the drought and large scale refugee immigration, following the insecurity in the areas west and southwest of Kongelai. In August 1979 Kongelai suddenly had 5,500 people, which means a density of twenty-five inhabitants per square kilometre (1979 boundaries; 220 square kilometres). Many refugees started cultivation along the Suam River.

#### 6.4.3 1979-1986

In Kongelai, the 'localized' disasters were not as severe as in Alale or Kodich, during the 1979-81 and 1984-85 periods: a goat's disease, cattle epidemics and cattle starvation, as well as diminished harvests were a serious attack, but not as damaging as elsewhere. Raiders did not reach Kongelai (although herdsmen with animals in Upe or Karapokot lost part of their herd) and the military operation of 1984 largely left Kongelai in peace. The results of the problems elsewhere, however, had far reaching effects on Kongelai. In 1979, the census in August already found a strongly increased population. In 1981, on the other hand, a 'head count' of members of the Group Ranch showed that 35 % of the members who had been registered in 1972, had moved away. All economic refugees, and most of the original inhabitants had experienced a severe loss of livestock and could no longer rely on livestock for food. Many households had started or increased riverine cultivation along the Suam River. Other important changes were increased job opportunities (Rural Access Roads; church jobs; assisting the Mnagei harvest) and increased education (no school in 1976; one school with 49 boys and 4 girls in 1978; six schools with 320 boys and 196 girls in 1983 and seven schools with 386 boys and 184 girls in 1986. The proportion of girls is better than in Alale or Kodich).

#### 6.4.4 Survival Strategies in 1984-85: the Household Level

In Kongelai, many households started riverine cultivation as their major response to loss of livestock during the 1970s and early 1980s. Yields were encouraging and quite a number of households were more 'cultivators' than 'herders' by 1983. When in 1984 the drought caused a virtual crop failure (unlike the dry years 1979-80), the cultivators were suddenly confronted with the risks involved in farming under semi-arid conditions.

In August 1985, fifty-four farmers were interviewed to discover their responses to the harvest failure. Three groups of eighteen farmers each were chosen in the three major production areas: Akiriamet/Simotwo in the east, Kongelai in the centre and Lomusuku more southwest. From Akiriamet to Lomusuku, more than 120 people claim land - which formally belongs to the Group Ranch. A minority claims land up to 15 ha. Most 'owners' say they claim plots of 3-4 ha, a quarter of them two of these plots. The average owner's household, however, only cultivates slightly more than 1 ha, sometimes scattered. Around 1979, all the useful land near Kongelai Centre had been claimed; in 1981 almost all the useful land at Akiriamet and Lomusuku. Newcomers had to 'beg' land. Gradually, 'owners' started to 'lease' part of their plots, mostly for a goat per season, although the payment of cash rent becomes more important. People who 'beg' or 'rent' land only cultivate pieces of 0.4 to 0.6 ha. The large majority of the cultivators prefer to live on the plains, more inland. Few had actually moved to the riverside for more permanent settlement there. An exact measurement of all households claiming land and begging land was not possible. Measurement of plot sizes and field sizes was even unthinkable: land measurement is immediately connected with land adjudication here, which was and is a very hot issue. Needless to say that there is no land registry or any other sample frame. Farmers had to be interviewed as they were found in their fields, during harvest time. We found that out of fifty-four interviewed cultivators, eight begged or rented a plot; on the other hand, five out of forty-six 'owners' said they leased part of their plot to one or more families, in 1985. We roughly estimate that 150 households cultivated near the Suam River in Kongelai. In our sample an average household had seven members. If our estimates are correct, between Akiriamet and Konyanga, around 1,000 persons depended at least partly on riverine cultivation, in 1985. They cultivated approx. 150 ha. More to the southwest, between Konyanga and Kapchemanget rivers, another sixty households (400 members) cultivated approx. 40 ha.

The oldest cultivation area can be found near Kongelai-Centre. One of the interviewed farmers already started here in the 1950s. Ten cultivators started during the 1970s; the others between 1980 and 1982. In Lomusuku, two farmers started during the 1960s, seven during the 1970s, eight during 1980 or 1981 and one in 1983. In Akiriamet two farmers started during the 1960s, three during the 1970s, ten in 1980 or 1981 and three in 1983 or 1984. For the area as a whole, more than half of the interviewed households started cultivation along the Suam River after 1979. Most of them came from Kacheliba Division.

The interview results allow a rough comparison of food needs and food production in 1983, on the household level. Fifty-three households, with approx. 350 members, had been there in 1983. Together they produced

enough arable food - mostly maize - to feed 144 persons, and enough milk, cattle meat and 'converted shoats' to feed another ninety-three people (if the standard shoat's offtake would have been sold and subsequently converted into maize grains). This means, that in 1983, two-thirds of the optimal food needs could be provided by local agriculture. If we add wild food, animal blood, flying ants, honey etc., it was even more. An average household had to get only a minor part of its food needs by other means.

'Average' households, and 'standard' conditions, however, are invented for our scientific convenience. Temporal and spatial variations in production are large; households differ in number and composition, in acreage, in yields, in livestock numbers and composition and in livestock productivity. For instance: in 1983, in the interview group, there were seven households with more than ten members against six with only two or three members. There were fourteen polygamous households; five three-generation households; three households headed by a widow. In 1983, there were nineteen households with a harvest of less than 250 kg of grain - although the rainfall was generally good - against eight households with more than 1,000 kg (two with more than 4,000 kg). Nine of the interviewed households had lost all their animals during previous disaster periods; forty-two households had goats, thirty-eight had cattle and thirty-two had sheep. Among the livestock owners, six had at least ten heads of cattle and at least twenty shoats. The 'rich' households regard themselves as poor, however, compared to their livestock wealth in the 1970s and before.

If we look at the individual households more closely, we deduct that thirteen households could produce more than their own food needs, and on the other extreme, thirteen households produced less than a quarter of their food needs, in 1983. See table 6.7. Together, the thirteen 'surplus' households - with 82 members - could feed an additional 56 people, if they had wanted to (it would have meant giving away food, or adopting 'visitors'; sale of locally produced food is socially not yet accepted). If we compare the two extreme groups, a few differences are worth mentioning: the households with a severe deficit were larger (7.9 instead of 6.3 members, on average); there were more late arrivals (six against one arrived after 1980); almost the majority could be found in the westernmost part (Lomusuku: six against only two); six had no animals (against only one) and the average number of cattle was low: four against twelve.

What happened with these fifty-four households from April 1984 to August 1985? In April 1984, twenty-three households still had food in store: together more than 4,000 kg. In August-September 1984, twelve households had a minor harvest (six maize: 1,600 kg; two millet: 200 kg; two sorghum: 100 kg, four beans: 100 kg), together 2,000 kg. Four households had a second plot in the highlands, and harvested 4,500 kg there. Together, the available arable food could feed twenty-eight persons during the sixteen months period under review, not even 10 % of the total food needs.

Very roughly, we deduct that out of 150 head of cattle lost after March 1984, twenty had been lost due to the Operation (five households), fifteen had been sold (by ten households) and the others had died because of lack of food or/and diseases, or were slaughtered during ceremonies. If 100 dead animals could have been eaten -with seventy-

Table 6.7 Food Needs and Food Production at the Household Level, Kongelai, 1983

self sufficiency rate	number of households
> 1: crops and livestock combined	13
: crops alone	7
: livestock alone	4 (3 also crops alone!)
0.5 - 1	12
0.25 - 0.49	15
< 0.25	13
Total	53

Source: interviews August 1985 (n=54; one household had arrived after 1983)

five kg of meat each; most of the animals will have been all skin and bone- fifteen more persons could be fed. Around seventy cows produced milk after April 1985 (twenty-two households). If their daily production for human consumption would have been 2.5 litres, total milk production could feed another ten persons (concentrated in the April-August 1985 period).

The fifty-four households said they had 974 shoats in early 1984; after the drought: 706. Out of these, approx. 250 must have been born in 1985. This means that approx. 500 shoats were lost. We know that at least 135 had been sold, and fifty had been slaughtered. This means that another 300 shoats had died because of starvation or disease. If half of it had been eaten (10 kg each), five persons could be fed. If we add goat's milk and animal blood (twenty households said they bled animals), chicken meat and eggs, approx. forty persons could be fed on livestock products. With the proceeds of animals that had been sold (135 shoats for 15,000 KShs and fifteen head of cattle for 14,000 KShs) and a few thousand Shillings earned with the sale of hides and skins, at least 20,000 kg of maize could have been bought; enough to feed an additional fifty-four persons. We may conclude: in the period April 1984 up to August 1985, arable and livestock production could feed approx. 120 people. But that was far below the 350 people present.

What did the interviewed households do to avoid starvation?

1. Sixteen people were said to have left the households after 1984; part of them were married away to the highlands. On the other hand, twenty-two people joined with the households, most of them 'because of hunger'. In August 1985, there were twenty-four 'visitors' in the interviewed households.

2. Most of the ninety-nine school-age children went to schools where they got lunches and school milk. In Riwa Location as a whole, school attendance rose 40 %, if we compare early 1986 with early 1985 (Ministry

of Education, Kapenguria, Correspondence).

3. Thirty-three households gathered considerable quantities of wild produce (esp. from *Tamarindus Indica* and *Terminalia* spp.). Even fish was eaten, which is rather remarkable for the Pokot. Most households said that they lived on wild produce during the most severe part of the famine. Nobody reported the hunting of wild game (small animals and some types of birds will probably have been eaten).

4. Twenty-two households received 'food from relatives'; ten of them from the highlands. Sometimes they had to work for it. They received gifts from 15 to 150 kg of maize grains, together probably more than 1,000 kg.

A specific type of 'gifts' was the meat of dead animals during the Army Operation. A group of Turkana - living in Kongelai since the mid-1970s, and engaged in charcoal burning, buzaa brewing, butcher's work and some farming - were allowed to take away dead animals from Kacheliba holding ground. Pokot women from around begged (or bought) this meat.

5. Ten households sent one or more members (mostly wives or daughters) to Mnagei to work in the maize harvest there ('maize contracts') paid in the form of food during work and one or two bags of maize grains for a month's work. Together, at least 2,000 kg of food was brought home, in the period December 1984 to February 1985. (For transport, people share the rent of a matatu).

6. All except three households received famine relief from the Chief or Assistant Chief. People claimed that it was less than elsewhere (e.g. in Kodich) and that newcomers and widows had problems to acquire it. As far as we could assess, close to 8,000 kg of famine relief food was received by the interviewed households.

7. Twenty-nine households did Food for Work jobs for missions (RC and CPK). Most of them worked on the Akiriamet-Simotwo road and the Simotwo primary school. Some worked for one day only, others for two months. We estimate the total food earned this way at 4,000 kg.

8. All except two households bought maize, mostly in Kongelai or Kacheliba - originating from Ugandan Sebei mostly -, thirteen households went to the highlands to buy (part of) their food. More than 36,000 kg of maize purchases were reported. This means that the sale of livestock was not enough to earn this amount of food. The sources of income are given in table 6.8. Compared with Kodich, the range of cash income activities is much broader, and the amount of cash income per household is almost three times as high (excluding the teachers). In Kodich, nobody, except one teacher's household, had the government or a mission as sources of cash income; in Kongelai half of the households had more than half of cash income originating from these sources. The commercialization of land and building materials -although small scale- also suggests a more monetarized economy. Most of the money will have been used to buy food, although food was not always available locally: during the Operation no commercial food was allowed to be transported from Makutano to Kongelai/Kacheliba, and after October 1984, a lot of

traders diverted their food trade from these centres to the buoyant gold centre of Chepkarerat, where prices were much higher. Non-food expenses must have been small in 1984-85: most of the school expenses will have been adopted by missions; few clothes were bought (at least eight households received second-hand clothes from missions, free of charge).

9. At least during part of the period people were away: to Mnagei (harvest contracts; begging food) or to Chepkarerat (gold). They received or bought food there, and were not a burden to the households in Kongelai during these periods of absence.

10. The majority of the households reported severe hunger during at least a few months, especially towards the end of 1984. Under-nourishment is most probable. Deaths related to the famine are likely to have occurred. According to the missionaries in Kacheliba, there was a high child death rate.

Table 6.8 Sources of Income, Kongelai 1984-85

Source of income	nr. of households	type of member(s) involved (*)	remarks
sale of cattle	10	h	14,000 KShs (av.900 KShs)
sale of milk	?	d/w	small income
sale of shoats	35	h/(w)	15,000 KShs (av.110 KShs) (**)
sale of hides and skins	33	h	few thousand KShs
sale of chickens and eggs	4	w	small income
sale of honey	2	h	few hundreds of KShs
sale of fruit and vegetables	3	w/h	pawpaw, bananas, leaves
sale of cooked food	3	w	at Kongelai/Chepkarerat
brewing of beer for sale	9	w	considerable income
tobacco trade	4	h	
food trade	1	h	buying at Makutano, selling at Kongelai
sale of firewood	14	h/w/s	
sale of poles	2	h	
sale of charcoal	10	h/s	
sale of bunches of grass	3	w	
sale of gold	34	h/w/s/d	Chepkarerat; at least 13,000 KShs
sale of handicrafts	3	h	
leasing land for money	5?	h	not more than 100 KShs each
loan from cooperative	1	h	(Coop. based in Kapenguria)
permanent jobs:			
- teacher	3	h	each one 800-1,200 KShs/month
- other civil servant jobs	4	h/w	e.g. Assistant Chief, school cook
- preacher	4	h	200-600 KShs/month each
casual jobs in or nearby Kongelai			
- Rural Access Roads	12	h/s	300-400 KShs each
- other government work	4	h	
- contracts for missions	5	w/h	150-400 KShs each
- shamba work	3	w/h	60-80 KShs each
remittances	2	h	approx. 1,000 KShs altogether
money from relatives	8	h/w	approx. 500 KShs altogether

(\*) h=head, w=wife, s=son, d=daughter

(\*\*) during the Operation the price had gone down to a level below 100 KShs per shoat; after the discovery of gold at Chepkarerat it went up to about 150 KShs again.

Source: 54 interviews Kongelai, August 1985.

The Kongelai responses show a more 'autonomous' reaction, compared to Kodich. The relative importance of famine relief was less and the reported purchase of food was considerably higher. Other responses to the drought are worth mentioning too. Thirty households said that they had fed branches and leaves of certain ever-green trees (esp. Terminalia spp.) to their animals, to keep them alive. Charcoal burners, however, destroy ever more of these important trees. Five households went to Uganda with their animals, five to Karapokot. Two households had brought animals to the Mnagei highlands. Forty-three households said that they had 'tilia' relationships with (at least) 160 partners (most of them in or around Kongelai; nineteen partnerships were mentioned with herders in Karapokot, two in Upe, five in Mnagei and one east of Kipkomo). Out of 35 households with cattle in August 1985, 21 households reported that 51 out of 230 head of cattle were related to tilia partners. A few partnerships for goats and sheep were reported. Mythical devices to beg for rain are hardly used here. Only one person said that he had used the services of a rainmaker, and paid him with beer and preserved milk.

How pastoral were these households in August 1985? The group as a whole had 230 head of cattle and 708 shoats: 4 resp. 13 per household. This is neither sufficient for 'subsistence pastoralism' nor for 'commercial pastoralism' (it only gives resp. 10 and 35 % of necessary food, if we know that an average household had 6.5 members). Within the interview group there were large differences, however: eight households were completely without animals; ten households only had goats and/or sheep (average:11). Five households had cattle (av.:4) but no shoats. Thirty households, or 56 % had the traditional combination of cattle, goats and sheep (with an average of 7 cattle and 20 shoats). Within this group there were seven households with more than ten head of cattle. These households (13 %) had 51 % of all the cattle and 42 % of all the shoats of the interview group as a whole. The top household had 22 cattle and 68 shoats. These relatively wealthy households clearly succeeded to remain pastoral to a large degree. For the others, farming, jobs and petty trade had become more important than animals.

If we look at the agricultural practices during the 1985 season, the Kongelai farmers show a remarkable 'improved husbandry' attitude. All farmers cultivated maize, the large majority hybrid varieties. Two-thirds of the cultivators combined maize with another crop; in eighteen cases there were beans; in eighteen cases sorghum, in seven cases fingermillet, two times groundnuts and one farmer had cowpeas. Half of the farmers said they used one or more 'soil husbandry' practices (crop rotation, planting trees, water harvesting, leguminose crops). Most of these farmers said they specifically used the 'good soils' in their plots. Ten farmers said they had weeded more than once.

We have started this section with the food situation in 1983 and we discovered a group of thirteen households who were more than self sufficient in 1983 and, at the other extreme, a group of thirteen households who produced less than a quarter of their food needs. Let us call these groups the S (surplus) and D (deficit) groups respectively. How did these two groups survive the 1984-85 drought? The demographic characteristics of the two groups immediately show an interesting contrast: the S group increased (from 6.3 to 7.2 members per



average household); the D group decreased (from 7.9 to 7.7 members). In the S group there were twelve 'visitors'; in the D group only three. Surplus food clearly attracts people (or: gives the obligation to adopt economic refugees), while deficit food means that (some) people are sent away. The S group had a better starting position: eight out of the thirteen households still had food in their stores ( a total of 1,800 kg); they had much more animals (twelve households had 155 cattle and 353 shoats in the S group; seven households had only fifty-three cattle and eighty-five goats in the D group), and hence more possibilities to get meat, milk and blood. Even the 1984 harvest was better (three households with 1,600 kg against two households with 600 kg). In the S group one household still produced enough food in 1984-85; five households produced more than 25 % of their food needs. In the D group only one household produced more than 25 % of their food needs. To get additional food, eleven households in the S group sold animals, against only six households in the D group. The result of livestock sales and the consumption of meat (and for two households also the results of the Operation), shows a slight decrease of livestock wealth in the S group (to 113 cattle, 349 shoats in August 1985), but a dramatic decrease of livestock wealth for the D group (to only eighteen head of cattle and twenty-eight shoats; in this group only five households still owned cattle in August 1985). The D group was clearly 'eating into their capital', an extreme example of pastoral marginalization.

With the exception of one household, all households in both the S group and the D group had to struggle to get additional food during 1984-85, to keep the remaining animals alive and to try and get a better harvest in 1985. If we look at the strategies employed (see table 6.9), the differences between the two groups are not large and neither is the difference with the interview group as a whole. Some differences are worth mentioning, though. Some are self-explanatory: the fact that the D group had few animals sets bounds to some more traditional pastoral survival strategies: households without animals cannot bleed them, cannot go to traditional drought-refuge areas in Uganda, cannot feed them branches as survival feed and - in general - their tilia network will be very limited or no longer existing. Those households in the D group, who still have some animals show the attitude of the desperate: they sell their last wealth. Other differences between the D and S group show a differential resilience: the households in the S group have more sources of income (on average 4.2, against 2.8 for the D group) and they have a higher total reported cash income (2,500 KShs on average against 1,700 KShs; leaving out two teachers, in each group one). In the S group there are four households with more than 500 KShs cash income per capita; in the D group none. Compared with the average Kenyan household, all Kongelai households are extremely poor. But some households are more 'extremely poor' than others. The S group shows a more enterprising attitude than the D group: more go to Chepkarerat to pan gold; more sell local brews; more have 'other trades' (selling fruit, chickens, tobacco, honey, cooked food, bunches of grass or handicrafts) and these 'other trades' are different from the ones of the D group, who only sold gathered produce (wild vegetables, poles for building).

Looking at their arable husbandry practices in 1985, the S group shows a more enterprising attitude too: a much higher proportion of the S group used hybrid maize seeds and cultivated beans (but they do not forget to

include sorghum or millet in their farming system). Of course the most remarkable fact is the large proportion of 'permanent jobs' among the S group, especially jobs related to churches. Both groups show a remarkably high participation in (church sponsored) food for work activities; considerably above the interview group as a whole. For the S group this fits in their strong 'opportunism'; for the D group it points towards extreme and structural 'charity dependence'.

Table 6.9 Survival Strategies, Kongelai 1984-85

Type of strategy	S group (n=13)	D group (n=13)	all households (n=54)
	---- in rounded percentages ----		
<b>a. Additional food</b>			
- bleeding animals	40	20	40
- gathering wild food	50	60	60
- eating honey	20	0	10
- food from relatives	50	50	40
- harvest contracts highlands	20	30	20
- government famine relief	90	100	90
- food for work (mostly church based)	80	80	50
- school food	70	60	60
- food bought	100	100	100
Sources of income to buy food			
- sale of cattle	30	30	20
- sale of sheep or goats	80	50	60
- sale of gold	70	50	60
- sale of firewood/charcoal	40	40	30
- sale of beer and other brews	40	0	20
- other trade	60	20	40
- gifts in cash/remittances	20	20	20
- permanent job income	40	10	20
- casual contracts	40	50	40
<b>b. Survival of livestock</b>			
- feeding branches	50	40	60
- to Ugandan pastures	30	0	10
- bringing animals to relatives elsewhere	20	20	10
- stock at tilia partners	80	50	80
- tilia stock in own herd	50	30	40
<b>c. Avoid another harvest failure or increase harvest</b>			
- produce sorghum/millet in addition to maize	50	50	40
- use hybrid maize seeds	90	50	70
- produce beans	50	20	30

Source: 54 interviews; August 1985

If we look at the success of the survival strategies in 1984-85 in terms of food availability on the household level, we must conclude that seven out of the thirteen households in the S group had enough food: the other six households probably failed, among them the two largest households. On the other hand, ten D group households failed to get enough food, whereas three succeeded: two small households and one household with a relatively high cash income because of gold. In all the other households the famine was severe and their future survival is further endangered because most households have sold their last wealth. It is not surprising, that in the D group three households could be found who beg land; in the S group none; another characteristic of a socio-economic bottom position. We have tried to find 'Chayanovian' reasons (e.g. see Grigg 1982, Ch.7) for the problematic position of the D group compared to the S group, but we could not find them. The adults/dependents ratio was 0.79 in both groups. The average age of the head of the household did not differ much (S:36; D:39). The number of adult women was the same (21 in both groups). The average age of the women was comparable (S:29; D:31). The number of households with very young children was almost the same (S:10; D:9) as well as the number of households with children between 10 and 14 years old (S:6; D:7). In the S group there were three polygamous households; in the D group two. In the S group there were three female-headed households; in the S group one (and there was one widower). We can conclude that the 'position in the life cycle' is not a determining factor. Possession of animal wealth seems to be much more important. Compared to Alale and Kodich, Kongelai shows a much more structural poverty for part of the households. It also shows signs of class differentiation: owners of land and beggars of land; people who employ local casuals and people who do 'casual contracts' for others, locally; people who buy formerly non-monetarized goods (firewood, bunches of grass, wild vegetables, poles) and other people who sell it. For households without animals and with a continuous problem of acquiring food and money, a pastoral future seems to be an illusion. These households do have considerable difficulties to engage in the more profitable sources of money (a job; or gold: when Chepkarerat was still functioning gold panners needed money to buy food there at the inflated prices, or they needed 'protection'; for the S group both conditions were probably difficult to fulfil; now the 'lottery' of Chepkarerat seems to be over and no other gold places were discovered nearby). The D group households - but probably this is true for most Kongelai households - also lacked a network and experience which enables them to engage in profitable cattle raids. Some D group households, however, do have girls which are nubile or which will be so in the near future. A marriage strategy might be a possibility to acquire a new herd, although it is questionable whether this herd will survive the necessary emergency sales. For the bottom group of households a continuous struggle of basic, physical survival lies ahead. For the S group, rebuilding the herd and flock, and hence a future of (commercial) pastoralism is more likely. But they will never be 'specialized' pastoralists. It is the combination of resources which gives this group a more reliable future.

## 6.5 Conclusion

Pokot have been stereotyped as a 'conservative' people (Patterson 1969), 'resistant to change' (Schneider 1959). Patterson based this conclusion on the lecture of annual reports and related products of administrative views in 'West Suk' up to Independence. Schneider did a field survey in Batei, in 1951-52, and his subsequent writings have been rather influential in the world of pastoral anthropologists. Both views were coloured by the fact that the Pokot who were pictured, were relatively affluent at that time. As pastoralists, the Pokot had their best time between the 1930s and 1950s. Administrative 'innovations' were not really needed then, and - as Doornbos (1986, p.361) rightly stated, when he used the Pokot as an example - "it is not without logic that innovations which would appear to constrain rather than to extend the scope of possible alternatives (as administrative measures so often have seemed to do), would not so readily find acceptance". Our case studies deal with the Pokot too, and they show a remarkably 'adaptive' people, 'forced to change' and doing so with an ingenuity which is striking. The stereotypes of the 1950s are no longer valid. The 'environment' of the Pokot is no longer the same. Compared to the multitude of crises ravaging the Pokot recently, the mid-20th century may easily give the impression of a pastoral idyl.

The three case studies show a different mix of causes for the recent crisis and they also show a different mix of responses. In all three cases a goat's epidemic, rinderpest, harvest failures due to droughts and the large scale influx of refugees were elements of the 1979-85 crisis, as well as cattle raids in dry season pastures west of the case study areas. In Alale and Kodich a military operation was an additional element of crisis. In Kodich it was a very decisive one. In Alale, cholera and raids in the case study area itself completed the disaster there. As the single most important cause for the destruction of animal wealth, we may give raids in Alale, the Operation in Kodich and animal diseases in Kongelai.

During the crisis, people of Alale were soon assisted by a Red Cross team; from 1982 onwards a mission took care of their health problems. In Kodich people had (and still have) to bridge a distance of twenty-five kilometres before they could get medical treatment: in Kacheliba. For people in Kongelai, the Kacheliba Health Centre and the Roman Catholic clinic there were more nearby.

If we deal with the other aspect of physical survival, the acquisition of food, we can conclude that arable farming became very important after 1979, in all three areas. It was unsuccessful, however, in 1980 (except Kongelai) and in 1984. As sources of additional food, wild food, school food, famine relief, food for work, internal redistribution of food ('begging') and redistribution of household members, all were of substantial importance in Alale, Kodich and Kongelai. In Kodich government sources of food were considerable; in Alale missionary and Red Cross sources of food. In Kodich and Kongelai casual harvest jobs in the highlands were of some importance; in Kongelai the possession of a plot in the highlands. In all three case study areas a lot of food was bought, maize meal ('posho') mainly in Alale and Kongelai - sold in shops and acquired in Kitale Town - and maize grains mainly in Kodich:

acquired from Ugandan Sebei who were eager to get 'hard' Kenyan currency in return. To get cash, in Kodich and Kongelai the sale of animals was a substantial source of money, causing a further reduction of the depleted herd and flock. In Alale, miraa and especially local gold, as well as all types of 'informal activities' surrounding it, were a major source of money. In 1984-85 gold also became important in Kodich and Kongelai (large numbers of people went to Chepkarerat). In Alale, and especially in Kongelai a multitude of casual job opportunities (government, mission or private) were a substantial source of money for men. Women could acquire cash by engaging in commercial brewing of beer, an activity which was significant everywhere and which functions as a major method of redistribution of gold, animal and job income. If we compare Alale, Kodich and Kongelai, the average cash incomes per capita differ considerably. Alale undoubtedly leads (in 1982 approx. 750 KShs/capita), followed by Kongelai (approx. 350 KShs/cap. in 1984-85) and finally by Kodich (only approx. 75 KShs/cap. in 1984-85). Very large differences exist between households and from one year to another.

We may wonder whether the proximity of the highlands/Kapenguria can explain the differences in responses. Harvest jobs in the highlands were of some importance for households in Kodich and Kongelai (and not for households in Alale), but only for a minority. Very few households in Kongelai (and none in Kodich and Alale) had access to plots in the highlands. Proximity had some influence, but not a strong one. Proximity can also explain the larger government interference in Kongelai and Kodich compared to Alale. The job opportunities in Kongelai certainly are a result of a longer and more diversified attention from 'Kapenguria'; in Kodich, however, the government attention was at least as important, although it was more of a famine relief/food for work character. Alale really seems to be isolated from major government interference (but not from missionary interference!). Probably this isolation had positive effects: the business of gold, and related activities, were strongly in local Pokot hands (with some Somali interference), and it is questionable whether such a lot of its proceeds would have gone to the local people if the government and government employees had been more close.

We will now deal with the capital survival strategies. To safeguard the herd during the crisis, some practices were general: feeding branches, going to fall-back areas (for Kongelai: Mnagei, for Kodich: Sook and Upe, for Alale: Upe), distributing stock among relatives and tilia associates and - if available at the right places, at the right times - inoculation. One can understand that gathering of information about the violence-related capital survival strategies (defence, acquisition of guns, raids) did not give very reliable results. There is enough evidence, however, that people in Kodich and Alale were using these methods, while Kongelai herdsmen didn't.

As a pastoral society, Alale had received the severest blow during the 1979-85 crisis. It is remarkable, that it is in Alale where the most rapid recovery seems to take place. Our stories of ten households show that almost all households had cattle again, in 1985; an average of ten head. In Kodich an average household had five or six head of cattle, in 1985; in Kongelai only four. In Kodich 18 % of the 330 households

interviewed in 1984 did not have cattle; 17 % of the 60 households interviewed in 1985. In Kongelai the percentage of cattle-less households was much higher: 33 %. Kongelai more clearly shows the signs of structural polarization, as we have seen. More households seem to have accepted a non-pastoral future, compared to Kodich and Alale. For most of those households, a combination of farming, (casual) wage labour and a variety of petty activities seems to be a poverty-prone prospect of a longer duration. Their pastoral survival strategies have failed. For most households, however, in Kongelai, Kodich and Alale, there is no need to conclude that pastoralism has no future, even if we have to deduce that animals only produce a small part of the people's food needs nowadays, both directly and indirectly. With an adequate defence, and with some assistance to rebuild animal wealth, to pasture management and to a gradual commercialization of recovered pastoralism, the western lowlands can be a domain of pastoralism for a long time to come.

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## Appendix 6.1 Food Production Estimates

### Introduction

The following assumptions have been used:

grains: 'simple husbandry' means no deliberate manuring, poor land preparation, poor weeding, use of local seeds, no irrigation or water harvesting  
 'improved husbandry' means use of hybrid seeds and better weeding  
 1 ton of grains is enough to feed 3.6 average persons

cattle: in a standard year (adequate grass and water for mobile herd; no disease; no prior drought):  
 milk: 1 Stock Unit = 1.4 head of cattle x 21 % lactating x 315 l x 700 kcal = approx. 65,000 kcal/yr  
 meat: 1 SU = 1.4 head of cattle x 13 % offtake x 110 kg edible meat x 2360 kcal = approx. 50,000 kcal/yr  
 together: 115,000 kcal/yr = 0.14 person

goats: in a standard year:  
 milk: 1 SU = 5 goats x 35 % lactating x 70 l x 730 kcal = approx. 90,000 kcal.  
 meat: 1 SU = 5 goats x 21 % offtake x 15 kg edible meat x 1450 kcal = approx. 25,000 kcal  
 together: 115,000 kcal/yr = 0.14 person

sheep: in a standard year:  
 meat: 1 SU = 5 sheep x 25 % offtake x 15 kg x 4035 kcal = approx. 75,000 kcal = 0.09 person

A 'dry' year is a moderately dry year after a standard year; yields are diminished; animal offtake goes to 30 %, more because of higher disease susceptibility than because of starvation; virtually no milk production.

Second dry years after a severe dry year, with complete crop failures and very high animal death rates during the first dry year result in much lower food production during the second dry year (see Chap.4).

#### a. Alale

147 km<sup>2</sup>; all Zone IV; no severe erosion; soil types: Um24 (117 km<sup>2</sup>) and M12 (30 km<sup>2</sup>)  
 livestock only: M12 not to be used; Um24: 1 SU/ha = 1800 persons  
 potential carrying capacity for a standard pre-drought year: 11,700 SU;  
 during a dry year: animal food for 1,000 people  
 arable use: M12: 30 km<sup>2</sup> x 0.05 PAUPA x 800 kg/ha maize = 120 tons  
 Um24: 117 km<sup>2</sup> x 0.21 PAUPA x 500/800 kg/ha sorghum/maize = 1230-1970 tons (all simple husbandry) : food for 4,900 to 7,500 people  
 with improved husbandry: food for 10,000 people  
 in a dry year (harvest 300 kg/ha): 780 tons together: 2,800 people

#### b. Kodich

208 km<sup>2</sup>; 57 km<sup>2</sup> in Zone V; 151 km<sup>2</sup> in Zone IV; soil types: U119 and A8, partly severely eroded. Details: V U119 moderate erosion: 51 km<sup>2</sup>; severe erosion: 5 km<sup>2</sup>; V A8: 1 km<sup>2</sup>; IV U119 moderate erosion: 74 km<sup>2</sup>; severe erosion: 54 km<sup>2</sup>; IV A8: 23 km<sup>2</sup>  
 livestock only: V standard: U119: 0.5 SU/ha; in eroded parts: 0.25 SU/ha; A8: 1 SU/ha

(although only to be used in the dry season); IV standard: U119: 1 SU/ha; in eroded parts: 0.5 Su/ha; A8: 2 SU/ha (dry season only)

Standard measurement: animal food for 3,000 people; measurement taking erosion into account: 2,500 people. Potential carrying capacity for a standard pre-drought year (erosion included): 17,525 SU. In a dry year this can feed 1,500 people.

arable use:

	ha	PAUPA	yield kg/ha	standard yield	A8 yield improved -----in tons-----	yield during dry year
V U119	5100	0.09	300/ 300/ 0	138	138	-
eroded	500	0.06	300/ 300/ 0	9	9	-
A8	100	0.64	500/ 800/ 0	32	51	-
IV U119	7400	0.09	500/ 500/300	333	333	200
eroded	5400	0.06	500/ 500/300	162	162	97
A8	2300	0.64	800/1150/500	1178	1546	736
total	20800			1852	2239	1033
population supporting capacity on the basis of subsistence arable farming				6700	8100	3700

c. Kongelai

154 km<sup>2</sup>; all IV; soil types: A8 (1,700 ha); U119 severely eroded (10,200 ha); U119 moderately eroded (900 ha); FY1 severely eroded (1,400 ha); FY1 moderately eroded (500 ha); F13 severely eroded (700ha); livestock use, if not eroded; A8: 2 SU/ha; others 1 SU/ha; if eroded: 0.5 SU/ha

standard non-eroded situation: carrying capacity in a pre-drought year: 17,100 SU; gives food for 2,600 people. Due to erosion, the carrying capacity will be below 10,950 SU, which gives food for 1,600 people. In a dry year, animal food can feed 1,000 people.

arable use:

type	ha	PAUPA	yield kg/ha	standard yield	A8 yield improved -----in tons-----	yield during dry year
A8	1700	0.64	800/1050/500	870	1142	544
U119	900	0.09	500/ 500/300	41	41	24
eroded	10200	0.06	500/ 500/300	306	306	184
FY1	1900	0.06	500/ 500/300	57	57	34
F13	700	0.12	500/ 500/300	42	42	25
total	15400			1316	1588	811
population supporting capacity on the basis of subsistence arable farming				4700	5700	2900

For table 6.7 and appendix 6.2 the following rough estimates have been used:

1 bag of grains (80 or 90 kg) = 1/3 person

1 head of cattle (milk, meat) = 0.1 person

1 goat (milk, meat) = 0.025 person. If the offtake is converted into grains - 150 KShs for a goat; 15 KShs for 1 kg of maize grains - = 0.1 person

1 sheep (meat): = 0.02 person. If the offtake is converted into grains: 0.1 person.

Appendix 6.2 Details Kongelai S Group and D Group, 1984-85

S group (surplus 1983)

	A	1	2	3	4	5	6	7	8	9	10	11	12	13	all
A	1														
B	12	7	13	6	5	4	8	7	9	6	7	3	7		
C	-	1	1	1	1	-	1	1	-	1	-	1	-		8
D	2	0	-	4	-	-	-	-	-	-	-	-	-	-	3
E	1	0	1	1	-	-	-	0	-	-	-	-	0	1	7
F	0	2	-	-	-	0	-	0	-	-	-	-	-	0	5
G	0	-	0	-	0	-	-	0	-	0	-	0	-	-	6
H	0	0	-	0	-	-	-	0	-	-	-	-	1	-	5
I	30	40	30	100	20	10	10	20	0	10	0	70	20		1
J	-	+	-	-	+	-	-	+	-	-	-	+	+		5
K	+	-	+	+	-	+	-	+	-	+	-	-	+	+	7
L	-	-	-	+	-	+	-	-	-	-	-	-	-	+	3
M	-	+	+	+	-	-	+	-	-	+	-	+	+	+	7
N	-	-	-	-	1	-	-	-	-	-	-	-	-	+	2
O	+	+	+	+	0	0	-	+	+	+	+	+	+	1	12
P	1	-	+	+	-	0	+	-	-	-	-	-	-	+	6
Q	-	+	1	1	0	0	+	+	0	-	+	-	-	+	10
R	+	+	+	+	-	-	+	+	+	+	+	-	-	+	9
S	9	9	+	1	1	4	2	4	5	1	+	1	2		13
T	p	p	-	-	-	p	-	p	-	-	-	-	-	-	4
U	+	p	+	+	+	p	-	p	p	+	+	+	-	-	11
V	p	-	-	p	-	p	-	-	p	-	-	-	-	p	5
W	+	-	-	-	-	+	-	+	-	-	+	+	-	-	5
X	p	+	+	p	+	-	+	-	-	p	-	+	+	p	9
Y	-	+	-	-	-	-	-	p	+	-	p	-	+	+	5
Z	-	-	-	+	-	-	+	-	-	+	+	p	-	-	5
a	+	-	+	-	-	+	-	+	+	+	-	p	+	+	8
b	-	-	+	-	-	+	-	-	+	-	-	-	+	+	5
c	-	-	+	+	-	+	-	+	+	-	+	-	-	-	6
d	y	y	n	y	n	y	n	y	n	n	n	y	y		7
e	+	-	+	-	-	-	-	+	+	+	-	+	+	+	7
f	-	-	-	+	+	-	-	-	-	+	-	-	-	-	4
g	-	-	+	-	-	-	-	-	-	+	-	-	-	-	2
h	-	+	+	+	+	+	-	+	+	+	-	+	+		10
i	-	-	-	+	-	+	-	+	+	+	-	-	+		6
j	-	-	-	+	-	-	-	-	-	-	-	-	-	-	1
k	+	+	+	+	-	+	+	+	+	+	+	+	+	+	12
l	-	+	+	+	-	-	+	-	+	+	-	+	-		7
m	7	2	1	11	1	4	0	3	3+	1	1	2	5		

A = number

B = number of members in the household, August 1985

C-Q: - = zero / 0 = less than one person can be fed / other = number of persons that can be fed; see Appendix 6.1

C = food in store April 1984

D = harvest 1984

E = milk production

F = ate cattle

G = ate goats

H = ate sheep

I = percentage of food needs covered by own production

J = bleed animals

K = gather wild food

L = eat honey

M = received food from relatives, partly by begging in the highlands

N = highland harvest contracts

O = governmental famine relief

P = food assistance from a church

Q = food for work, mostly church-sponsored

R = school food

S = number of people that can be fed with purchased food (+ = unknown but probably small)



D Group (severe food deficit in 1983)

	14	15	16	17	18	19	20	21	22	23	24	25	26	all
A	14	15	16	17	18	19	20	21	22	23	24	25	26	all
B	14	5	8	9	13	4	9	9	9	3	4	10	3	
C	-	0	-	0	-	-	0	-	0	-	-	-	-	4
D	-	-	-	0	-	-	-	-	-	-	2	-	-	2
E	-	+	+	+	-	-	-	-	-	-	-	-	-	3
F	-	+	+	-	-	-	+	-	-	-	-	+	-	4
G	+	-	-	+	-	-	+	-	-	-	-	+	-	4
H	-	-	-	+	-	-	-	-	-	-	-	+	-	2
I	0	20	10	20	0	0	0	0	0	0	50	10	0	0
J	+	-	-	+	-	-	-	-	-	-	-	+	-	3
K	-	+	+	+	-	+	+	+	-	-	-	+	+	8
L	-	-	-	-	-	-	-	-	-	-	-	-	-	0
M	-	+	-	-	+	+	+	-	+	-	+	-	-	6
N	1	+	-	-	-	-	+	-	-	-	-	-	+	4
O	2	0	+	+	+	+	1	+	1	+	1	0	1	13
P	-	+	-	+	-	-	-	-	-	-	-	-	-	2
Q	-	0	+	3	-	1	1	1	0	-	+	0	+	10
R	+	-	+	+	+	-	+	+	+	-	-	+	-	8
S	3+	2	5	1	6	2	10	6	1	1	2	2	3	13
T	p	p	p	-	-	-	p	-	-	-	-	-	-	4
U	p	+	+	p	-	-	p	-	-	-	-	+	-	6
V	-	-	-	-	p	-	-	-	-	-	-	-	-	1
W	+	-	-	-	-	+	-	p	-	-	p	+	+	6
X	+	-	+	+	-	-	p	-	p	+	-	+	-	7
Y	-	-	-	+	-	-	-	p	+	+	-	-	+	5
Z	-	-	-	-	-	-	-	-	-	-	-	-	-	0
a	-	-	-	-	+	+	+	+	+	-	-	-	+	6
b	+	-	-	-	-	-	-	-	-	+	-	-	-	2
c	-	-	-	-	-	-	-	-	-	-	-	-	-	0
d	n	n	n	n	n	n	y	n	n	n	y	n	y	3
e	+	+	+	+	-	-	+	-	-	-	-	-	-	5
f	-	-	-	-	-	-	-	-	-	-	-	-	-	0
g	-	-	-	-	-	-	+	+	-	-	-	-	-	2
h	+	+	+	+	-	-	-	-	+	-	-	+	+	7
i	+	+	-	+	-	-	-	-	+	-	-	-	-	4
j	-	-	-	-	-	-	-	-	-	-	-	-	-	0
k	-	-	+	+	+	+	-	+	-	+	-	-	-	6
l	-	-	+	-	+	-	-	+	-	-	-	-	-	3
m	3+	1	3	1	10	0	4	3	1	1	1	1	1	

T - a: - = no reported income / + = reported income , probably below 500 KShs / p = reported income above 500 KShs

T = sale of cattle

U = sale of sheep or goats

V = income from a permanent job

W = income from a casual job

X = gold

Y = firewood or charcoal

Z = beer or other local brews

a = other income

b = members who were there in April 1984 went away afterwards

c = new arrivals, adopted by the household

d = food availability y = probably enough n = probably not enough

e = feed branches as survival feed

f = to Ugandan pastures during the drought

g = sent stock away to relatives

h = has tilia-cattle elsewhere; maybe sent stock there during the drought

i = has tilia-cattle in own herd; maybe received cattle recently

j = has a shamba in the highlands

k = used hybrid maize seeds in 1985

l = planted beans in 1985

m = total reported cash income x 1000 KShs (0 = less than 500 KShs), April '84-August '85

## 7. CONCLUSIONS AND THEORETICAL REFLECTIONS

Pokot adore livestock. Animal food is most favoured; animals are a principal store of wealth and the most important means of accumulation; animals are a unit of account, a basic material for cementing social networks, a major element of bridewealth and a source of socio-economic prestige. As a way of life, subsistence pastoralism is clearly preferred. For the large majority of inhabitants of western Pokot, subsistence pastoralism was the core of their economy, until the 1970s. During and after the 1970s, things went wrong. Our case studies show that currently the western Pokot are pastoralists in dire straits. Most households have in fact ceased to be pastoralists. The western Pokot have experienced a disastrous destruction of wealth, probably only paralleled by the crisis of the 1890s. Most households are forced now to scratch a living out of arable farming, gold panning and a host of other petty activities. In this concluding chapter we will try to summarize the answers to the four research questions which have been introduced in Chapter One.

### 7.1 How Crisis Prone is the Economy in Semi-Arid Western Pokot, due to Threats from the Physical Environment?

1.A For human land-use of semi-arid areas, not so much the low average rainfall is a problem, but the variability and unreliability of rainfall in space and time. In case of arable land-use, isolated harvest failures are normal, area-wide harvest failures occur irregularly but with a statistical chance of at least 25 % on the humid side and definitely more than 50 % on the arid side of semi-arid areas. The irregularity means that all cultivators have to reckon with harvest failure every season. Within the semi-arid zone large physical differences occur: differences in soils (fertility, available water capacity for plants), relief, water availability for irrigation, intra-zonal and micro-environmental differences in rainfall and evaporation. This means that the 'possible arable use per annum' and the potential yield levels differ widely. If we add differences in the quality and types of seeds and in arable husbandry, it means a large differentiation in local arable food availability from field to field, from household to household, from place to place and from season to season. Households who cultivate structurally good fields are in a better position in general; however, they can be hit by harvest failures too (good riverine soils, for instance, might be flooded).

With such a large variety and with the continuous danger of local arable food shortages, the acquisition of 'reserve food' or 'emergency food' becomes crucial. Storage of excess harvests from former years may be a possibility. In western Pokot it hardly occurs: even in good years there are few cultivators with excess harvests, due to small acreages and this is mainly caused by labour shortages during part of the cropping season. On top of that, maize and sorghum store badly and finger millet, which stores better, has very low yields. Alternative sources of food are much more important than grain storage. These are either livestock and wild food or food which is bartered, purchased or received as a gift.

1.B Food security in semi-arid areas like western Pokot can best be based upon livestock. In years with adequate rainfall, milk and the meat of small stock are adequate sources of food for subsistence pastoralists; if they have enough animals. During droughts, meat - also of cattle - becomes more important; the importance of milk becomes negligible. During a severe dry year, the meat of dead or slaughtered animals could provide more calories and protein than milk and meat during standard years. During a moderately dry year at least half of the calories and protein of a standard year will be available. If sheep are important, there may even be hardly any difference in food availability between a standard and a moderately dry year. Only a second dry year in succession, following a severe first dry year with more than 50 % casualties, endangers the availability of livestock food. First dry years with more than 50 % livestock mortality did occur in western Pokot during this Century (they were reported in 1921, 1943, 1960, 1965, 1973 and 1984). Livestock epidemics caused more animal deaths than lack of feed or water as such. Elsewhere in Kenya such casualty rates have been reported too. During the 1984-85 drought, for instance, Homewood & Hurst (1986) found 50 - 60 % herd decline in Baringo; Grandin & Lembuya (1987, p.12) found a net decline of 40 % for rich producers in eastern Kajiado and of 70 % for poor livestock owners. For Turkana, Hogg (1983) even reported a cattle mortality of 90 % during the 1979-80 drought, as well as 80 % sheep and goat's mortality and 40 % camel mortality. Lack of grazing and water during a first severe dry year results in weak animals, which are easy victims to livestock diseases. If severe dry years are followed by years which are also under the average rainfall, further casualties will occur. During this Century, periods of livestock disasters of two or more years occurred in western Pokot between 1919 and 1924, 1927-29, 1943-44, 1960-61, 1965-66, 1971-74 and 1978-81. During recovery years afterwards there is a consumption shift back to milk and a very minor role of meat in the diet. If pastoral households had accumulated enough animals for food self sufficiency, a first disaster year does not endanger food security (as it does with arable farming); a second disaster year may be more problematic. Afterwards, the depleted animal wealth is insufficient to produce enough animal food, during recovery years. If more than one disaster period occur during a decade, as happened between 1918 and 1929, and after 1960, recovery periods are broken off too soon and pastoralism faces a major survival crisis. Arable and non-agricultural survival strategies become a necessity to secure alternative sources of food.

1.C Our findings show that for western Pokot there is not necessarily a 'tragedy of the commons' (Hardin 1968), no 'overexploitation of the range because of excess animals'. Pokot during this Century never had a chance to build up herds and flocks beyond the 'carrying capacity' of the land as a whole, except in the driest of years. We join the ranks of scientists who have become very critical of the wisdom of range ecologists applied in semi-arid areas (see Sandford 1982, 1983; Gilles & Jamtgaard 1982). There is so much confusion about the assumptions underlying 'carrying capacity' estimates, that one should be suspicious about policy statements based upon 'overstocking'. Especially, it is unclear how rainfall variability influences the variability of carrying

capacity. If in western Pokot stock is 'overconcentrated' in some places in some dry periods, not 'excess stock' is a problem or 'wrong' herd and pasture management, but lack of access to refuge areas; due to 'ngoroko' insecurity and a bit due to 'forbidden areas' and enclosures, which became an increasing problem in southern Pokot after the mid-1950s. Even if 'overconcentration' of stock occurs, this is not automatically 'a problem'. Underutilization of the vegetation may even be a more serious problem in the long run because of bush encroachment and the expansion of tsetse-fly areas.

1.D Recurrent livestock disasters before 1930, during the early 1940s and after 1960 have meant that total animal density in western Pokot was highest during the late 1930s and the late 1950s and lower in between and afterwards. During the 1930s most Pokot food needs could be provided by their animals. If we assume that the population of western Pokot was around 25,000 in 1926 and approx. 110,000 in 1986, a more than fourfold increase, it is clear that 'subsistence pastoralism' is a way of life of the past. For the western Pokot lowlands as a whole, the actual animal food production is far below human food requirements nowadays, both during standard years and during droughts. During the 1970s also the potential livestock-based production became lower than the food needs of the increasing population in western Pokot. If all 110,000 people in western Pokot would be fed on livestock products completely, they need at least 800,000 stock units during standard years and more during moderately dry years. The area covers 7,500 square kilometres. It would mean a stock unit density of at least 105 per square kilometre. This is well beyond the carrying capacity which we have calculated on the basis of KSS/Braun (see Ch.3) and far beyond the carrying capacity based on former models. Even if we would take a 50 % food provision on the basis of livestock, the population grows beyond the population supporting capacity on the basis of livestock, especially during years below the average rainfall. With a population growth rate of 3 % per annum (and perhaps even more) any strategy trying to restore 'subsistence pastoralism' is doomed to fail, or worse may result in carrying capacity degradation, unless far reaching methods of pastoral intensification are applied.

## 7.2 What Types of Strategies have the People of Western Pokot Developed to Survive these Recurrent Crises?

We have tried to distinguish between three types of survival strategies:

- the physical survival strategies during or after a drought or any other type of disaster;
- the capital survival strategies to prevent mass losses of animal wealth during disaster periods;
- the pastoral survival strategies to safeguard pastoralism as a way of life.

In Chapter 4 and 6 we have seen that physical survival strategies were manifold and that especially during the most recent period of disasters, 1979-85, a very diversified range of methods was applied to stay alive and to get sufficient food. The mix of responses (and the type of crisis) differed for various parts of the research area, as was

discovered in Chapter 6. In the three case-study areas, and probably in western Pokot as a whole, physical survival strategies generally seem to have worked. Unlike neighbouring Karamoja, and unlike other areas in Africa, famine deaths could largely be avoided, despite the gravity of the crisis. It is difficult to be specific about former crises, because of lack of data. The scant evidence about the 1886-1896 crisis suggests a high death rate and the overriding importance of two food acquisition strategies: hunting/gathering and barter of ivory for food. The 1918-24 crisis had many casualties too. People started to make use of government sources of food and money. The 1927-29, 1943-44, 1950-53, 1960-61, and 1971-74 periods of crises were less severe and probably did not result in famine deaths; dead animals and imported food provided most of the food needs. The 1965-66 crisis was more severe and famine food probably played a major role to prevent famine deaths.

Capital survival strategies are at the core of the pastoral economy. They are not always successful, however, as an animal death rate above 50 % clearly shows. During the most recent disaster-period, the capital survival strategy largely failed. The combination of drought, epidemics, raids and military violence was too much, and made the 1979-85 crisis the most severe one during this century (in terms of depredation of wealth).

As a result, we can no longer regard the western Pokot economy a pastoral one. The current food basis is a mixture of locally produced crops, relief food and, for a considerable part, purchased food. Live-stock food additions are minimal. Instead of 'pastoralists' we should speak of 'charity dependent peasants-cum-labourers-cum petty producers' now (if the last word sufficiently covers the gold, miraa and other trades). For the time being we may speak of the defeat of pastoralism.

### 7.3 What Impact did External Interventions have on Crises and on Survival Strategies of the Western Pokot?

3.A The three types of external interventions in western Pokot during this century were those of 'enemy neighbours' (Turkana, Karimojong, Sebei), state institutions and religious missions. Private companies or traders did not play important roles, with the exception of (more or less indigenous) Somali traders and recently other non-Pokot traders in centres like Kacheliba and Chepareria.

Enemy neighbours are both an aid to survival strategies (providing animals which can be raided) and a threat (raiding and damaging stores and fields, killing people). Before 1925 and after 1967 Turkana have been a threat mostly, resulting in the depopulation of northeastern Karapokot. Sebei and Karimojong have been an 'aid' - if we make up the balance - until the late 1920s and between 1950 and the mid-1970s. After the mid-1970s they have become a severe threat, resulting in the depopulation of Upe, southern Karapokot and southwestern Riwa. 'Ngoroko' (violent stock theft) also means the contraction of the grazing area. We have seen that, in Alale, the major part of the herd depredation was caused by enemy raiders. During the 1930s and 1940s there was a period of remarkable security, by a combination of relatively good weather, and strong British police presence. After 1950 the insecurity increased, threatening ever more parts of western Pokot (it is useful to stress

that the breakdown of security started a decade before Independence, not after Independence. White settlers whom we interviewed were eager to blame the African government, which is not in conformity with the facts).

3.B Institutional interventions had a considerable, but partly contradictory impact on survival strategies, and on the occurrence of crises as well. But before dealing with the relationship between institutional interventions and the three types of survival strategies given above, it is useful to look at the interventions as such. In chapter 5, a lengthy description provided the building material for a number of conclusions drawn there. Here we will compare our findings with the conclusions of a major comparative study in the field of pastoral development policy: Sandford's book on the 'Management of Pastoral Development' (1983). He states that "in pastoral development government has five broad roles to play. Firstly, it must ensure an adequate level of security. (...) Secondly, government will, in almost all cases have to carry out the research required to improve the technology of range and livestock development. Thirdly, it will also normally have to act as the channel through which funds from sources outside pastoral society (...) flow into pastoral development. Fourthly, government usually influences the general institutional background, in terms of land-tenure policies, the price-ratios between commodities which pastoralists buy and sell, and the provision of social and physical infrastructure (...) Fifthly, it usually provides some of the services, e.g. animal health and water supply, involved in specific components of pastoral development" (Sandford 1983, pp.255-256).

If we look at our research area we can conclude that in practice the government does not always play those roles, not everywhere and not well enough. Let us look at each of the components, which Sandford mentions.

- 1) Increasingly, the government cannot ensure an adequate level of security. Its attempts to do so, result in more insecurity, and in a deepening of the pastoral crisis - as is clear from the Kodich case - study.
- 2) Area-specific research to improve range and livestock development has been very meagre in general, and in western Pokot in particular.
- 3) A relatively large proportion of funds reaching the Pokot area for development purposes flows through missionary channels, virtually independent of any government interference.
- 4) Land tenure policies (e.g. Group Ranches) have only been implemented in a small part of the research area and they were unsuccessful. Price-ratios for animals, grains and gold - the most important products for Pokot lowland people - are very marginally influenced by institutional policies. In social and physical infrastructure (especially water, education and health care) missions play important roles; in northern Karapokot and Upe they are the dominant agents in these respects.
- 5) Finally, livestock specific interventions have been meagre, discontinuous and often unsuccessful (dips) or too late to avoid major crises (vaccinations).

All this does not mean that external agencies had no impact on pastoral development. Missions are performing so many 'government duties' in western Pokot, that they should be analysed together with the various government agencies. Then the width and strength, as well as the spatial

coverage of interventions becomes more profound. The government played more roles than Sandford suggests, and those other roles are often more important: taxation, punishment/confiscation, labour recruitment, control of movement, settlement and trade, famine relief, food for work, casual labour opportunities and crop development, to mention the most important other interventions. Some of these interventions have a clear negative impact on pastoral development. In areas with a lot of interventions, one is struck by the contradictions between the various interventions, and by the differential impact on survival strategies.

In Chapter 5 we have seen that even a relatively small area as western Pokot experienced large intraregional differences in the width and depth of institutional interventions. In Chapter 4 we also discovered a differential importance of the occurrence of raids/warfare by neighbouring enemies. A striking difference can be noticed between Upe and the other three sub-regions, after 1970. Belonging to Uganda meant misery and anarchy, and a shrinking governmental presence. For the Karapokot ('Kenya Mpya': New Kenya) and the area East of Suam, belonging to Kenya meant the participation in a 'semi-arid focus', an upsurge of all kinds of institutional interventions. The border position, and especially the position near violence-stricken Uganda, resulted in some interventions which were particularly harsh: the military operations.

3.C It is time to deal with the most important research question of this study: what impact did external intervention have on crises and on the survival strategies of the western Pokot? We will first look at the impact of external interventions on survival strategies which try to avoid death during a crisis. We have distinguished health-related from food-related physical survival strategies. Within food strategies we have to deal with livestock food, arable food, demographic strategies, additional food, money to buy food and the availability of commercial food. See table 7.1 for an inventory. Here, and in tables 7.2 and 7.3 we give our own judgements, combining the effects of all external interventions which were described in chapter four (enemy raids) and five (government and missionary interventions in the sphere of incorporation and development).

3.C.a Only after the mid-1940s small health facilities were started where all sick people could go; during the 1950s people could also go to lowland hospitals. Recently most populated areas are adequately covered with health facilities, with a fair to good quality of health care. Missions are important. Vaccinations, mobile health care and mother and child health care - after the 1950s - must have had an important preventive influence. Cholera vaccination, in 1980, contained a severe epidemic. Disease prevention was also reached by strongly improved clean water facilities (boreholes 1950s; piped water supplies and again boreholes after 1975). Summing up, external activity of government, but mainly missionary agencies must have resulted in better health conditions, and hence in higher chances to survive crises. Health care and clean water can probably explain a large part of the major population increase in western Pokot after the 1950s. Two negative influences on health conditions should be mentioned: raids (prior to 1930, and after 1950, especially 1979-82) and military actions (prior to

1925, during the 1960s and in 1984 and 1986).

3.C.b The external influence on livestock food during crises has either been non-existent or negative. Almost constantly the government has drained livestock wealth (and hence food 'stored on the hoof'): by taxation, especially heavy during the 1930s, by quota-destocking (1950s), by harambee contributions in the form of animals (after Independence), by collective punishment (1910s, 1950s and 1960s), by individual fines (especially 1950s), prevention to recover stolen stock (1920s), army and police raids (Upe 1960s and 1970s) and confiscation of animals during military actions (esp. 1984). In addition, cattle raiders have drained animal wealth and worsened crises during droughts (early 1920s, 1979-81). Only once external institutions assisted in herd accumulation: in the years 1919-23, Pokot got a share in the booty of the punitive expedition in Turkana.

3.C.c Arable strategies aiming to secure at least some harvest during droughts were strongly assisted after the mid-1970s, partly directly (a variety of drought-adapted crops/varieties, good seeds, larger fields, better husbandry, better choice of fields) and partly indirectly (water facilities nearby result in a higher labour availability and hence in the possibility to cultivate larger and more scattered fields and more labour intensive crop husbandry). Some arable extension was practised long before the mid-1970s: during Chaundy's time, the 1930s and early 1940s. Arable survival strategies were not only positively influenced. Interventions tried to stop the colonization of humid (forest) areas and the use of beer in social ceremonies. During military operations sometimes food stores or even fields were destroyed. Indirectly the drainage of child labour away from cultivation into schools must have offset at least part of the increase of labour availability due to more nearby water facilities. On the whole we may conclude that missionary and government (e.g. ASAL-)interventions have assisted in the increase of arable farming, in making it more drought-adapted, and in supplying livestock-poor Pokot with a new possibility of food self sufficiency.

3.C.d The kinship- and marriage-responses to crises were largely undisturbed by external interventions. The only 'demographic' response related to external interventions can be found in the sphere of education: stimulated by boarding schools and school food. In areas where the provision of school food was continuous, it must have had a major impact on the nutrition of children. The extraordinary increase of education in western Pokot, between 1979 and 1982 can mainly be attributed to the availability of school food.

3.C.e Additional food during crises can be acquired via barter with highland grain producers, via various types of 'begging' and via purchase of food. Barter was generally not interfered with: most barter does not take place at formal market places, but within networks of acquaintances. Only recently an indirect threat to barter is the acquisition of highland- and Chepareria-maize by a nation-wide marketing agency. The indigenous practices of 'begging' - with or without some work in return - were not interfered with. Important possibilities for 'begging' were added, though: the free food of missions and the



Table 7.1 Physical survival strategies in western Pokot and the impact of external interventions, 1900-1985

Where: a = first half of a decade  
 b = second half of a decade  
 + = major positive impact  
 . = minor positive impact  
 - = negative impact  
 () = indirectly  
 c = contradictory impact (some interventions positive, others negative)  
 u = under construction

Type of strategy	Impact of external interventions																	
	1900		1910		1920		1930		1940		1950		1960		1970		1980	
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
<b>Health</b>																		
acquire medicine			.	.	.	.			.	.	+	+	+	+	+	+	+	+
vaccination, mobile health											+	+	.	.	.	.	.	+
mother/child health											+	+	+	+	+	+	+	+
avoid contaminated water									.	.	+	+	.	.	.	.	.	+
<b>Food: Livestock strategies</b>																		
herd accumulation as insurance			-	+	c	-	-	-	-	-	-	-	-	c	-	-	-	-
animal diversity																		-
flexible diet																		
preservation of animal food																		
eating dead animals																		-
bleed animals																		
slaughter animals											(-	-)						
hunting parties											-	-	-	-	-	-	-	-
wild food																		
barter animals for grain																		(-)
<b>Food: Arable strategies</b>																		
drought-adapted varieties/crops											+	+	+	+	+	+	+	+
combining crops/intercropping											+	+						+
cultivating larger areas																		
tractor																		+
more labour																		-
scattered fields																		(+)
colonization more humid areas																		-
choice of fields																		+
moisture harvesting																		+
irrigation																		u
adequate crop husbandry																		+
improved storage																		+
beer parties to strengthen networks											+	+						(-)
																		-

Table 7.1 continued

Type of strategy	Impact of external interventions																	
	1900		1910		1920		1930		1940		1950		1960		1970		1980	
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
Food: Demographic strategies																		
members to relatives																		
members to schools (boarding)														+	+	+	+	
school food										+	+							+
members to highland husbands																		
Additional food strategies																		
begging food from																		
relatives																		
missions/church members														+	+	+	+	
free famine food														+	+	+	+	
food for work																+	+	
local labour parties																		
join ceremonies																		
Money to buy food																		
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
sell goats			+	+	+	+	+	+	+	+	+	+						
sell cattle			-	c	-	-		+	+	+	+	-	-			c	-	
sell hides and skins	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
sell gold																		(+)
sell miraa																		(-)
sell beer																		-
sell wood/charcoal																		-
sell crafts																		+
sell precious stones																		+
sell honey																		+
sell vegetables, fruit																		(+)
sell crops, esp. maize																		+
sell ivory	+	+	+	+														-
sell hunting products																		-
private labour contracts																		+
mission labour contracts														+	+	+	+	+
local casual gov. jobs			+	+	.	.								+	+	+	+	+
local permanent jobs			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
civil servant informal jobs							+	+	+	+	+	+	+	+	+	+	+	+
petty trade														-	-	c	c	
prostitution																		(+)
migrant labour jobs					+	+												(+)
permanent jobs in southern highlands																		+
permanent jobs outside the district									+	+								+
Availability of commercial food																		
in local shops									+	+			+	+				+
in highlands																		-
outside district			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

government, the food for work projects, and the addition of a new begging circuit: the congregation of members of particular church groups. These new forms of begging became important after 1965. Especially the Kodich case study showed the importance of famine relief food in surviving the 1979-82 crisis.

3.C.f The purchase of food (grains especially, but maize meal as well) has two aspects: the availability of food, and the availability of money to buy food. The major government strategy against famine during colonial times was to ensure that there was enough food in shops. The colonial government also stimulated (Indian) traders to sell food at livestock markets. After the mid-1970s more private traders established shops in some lowland centres (esp. Kacheliba, Chepareria, Alale-Amakuriat) where food could be bought. As far as maize meal was sold in the Kenyan parts of the western Pokot lowlands, the official prices were mostly adhered to. Only in gold centres inflated prices were paid. The same is true for the Chepkarerat gold centre in Upe (1984-85). Chepkarerat attracted so much food, that commercial food availability in other centres was hampered. Lowland people who went to buy food in the southern Pokot highlands or in Sook had no problems in doing so, in general. Those who went to Trans Nzoia to buy maize were not allowed to transport it over district boundaries, though, without permission. For many Pokot who transported food from Trans Nzoia into Riwa there were no problems, in practice. Many traders in Karapokot also had no practical problems to buy food in Ugandan Sebei and transport it to Kanyerus or Kacheliba.

3.C.g To buy food, people need money. On the one hand, the government had a negative influence on the specific availability of money for food, as money was drained for non-food purposes: taxes, but recently also school fees, clothes, harambee contributions. On the other hand, external interventions had positive as well as negative effects on the availability of money as such. In the early parts of this Century, the major positive influence was the sale of ivory to private traders and caravans (cowrie shells were money). During the early Colonial period, goats' markets, the organization of the hides' and skins' trade, a few local jobs - especially in administration and road building - and officially recruited migrant labourers were sources of money. The sale of cattle was generally hampered. In late colonial times the sale of cattle, local contracts for missions, 'informal' income related to government positions, and army jobs were additions of some importance. On the other hand the informal trade in ivory and other hunting products was checked. During the 1960s and 1970s the government had no more influence on goats' marketing, while the interference with the hides' and skins' trade decreased. The strong increase in casual jobs and later also in permanent jobs (esp. teachers) resulted in an unprecedented inflow of money. Indirectly this meant a possibility to sell agricultural produce (and labour) to the increased number of civil servants (who form a ready market for milk, goats, grains, some vegetables and fruits). During the 1980s the government had a positive impact on the organized sale of honey (Kodich), maize (Chepareria), and craft products (village polytechnics). Ambivalent and minor was the influence on the sale of gold - the most important source of cash income

since 1979. Negative was the impact on the sale of home-brews (a major source of income for women), firewood and charcoal. Pokot petty trade was often hindered (licences, public health checks) and the persistent lack of credit was never mitigated. Indirectly government activities created opportunities for petty trade, the sale of local beer, prostitution: road work's camps and army barracks acted as a centre of gravity (as did gold centres, but there we cannot speak about a government initiative). Lowland money must also have been increased by remittances from those who had found jobs in the highlands.

3.C.h If we compare the case-study areas Alale, Kodich and Kongelai, some differences in the relative importance of various physical survival strategies are abundantly clear during 1979-85. In Alale gold has been of utmost importance from the start, in Kodich and Kongelai only after 1983. In Alale missionary famine relief was more important than elsewhere, in Kodich government famine relief. In Kongelai the purchase of food and the acquisition of food from the highlands was dominant. The relative importance of external interventions on survival strategies also differed: in Kodich both the negative influence (military action) and the positive influence (food for work, famine relief, assistance to arable farming) had very far reaching effects. In Alale the most important survival strategy, gold, was in fact completely out of reach of the government. The most important negative impact here, the raids, were also not of a government nature. In Kongelai both the negative and the positive external influences on crises and survival strategies were less pronounced. The crisis was a bit less severe, here. The people were more left to find their own solutions. Internal differences in successful physical survival strategies proved to be very large, though, and probably a process of pauperization among part of the population is more structural in Kongelai than elsewhere.

3.D So far we have dealt with a large number of physical survival strategies. A second major group of survival strategies is the one concerned with the survival of livestock wealth (and hence household wealth to a large degree) during crises. Table 7.2 gives a summary. Partly, these strategies were not or only marginally interfered with (e.g. defence against predators, herd dispersal, stock associateness - although here the forced destocking of the 1950s and the military action in 1984 probably strained some 'tilia-'relationships). Other survival strategies under this heading were very strongly influenced. Herd mobility was negatively influenced by constraining animal movements, by diminishing labour availability for movement, by hindering access to particular areas. On the other hand, herd mobility was positively influenced by improved animal health and better availability of water. Also the assistance to the acquisition of additional fall-back grazing land in Karimojong territory (1920s-1950s) was of some importance. Preventive animal health care (vaccination campaigns, some dips) clearly had a positive impact after the mid-1950s, although it was not always in time, and goats and sheep were virtually neglected. The survival of livestock wealth was also assisted by improved management of the environment, especially by rotational grazing in the grazing schemes of 1954-60 and in the group ranches, between 1974 and 1979 (although East of Suam only). More reliable water facilities (1950s, after 1975)

Table 7.2 Strategies for the Survival of Animal Wealth during Crises and the Impact of External Interventions, Western Pokot 1900-1985

for the meaning of +, - etc.: see table 7.1

Type of strategy	Impact of external intervention																	
	1900		1910		1920		1930		1940		1950		1960		1970		1980	
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
herd mobility					-	-					+	c	c	+	c	c	c	c
defence against predators																		
herd dispersal																		
(risk spreading)																		
(by labour availability)																		
stock associateship																		
(risk spreading)																		
animal health care																		
vaccination of cattle																		
of goats/sheep																		
selective breeding																		
(drought adjustment)																		
management of the environment																		
grazing reserves/rotational grazing																		
water availability																		
use of fire																		
organization of committees																		
defence against raiders																		
conquering/acquiring 'enemy' grazing land																		
adding other fall-back pasture																		
fodder production																		

increased the potential grazing area. The use of fire, though, was strongly discouraged. Indigenous environmental management existed largely unnoticed. Part of the traditional fall-back areas (the humid forests and the southern highlands) could no longer be used because of external intervention. The possibility to add new fall-back areas in zones with tsetse infestation was hardly assisted. Experimental fodder production only recently started; indigenous use of 'drought-feed' was largely unnoticed, and was not assisted. In general, one major survival strategy - defence against raids - was assisted, although parallel to and not integrated with Pokot defence organization: only once Pokot were armed by the government (1980). In 1984 these 'homeguards' had to deliver up their guns again. Army and police were effective allies in suppressing enemy raids between 1929 and 1953, very ineffective prior to 1924 and between 1979 and 1982. In the mid-1960s and during the 1980s - in Upe in fact since 1964 - the presence of institutional protectors backfired in some areas, when policemen and soldiers became looters and killers themselves, instead of allies against a raiding and killing enemy. The regional selectivity in police- and military actions (strong in Upe and Karapokot, weak in Turkana, Sebei, Karamoja) resulted in a relative weakening of Pokot defence capacities. If insecurity continues,

and the army and police can not guarantee an effective 'institutional' defence, while weakening Pokot defence, the future of Pokot pastoralism is very bleak indeed.

3.E The last cluster of 'survival strategies' concerns the survival of pastoralism as a mainstay of western Pokot economy; the long-term prevention of the loss of a way of life that is clearly regarded as a cultural and economic ideal. Our study shows an overwhelmingly negative external influence on the possibilities to rebuild herd and flock (see table 7.3), although not touching on all aspects. Hardly any interference was noticed on animal diversity (with the exception of the 'anti-goat attitude' during the 1930s, which had only 'office' importance, though), on stock associateship and on bridewealth arrangements. Very negative was the impact on herd growth. We have already dealt with the ways the government (and raiders) drained animal wealth. The suppression of raids to acquire cattle from 'enemies' of course had an adverse influence too. The dissenting missionary attitude towards polygamy - as far as it had any impact - had a negative influence on one of the crucial indigenous elements of network-building and, for bride's families, on the availability of bridewealth.

Table 7.3 The External Impact on the Survival of Pastoralism, 1900-1985

for the meaning of +, - etc.: see table 7.1

Type of strategy	Impact of external interventions																	
	1900		1910		1920		1930		1940		1950		1960		1970		1980	
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
<b>A. Rebuilding herd and flock</b>																		
herd accumulation	-	+	c	-	-	-	-	-	-	-	-	c	-	-	-	-	-	-
additional pasture			c	c	c	c	+	+	-	-	c	-	-	-	-	-	-	-
animal diversity							(-	-)										
stock associateship											(-							(-)
raids			c	c	c	c					c	c	c	c	c	c	c	-
buying animals (internal exchange)											+	+	+					
receiving animals (bridewealth)																		
money to buy animals					+	+												+
barter animals for ivory	+	+	+															
restocking assistance																		
<b>B. Intensification of pastoralism</b>																		
improved pasture											+	+			+	+		.
higher food per stock-unit											.				.			.
labour addition																		
polygamy							(-				(-	-	-	-	-	-	-	-)
labour adoption																	(-	-)
fertility												+	+	+	+	+	+	+
<b>C. Commercial pastoralism</b>																		
			+	.	.	.	.	.	+	+	+	+	+	+	.	.	.	c

Some other positive influences can be mentioned too. The barter of ivory for livestock during the early part of this century, gave the opportunity to rebuild herds rather quickly. The acquisition of valuable additional pasture in southern Karapokot, Upe and Pian (1910-1960) probably offset the loss of pasture in the northeast (Turkana) and the south (White farmers and enclosed holdings of mixed farmers), giving room for Pokot pastoralism to expand. The organized goat's trade (especially during the 1950s) resulted in a formal addition to informal trade networks. The strongly increased job opportunities in the Pokot area during the 1980s resulted not only in the possibility to buy food and other consumer goods, but also in the possibility to buy animals: Somali traders brought large numbers of goats for sale from Turkana. Pokot lowlanders went to the Pokot highlands to buy cattle there. Within the lowlands the availability of money (gold, jobs) resulted in a large redistribution of stock, bringing animals from the central Pokot area (Kipkomo, Batei, Riwa) for sale to the plundered areas in the West. Direct external assistance to restock the Pokot lowlands was never practised, unlike for instance missionary restocking programmes in Isiolo (see Hogg 1980, 1983, 1985), Turkana (see Hogg 1985), Marsabit (see Gufu 1985, p.46) and Kajiado (see Dietz e.a. 1986).

A second group of pastoral survival strategies is the intensification of pastoralism: the improvement of pasture, of food per stock-unit and of labour availability. The improvement of pasture was assisted east of the Suam only, in the grazing schemes (1954-60) and group ranches (1974-79). Very recently some experiments began in Karapokot (some had been done in Upe during the 1950s). In western Pokot even the institutional introduction of 'improved' breeds of cattle, goats or sheep has been a very marginal affair, as well as other interventions to improve the food availability per stock unit. Intensification strategies are mostly labour-dependent. Additional labour can be useful. The short term strategy of labour adoption of children is more difficult because of increased education. The negative missionary influence on polygamy may result in smaller working groups. On the other hand the health facilities have definitely resulted in a higher child survival rate, and hence in a fast growth of the available labour power.

If we look at the 'survival of pastoralism' by way of livestock commercialization and an extended livestock-for-grains trade, we must conclude that interventions were important, and generally positive, in late-colonial times. According to our analysis, this was a period when there was in fact no need yet for commercial pastoralism to secure pastoralism as a way of life. Livestock sales were part of 'physical survival strategies'. People needed money to buy food during a crisis (hence the 'inverted' demand-supply situation: the highest supply when prices were lowest). After the 1960s there is an increasing need for livestock commercialization as part of 'pastoral survival strategies', even during good rainfall years. We must conclude, however, that government interventions to assist the livestock-for-grains trade were very minimal during that period and recently even partly negative. This is a most serious situation.

#### 7.4 Under What Conditions can Pastoralism be a Viable Livelihood in Western Pokot?

The major strategic question, of course, is how 'structural' the defeat of pastoralism is. Is it possible to apply 'pastoral survival strategies' - as before - so that households or even the community as a whole can recover as a pastoral society? Given the population and the land, a recovery of 'subsistence pastoralism' will be virtually impossible: it would ask forms of pastoral intensification (assisted by accelerated herd and flock recovery) well beyond the current possibilities.

There is an important reason, though, why 'pastoralism' can still be very important: the excellent terms of trade with grain producers if we compare the caloric value. This observation was made by other writers too (e.g. Greer & Thorbecke 1986, p.53, Jahnke 1982, also see Aronson 1984, p.77). We have presented historical evidence that these terms of trade in western Pokot have even improved during this century due to a change from sorghum to maize, in the livestock-for-grains trade. This is contrary to Little's thesis for Baringo (see Little 1983, p.94) and contrary to the "evidence (...) of a sharp decline in the terms of trade", as suggested by Aronson (1980, p.181). A pastoral household of eight members, with ten head of cattle and twenty 'shoats' is severely short of food if the members are 'subsistence pastoralists', but can secure more than enough food if they sell animals beyond a stationary herd and flock and if they buy or barter grains. We can say that western Pokot can even support many more 'commercial pastoralists' than there are people now. Pastoral specialization, however, is dangerous under the current situation of large scale insecurity: herders can lose their animals from one day to another. Livestock epidemics are also threats which make specialization a risky adventure. Finally, livestock-for-grains trade as the basis of food security, can only work when grains are available, when animals can be sold, or bartered (and safely transported) and when terms of trade are reliably and continuously good for herders. These conditions are not always fulfilled. Grains from nearby highland producers may be lured to other markets (as is currently happening by the National Cereals and Produce Board in southern Pokot) or grain production fails (during highland droughts). Animals may not always be in demand. Official auctions may fail (bad organization, no interested buyers), formal or informal markets may be blocked (fear for epidemics, fear for insecurity). Terms of trade usually become less positive during droughts because animal prices fall while grain prices rise or grains are not available and more expensive maize meal is offered. Western Pokot informal trade and exchange networks between highland cultivators and lowland pastoralists - linked by extensive family ties - result in rather stable price levels, though.

If pastoralism ever recovers as a way of life for the large majority of the inhabitants of western Pokot, it has to be developed as 'commercial pastoralism'. People will definitely try to rebuild subsistence pastoralism (for the time being with most emphasis on crops, gold, jobs, relief food etc. in their household economy). If there are no commercial outlets (or even a 'commercial pastoralist orientation'), rebuilding pastoralism by all households will probably result in subsistence pastoralism which ruins the pasture. Karamoja during the late 1950s and



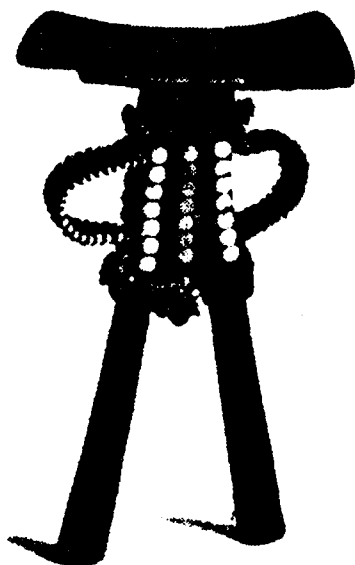
1960s provides lessons which are clear enough.

Commercial pastoralism is not something external agencies can organize. But external agencies can assist. What are the major tasks ahead?

1. Security is most important: against enemy raids, against internal theft and against abuse of military and police power. Pokot defence capabilities should not be weakened, but strengthened. Armed Pokot can perhaps be integrated in a strong institutional defence organization. The integration of Upe in Kenya, under one administrative authority, may be helpful. Branding of Pokot cattle can facilitate the detection of raided cattle.
2. No-man's land should be reoccupied, under military protection.
3. To enable the marketing of cattle, sheep and goats, the County Council needs to be supported to organize auctions at places where the livestock is and at times when the supply is greatest, in the dry season and during droughts. A guaranteed minimum price can be beneficial to overcome the existing sellers' mistrust.
4. Adequate veterinary measures are needed so that the marketing of animals is not hampered by quarantines. It is useful that Pokot herders are trained in veterinary matters, with attention for cattle, but for goats and sheep as well.
5. Pokot and Somali livestock traders and local butchers should be encouraged to expand their business.
6. Pokot traders can be assisted to expand the transportation and sale of grains and maize meal.
7. The availability and prices of grains and other foodstuffs should be carefully monitored.
8. When the availability of grains becomes a problem or when the terms of trade for pastoralists are deteriorating, intervention in the market is needed.
9. The export of grains from the southern Pokot highlands should be discouraged. The highlands-lowlands market link should not be undermined. Grain production (with adequate soil conservation measures) in the Sook highlands and the Chemorongit Hills needs every support it can get.
10. Some assistance might be given to rebuild herds and flock. This can be done indirectly (by offering casual labour opportunities to be paid with money and by not interfering with the gold business) or it can be done directly via restocking assistance. Why can't the government start a restocking campaign in western Pokot along the lines of a tilia arrangement? That could be a start of a 'commercial pastoral strategy', which is a much more secure basis for development. It will probably give higher average incomes than arable

farming or all those petty sources of money that were and are very valuable during a crisis, but which are not a sound and secure basis for an improved level of living.

11. Experiments in pasture and herd improvement should be encouraged, as well as experiments in feed storage.
12. For the time being arable farming in the lowlands - and if it fails, famine relief - will still be needed. There is ample scope for continued assistance in these fields. Arable farming should not be seen as an alternative for pastoralism, but as an addition.



These mist covered mountains  
Are a home now for me  
But my home is the lowlands  
And always will be

Mark Knopfler e.a. (Dire Straits)  
Title song of 'Brothers in Arms',  
London: Phonogram 1985

## BIBLIOGRAPHY

- ACLAND, J.D. (1971), East African crops. London: Longman (FAO).
- AFRIKA MUSEUM (1984), De Pokot onderweg. De veranderende wereld van een volk uit Kenia. Persinformatie. Berg en Dal.
- ALDEV BOARD (1962), African land development in Kenya: 1946-1962. Nairobi: Ministry of Agriculture, Animal Husbandry and Water Resources.
- ALDINGTON, T.J. & F.C.WILSON (1968), The marketing of beef in Kenya. Nairobi: Institute for Development Studies, Occasional Paper 3.
- ALNWICK, D.J. (1985), The 1980 famine in Karamoja. In: DODGE, C.P. & P.D.WIEBE, Crisis in Uganda. The breakdown of health services. Oxford: Pergamon, pp. 127-144.
- ANDERSEN, K.B. (1978), African traditional architecture. A study of the housing and settlement patterns of rural Kenya. Nairobi: Oxford U.P.
- ANDERSON, D. (1984), Depression, dust bowl and demography: the colonial state and soil conservation in East Africa during the 1930s. African Affairs 83, pp.321-343.
- APELDOORN, G.J. VAN (1981), Perspectives on drought and famine in Nigeria. London: Allen & Unwin.
- ARONSON, D.R. (1980), Must nomads settle? Some notes toward policy on the future of pastoralism. In: SALZMAN, Ph. C., When nomads settle. Processes of sedentarization as adaptation and response. New York: Praeger, pp. 173-184.
- ARONSON, D.R. (1984), Pastoralism in contemporary development perspective. Nomadic Peoples 16, pp. 73-84.
- ASAL (ARID AND SEMI-ARID LANDS) MISSION KENYA (1980), Report (ASAL West Pokot and Elgeyo Marakwet), 2 parts. NP.
- ASAL ELGEYO MARAKWET & WEST POKOT (1982), Voortgangsrapport van de Coordinator voor het Arid and Semi-Arid Lands Programme in Elgeyo Marakwet en West Pokot District in Kenya (H. HENDRIX). Kapenguria.
- ASAL DEVELOPMENT PROGRAMME ELGEYO MARAKWET & WEST POKOT DISTRICT (1983), Activity proposals 1984 (J.C.CAPPON & H.G.M. HENDRIX). Iten & Kapenguria: ASAL Offices.
- ASAL DEVELOPMENT PROGRAMME WEST POKOT DISTRICT (1984), Summary work plan and budget proposals 1985, Oct. 30, 1984. Kapenguria: ASAL Office.
- ASAL DEVELOPMENT PROGRAMME WEST POKOT DISTRICT (1984), Progress report on the ASAL Development Programme in West Pokot District, Dec. 1, 1984. Kapenguria: ASAL Office.
- ASAL DEVELOPMENT PROGRAMME COORDINATOR WEST POKOT DISTRICT (1985), Some notes on Netherlands Government assisted development activities in West Pokot District (H.HENDRIX), Kapenguria: ASAL Office.
- ASAL DEVELOPMENT PROGRAMME WEST POKOT DISTRICT (1985), Progress report ASAL Development Programme West Pokot District period 1 January, 1985- March 1985. Kapenguria: ASAL Office.
- ASAL DEVELOPMENT PROGRAMME WEST POKOT DISTRICT (1985), Summary of progress and proposals for consideration by District Development Committee West Pokot, 12th-8-'85, Kapenguria: ASAL Office.
- ASAL DEVELOPMENT PROGRAMME WEST POKOT DISTRICT (1985), Work plan 1986 (Oct. 1985), Kapenguria: ASAL Office.
- ASAL DEVELOPMENT PROGRAMME WEST POKOT DISTRICT (1985), Some suggested corrections and some comments on the report of the Review Mission ASAL Programme West Pokot and Elgeyo Marakwet 7th Nov. 1985- 26th Nov. 1985 (H.G.M.HENDRIX, ASAL Adviser), Kapenguria: ASAL Office.
- ASAL DEVELOPMENT PROGRAMME WEST POKOT DISTRICT (1985), Quarterly progress report period 1 October 1985 - 31 December 1985. Kapenguria: ASAL Office.
- ASAL DEVELOPMENT PROGRAMME WEST POKOT DISTRICT (1986), Progress report to District Development Committee - 17th March 1986, Kapenguria: ASAL Office.
- ASAL DEVELOPMENT PROGRAMME WEST POKOT DISTRICT (1986), Summary of recommendations of the Review Mission - ASAL West Pokot and Elgeyo Marakwet, 7-26 Nov. 1985 and comments of the West Pokot District Executive Committee on 3-3-1986. Kapenguria: ASAL Office.
- ASAL DEVELOPMENT PROGRAMME WEST POKOT DISTRICT (1986), Progress report 1st July-30th September 1986. Kapenguria: ASAL Office.
- ASAL DEVELOPMENT PROGRAMME WEST POKOT DISTRICT (1987), Progress report 1st Oct.- 31st December 1986 (2-2-1987). Kapenguria: ASAL Office.
- ASMERON, H.K. (1984), A strategy for rural development with reference to the Special Rural Development Programmes (SRDP) of Kenya: a reappraisal. In: BINSBERGEN, W. van & G.HESSELING, Aspecten van staat en maatschappij in Afrika. Leiden: African Studies Centre, Research Report 22, pp. 391-418.
- ASSOCIATED CHRISTIAN CHURCHES OF KENYA (1982), Karapokot water supply project. Application to NORAD for financial support. Nairobi: ACCK.

- ATLAS OF KENYA, see SURVEY OF KENYA.
- AUSTIN, H.H. (1903), With Macdonald in Uganda. London/Folkestone.
- AYIEMBA, E.H.O. (1983), Population growth in the dry lands. *The Kenyan Geographer* 5, 1&2, pp. 112-118.
- BAILEY, H.P. (1979), Semi-arid climates: their definition and distribution. In: HALL, A.E., G.H. CANNELL & H.W. LAWTON, *Agriculture in semi-arid environments*. Berlin: Springer, *Ecological Studies* 34, pp. 73-97.
- BAKER, P.R. (1967), Environmental influences on cattle marketing in Karamoja. Kampala: Makerere University College, Department of Geography, Occasional Paper 5.
- BAKER, R. (1974), Perceptions on pastoralism. Edinburgh: Development Studies Centre for Tropical Veterinary Medicine, Discussion Paper 3.
- BAKER, R. (1976), 'Development' and the pastoral people of Karamoja, North-East Uganda. An example of the treatment of symptoms. East Anglia: Institute of Development Studies reprints. Orig. in MONOD, Th., ed. (1975), *Pastoralism in Tropical Africa*. Oxford: UP.
- BAKER, P.R. (1977), Polarisation: stages in the environmental impact of alien ideas on a semi-pastoral society. East Anglia: Institute of Development Studies reprints, Orig. in O'KEEFE, Ph. & B.WISNER (1977), *Landuse and Development*. London: International African Institute, in association with the Environment Training Programme UNEP-IDEF-SIDA; *African Environment Special Report*, 5, pp. 151-170.
- BAKER, R. (1980), 'Sociological factors' in the commercialisation of cattle in Africa. East Anglia: Development Studies Discussion Paper 61.
- BARBER, J.P. (1962), The Karamoja District of Uganda. A pastoral people under colonial rule. *Journal of African History* 3, 1, pp. 111-124.
- BARBER, J.P. (1965), The moving frontier of British imperialism in Northern Uganda 1898-1919. *The Uganda Journal* 29, 1, pp.27-43.
- BARBER, J.P. (1968), Imperial frontier. A study of relations between the British and the pastoral tribes of North East Uganda. Nairobi: East African Publishing House.
- BARRETT, D.B. e.a. (1973), *Kenya churches handbook. The development of Kenyan christianity, 1498-1973*. Kisumu: Evangel Publishing House.
- BARTON, J. (1921), Notes on the Suk tribe of Kenya colony. *Journal of the Royal Anthropological Institute* 51, pp. 81-100.
- BEALS, R.L. (1975), The peasant marketing system of Oaxaca, Mexico. In: COOK, S. & M.DISKIN, eds., *Markets in Oaxaca*. Austin: University of Texas Press.
- BEECH, M.W.H. (1911), *The Suk, their language and folklore*. London: H.Frowde.
- BEIDELMAN, Th.O. (1981), Contradictions between the sacred and the secular life: the Church Missionary Society in Ukaguru, Tanzania, East Africa, 1876-1914. *Comparative Studies in History and Society* 23, pp. 73-95.
- BERNARD, F.E., & D.J.THOM (1981), Population pressure and human carrying capacity in selected locations of Machakos and Kitui Districts. *The Journal of Developing Areas* 15, pp. 381-406.
- BIELLIK, R.J. & P.L.HENDERSON (1985). Mortality, nutritional status and diet during the famine in Karamoja, Uganda, 1980. In: DODGE, C.P. & P.D.WIEBE, *Crisis in Uganda. The breakdown of health services*. Oxford: Pergamon, pp. 145-154.
- BIGSTEN, A. (1980), Regional inequality and development. A case study of Kenya. Westmead: Gower.
- BINSBERGEN, W.VAN, F.REYNTJENS & G.HESSELING (1986), Aspects of modern state penetration. In: BINSBERGEN, W.VAN, F.REYNTJENS & G.HESSELING, *State and local community in Africa*. Brussel/Bruxelles: ASDOC Studies/Les cahiers du CEDAF, 2-3-4, pp. 369-394.
- BINSWANGER, N.P., N.S.JODHA & B.C.BARAN (1980), The nature and significance of risk in the semi-arid tropics. In: ICRISAT, *Proceedings of the international workshop on socio-economic constraints to development of semi-arid tropical agriculture*. Hyderabad (India): International Crop Research Institute for the Semi-Arid Tropics, pp. 303-316.
- BOER, L., D.BUYS & B.GALJART (eds.) (1985), *Poverty and interventions: cases from developing countries*. Leiden (Netherlands): Development Studies 6.
- BOSERUP, E. (1965), The conditions of agricultural growth: the economics of agrarian change under population pressure. London: G.Allen & Unwin.
- BOSERUP, E. (1981), *Population and technology*. Oxford: Blackwell.
- BPSAAP (1984), Summary of interim report, Baringo Pilot Semi-Arid Area Project. Marigat (Kenya): BPSAAP.
- BRADBURY, D. (1984), Marxism and the study of pastoralists. *Nomadic Peoples* 16, pp. 3-14.
- BRANDSTROM, P., J.HULTIN & J.LINDSTRÖM (1979), Aspects of agro-pastoralism in East Africa. Uppsala (Sweden): Scandinavian Institute of African Studies, Report 51.
- BRASNETT, J. (1958), The Karasuk problem. *The Uganda Journal* 22, pp. 113-122.
- BRAUN, H.M. H. (1977), Proposal for an agro-climatological classification. Nairobi: Kenya Soil Survey Project, Internal Communication 9.
- BRAUN, H.M.H. (1982), see: KENYA SOIL SURVEY (1982).

- BREMAN, H. (1975), Maximum carrying capacity of Malian grasslands. Nairobi: International Livestock Commission for Africa (ILCA).
- BREMAN, H. & C.T. DE WIT (1983), Rangeland productivity and exploitation in the Sahel. Washington: AAAS.
- BROOKFIELD, H.C. & P.BROWN (1963), Struggle for land: agricultural and group territories among the Chimbu of the New Guinea highlands. London: Oxford U.P.
- BROWN, B. (1977), Political administration and rural development in Kenya - lessons from settlement and other rural programs. Syracuse (Ph.D.) (Ann Arbor).
- BROWN, E.J. (1979), Turkwel Gorge multipurpose project. Socio-anthropological survey. Feasibility study. Høvik (Norway): Norconsult/ Nairobi: Ministry of Water Development.
- BROWN, L.H. (1963), The development of semi-arid areas of Kenya. Nairobi: Ministry of Agriculture.
- CAMPBELL, D.J. (1979), Response to drought in Maasailand: pastoralists and farmers of the Loitokitok area, Kajiado District. Nairobi: Institute for Development Studies, University of Nairobi. Discussion Paper 267.
- CAMPBELL, D.J. & G.H.Axinn (1980), Pastoralism in Kenya. Obsolete societies en route to extinction, or appropriate technologies for a fragile environment? Hanover N.H. (USA): American Universities Field Staff Reports, 30, Africa.
- CAMPBELL, D. & S.E. MIGOT-ADHOLLA (eds) (1981), The development of Kenya's semi-arid lands. Nairobi: Institute for Development Studies, University of Nairobi, Occasional Paper 36.
- CANCIAN, F. (1980), Risk and uncertainty in peasant 'decision making'. In: ICRISAT: Proceedings of the international workshop on socio-economic constraints to development of semi-arid tropical agriculture. Hyderabad (India): International Crop Research Institute for the Semi-Arid Tropics, pp. 317-325.
- CARLSTEIN, T. (1982), Time resources, society and ecology. On the capacity for human interaction in space and time. Vol.1: Pre-industrial societies (esp. Ch. 4: Nomadic Pastoralism, pp. 103-186). London: G.Allen & Unwin.
- CARR, C.J. (1977), Pastoralism in crisis. The Dasanetch and their Ethiopian lands. Chicago: the University of Chicago, Department of Geography, Research paper 180.
- CASLEY, D.J. & D.A.LURY (1982), Monitoring and evaluation of agriculture and rural development projects. Baltimore & London: Johns Hopkins UP/World Bank.
- CBS (1968), Employment and earnings in the modern sector, 1963-67. Nairobi: Central Bureau of Statistics.
- CBS (1976), Employment and earnings in the modern sector, 1972-73. Nairobi: Central Bureau of Statistics.
- CBS (1977), Employment and earnings in the modern sector, 1975, an analysis. Nairobi: Central Bureau of Statistics.
- CBS (1980), Employment and earnings in the modern sector, 1978. Nairobi: Central Bureau of Statistics.
- CBS (1981), Employment and earnings in the modern sector, 1979. Nairobi: Central Bureau of Statistics.
- CBS (1981), Statistical Abstract 1981. Nairobi: Ministry of Economic Planning and Development, Central Bureau of Statistics.
- CHAMBERS, R. (1980), Rapid rural appraisal: rationale and repertoire. Brighton (UK): Institute of Development Studies, University of Sussex, Discussion Paper 155. Also: Public Administration and Development 1, 2, 1981, pp. 95-106.
- CHAMBERS, R. (1983), Rural development, putting the last first. London: Longman.
- CHAUNDY, G.H. (1939), Primitive agricultural methods of the West Suk tribe and some improvements. The East African Agricultural Journal, July, pp. 23-30.
- CHAUNDY, G.H. (1943), The agricultural education of a primitive tribe: the West Suk of Kenya. Farm and Forest, 4, pp. 167-172.
- CHESANG, S.K. (1971), A report on socio-economic survey of Riwa proposed group ranch (to Provincial Director of Agriculture, Nakuru). Kapenguria: Range Management Division West Pokot District.
- CISTERNINO, M. (1979), Karamoja, the human zoo. The history of planning for Karamoja with some tentative counterplanning. Swansea: Centre for Development Studies, University of Wales (dissertation for the Post Graduate Diploma in Development Policy and Social Planning).
- CISTERNINO, M. (1985), Famine and food relief in Karamoja. In: DODGE, C.P. & P.D. WIEBE, Crisis in Uganda. The breakdown of health services. Oxford: Pergamon, pp. 155-161.
- CLAYTON, E. & F.PETRY (1983), Monitoring systems for agricultural and rural development projects, 2 vols. Rome: FAO, Economic and Social Development Paper, 12, rev.1.
- CLIFFE, L., J.S.COLEMAN & M.R.DOORNBOS (eds.) (1977), Government and rural development in East Africa: essays on political penetration. The Hague (Netherlands): M.Nijhoff/Institute of Social Studies.

- COLLIER, P. & D.LAL (1980), Poverty and growth in Kenya. Washington DC: World Bank Staff Working Paper 389.
- COLLINS, R.O. (1961), The Turkana Patrol, 1918. The Uganda Journal 25, 1, pp. 16-33.
- CONANT, F.P. (1965), Korok, a variable unit of physical and social space among the Pokot of East Africa. American Anthropologist 67, pp. 429-434.
- CONANT, F.P. (1982), Thorns paired, sharply recurved: cultural controls and rangeland quality in East Africa. In: SPOONER, B. & H.MANN (eds), Anthropology and desertification. Dryland ecology in social perspective. London: Academic Press, pp. 111-122.
- COX, P. (1967), The Amudat story. London: Bible Churchmen's Missionary Society.
- COX, P.S.V. (1972), The disease pattern of the Karapokot and its relationship to their environment and culture. London: University of London. Unpublished Ph.D. Medical Thesis.
- COX, P.S.V. (1973), Geographical variation of disease within a single district. The East African Medical Journal 50, 12, pp. 712-719.
- COX, P.S.V. (1985), The Karamoja health service: a proposed revolution. In: DODGE, C.P. & P.D.WIEBE, Crisis in Uganda. The breakdown of health services. Oxford: Pergamon, pp. 171-175.
- CRAZZOLARA, J.P. (1969), The Hamites - who were they?. The Uganda Journal 33, 1, pp. 41-48.
- CRITCHLEY, W. (1979), Chesongoch agricultural project 1977-1979; final report. Chesongoch (Elgeyo Marakwet, Kenya): Catholic Mission (mimeo).
- DAHL, G. (1981), Production in pastoral societies. In: GALATY, J.G. e.a. (eds), The future of pastoral peoples. Ottawa: IDRC, pp. 200-209.
- DAHL, G. & A.HJORT (1976), Having herds: pastoral herd growth and household economy. Stockholm: Studies in Social Anthropology 2, University of Stockholm.
- DAHL, G. & A.HJORT (1979), Pastoral change and the role of drought. Stockholm: Swedish Agency for Research Cooperation with Developing Countries. SAREC report R2.
- DAVIS, R.K. (1970), Some issues in the evolution, organization and operation of group-ranches in Kenya. Nairobi: Institute for Development Studies, University of Nairobi, Discussion Paper 93.
- DAWP (1985), District Atlas West Pokot, see: HENDRIX, MWANGI & DE VOS.
- DAYSTAR COMMUNICATIONS (1982), Unreached peoples of Kenya project: the Pokot. K.SHINGLEDECKER e.a.). Nairobi: Daystar Communications.
- DESHLER, W.N. (1964), The Dodos: a cattle-keeping tribe in East Africa. In: THOWAN, R.S. & D.J.PATTON, Focus on geographical activity. New York: McGraw Hill, pp. 7-14.
- DIARRA, L. (1976), Composition et productivité des paturages Soudano-Sahéliens sous une pluviosité annuelle moyenne de 1100 à 400 mm. Bamako (Mali): Centre Pédagogique Supérieure. Thèse.
- DIETZ, A. (1985), Monitoring and evaluation of ASAL programmes in Kenya. Report for the Ministry of Finance and Planning, Rural Planning Division, Government of Kenya, Nairobi. Amsterdam: Department of Human Geography, University of Amsterdam.
- DIETZ, T. (1986), Migration to and from dry areas in Kenya. Tijdschrift voor Economische en Sociale Geografie/Journal of Economic and Social Geography 77, 1, pp. 18-24.
- DIETZ, T. (1987), Geografisch determinisme in vermomming? Over agrarische landevaluatie, bevolkingsdraagvlak en geïntegreerde rurale ontwikkelingsgeografie. In: WUSTEN H. VAN DER, Postmoderne aardrijkskunde. De sociografische traditie voortgezet, pp. 89-102. Muiderberg (The Netherlands): Coutinho.
- DIETZ, T. & R.VAN GEUNS (1982), Regionale ongelijke ontwikkeling in Kenia en Tanzania: regionale verschillen in transformatie- en marktintegratie-processen 1960-1980. Nijmegen (Netherlands): Politiek en Ruimte 3, pp. 93-120.
- DIETZ, T. & A. VAN HAASTRECHT (1982), Market integration in Elgeyo Marakwet and West Pokot: comparing households and locations. Nairobi: Institute for Development Studies, University of Nairobi, Working Paper 392.
- DIETZ, T. & A. VAN HAASTRECHT (1983), Rapid Rural Appraisal in Kenya's wild west: economic change and market integration in Alale Location, West Pokot District. Nairobi: Institute for Development Studies, University of Nairobi, Working Paper 396.
- DIETZ, A.J., J.M.VAN HAASTRECHT & H.R.SCHEFFER (1977), Local effects of two large scale industrial projects in the Kafue-Mazabuka area in Zambia: the Kafue Estate and Nakambala Sugar Estate. Nijmegen (The Netherlands): Nijmeegse Geografische Cahiers 8.
- DIETZ, T., A. VAN HAASTRECHT & M.SCHOMAKER (1982-1985), Locational Development Profiles. Reports for the ASAL Programme West Pokot: Alale, Kapchok, Kasei-Chemorongit, Lelan, Mwino, Riwa & Lower Mnagei, Sekerr, Sook, Suam. Amsterdam: Dept. of Human Geography, University of Amsterdam.
- DIETZ, T., A.VAN HAASTRECHT & M.SCHOMAKER (1983), Programmatische benadering en onderzoek. Ervaringen van 'Regional Development Research in West Pokot and Elgeyo Marakwet for the

- Arid and Semi-Arid Lands Development Programme'. Rapport voor DGIS O&AT. Amsterdam: Sociaal Geografisch Instituut & Fysisch Geografisch en Bodemkundig Laboratorium, Universiteit van Amsterdam.
- DIETZ, T. & J.KONINX (1984), Regionale ongelijkheid in Kenia en de lokatie van de Nederlandse ontwikkelingshulp projecten. Amsterdam: Instituut voor Sociale Geografie, Universiteit van Amsterdam, Publikatie 5.
- DIETZ, T., A.P.OWITI, J.BRANDT & O.A'TINGA (1986), Report of the identification mission for an Arid and Semi-Arid Lands (ASAL) Programme in Kajiado District. Prepared for SNV/Netherlands Development Organization. Nairobi: SNV.
- DIETZ, T., A.P.OWITI & A. VAN HAASTRECHT (1987), Report of the ASAL backstopping mission West Pokot and Elgeyo Marakwet, Oct. 25 - Nov. 17, 1986. Nairobi/Amsterdam: Ministry of Planning and National Development/ Dept. of Human Geography, University of Amsterdam.
- DOCHERTY, A.J. (1957), The Karamojong and the Suk. The Uganda Journal 21, pp. 30-40.
- DOHERTY, D. (1979), A preliminary report on group-ranching in Narok District. Nairobi: Institute for Development Studies, University of Nairobi, Working Paper 350.
- DOORNBOOS, M. (1986), Incorporation and cultural 'receptivity' to change. In: BINSBERGEN, W.VAN, F.REYNTJENS & G. HESSELING (eds.), State and local community in Africa. Brussel/Bruxelles: ASDOC Studies/ Les Cahiers du CEDAF, 2-3-4, pp. 349-368.
- DUBEL I. & M. DE KWAASTENIET (1983), Irrigated agriculture as a base of subsistence: the cases of the Pokot and the Marakwet, with reference to the labour of women. Report for the Provincial Irrigation Unit, Rift Valley Province, Nakuru (Kenya). Amsterdam: Dept. of Human Geography, University of Amsterdam.
- DUNDAS, K.R. (1910), Notes on the tribes inhabiting the Baringo District, East Africa Protectorate. Journal of the Royal Anthropological Institute 40, pp. 49-72.
- DYSON-HUDSON, N. (1958), The Karamojong and the Suk. Notes. The Uganda Journal 22, 2, pp. 173-180.
- DYSON-HUDSON, N. (1966), Karimojong politics. Oxford: Clarendon Press.
- DYSON-HUDSON, R. & N. (1969), Subsistence herding in Uganda. Scientific American, 220, pp. 76-80.
- DYSON-HUDSON, R. & N. (1970), The food production system of a semi-nomadic society: the Karimojong, Uganda. In: McLOUGHLIN, P.F.M. (ed.), African food production systems. Baltimore: Johns Hopkins UP.
- DYSON-HUDSON, R. & N. (1982), The structure of East African herds and the future of East African herders. Development and Change, 13, pp. 213-238.
- DYSON-HUDSON, V.R. (1960), East Coast Fever in Karamoja. The Uganda Journal, 24, pp. 253-259.
- DYSON-HUDSON, R. (1980), Towards a general theory of pastoralism and social stratification. Nomadic Peoples, 7, pp. 1-7.
- DYSON-HUDSON, R. & J.T. McCABE (1983), Water resources and livestock movements in South Turkana, Kenya. Nomadic Peoples, 14, pp. 41-46.
- EHRET, Chr. (1971), Southern Nilotic history: linguistic approaches to the study of the past. Evanston: Northwestern UP.
- ENSMINGER, J. (1984), Theoretical perspectives on pastoral women: feminist critiques. Nomadic Peoples, 16, pp. 59-72.
- EPP, H. & A. KILLMAYER (1982), Determination of the cultivation boundary in Kenya. Nairobi: Ministry of Environment and Natural Resources. Kenya Rangeland Ecological Monitoring Unit, KREMU Tech. Report Series, 90.
- ETTEMA, W. (1982), Het centrum-periferie perspectief in de ontwikkelingsgeografie. Nijmegen: (The Netherlands): Politiek en Ruimte, 3, pp. 7-26.
- EVANS-JONES, P. (1960), The Karamoja Development Scheme. A report on the work during the years 1955/59. Kampala: Uganda Protectorate, Special Development Section.
- EVEN, W. (1986), Towards a primary health care system in Southern Karamoja and Pokot. Annual Report of the work as volunteer between April 1985 and April 1986, in the service of the Karamoja Diocese, Church of Uganda. Amudat (April, and work-reports May & June, July, August).
- FAO (1965), Calorie requirements. Report of the second committee on calorie requirements for the Food and Agriculture Organization of the United Nations. Rome: FAO Nutritional Studies, 15 (3d printing; orig. 1957).
- FAO (1980), Report on the second FAO/UNFPA Expert Consultation on Land Resources for Populations of the Future. Rome: FAO.
- FUMAGALLI, C.T. (1978), An evaluation of development projects among East African pastoralists. African Studies Review, 21, 3, pp. 49-63.
- GALATY, J. (1980), The Maasai group ranch: politics and development in an African pastoral society. In: SALZMAN, Ph.C., When nomads settle. Processes of sedentarization as adaptation and response. New York: Praeger, pp. 157-172.
- GALATY, J. (1984), Cultural perspectives on nomadic pastoral societies. Nomadic Peoples,



- 16, pp. 15-30.
- GALATY, J. e.a. (eds.) (1981), The future of pastoral peoples. Proceedings of a conference held in Nairobi, Kenya, 4-8 August, 1980. Ottawa: IDRC.
- GALATY, J. & Ph. C. SALZMAN (eds.) (1981), Change and development in nomadic and pastoral societies. Leiden: E.J.Brill.
- GALLÉ, M. e.a. (1987), Locational Development Profile Batei Location. Report for the ASAL Programme West Pokot, Kenya. Amsterdam: Dept. of Human Geography, University of Amsterdam.
- GARTRELL, B. (1985), Searching for 'the Roots of Famine': the case of Karamoja. Review of African Political Economy, 33, pp. 102-109.
- GEEST, S. VAN DER (1986), Health care as politics? 'Missed chances' in rural Cameroon. In: BINSBERGEN, W. VAN, F.REYNTJENS & G.HESSELING, State and local community in Africa. Brussel/Bruxelles: ASDOC Studies/Les Cahiers du CEDAF, 2-3-4, Juli/Juillet, pp. 241-259.
- GESCHIERE, P. (1984), La paysannerie africaine est-elle captive? Sur la thèse de Goran Hyden et pour une réponse plus nuancée. Politique Africaine, 14, pp. 13-33.
- GESCHIERE, P. (1985), Applications of the lineage mode of production in African Studies. Canadian Journal of African Studies, 19, pp. 80-91.
- GESCHIERE, P. (1986), Hegemonic regimes and popular protest - Bayart, Gramsci and the state in Cameroon. In: BINSBERGEN, W.VAN, F.REYNTJENS & G.HESSELING, State and local community in Africa. Brussel/Bruxelles: ASDOC Studies/Les Cahiers du CEDAF, 2-3-4, Juli/Juillet, pp. 309-347.
- GHAI, Dh., M. GODFREY & F. LISK (1979), Planning for basic needs in Kenya. Performance, policies and prospects. Geneva: International Labour Organization.
- GICHOHI, C.M. & D.F.M. KALLAVI (eds) (1979), Baringo/Kerio Valley analysis and project identification. Nairobi: Ministry of Agriculture, Report 11, Marginal/Semi-Arid Lands Pre-Investment Inventory.
- GILLES, J.L. & K. JAMTGAARD (1982), Overgrazing in pastoral areas. The commons reconsidered. Nomadic Peoples, 10, pp. 1-10.
- GOLDSCHMIDT, W. (1976), The culture and behavior of the Sebei. Berkeley: University of California Press.
- GORE, Ch. (1984), Regions in question. Space, development theory and regional policy. London/New York: Methuen.
- GoK or GOVERNMENT OF KENYA: see KENYA.
- GRANDIN, B.E. & P.LEMBUYA (1987), The impact of the 1984 drought on Olkarkar group ranch, Kajiado, Kenya. London: ODI, Pastoral Development Network, Paper 23e.
- GRAY, J. (1952), Acholi history 1860-1901, Part II. The Uganda Journal, 16, 1.
- GREER, J. & E. THORBECKE (1986), Food poverty and consumption pattern in Kenya. Geneva: International Labour Organization.
- GREGORY, R.G., R.M. MAXON & L.P.SPENCER (1968), A guide to the Kenya National Archives. Syracuse: Program of Eastern African Studies, Syracuse University.
- GRIGG, D.B. (1976), Population pressure and agricultural change. Progress in Geography, 8, pp. 133-176.
- GRIGG, D.B. (1980), Migration and overpopulation. In: WHITE, P. & R.WOODS, The geographical impact of migration. London/New York: Longmans.
- GRIGG, D.B. (1982), The dynamics of agricultural change. The historical perspective. London: Hutchinson.
- GUFU, O. (1985), Perceptions of environment among Kenyan pastoralists: implications for development. Nomadic Peoples, 19, pp. 33-58.
- GUFU, O. & W.J.LUSIGI (1987), An overview of drought strategies and land use in African pastoral systems. London: Overseas Development Institute, Pastoral Development Network, Paper 23a.
- GULLIVER, P.H. (1955), The family herds (Jie and Turkana). London: Routledge & Kegan Paul.
- GULLIVER, P.H. (1956), The Teso and the Karamojong cluster. The Uganda Journal, 20, 2, p.213-215.
- GWYNNE, M.D. (1981), Issues in the development of Kenya's semi-arid lands. In: CAMPBELL, D. & S.E.MIGOT-ADHOLLA, The development of Kenya's semi-arid lands. Institute for Development Studies University of Nairobi. Occasional Paper, 36, pp. 11-24.
- HAASTRECHT, A.VAN & R.P.CHIZUPO (1983), Education in West Pokot. Report for the ASAL Programme West Pokot, Kenya. Kapenguria: ASAL-Programme.
- HAASTRECHT, A.VAN & M.SCHOMAKER (1985), An estimate of the population supporting capacity of West Pokot District, Kenya. Methodology and results. Report for the ASAL Programme West Pokot, Kenya. Amsterdam: Dept. of Human Geography & Dept./Laboratory of Physical Geography and Soil Sciences, University of Amsterdam.
- HAASTRECHT, A.VAN, M.SCHOMAKER & T.DIETZ (1986), Weiwei Locational Development Profile.

- Report for the ASAL Programme West Pokot. Amsterdam: Dept. of Human Geography, University of Amsterdam.
- HÄGERSTRAND, T. (1978), Survival and arena: on the life-histories of individuals in relation to their geographical environment. In: CARLSTEIN, T., D. PAIKES & N. THRIFT, Human activity and time geography. London: Edward Arnold.
- HARDEMAN, J. (1984), Selectieve innovatie door kleine boeren in Mexico. Amsterdam: Vrije Universiteit (Ph.D.).
- HARDIN, G. (1968), The tragedy of the commons. *Science*, 162, pp. 1243-1248.
- HARTLEY, B. (1985), Consultant's report ASAL Development Project, West Pokot, Kapchok Location and Suam Location, Kacheliba Division. Kapenguria: ASAL Programme.
- HEDLUND, H.G.B. (1971), The impact of group ranches on a pastoral society. Nairobi: Institute for Development Studies, University of Nairobi, Staff Paper, 100.
- HEINEMEIJER, W.F. (1968), Nationale integratie en regionale diversiteit: een sociografische studie van Marokko als ontwikkelingsland. Amsterdam: De Bezige Bij (Ph. D.).
- HENDRIX, H.G.M. (1981), The programmatic approach: rhetoric and reality in Dutch bilateral aid. East Anglia: Faculty of the School of Development Studies of the University of East Anglia. (Diss.).
- HENDRIX, H.G.M. (1983), Water survey West Pokot District. Provisional (and incomplete) report Kacheliba Division, Chepareria Division. Kapenguria: ASAL Programme.
- HENDRIX, H., M.S. MWANGI & N. DE VOS (1985), District Atlas West Pokot. Kapenguria: Ministry of Planning and National Development, Arid and Semi-Arid Lands Programme West Pokot.
- HENKEL, R. (1979), Central places in Western Kenya. Heidelberg: Heidelberger Geographische Arbeiten, 54.
- HERON, P. (1983), Education for nomads. *Nomadic Peoples*, 13.
- HERRING, R.S. (1973), Centralization, stratification and incorporation: case studies from Northeastern Uganda. *Canadian Journal of African Studies*, 7, 3, pp. 497-514.
- HERSKOVITS, M.J. (1926), The cattle complex in East Africa. *American Anthropologist*, 28, pp. 230-272, 361-388, 494-528, 633-664.
- HINDERINK, J. & J.J. STERKENBURG (1979), Agricultural commercialization and rural development in Subsaharan Africa, an overview. Leiden: African Studies Centre. Paper presented at the Conference on the Small-scale Farmer: Production and Commercialization.
- HINDERINK, J. & J.J. STERKENBURG (1980), Spatial aspects of agricultural commercialization in Africa. Utrecht (The Netherlands): Diskussiestukken SGO, 6, Dept. of Geography, University of Utrecht.
- HINDERINK, J. & J.J. STERKENBURG (1987), Agricultural commercialization and government policy in Africa. Monographs from the African Studies Centre, Leiden. London/New York: KPI.
- HJORT, A. (1981), Herds, trade and grain: pastoralism in a regional perspective. In: GALATY, J.G. e.a. (eds), *The future of pastoral peoples*. Ottawa: IDRC, pp. 135-143.
- HJORT, A. (1982), A critique of 'ecological' models of pastoral land use. *Nomadic Peoples*, 10, pp. 11-27.
- HOEHNEL, L.VON (1894), *The discovery of lakes Rudolf and Stephanie*. Vienna: Holder.
- HOGG, R. (1980), Pastoralism and impoverishment: the case of the Isiolo Boran of Northern Kenya. *Disasters*, 4, 3, pp. 299-310.
- HOGG, R. (1983), Restocking the Isiolo Boran: an approach to destitution among pastoralists. *Nomadic Peoples*, 14, pp. 35-40.
- HOGG, R. (1983a), Destitution and development. *The Turkana of North West Kenya*. *Disasters*, 6, 3, pp. 164-168.
- HOGG, R. (1985), Re-stocking pastoralists in Kenya: a strategy for relief and rehabilitation. London: ODI, Pastoral Development Network, Paper 19c.
- HOLTHAM, G. & A. HAZLEWOOD (1976), Aid and inequality in Kenya. British development assistance to Kenya. London: Croom Helm.
- HOMEWOOD, K.M. & A.V. HURST (1986), Comparative ecology of pastoralist livestock in Baringo, Kenya. London: ODI, Pastoral Development Network, Paper 21h.
- HOOK, R.M. (1983), Consultancy report to USAID/Kenya on review of the Arid and Semi-Arid Lands Development Project. Harvard: Institute for International Development.
- HOPCRAFT, P.N., P. REINING & S.B. WESTLEY (1977), Arid lands - economic, social and ecological monitoring. Report of a workshop held at the IDS, June 1976. Nairobi: Institute for Development Studies, University of Nairobi, Occasional Paper, 22.
- HOPCRAFT, P.N. (1981), Economic institutions and pastoral resource management: considerations for a development strategy. In: GALATY, J.G. e.a. (eds), *The future of pastoral peoples*. Ottawa: IDRC, pp. 224-243.
- HOROWITZ, M.M. (1979), *The sociology of pastoralism and African livestock projects*.

- Washington: A.I.D., Program Evaluation Discussion Paper, 6.
- HOUEROU H.N. LE & C.H.HOSTE (1977), Rangeland production and annual rainfall relations in the Mediterranean Basin and the African Sahelo-Sudanic zone. *Range Management*, 30, 3, pp. 181-189.
- HUNTING TECHNICAL SERVICES (1974), Development plan Southern Darfur, Sudan, land use planning survey. Ministry of Agriculture. Phase 2, Annex 3: Animal resources and range ecology. Boreham: Hunting T.S.
- HUNTINGFORD, G.W.B. (1953), *The Southern Nilo-Hamites*. London: Ethnographic Survey of Africa, Part VIII, pp. 78-90.
- HVA (1982), Kongelai Irrigation Project. Proposal. NP (Nairobi).
- HYDEN, G. (1983), *No shortcuts to progress: African development management in perspective*. London/Berkeley: Heinemann/University of California Press.
- HYDEN, G. (1986), The anomaly of the African peasantry. *Development and Change*, 17, pp.677-705.
- ICRISAT (1980), *Proceedings of the International Workshop on Socio-Economic Constraints to Development of Semi-Arid Tropical Agriculture*, Febr. 1979. Hyderabad (India): International Crops Research Institute for the Semi-Arid Tropics.
- IDS (1973), *An overall evaluation of the Special Rural Development Programme*. Nairobi: Institute for Development Studies, University of Nairobi, Occasional Paper, 8.
- IDS (1975), *Second overall evaluation of the Special Rural Development Programme*. Nairobi: Institute for Development Studies, University of Nairobi, Occasional Paper, 12.
- ILO (1972), *Employment, incomes and equality: a strategy for increasing productive employment in Kenya*. Geneva: International Labour Organization.
- INSTITUTE FOR DEVELOPMENT ANTHROPOLOGY (1980), *The workshop on pastoralism and African livestock development*. Report for USAID. Binghamton, New York: AID Program Evaluation Report, 4.
- ISRAEL, G.L. (1982), *Behavior and practice of health care among the Pokot of Western Kenya*. Paper submitted to the Kenyan Ministry of Health, Kapenguria District Hospital and others. Seattle, Washington.
- JAETZOLD, R. (1977), Humid month isolines as an aid in agricultural planning. *Applied Scientific Development*, 9, pp. 140-158.
- JAETZOLD, R. & H. SCHMIDT (1983). *Farm Management Handbook of Kenya*. Vol. II: Natural conditions and farm management information. Vol. IIB: Central Kenya (Rift Valley and Central Provinces). West Pokot District: pp. 179-232. Nairobi: Ministry of Agriculture.
- JAHNKE, H.E. (1982), *Livestock production systems and livestock development in Tropical Africa*. Kiel: Wissenschaftsverlag Vauk.
- JANVRY, A. DE (1981), *The agrarian question and reformism in Latin America*. Baltimore & London: John's Hopkins UP.
- JIHADHARI (1984), *Het leger in Karapokot*. Nairobi: SNV-Kenya, 9, (40), pp. 8-14.
- JORRITSMA, H. (1979), *Damergou, een historische en sociaal-economische studie van een landstreek in Midden-Niger*. Amsterdam: Koninklijk Instituut voor de Tropen (Ph.D.).
- JUNGERIUS, P.D. (1986), *Perception and use of the physical environment in peasant societies*. Reading (U.K.): Dept. of Geography, University of Reading, Geographical Paper, 93.
- KABWEGYERE, T.B. (1974), *The politics of state formation. The nature and effects of colonialism in Uganda*. Nairobi: East African Literature Bureau.
- Kar.AR: Karamoja Annual Reports, various years. Moroto (Uganda).
- KARAMOJA DEVELOPMENT PROGRAMME (1986), *Technical services for the Karamoja Development Programme*. Typescript. NP (request for extended EEC funding?).
- KARAMOJA DISTRICT PLAN (1958), Entebbe: Uganda Protectorate, Government Printers.
- KASFIR, N. (1986), Are African peasants self-sufficient? A review of Goran Hyden. *Development and Change*, 17, pp. 335-357.
- KAUFMANN, R.VON (1976), *The development of the range land areas*. In: HEYER, J., J.K.MAITHA & W.M.SENGA, *Agricultural development in Kenya, an economic assessment*. Nairobi: Oxford UP, pp. 255-287.
- KENYA COLONY (1962), ALDEV: see ALDEV BOARD.
- KENYA (1964), *Kenya Population Census 1962. Tables Vol. 1*. Nairobi: Directorate of Economic Planning, Ministry of Finance and Economic Planning.
- KENYA (1965), *Kenya Population Census 1962. Tables Vol. II*. Nairobi: Statistics Division, Ministry of Economic Planning and Development, Government Printer.
- KENYA (1965), *Five Year Plan 1966-1970*. Nairobi: Government of Kenya.
- KENYA (1970), *Kenya Population Census 1969, Vol.1*. Nairobi: Republic of Kenya, Statistics Division, Ministry of Finance and Economic Planning, Government Printer.
- KENYA (1974), *Third Five Year Plan, 1974-1978*. Nairobi: Government of Kenya.
- KENYA (1974), *District Development Plan West Pokot District 1974-1978*. Nairobi: Government of Kenya.

- KENYA (1978), Marginal/Semi-Arid Lands Pre-Investment Inventory. (Ten volumes). Nairobi: Government of Kenya/ Consortium for International Development.
- KENYA (1979), Kenya Population Census: supervisor's instructions/ leader's guide/ enumerator's instructions/ West Pokot enumeration area maps.
- KENYA (1979), Arid and Semi-Arid Lands development in Kenya. The framework for programme planning, implementation and evaluation. Nairobi: Government of Kenya, Government Printer.
- KENYA (1979), District Development Plan West Pokot District, 1979-1983. Nairobi/Kapenguria: Government of Kenya.
- KENYA (1981), Kenya Population Census 1979. Vol. 1. Nairobi: Republic of Kenya, Central Bureau of Statistics, Ministry of Economic Planning and Development.
- KENYA (nd), Kenya Population Census 1979, Enumeration area results West Pokot District. Kapenguria: archives District Commissioner.
- KENYA (nd), Kenya Population Census 1979, Migration figures (unpublished).
- KENYA (1983), Results of parliamentary elections 1983. Nairobi: Republic of Kenya, Government Printer.
- KENYA (1983), Development Plan 1984-1988. Nairobi: Republic of Kenya, Government Printer.
- KENYA (1984), District Development Plan West Pokot District 1984-1988. Kapenguria/Nairobi: Government of Kenya, Government Printer.
- KENYA (1985), 1985-86 Estimates of Recurrent Expenditure. Nairobi: Government of Kenya.
- KENYA (1986), Development Estimates 1986-87. Nairobi: Government of Kenya.
- KENYA SOIL SURVEY (1976), Soils of the Kapenguria area (GELENS, H.F., H.C.K. KINYANJUI & R.F.VAN DE WEG (ed). Nairobi: KSS, Reconnaissance Soil Survey Report, R2.
- KENYA SOIL SURVEY (KSS) (1982), Exploratory soil map and agro-climatic zone map of Kenya, 1980, Scale 1:1,000,000 (W.G. SOMBROEK, H.M.H. BRAUN & B.J.A. VAN DER POWW). Nairobi: KSS. Exploratory Soil Survey Report E1.
- KERIO PROVINCE (nd), Political record book (PRB), (approx. 1921-1939). Nairobi: National Archives.
- KERIO VALLEY DEVELOPMENT AUTHORITY (1980), Background study of the Kerio Valley, 3 vols. Nairobi: African Development and Economic Consultants Ltd.
- KERIO VALLEY DEVELOPMENT AUTHORITY (1981), General development plan for the Kerio Valley Basin. 2 vols. Nairobi: African Development and Economic Consultants Ltd.
- KESBY, J.D. (1977), The cultural regions of East Africa. London: Academic Press.
- KVDA (KERIO VALLEY DEVELOPMENT AUTHORITY) (1982), The socio-economic impact of the Turkwell Gorge Multi-Purpose Project. Nairobi: African Development and Economic Consultants Ltd. (ADEC).
- KESSLER, J.J. & F.M.J. OHLER (1983), Interventies in Sahellanden: een ecologische benadering. Effectiviteit van en milieubeïnvloeding door interventies in de Sahel- en Soedan-zones van West Afrika. Wageningen: CEO. Rapport voor Directoraat Generaal Internationale Samenwerking, Den Haag.
- KIPKORIR, B.E. (1973), Colonial response to a crisis - the Kolloa affray and colonial Kenya in 1950. Kenya, Past and Present, 2, pp. 22-35.
- KIPKORIR, B. (1978), Pokot swan song. African Perspectives, 2, pp. 20-21.
- KIPKORIR, B.E., R.C. SOPER & J.W.SENNYONGA (1981), Kerio Valley, past, present and future. Proceedings of a seminar held in Nairobi, May 21-22.
- KITCHING, G. (1980), Class and economic change in Kenya. The making of an African petite-bourgeoisie, 1905-1970. New Haven & London: Yale UP.
- KLEINPENNING, J.M.G. & H.A.REITSMA (1987), Regionale geografie - een 'must' voor de studie van ontwikkelingsvraagstukken. K.N.A.G. Geografisch Tijdschrift, 21, 1, pp. 63-71.
- KLIEST, T. (1985), Regional and seasonal food problems in Kenya. Nairobi/Leiden, Food and Nutrition Studies Programme, Ministry of Finance and Planning/ African Studies Centre. Report 10.
- KLINKEN, M.K. VAN (1985), Traditional irrigation in Kenya: the case of the Pokot. Berlin: German Association for Water Resources and Land Improvement. Paper for the 8th irrigation symposium, April 24.
- KLINKEN, M.K. VAN (1985a), Seed distribution programme 1985, Kapchok Location. A report for the District Agricultural Officer, West Pokot District; to the ASAL Programme Coordinator on the implementation of the Suam River Agricultural Project. Kapenguria: District Irrigation Officer.
- KLINKEN, M.K. VAN (1985b), Project evaluation report. To Resident Representative ONV Kenya, Nairobi. Kapenguria (incl. Briefing on Cherangan Irrigation Scheme Kodich for PC's visit on 23d October).
- KLINKEN, M.K. VAN & P.M.MWIRIGI (1984), Suam River Agricultural Project, including Kodich Irrigation Scheme. A Project Proposal. Kapenguria: Ministry of Agriculture and Livestock Development.
- KNUTSSON, K.E. (1985), Preparedness for disaster operations. In: DODGE, C.P. &

- P.D.WIEBE, Crisis in Uganda. The breakdown of health services. Oxford etc.: Pergamon, pp. 183-189.
- KOGI, W. (1982), Nutrition and family health. A brief preliminary study in West Pokot. Nairobi: AMREF.
- KSS (1982): see KENYA SOIL SURVEY.
- LANDS AND SURVEYS DEPARTMENT, UGANDA PROTECTORATE (1958), Southern Karamoja Water Resources, Map 1:250,000, 250-7/58.
- LAUER W. & P. FRANKENBERG (1981), Untersuchungen zur Humidität und Aridität von Afrika: das Konzept einer potentiellen Landschaftsverdunstung. Bonn.
- LAVRIJSEN, J.S.G. (1984), Rural poverty and impoverishment in Western Kenya. Utrecht: Utrechtse Geografische Studies, 33 (Ph.D.).
- LEEuw, W. DE (1985), Het Bura irrigatie- en vestigingsproject: zelfs geen illusie van ontwikkeling. Een analyse van de voorbereiding, besluitvorming, uitvoering en consequenties van een grootschalig irrigatieproject in Kenya. Amsterdam: Vrije Universiteit (Drs. Thesis).
- LEYS, C. (1974), Underdevelopment in Kenya: the political economy of neocolonialism, 1964-1971. Berkeley (London: Heinemann, 1975).
- LITTLE, D.P. (1983), The livestock-grain connection in Northern Kenya: an analysis of pastoral economics and semi-arid land development. Rural Africana, 15-16, pp. 91-108.
- LIVINGSTONE, I. (1975), Cowboys in Africa: the socio-economics of ranching in Africa. Nairobi: Institute for Development Studies, University of Nairobi, Working Paper 220.
- LIVINGSTONE, I. (1977), Economic irrationality among pastoral peoples: myth or reality? Development and Change, 8, pp. 209-230.
- LONG, N. (1986), Commoditization: thesis and antithesis. In: LONG, N. e.a., The commoditization debate: labour process, strategy and social network. Wageningen: papers of the Depts. of Sociology, Agricultural University, 17.
- LWS (LUTHERAN WORLD SERVICE) UGANDA (1981), Annual Report, Karamoja Emergency Development Programme. Kampala: LWS Uganda.
- LWS UGANDA (1982), Annual Report Karamoja Development Programme. Kampala: LWS Uganda.
- LWS UGANDA (1983), Annual Report; Karamoja Development Programme: pp. 9-27. Kampala: LWS Uganda.
- LWS UGANDA (1985), Annual Report; Karamoja Development Programme: pp. 8-21. Kampala: LWS Uganda.
- MACHAKOS INTEGRATED DEVELOPMENT PROGRAMME (1984), Annual Work Plan 1984-5. Machakos (Kenya): MIDP.
- MAHADEVAN, P. (1963), Report of the Committee of Inquiry into the Marketing of Cattle from Karamoja. Kampala: Uganda Government (unpublished mimeo).
- MAKOKHA, J. (1985), The District Focus. Conceptual and management problems. Nairobi: Africa Press Research Bureau.
- MAMDANI, M. (1982), Karamoja: colonial roots of famine in North-East Uganda. Review of African Political Economy, 25, pp. 66-73.
- MAMDANI, M. (1986), The colonial roots of the famine in Karamoja: a rejoinder. Review of African Political Economy, 36, pp. 85-92.
- MASAKHALIA, Y.F.O. (1981), Opening statements ASAL workshop by Permanent Secretary of the Ministry of Economic Planning and Development. In: CAMPBELL, D. & S.E. MIGOT-ADHOLLA, The development of Kenya's semi-arid lands. Nairobi: Institute for Development Studies, University of Nairobi, Occasional Paper, 36, pp. 1-4.
- MBITHI, P. & C. BARNES (1975), The spontaneous settlement problem in Kenya. Nairobi: East African Literature Bureau.
- MEADOWS, S.J. & J.M. WHITE (1981), Cattle herd structures in Kenya's pastoral rangelands. London: ODI, Agricultural Administration Unit, Pastoral Network Paper, 11e.
- MEYERHOFF, E. (1981), The socio-economic and ritual roles of Pokot women. Cambridge University (unpublished Ph.D. thesis).
- MEYN, K. (1970), Beef production in East Africa. München:IFO-Institut.
- MIGOT-ADHOLLA, S.E. & P.D. LITTLE (1981), Evolution of policy toward the development of pastoral areas in Kenya. In: GALATY, J.G.E.A. (eds), The future of pastoral peoples. Ottawa: IDRC, pp. 144-156.
- MoALD (1983), Workshop on small-scale irrigation in Kenya. Nairobi: Ministry of Agriculture and Livestock Development, Irrigation and Drainage Branch.
- MOROTO ARCHIVES, Administrative reports, minutes, miscellaneous correspondence, Karamoja District (found in a damaged, deserted office shed, Moroto), various years.
- MUIR, C.A. (1985), Response to maendeleo - changing perceptions amongst the Pokot of Nginyang in a period of transition. Edinburgh: Centre of African Studies, Edinburgh University, Occasional Papers, 14.
- MUNRO, J.F. (1975), Colonial rule and the Kamba. Social change in the Kenya highlands, 1889-1939. Oxford: Clarendon Press.
- MUNYAKO, D.K. (1986), KMC: a giant on its knees. Nation Sunday Magazine, October 12,

- Nairobi: Nation.
- NATIONAL ATLAS OF KENYA: see SURVEY OF KENYA.
- NGUNJIRI, E. (1983), Beekeeping survey report to ASAL (Oct.-Nov. 1982), Kapenguria: ASAL Programme.
- NGUTTER, L.G.K. (1981), Kenya government policy in semi-arid areas. In: CAMPBELL, D. & S.E. MIGOT-ADHOLLA, The development of Kenya's semi-arid lands. Nairobi: Institute for Development Studies, University of Nairobi, Occasional Paper, 36, pp. 25-39.
- NKINYANGI, J.A. (1981), Education for nomadic pastoralists: development planning by trial and error. In: GALATY, J.G. e.a. (eds), The future of pastoral peoples. Ottawa: IDRC, pp. 183-196.
- NORCONSULT A.S. (1981), Karapokot water supply: proposal for a water supply project. Report for the Government of Kenya and the International Red Cross. Høvik (Norway): Norconsult.
- NRC-HANDELSBLAD (1986), De goudprijzen, 12 Aug. (Rotterdam, The Netherlands).
- NSIBAMBI, A. & F. BYARUGABA (1982), Problems of political and administrative participation in a semi-arid area of Uganda: a case-study of Karamoja. *The African Review*, 9, 2, pp. 79-96.
- OBARA, D.A. (1983), Constraints on cotton production in Kenya's semi-arid environments. *The Kenyan Geographer*, 5, 1-2, pp. 145-153.
- OBUDHO, R.A. & D.R.F. TAYLOR (eds) (1979), The spatial structure of development: a study of Kenya. Boulder (Colorado, USA): Westview Press.
- OCAN, J. (1986), The Karamoja problem has been misunderstood. *Weekly Topic*, May 14, p.5 & 16. Kampala: *Weekly Topic*.
- OCHIENG', W.R. (1975), An outline history of the Rift Valley, Kenya, up to A.D. 1900. Nairobi: East African Literature Bureau.
- ODEGI-AWUONDO, (1982), Wildlife conservation and decline of pastoralism in Kenya. *African Journal of Sociology*, 2, 2, pp. 74-83.
- ODEGI-AWUONDO, (1983), Drought and famine in Turkana: some human problems and suggested solutions. *The Kenyan Geographer*, 5, 1-2, pp. 175-182.
- OFFICE OF THE PRESIDENT (1984), District Focus for rural development. Revised. Nairobi: Government of Kenya.
- OGENDO, R.B. (1983), A planning classification of Kenya's arid and semi-arid districts. *The Kenyan Geographer*, 5, 1-2, p. 124-126.
- OJANY, F.F. & R.B. OGENDO (1982), Kenya. A study in physical and human geography. Nairobi: Longman (3d impr.).
- OJANY, F.F. & Sh.OLSON (eds) (1983), Strategies for developing the resources of the arid and semi-arid lands of Kenya. Nairobi Workshop (4-8 August 1981). *The Kenyan Geographer*, 5, 1-2.
- O'LEARY, M. (1980), Responses to drought in Kitui District, Kenya. *Disasters*, 4, 3, pp. 315-328.
- O'LEARY, M. (1984), The Kitui-Kamba: economic and social change in semi-arid Kenya. Nairobi: Heinemann Educational Books.
- O'LOUGHLIN, J. & H. VAN DER WUSTEN (1987), Geography's imprint on the structure of international relations and the conduct of foreign policy. Chicago: American Political Science Association. Paper.
- OMINDE, S.H. (1968), Land and population movements in Kenya. London: Heinemann.
- OMINDE, S.H. (1971), The arid and semi-arid lands of Kenya. In: OMINDE, S.H., *Studies in East African geography and development*, pp. 146-161. London: Heinemann.
- OMINDE, S.H. (1979), Regional disparities and the employment problem in Kenya. In: OBUDHO, R.A. & D.R.F.TAYLOR (eds), *The spatial structure of development: a study of Kenya*. Boulder (Colorado, USA): Westview Press, pp. 46-73.
- OWITI, A., J.KIPKAN & T.DIETZ (1985), Review Mission ASAL Programme West Pokot and Elgeyo Marakwet. Nov. 7th.-Nov. 26th. Nairobi: Ministry of Planning and National Development/Netherlands Embassy.
- OXBY, C. (1982), Group ranches in Africa. London: ODI, Agricultural Administration Unit, Pastoral Network Paper 13d.
- OYUGI, W.O. (1981), Rural development administration: a Kenyan experience. New Delhi: VIKAS Publ. House.
- PATTERSON, K.D. (1969), The Pokot of Western Kenya, 1910-1963: the response of a conservative people to colonial rule. New York: Syracuse, Occasional Paper, 53.
- PEARSE, A. (1975), The Latin American peasant. London: Frank Cass.
- PENNING DE VRIES, F.W.T. (1983), The productivity of Sahelian rangelands - a summary report. London: ODI, Agricultural Administration Unit, Pastoral Network Paper, 15b.
- PEPERKAMP, G. (1986), Land-use competition and conflicts in Kenya's marginal areas as exemplified by the situation in Laikipia and Meru Districts. An introduction. Nijmegen: Study Group for Human Geography of Developing Countries, Institute for Geography and

- Planning, Catholic University of Nijmegen (The Netherlands), Publ. 45.
- PEREIRA, H.C. (1962), Grazing control in semi-arid rangeland; the land-use problem and the experimental environment. *East African Agricultural and Forestry Journal*, Special Issue, pp. 42-46.
- PERISTIANY, J.G. (1951), The age-set system of the pastoral Pokot. *Africa*, 21, pp. 188-206; 279-302.
- PERISTIANY, J.G. (1954), Pokot sanctions and structure. *Africa*, 24, pp. 17-25.
- PERISTIANY, J.G. (1975), The ideal and the actual: the role of prophets in the Pokot political system. In: BEATTIE, J.W.M. & R.G. LIENHARDT, *Studies in Social Anthropology*. London, pp. 167-212.
- PERSOON, G. (1985), From affluence to poverty. The 'development' of tribal or isolated peoples. In: BOER, L., D.BUYS & B. GALJART (eds), *Poverty and interventions. Cases from developing countries*. Leiden (The Netherlands): *Development Studies*, 6, pp. 89-110.
- POLITIEK EN RUIMTE (1982), Regionale ontwikkeling in perifere landen. Nijmegen (The Netherlands): *Stichting Politiek en Ruimte*, 3.
- PORTER, Ph. W. (1963), Suk views on Suk environment. *Annals of the Association of American Geographers*, 53, pp. 615-616.
- PORTER, Ph. W. (1965), Environmental potentials and economic opportunities, a background for cultural adaptations. *American Anthropologist*, 67, pp. 409-420.
- PORTER, Ph. W. (1976), Climate and agriculture in East Africa. In: KNIGHT, C.G. & J.L.NEWMAN (eds), *Contemporary Africa, geography and change*. New Jersey: Englewood Cliffs, pp. 112-139.
- PORTER, Ph. W. (1979), Food and development in the semi-arid zone of East Africa. New York: Syracuse.
- POYCK, L.J. (1985), Ruimtelijk-ekonomische ontwikkeling, sociale differentiatie en kleinschalige niet-agrarische bedrijvigheid in Kenya. Nijmegen (The Netherlands): *Nijmeegse Geografische Cahiers*, 28 (Ph.D.).
- PRATT, D.J. & M.D.GWYNNE (eds) (1977), *Rangeland management and ecology in East Africa*. London: Hodder & Stoughton.
- PRECIS for the Land Enquiry Commission. Proposals or Applications affecting the Native Reserve Boundaries, Vol. 1, Part D, Turkana Province. Nairobi (ND; approx. 1933).
- PROVINCIAL IRRIGATION UNIT, RIFT VALLEY PROVINCE (1982), Re: proposals small scale irrigation near Kongelai. Letter to the District Agricultural Officer West Pokot District, Dec. 21. Nakuru: PIU, RVP.
- QUAM, M.D. (1978), Cattle marketing and pastoral conservatism: Karamoja District, Uganda, 1948-1970. *African Studies Review*, 21, 1, pp. 49-71.
- RAIKES, Ph. L. (1981), *Livestock development and policy in East Africa*. Uppsala (Sweden): Scandinavian Institute of African Studies.
- RANDIGA, S.C. (1974), SRDP Kapenguria. Annual implementation and evaluation review. Kapenguria: Special Rural Development Programme.
- RAVENSTEIN, E.G. (1891), Messrs Jackson and Gedge's journey to Uganda via Masailand. *Proceedings of the Royal Geographical Society*, 4, pp. 193-208.
- REDCLIFF, M. (1986), Survival strategies in rural Europe: continuity and change, an introduction. *Sociologia Ruralis*, 26, 3-4, pp. 218-227.
- REITSMA, H.A. & J.M.G. KLEINPENNING (1985), *The Third World in perspective*. Assen/Maastricht (The Netherlands): Van Gorcum.
- REMPEL, H. (1977), An analysis of the information on inter-district migration provided in the 1969-census. Nairobi: Institute for Development Studies, University of Nairobi, Discussion Paper, 244.
- RENQVIST, U., W.VAN STEENBERGEN & M. VAN DER RIJST-KRUYTHOFF (1986), *Voeding in de Tropen*. Amsterdam: Koninklijk Instituut voor de Tropen.
- REPUBLIC OF KENYA: see KENYA.
- REYNOLDS, J.E. (1982), Community underdevelopment, ethnicity and stratification in a rural destination: Mnagei, Kenya. Washington (Ph.D.).
- RIFT VALLEY PROVINCE (1964), *Development Plan 1964-1970: 7-year Agricultural Development Plan West Pokot*. Nakuru: RVP.
- RIGBY, P. (1981), Pastors and pastoralists: the differential penetration of christianity among East African cattle herders. *Comparative Studies in Society and History*, 23, pp. 96-129.
- RINSUM, G.J. VAN (1974), Kapenguria Special Rural Development Programme. Verslag over uitvoering projecten gedurende financiële jaar 1973/74. Kapenguria: Special Rural Development Programme.
- RINSUM, G.J. VAN (1975), Final report of Kapenguria SRDP. Kapenguria: Special Rural Development Programme.
- ROBERTSON, A.F. (ed) (1982), *Uganda's first republic. Chiefs, administrators, and politicians 1962-1971*. Cambridge: African Studies Centre, Cambridge Afr. Monographs 1.

- ROWLAND, J. (1985), How to grow good crops in Karamoja. Kotido: Karamoja Seed Scheme, Kotido District, 3d edit.
- ROWLAND, J.R.J. & M. CISTERNINO (1980), Some guidelines in the development of Karamoja, NP, Typescript.
- RUTHENBERG, H. (1971), Farming systems in the Tropics. Oxford: U.P. (3d edit. 1980).
- RUTTEN, M. (1985), Where to go?!? Conflicts and competition for space among the Turkana, (ex-) nomadic pastoralists of North West Kenya. Nijmegen (The Netherlands): Faculty of Geography and Planning, Catholic University of Nijmegen (Drs Thesis).
- RUTTEN, R. (1987), Notities over onderzoek naar overlevingsstrategieën van huishoudens. Amsterdam: 6e KOTA-Conferentie: Overlevingsstrategieën, huishoudens en verwantschap, 20- 21 Mei (unpublished paper).
- SALZMAN, Ph. C. (ed) (1980), When nomads settle. Processes of sedentarization as adaptation and response. New York: Praeger.
- SALZMAN, Ph. C. (1984), Synthetic and multicausal approaches to the study of nomadic peoples. *Nomadic Peoples*, 16, pp. 31-42.
- SANDFORD, S. (1982), Pastoral strategies and desertification: opportunism and conservation in dry lands. In: SPOONER, B. & H.S.MANN (eds), *Desertification and development: dryland ecology in social perspective*. London/New York: Academic Press.
- SANDFORD, S. (1983), Management of pastoral development in the Third World, Chichester (U.K.): J. Wiley & Sons (in association with ODI).
- SCHAYK, A VAN (1987), Overleving of groei: koloniaal beleid en agrarische ontwikkeling op Java rond 1900. Amsterdam: 6e KOTA-Conferentie: Overlevingsstrategieën, huishoudens en verwantschap, 20-21 Mei (unpublished paper).
- SCELLENBERGER, B. (1981), Op de rand van de periferie: ruimtelijke verschillen in economische ontwikkeling en de invloed van de overheid daarop in Kitui, Kenya. Amsterdam: Instituut voor Sociale Geografie, Universiteit van Amsterdam (Drs Thesis).
- SCHENDEL, W.VAN (1987), Self-rescue and survival: the rural poor in Bangla Desh. Amsterdam: 6e KOTA-Conferentie: Overlevingsstrategieën, huishoudens en verwantschap, 20-21 Mei (unpublished paper).
- SCHMINK, M. (1984), Household economic strategies: review and research agenda. *Latin American Research Review*, 19, 3, pp. 87-101.
- SCHNEIDER, H.K. (1953), The Pakot (Suk) of Kenya with special reference to the role of livestock in their subsistence economy. Evanston: Northwestern University (Ph.D.).
- SCHNEIDER, H.K. (1957), The subsistence role of cattle among the Pokot in East Africa. *American Anthropologist*, 59, pp. 278-300.
- SCHNEIDER, H.K. (1959), Pakot resistance to change. In: BASCOM, W.R. & M.HERSKOVITS (eds), *Continuity and change in African cultures*, pp. 144-167. Chicago: University of Chicago Press.
- SCHNEIDER, H.K. (1979), Livestock and equality in East Africa: the economic base for social structure. Bloomington: Indiana Univ. Press (USA).
- SCHNEIDER, H.K. (1981), Livestock as food and money. In: GALATY, J.G. e.a.(eds), *The future of pastoral peoples*. Ottawa: IDRC, pp. 210-223.
- SCHNEIDER, H.K. (1984), Formalist approaches to pastoralism. *Nomadic Peoples*, 16, pp. 43-58.
- SCHOMAKER, M. (1982), Preliminary report, accompanying a physiographic photo- and landsat-interpretation study of the Kapenguria-area, Kenya. Amsterdam: Dept. of Physical Geography and Soil Science, University of Amsterdam (internal paper).
- SCHOMAKER, M.C.B. (1983), A qualitative land evaluation for the West Pokot and Elgeyo Marakwet Districts, Kenya. Amsterdam: Dept. of Physical Geography and Soil Science, University of Amsterdam (internal paper).
- SCHWARTZ, H.J. (1983), Pastoral livestock production in Northern Kenya: constraints and potential. *The Kenyan Geographer*, 5, 1-2, pp. 154-159.
- SCHWEIGMANN, C, T.A.B. SNIJDERS & F.HAGENZIEKER (1981), Risks in agriculture in developing countries caused by rainfall variability. Introduction to risk computations. Groningen: University of Groningen (The Netherlands): AGRISK.
- SIDERIUS, W. (1978), The soils of the Upper Kerio Valley. Nairobi: Kenya Soil Survey.
- SNV (1986), Irrigation - a sector policy paper. Nairobi: Netherlands Development Organization (mimeo).
- SOCIAAL GEOGRAFISCH INSTITUUT (1984), Van droogte doordrongen; een studie naar het beleid van overheid en hulporganisaties ter verhoging van het welvaartsnivo in de droge gebieden van Kenia na de onafhankelijkheid. Amsterdam: SGI, Universiteit van Amsterdam. Leeronderzoek-verslag (o.l.v. DIETZ, T. & B. SURIE).
- SOJA, E.W. (1968), The geography of modernization in Kenya. A spatial analysis of social, economic and political change. Syracuse: Syracuse Geographical Series, 2.
- SPENCER, I.R.G. (1983), Pastoralism and colonial policy in Kenya 1895-1929. In: ROTBERG, R.I., *Imperialism, colonialism and hunger: East and Central Africa*, pp. 113-140.



- Lexington: Lexington Books.
- SRDP (1971), The Special Rural Development Programme in Kapenguria: Recommendations. Wageningen (The Netherlands).
- STATISTICAL ABSTRACT (1981): see CBS.
- STEPHENSON, R.S. (1980), Karamoja: famine relief July-September 1980, debriefing report. London: International Disaster Institute.
- STICHTER, Sh. (1982), Migrant labour in Kenya. Capitalism and African response 1895-1975. Harlow: Longman.
- STREEFLAND, P. (1987), Modes of survival and survival strategies. Amsterdam: 6e KOTA-Conferentie: Overlevingsstrategieën, huishoudens en verwantschap, 20-21 Mei (unpublished paper).
- STREET, J. (1969), An evaluation of the concept of carrying capacity. *The Professional Geographer*, 21, 2, pp. 104-107.
- SURVEY OF KENYA (1961), Map 1:50,000 Series Y731, Kanyarkwat (74/2). Nairobi: Survey of Kenya.
- SURVEY OF KENYA (1970), National Atlas of Kenya. Nairobi (3d edit.).
- SURVEY OF KENYA (1971), Maps 1:50,000 Series Y731, Kapchoket (62/1), Nakujit (62/3), Kongelai (75/1; revised edition 1976), Turkwell Gorge (62/2), Sekerr (62/4). Nairobi: Survey of Kenya.
- SURVEY OF KENYA (1973), Maps 1:250,000 Series Y503, Moroto (NA36-8), Kapenguria (NA36-12) and Eldoret (NA36-16), Reprints 1981. Nairobi: Survey of Kenya.
- SWYNNERTON, R. (1955; draft: 1954), A plan to intensify the development of African agriculture in Kenya. Nairobi: Government Printer.
- TANAKA, J. (1980), Residential pattern and livestock management among the pastoral Pokot. In: TANAKA, J., A study of ecological anthropology on pastoral and agro-pastoral peoples in Northern Kenya. Kyoto (Japan): Primate Research Institute, Kyoto University.
- TARROW, S. (1977), Between center and periphery. Grassroots politicians in Italy and France. New Haven/London: Yale U.P.
- TESCAROLI, C. (1979), The Karapokot, a waiting people. *World Mission*, 30, pp. 28-33.
- TESCAROLI, C. (1981), The tragedy of Uganda's Karamoja region. *World Mission*, 32, pp. 17-21.
- THOM, D.J. (1980), Land-use and population pressure in Central Kitui, Kenya. Association of American Geographers, Louisville (Kentucky, USA).
- THOMAS, E.M. (1965), Warrior herdsmen. New York: A.A.Knopf.
- THOMSON, J. (1885), Through Masailand. London: Low e.a.
- TIENHOVEN, J.VAN & F.ZAAL (1986), Locational Development Profile Lomut and Cheptulel Locations. Report for the ASAL Programme West Pokot. Amsterdam: Dept. of Human Geography, University of Amsterdam.
- TIMBERLAKE, L. (1985), Africa in crisis. The causes, the cures of environmental bankruptcy. London & Washington: Earthscan IIED.
- TOMLINSON, R.H. (1981), Spatial inequality and public policy in less-developed countries: the case of Kenya. New Brunswick (Ph.D.).
- TOTTY, L.H., G.H. CHAUNDY & G.W.B. HUNTINGFORD (1952; orig. 1944), The peoples of Kenya: the people and district of West Suk, 17, Nairobi: Highway Press.
- TROUWBORST, A.A. (1956), Vee als voorwerp van rijkdom in Oost Afrika. (Ph.D. Leiden), 's Gravenhage: Excelsior.
- TULLY, D.R. (1985), Human ecology and political process: the context of market incorporation in West Pokot District, Kenya. Washington: Washington University (Ph.D.).
- TURKANA RURAL DEVELOPMENT PROGRAMME (1984), Work plan and programme budget for 1984-5. Lodwar & Protocol for the fifth meeting between GoK and NORAD on the TRDP. Nairobi: TRDP.
- TURNBULL, C.M. (1967), The Ik, alias the Teuso. *The Uganda Journal*, 31, 1, pp. 63-72.
- TURNBULL, C.M. (1972), The mountain people. New York: Touchstone.
- TURPIN, C.A. (1948), The occupation of the Turkwell River by the Karimojong tribe. *The Uganda Journal*, 12, 2, pp. 161-165.
- UGANDA ATLAS (1962), (Atlas of Uganda). Entebbe: Dept. of Lands and Surveys (2d edit. 1967)
- UGANDA GOVERNMENT (1972), 1:50,000 Maps, Series Y732, Chepsikunya (45/3), Karita (45/4), Amudat (45/2), Loro (36/4), Katikekile (36/2). Entebbe: Director of Surveys.
- UGANDA GOVERNMENT (ND), Uganda Population Census 1959, Age-sex analysis (Makerere University).
- UGANDA GOVERNMENT (1971), Uganda Population Census 1969. Kampala.
- UPE (1982), Food for Work Upe County (writer 'the people of Upe County'). Amudat (mimeo).
- UNESCO (1979), Map of the world distribution of arid regions. Explanatory note (and map). Paris: MAB Technical Notes, 7.
- VELDHUIS, M. (1981), Gevolgen van arbeidsmigratie voor het herkomstgebied, Makueni,

- Machakos. Amsterdam: Sociaal Geografisch Instituut, Universiteit van Amsterdam (Drs thesis).
- VERMAAT, B. e.a. (1986), Locational Development Profile, Kipkomo Location. Report for the ASAL Programme, West Pokot District. Amsterdam: Dept. of Human Geography, University of Amsterdam.
- VINK, A.P.A. (1983), Landscape ecology and land use. New York.
- VISSER, J.J. (1982), Towards a missionary approach among the Pokot. Zandijk (The Netherlands).
- VOS, N. DE (1984), Verzameling en bewerking van geografische data voor een ontwikkelingsproject. Een atlas voor het district West Pokot in Kenya. Amsterdam: Sociaal Geografisch Instituut, Universiteit van Amsterdam (Drs. Thesis).
- VOS, R. DE (1983), ASAL West Pokot, werkbezoek, 23-25 Maart. s'Gravenhage: DGIS.
- WALTER, J. (1984), Interview with Allan Savory. *Journal of Soil and Water Conservation*, July-August, pp. 236-240.
- WEATHERBY, J. (1969), A preliminary note on the Sorat (Tepeth). *The Uganda Journal*, 33, 1, pp. 75-78.
- WEATHERBY, J. (1979), Raindrums of the Sor. In: WEBSTER, J.B., Chronology, migration and drought in Interlacustrine Africa. London: Longman & Dalhousie U.P., pp. 317-331.
- WEATHERBY, J. B.E.KIPKORIR & S.E.G.SUTTON (1964), The Sirikwa. *The Uganda Journal*, 28, 1, pp. 61-74.
- WEBSTER, J.B. (1979), Noi! Noi! Famines as an aid to interlacustrine chronology. In: WEBSTER, J.B., Chronology, migration and drought in Interlacustrine Africa. London: Longman & Dalhousie U.P., pp. 1-37.
- WEEKLY REVIEW, Nairobi-based weekly (e.g. Oct. 3, 1986).
- WELCH, C.P. (1969), Pastoralists and administrators in conflict: a study of Karamoja District, 1897-1968. Kampala: University of East Africa. Thesis submitted in part fulfilment for the degree of Master of Arts.
- WELLS, M. (1985), The relief operation in Karamoja: what was learned and what needs improvement. In: DODGE, C.P. & P.D. WIEBE: Crisis in Uganda, the breakdown of health services. Oxford: Pergamon, pp. 177-182.
- WERE, G. & D.A. WILSON (1984), East Africa through a thousand years. London: Evans Brothers (3d. edit.).
- WEST POKOT DISTRICT (1974), Kapenguria Special Rural Development Programme. Group Ranch Project. Kapenguria: District Range Officer.
- WEST POKOT DISTRICT (1963-1984), West Pokot Annual Reports. Kapenguria (available: District Information and Documentation Centre, Kapenguria).
- WEST POKOT DISTRICT (1963-1984), West Pokot Annual Agricultural Reports. Kapenguria: Ministry of Agriculture (and Livestock Development) (available: District Information and Documentation Centre, Kapenguria; Library Ministry of Agriculture, Nairobi).
- WEST POKOT DISTRICT (1974, 1979, 1984), District Development Plan: see Kenya.
- WEST POKOT DISTRICT ATLAS (1985). See HENDRIX e.a.
- WEST POKOT DISTRICT (1985, 1986), Annex to the District Development Plan 1985-6 resp. 1986-7. Kapenguria: District Development Committee.
- WEST POKOT DISTRICT (ND), Proposed development plan, Karapokot Division. Kapenguria (approx. 1976).
- WEST SUK DISTRICT (1924-1962), Annual Reports. Kacheliba/Kapenguria (available: Kenyan National Archives, Nairobi, as well as: West Suk Handing Over Reports -HOR-, some Intelligence Reports -IR- and Miscellaneous Correspondence. Before 1924: Turkana Annual Reports (1910-14); Turkana and Suk Annual Reports (1916-1920); Kacheliba Annual Reports (1922-23). For detailed inventory see GREGORY, R.G. e.a. (1968).
- WEST SUK (ND), Agricultural Gazetteer. Kapenguria (approx. 1955).
- WHITE, B.N.F. (1980), Rural household studies in anthropological perspective. In: BINSWANGER, H. e.a. (eds), Rural household studies in Asia. Singapore: UP.
- WIDSTRAND, C. (1972), On Pokot group ranches, livestock marketing, pastoral values, planners and a variety of topics vaguely related. Kapenguria: SRDP? (mimeo).
- WIDSTRAND, C.G. (1973), Pastoral peoples and rural development, a case study. Uppsala (Sweden): *Annales Academiae Regiae Scientiarum Upsaliensis*, 17.
- WIGGINS, S. (1985), The planning and management of integrated rural development in drylands: early lessons from Kenya's arid and semi-arid lands programmes. *Public Administration and Development*, 5, 2, pp. 91-108.
- WILSON, J.G. (1960), Notes on Karamoja soils & Notes on Karamoja vegetation. In: EVANS-JONES, P., The Karamoja Development Scheme. A report on the work during the years 1955-59. Kampala, pp. 24-31.
- WILSON, J.G. (1962), The vegetation of Karamoja District, Northern Province of Uganda. Kampala: Uganda Protectorate, Dept. of Agriculture. *Memoirs of the Research Division*, Series 2: Vegetation, 5.

- WILSON, J. (1970), Preliminary observations on the Oropom people of Karamoja. *The Uganda Journal*, 34, 2, pp. 125-146.
- WILSON, J.G. (1973), Check-list on the artifacts and domestic works of the Karimojong. *The Uganda Journal*, 37, pp. 81-93.
- WILSON, J.G. (1985), Resettlement in Karamoja. In: DODGE, C.P. & P.D. WIEBE, *Crisis in Uganda. The breakdown of health services*. Oxford: Pergamon, pp. 163-170.
- WILSON, J. (1986), *Oxfam Kapedo Resettlement Project*. Moroto: Oxfam.
- WILSON, J.G. & D.M. NAPPER (1979), The assessment of vegetation change on the Atumatak water catchment experiment from 1957 to 1975. *East African Agricultural and Forestry Journal*. Special Issue, pp. 198-205.
- WISNER, B. (1978), *Human ecology and drought in Eastern Kenya*. Massachusetts: Clark University (Ph.D.).
- WORLD BANK (1986), *World Development Report*. Washington: World Bank/ New York etc.: Oxford UP.
- WORLD HEALTH ORGANIZATION (1965), *Protein requirements. Report of a joint FAO/WHO Expert Group*. Geneva: Technical Report Series WHO, 301.
- WPAAR: see WEST POKOT DISTRICT.
- WPAR: see WEST POKOT DISTRICT.
- WPDA: *West Pokot District Atlas*: see HENDRIX e.a.
- WRAP (1984), *Water resources assessment study West Pokot District. Main report*. Nairobi: Water Resources Department, Ministry of Water Development/ Delft (The Netherlands): Groundwater Survey TNO.
- WSAR: see WEST SUK DISTRICT.
- WUSTEN, H. VAN DER (1982), *Levensspaden langs domeinen en posities. Toepassingsmogelijkheden van het tijd-ruimtelijk perspectief bij de studie van kleine boeren-samenlevingen*. K.N.A.G. *Geografisch Tijdschrift*, 16, 4, pp. 320-327.
- WUSTEN, H. VAN DER & O. HELDRING (1987), *De materiële grondslagen van het samenleven. Een programmatische beschouwing over de ontwikkeling van de sociale geografie*. In: WUSTEN, H. VAN DER (red.), *Postmoderne aardrijkskunde. De sociografische traditie voortgezet*. Muiderberg (The Netherlands): Coutinho, pp. 12-27.
- YADETA, G. (1985), *Dynamic processes of development in marginal lands, a case study from the Pokot in North-West Kenya*. Lund (Sweden): The Royal University (Ph.D.).
- ZAAL, F. (1986), *Veehouden in West Pokot, Kenya; een geïntegreerde benadering van het bevolkingsdraagvlak*. Amsterdam: Sociaal Geografisch Instituut, Universiteit van Amsterdam (Drs. thesis).
- ZAAL, F. & I. VAN TIENHOVEN (1986), *Locational Development Profile Masol Location. Report for the ASAL Programme West Pokot*. Amsterdam: Dept. of Human Geography, University of Amsterdam.
- ZWANENBERG, R.M.A.VAN (1975), *Nomadic pastoralism: the process of impoverishment*. In: ZWANENBERG, R.M.A. & A. KING, *An economic history of Kenya and Uganda, 1800-1970*, pp. 79-109. London: Macmillan.

#### About the author

Ton Dietz was born in The Hague, in 1951. He did his M.A. (doktoraal) at the Catholic University of Nijmegen, Dept. of Geography and Planning, in 1976 (Research, Prof. P.Kouwe; Geography of Developing Countries, Prof. J.Kleinpenning). Since 1976 he works as a lecturer at the University of Amsterdam, Dept. of Human Geography, Jodenbreestraat 23, 1011 NH Amsterdam.

## SUMMARY

### PASTORALISTS IN DIRE STRAITS

Survival Strategies and External Interventions in a Semi-Arid Region at the Kenya/Uganda Border: Western Pokot 1900-1986

All over Africa, pastoralists are in trouble. Recent droughts and other disasters have jeopardized their existence and their future as herders. Many inhabitants of arid and semi-arid lands have been forced to look for alternatives in arable farming, non-farm occupations, charity, migrant labour, and outmigration.

This study deals with the western part of the Pokot area and its inhabitants. The western Pokot are a group of approximately 100,000 people at the present time, which is about 80,000 more than at the start of colonial rule, around 1920. They live in a semi-arid lowland and escarpment environment, north of humid highlands. Their habitat covers 7,500 km<sup>2</sup> in the western part of West Pokot District in northwestern Kenya, and in the eastern part of Karamoja in northeastern Uganda. The pastoralists of western Pokot, too, have lost most of their animal wealth, especially as a result of a combination of natural and human-caused disasters since 1979. During most of this century, the large majority of the western Pokot were predominantly pastoralists. They were one of the least integrated peoples within Kenya and Uganda, with a large autonomy. They possessed successful strategies to counter occasional crisis periods, which are part and parcel of living in a disaster-prone and highly variable natural environment. Mobility, flexibility, network planning and diversity, have been key elements of successful adaptations to the hazards of semi-aridity.

In the course of this century, external influences have gained importance in causing or aggravating crises. Raids and warfare by hostile neighbours have never been more threatening than during the past decade. However, external agencies have had the greatest influence on the more recent crises. These consist of a multitude of missionary organizations as well as the colonial and postcolonial Government agencies of Kenya and Uganda. The recent differences in approach between the Kenyan and the Ugandan state, both regarding the semi-arid areas as a whole, and western Pokot in particular, add an interesting comparative element.

Sometimes external interventions directly caused a crisis. More often they gradually undermined successful socio-economic adaptations to the semi-arid environment. On the other hand, quite a number of external interventions were valuable additions to the indigenous elements of the three types of survival strategies which are distinguished in this study: strategies aimed at finding solutions for food deficits or health problems during a drought or other disaster; strategies for minimizing the loss of animal wealth; and strategies to maintain a pastoral way of life. The chief objective of this study is to disentangle the complex relationship between the various types of external interventions and the various survival strategies in the region of the western Pokot. The seriousness of the current crisis of pastoralism has been caused by a combination of natural disasters, warfare and adverse interventions by

external agencies. Looking at the remains of a proud pastoral society, one wonders about its future. In the case studies presented, we see an economy which combines arable farming, gold panning, petty trades of all kinds and charity income. Livestock no longer plays an important role. The development interventions, which recently strongly increased in number, favour a settled, non-pastoral future, so it seems. The defeat of pastoralism is often regarded as inevitable. In the ideology of incorporation the recent dramatic changes are welcomed as a step forward. Opposing these dominant opinions in interventionist circles, it is argued that the current emphasis on an arable economy leads to a more unstable, and potentially more crisis-prone way of life. This conclusion can be drawn by applying land-evaluation and harvest-failure models to the semi-arid environment of western Pokot. It is also argued, that pastoralism, although a bit more commercial than in the past, might be a sound basis for the economy and should be encouraged. If population-supporting-capacity models are applied which take into consideration the terms of trade between lowland livestock products and highland arable products, more people than the present number could be supported in western Pokot on the basis of pastoralism. Arable farming, gold panning, and all the other sources of food and money are valuable additions, but they should not replace pastoralism as the basis of a viable economy.

## SAMENVATTING

### VEEHOUDERS IN ERNSTIGE MOEILIJKHEDEN

Overlevingsstrategieën en externe interventies in een semi-aride streek in de grenszone van Kenia en Uganda, Westelijk Pokot, 1900-1986

Overal in Afrika hebben veehouders het zwaar te verduren. Recente droogtes en andere rampen bedreigen hun bestaan en hun toekomst als herders. Veel inwoners van aride en semi-aride gebieden hebben zich gedwongen gezien alternatieven te zoeken in de akkerbouw, niet-agrarische werkzaamheden, voedselhulp, trekarbeid en migratie naar elders.

Deze studie handelt over ontwikkelingen in het westelijke deel van het Pokot-gebied. Westelijk Pokot telt momenteel ongeveer 100.000 inwoners: een vervijfvoudiging vergeleken met het inwonertal aan het begin van de koloniale overheersing, rond 1920. De mensen leven er in een semi-aride omgeving met vlaktes, heuvels en steile rotswanden, ten noorden van vruchtbare, humide hooglanden. Het onderzoeksgebied beslaat 7.500 km<sup>2</sup>. Het is gelegen in het westelijke deel van West Pokot District in noordwest-Kenia en in het oostelijke deel van Karamoja in noordoost-Uganda.

Ook de veehouders van het westelijke Pokot-gebied zijn het grootste deel van hun vee kwijtgeraakt. Dat gebeurde vooral na 1979 en was een gevolg van een combinatie van natuurlijke en door de mens veroorzaakte rampen. Gedurende het grootste deel van deze eeuw waren verreweg de meeste inwoners van westelijk Pokot veehouders. Ze waren een van de minst geïntegreerde bevolkingsgroepen binnen Kenia en Uganda, met een aanzienlijke autonomie. Ze hadden succesvolle strategieën ontwikkeld om

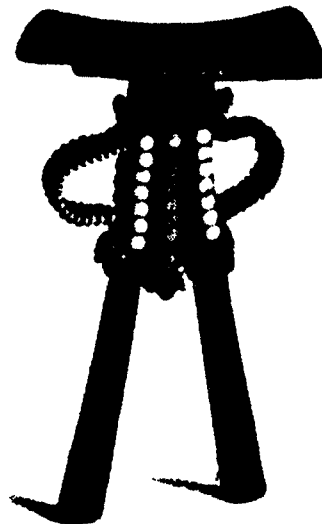
de van tijd tot tijd optredende crises het hoofd te bieden; crises die nu eenmaal een onderdeel vormen van het leven in een erg variabele natuurlijke omgeving. Mobiliteit, flexibiliteit, netwerkplanning en diversiteit, zijn trefwoorden waarmee we een succesvolle aanpassing aan de risico's van semi-aride omstandigheden kunnen begrijpen.

In de loop van deze eeuw zijn menselijke invloeden steeds vaker de oorzaak van crises geworden en eenmaal uitgebroken crises zijn door deze invloeden verergerd. Rooftochten en oorlogvoering door vijandige burens zijn nooit zo erg geweest als het laatste decennium. Binnendringende externe organisaties hebben echter de meest bepalende invloed gehad op de meer recente crises. Deze organisaties zijn missie- en zendingsgenootschappen en de koloniale en postkoloniale overheidsapparaten van Kenia en Uganda. Het verschil in optreden tussen de Keniase en Ugandese staatsorganisaties, zowel ten aanzien van semi-aride gebieden als geheel, als met betrekking tot westelijk Pokot, biedt daarbij materiaal voor een interessante vergelijking.

In een aantal gevallen is het optreden van deze externe organisaties rechtstreeks verantwoordelijk voor krisissituaties. Vaker echter hebben interventies geleidelijk de succesvolle aanpassingen aan de semi-aride omstandigheden ondermijnd. Aan de andere kant zijn er talloze interventies geweest die waardevolle aanvullingen bleken op de door de bevolking zelf ontwikkelde elementen van de drie types overlevingsstrategieën die hier worden onderscheiden: op de eerste plaats strategieën ter bestrijding van voedseltekorten en voor het oplossen van gezondheidsproblemen tijdens een droogte of andere ramp; op de tweede plaats strategieën die het verlies van vee proberen te minimaliseren en tenslotte strategieën die ontwikkeld zijn om de veehoudersmaatschappij in stand te houden als de meest te prefereren manier van leven. Centraal in dit boek staat het ontwarren van de ingewikkelde invloeden van de verschillende soorten externe interventies op de diverse overlevingsstrategieën.

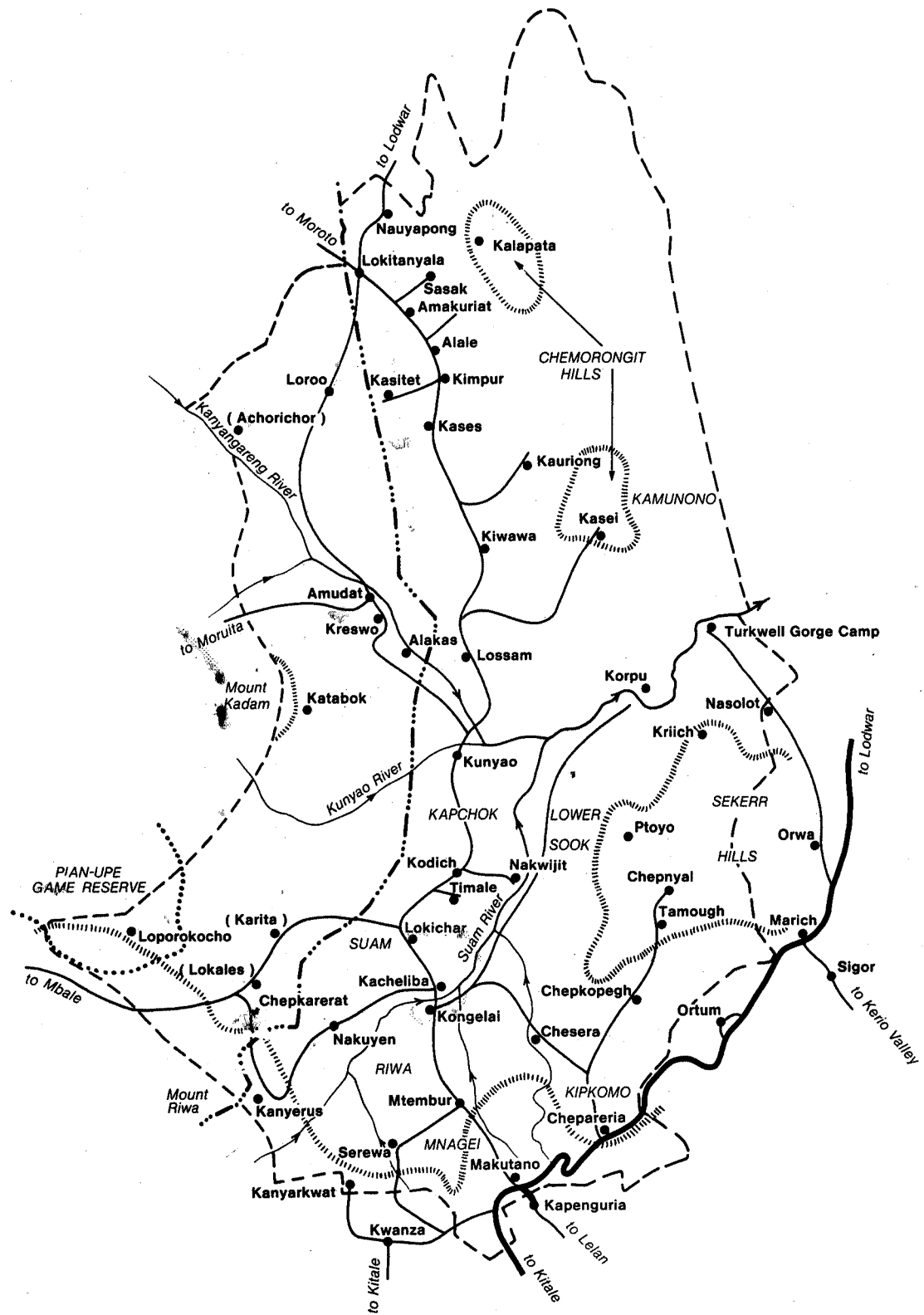
De ernst van de recente veehouderskrisis is veroorzaakt door een combinatie van natuurlijke tegenslagen, vijandelijkheden en nadelige interventies door externe organisaties. Als we zien dat er van de trotse veehoudersmaatschappij van de westelijke Pokot weinig over is, is het de vraag of de huidige crisis nu het definitieve einde is van de veehouderseconomie. In de voorbeeldstudies die worden gepresenteerd zien we inderdaad een economie waarin veeteelt nog maar een geringe rol speelt en waarin akkerbouw, kleinschalige goudwinning, allerlei soorten handeltjes en voedselhulp veel belangrijker zijn geworden. De in aantal sterk toegenomen ontwikkelingsmaatregelen lijken ook uit te gaan van een toekomstbeeld waarin voor veehouderij en daarmee samenhangende mobiliteit weinig plaats is. De ondergang van de veehouderij wordt vaak als onontkoombaar ervaren. De recente dramatische veranderingen worden zelfs als een stap voorwaarts gezien. Tegen deze overheersende opvattingen in wordt beargumenteerd, dat de recente nadruk op akkerbouw leidt tot een instabieler en krisisgevoeliger manier van leven, met waarschijnlijk een lager welvaartsniveau. Dit kan worden gekonkludeerd na het toepassen van landevaluatie- en oogstmislukkingsmodellen op de semi-aride werkelijkheid van westelijk Pokot. In deze studie worden ook bewijzen aangedragen voor de stelling dat de wederopbouw van de veehouderij, mits op een meer commerciële en intensievere wijze bedreven, de meest gezonde economische basis biedt voor deze lokale

samenleving. Na het toepassen van bevolkingsdraagvlakmodellen, die ook de ruilvoet tussen veeprodukten uit het laagland en akkerbouwprodukten uit het hoogland in de beschouwing betrekken, kan zelfs de konklusie worden getrokken dat er veel meer mensen zouden kunnen leven in westelijk Pokot op basis van die aangepaste veehouderij dan er nu zijn. Akkerbouw, goud en alle andere genoemde bronnen van voedsel en inkomen zijn nuttige aanvullingen, maar het is onwenselijk dat zij de veehouderij als basisactiviteit vervangen.









## STELLINGEN

behorende bij het proefschrift van Ton Dietz:  
Pastoralists in Dire Straits: Survival Strategies and External  
Interventions in a Semi-Arid Region at the Kenya/Uganda Border:  
Western Pokot, 1900-1986.

promotiedatum: 11 december 1987  
Universiteit van Amsterdam

1

Bij bevolkingsdraagvlakmodellen gaat men vaak uit van een gesloten gebied. Men miskent zo het belang van interregionale relaties en er ligt te veel nadruk op lokale zelfvoorziening als doel op zich. In situaties waarbij de ruilvoet van veeprodukten gunstig is, biedt interregionale handel meer perspectief aan een veehoudersbestaan dan zelfvoorziening.

2

Bij de verklaring van de hongersnood in Noord-Nigeria in de periode 1972-1974, benadrukt Van Apeldoorn de 'externe' oorzaken dusdanig, dat de problematische fysisch-geografische en demografische aspecten van het bevolkingsdraagvlak in dit gebied te veel uit het zicht verdwijnen.

G.J. Van Apeldoorn (1981), Perspectives on Drought and Famine in Nigeria. London: Allen & Unwin.

3

Wanneer informatieverzameling, management en afstandsoverbrugging als werk worden beschouwd, is de bewering dat mannelijke veehouders in de tropen in aanzienlijke mate 'verborgen werkloos' zijn, onjuist.

4

Op de KOTA-conferentie over "overlevingsstrategieën, huishoudens en verwantschap in Tropisch Azië" (Amsterdam, mei 1987) maakte vrijwel geen enkele participant een deugdelijk onderscheid tussen strategieën gericht op fysieke overleving, op het zo veel mogelijk in stand houden van bezit en op het blijven voortbestaan van een leefwijze. Bovendien is onvoldoende naar voren gebracht dat het begrip overlevingsstrategie beperkt dient te blijven tot crisissituaties.

Zie o.a. K. Lieten & O. Nieuwenhuys, Overleven of vooruitkomen. IMWOO Bulletin, 15/3, september 1987, pp. 8-11.

5

Wetenschappelijke onderzoekers die zich bezighouden met Afrikaanse ontwikkelingsproblematiek zouden meer aandacht moeten besteden aan de activiteiten van missie en zending. In gebieden waar staatsgezag nagenoeg ontbreekt zijn het vaak missie- en zendingsorganisaties die tal van 'staatsfuncties' vervullen. In gebieden met effectief staatsgezag zijn kerkelijke organisaties vaak als enige in staat tegenwicht te bieden aan uitwassen van het staatsoptreden.

## 6

De voorkeur voor het doen van veldwerk in veilige gebieden leidt in de theorievorming over ontwikkelingsvraagstukken tot een te geringe nadruk op de rol van geweld als ontwikkelingsbelemmerend en surplusafnemend mechanisme. In het algemeen geldt dat geografisch evenwichtige theorievorming ernstig wordt gehinderd door de slechte toegankelijkheid van grote delen van de Derde Wereld voor langdurig sociaal-economisch veldwerk door onafhankelijke onderzoekers.

## 7

Regionale ontwikkelingsprojecten die negatief worden geëvalueerd ten gevolge van een teleurstellende 'output', kunnen de ontwikkeling van een streek toch sterk hebben gestimuleerd wanneer de in omloop gebrachte projectgelden lokaal directe en indirecte bestedingseffecten met zich mee hebben gebracht.

## 8

In de reader "Uneven Development and the Geographical Transfer of Value" worden cruciale begrippen onduidelijk gedefinieerd en gebrekkig geoperationaliseerd. Bovendien toont het empirische deel aan dat bewijsvoering nagenoeg onmogelijk is door het ontbreken van vrijwel alle vereiste data. Desondanks zijn er omstandigheden waarin er vele indicaties zijn dat waardeoverdracht een belangrijk mechanisme is van regionale onderontwikkeling.

D.K. Forbes & P.J. Rimmer (Eds.) (1984), Uneven Development and the Geographical Transfer of Value. Canberra: Research School of Pacific Studies. The Australian National University, Human Geography Monograph 16.

## 9

Het verdient aanbeveling om op districts- of provincienivo in Derde Wereldlanden documentatiecentra op te zetten die in principe alle publikaties bevatten die ooit over het betreffende gebied zijn verschenen.

## 10

Proefschriften die alleen in het Nederlands worden uitgebracht en die gebaseerd zijn op veldwerk buiten Nederland, getuigen van een miskennis van het belang van wetenschappelijk universalisme en de auteurs maken zich schuldig aan een ernstige vorm van ongelijke ruil.

## 11

De statusfunctie die het tracteren op 'forests of beer' heeft verworven onder veel ambtenaren in Kenia, ondermijnt de kwaliteit van het overheidsapparaat en betekent voor de betrokken ambtenaren een zware financiële druk. Het verklaart mede waarom velen van hen 'bijverdiensten' proberen te verwerven.

## 12

De voor frankering gebruikte postzegels van hedendaagse Nederlandse stadspostdiensten zijn evengoed waardevolle filatelistische produkten als de postzegels die uitgegeven zijn door particuliere postdiensten zoals die vroeger o.a. hebben bestaan in Marokko, Duitsland en Noorwegen.