PASTORAL PEASANTS:
HOUSEHOLD STRATEGIES IN MUKOSODO DIVISION
LAIKIPIA DISTRICT

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Recent reviews of pastoral development in Africa have invariably deplored the lack in understanding about pastoral socio-economic systems. The paper argues that this is related to the fact that pastoral studies, a field dominated by anthropologists until the late 1970s, have been largely shielded from the dynamic developments in the analysis of peasant societies. It is maintained that there is a need to firmly relink pastoral and peasant studies, as most pastoral societies in Africa have been thoroughly peasantized over the last two decades.

More specifically, there is a need for studies starting from a microeconomic analysis of the basic production units (the households), in order to understand the processes involved in the rapid internal differentiation of pastoral societies. The major contention of the present study is that differences between households, in wealth but also other factors like education and the position in the domestic cycle, translate into qualitatively different options and constraints. These again make households adopt diverging strategies that need to be understood for planning development interventions.

The paper reviews the methods used for data collection in Mukogodo Division, Laikipia District. Special attention is given to a rapid sample selection method, called "informant wealthranking", as the establishment of a small but reliably representative sample is crucial for studying highly mobile and dispersed pastoral households.

Based on data collected in the first seven months of fieldwork, the large disparities in wealth between Mukogodo households are exemplified. It is then shown how wealth-related differences in management and marketing strategies are reflected in herd structures, drought recovery rates, pastoral labour inputs, the rate of labour migration and the specific development of dependency relations.
of absentees whose place and type of work was also recorded. At the same time, information on the age, sex, the number of wives of household heads and the relation of household sharing one homestead was collected.

The next step was to write the names of the household heads on small cards. A local act, in my case those living within the boundary of a group ranch or of a neighborhood subunit was then presented to 3-5 local informants. They were asked to sort the cards into piles of people that are equal or similar in wealth. Of course, the local vernacular concept had been explored beforehand. It proved to be helpful to select informants of different wealth and age, as wealthy people were more discriminating in the upper ranks, while poor people differentiated other poor people more finely. Packs of roughly 80 households were most manageable; if they were larger, problems of interview fatigue increased. The cards of people whose independence was unclear (brothers, fathers and sons) were kept together by a clip and the decision left to the informant to rank them together or separately. Difficulties of placing individual cards were immediately discussed and proved to be extremely fruitful. The "outsiders" or "newcomers", about whom rankers were uncertain became quickly apparent as well, allowing for a discussion of their status. In Mukogodo most rankers sorted the cards into 6-8 piles. I only intervened when a subpile seemed too large, asking them whether it was possible to subdivide. The ranker was then asked to explain what makes the difference between the piles, yielding local "poverty lines", differences in strategies etc. These discussions provided a wealth of qualitative information that was used to direct further informal questioning and to draw up viable, more formal questionnaires in a short time.

Finally, the cards were indexed by a very simple method. If a card was in the 1st pile of 8, the index is $\frac{1}{8} \times 100 = 12.5$ etc. The result was written onto the card immediately. As the ranking was repeated with other rankers, disagreements became easily visible and could be discussed immediately.

I chose the method because of its rapidity but also because of the known reluctance of Masai to count livestock, merely expecting it to yield a relative wealth gradient. It was soon discovered however that rankers themselves provided quantitative data in the course of discussing the piles, e.g. saying that those in the second pile had 3 or 4 cows and maybe 20 to 30 goats. As the ranking purposely included non-livestock wealth, these assessments are not precise for all households, crosschecks however showed their accuracy for the large majority. As estimates of the holdings of the few very rich people tended to become fuzzy, these were assessed separately again. The data provided by the wealth-ranking thus allow for a rough assessment of the distribution of livestock within the community, for the determination of poor and
affluent areas, and finally for a rough assessment of total livestock numbers and their spatial distribution after the rains of May/June, when most people resided in their permanent homesteads.

Ranking the whole Mukogodo community west of the forest, i.e. roughly 1,270 households on roughly 800km² with one assistant took only about 6-7 weeks, including the basic survey. It is obvious that even a sampled livestock census would have been much costlier, and probably no more precise, while losing out on much qualitative data.

Based on informant wealth ranks I originally chose a sample of one rich, medium, poor and very poor household in each of 9 areas, thus including 36 households, opportunistically selecting those willing to cooperate. Subsequent objective assessment of the sample households’ wealth made the moving of 2 households necessary. A further 5 had to be dropped for various reasons, so that the final sample for intensive study contains 31 households. Table 1 summarizes the sample characteristics.

<table>
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<td>% of total</td>
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1) estimates based on informant wealth ranking of 1,270 households

The overrepresentation of rich and the underrepresentation of the very poor households has resulted mainly from the uneven "drop-out" rate. It is compensated for by giving special attention to the very poor among the 28 households sharing bomas with the core sample. Each stratum further contains a roughly equal number of household heads from the four active age sets, which means that the households represent different stages in the domestic cycle. Unfortunately, female-headed households and those of migrants are underrepresented due to the difficulty involved in interviewing women. Unfortunately it has been impossible to find a female research assistant to improve this situation.
long-run redistributive networks, as well described in many monographs. This understates disparities in access to resources (livestock, water, labour) that may already have existed in precolonial or early colonial times and that have been persistently resulting in different options and constraints for various types of households. Being rich or poor means more than just a difference in male (Grandin, 1985). Obviously, such differentiation may have been thoroughly transformed by more recent developments; few anthropological studies have however taken e.g. wealth stratification into account, even when looking at herd management, herd or household composition or transaction behaviour.

Third, we also have little information on the often considerable non-pastoral components of "pastoral" strategies (hunting, beekeeping, gathering and even farming), again varying with wealth. The typical "selfsufficient" pastoralist relying on his herds alone is also rather a reflection of the ideal propagated by these societies (Hyson-Hudson, 1976 for an early warning). Special, labour migration (in colonial days often in the form of military service or work in the police) has often been mentioned but its effects have not been studied.

Fourth, it is also noteworthy that despite frequent hints of patron-client relationships in many reports, the topic has rarely been systematically explored in East African pastoral societies (with the exception of Baxter, 1973 and Dahl, 1979), while in other areas, like Botswana or the Middle East this has been done more often (Barth, 1981).

4. The framework of the present study

The present study rests on the conviction that in order to plan viable development interventions, it is necessary to have more smallscale studies of pastoral systems on the lines set out below, especially as recent studies have shown that it is impossible or misleading to extrapolate findings from one situation to another (Migot-Adholla and Little, 1981). It is felt that discussions on pastoral development are still too often framed in ethnic terms, e.g. discussing development for "the Maasai" or "the Turkana", thereby overlooking the fact that different Maasai or Turkana might have radically different needs, options and constraints.

To call for detailed studies of specific situations can however not mean to fall back into particularism. There is therefore an urgent need for a theoretical and methodological rethinking of pastoral studies and peasant studies. The current research argues that there is no insurmountable barrier against subsuming East African pastoralists under the current peasant debates. Most African pastoralists have indeed been
rapidly pastoralized over the last 20 years. As Asad has pointed out in a different context years ago, similarities between pastoralists and farmers are more important than the differences, in as far as they are integrated into the same wider structures (Asad 1979; Keminger 1984).

Like other peasants they simultaneously produce for subsistence needs and for the national market, and comply in many other ways with peasant definitions even if there are differences in the continuity of labour inputs, the degree of mobility, in the systems of ownership of the major resources (especially land) or the long-term effects of drought (de Haan, 1983).

The current research therefore tries both to look 'below', to the level of the basic production unit, in this case the household, and also 'beyond' to the wider regional and national structures. The basic assumption is that:

- there exist differences between pastoral households in access to strategic resources which result in qualitatively different strategies to cope with their total physical, social and economic environment, and
- that these strategies have been thoroughly transformed by market integration, land tenure reforms etc. as well as the disastrous droughts of the last decade.

The focus on strategies on the household level needs two short qualifications:

- There has recently been a discussion on the utility of the household as a unit of study, given the difficulties in defining it as a unit (Berger, 1981; Wong, 1984). The arguments have some appeal, especially in pastoral societies with their complex rights over livestock that extend beyond the household, their multiple lines of conflict linked to the slow devolution of stock to the next generation and the individual networks that cut across kin ties. Recent research has also shown that households are rarely self-sufficient in meeting the labour demands for a complex pastoral enterprise (Sperling, 1984). On the other hand, there can be no doubt that in most cases the household remains the basic decisionmaking unit, so that working with the household as a unit of study while keeping the limitations in mind does not pose severe theoretical problems.

- Coe (1964) among others has recently raised some questions on the term of "strategy", asking how to differentiate between tactics and strategies, the former involving short-term, the latter longer-term decisions. While plausible, the distinction is in principle impossible to operationalize as in football or military affairs. The term "strategy" is therefore employed in a rather large and colloquial sense, rather than as a defined theoretical concept.
Within peasant studies, there already exists a long tradition of research into differences of decision-making and socioeconomic strategies between households, and a similar disaggregation is needed for pastoral production systems.

Development-related work in this line has over the last years often been produced under the label of 'Farming Systems Research (FSR)' (Shaner et al., 1982; Barlett (ed.), 1980; Gilbert et al., 1980). FSR has proved very popular with International Agricultural Research Centres, so that it is not surprising that it was ILCA that has taken important steps in the indicated direction, thereby coining the term pastoral systems research (ILCA, 1983). Other studies within Kenya that draw from similar sources are Little, 1980, 1985; Ensangeler, 1984; Hogg, 1980, 1985.

The current research further assumes that the most important factor behind different socioeconomic strategies is wealth, in our case mainly in livestock. The studies just cited above have clearly shown that there are important wealth-related differences in social networks, in livestock management (grazing, milking etc.) and therefore productivity, in trans- action of livestock (offtake rates, marketing behaviour), in the importance of side-activities (agriculture, trade, charcoalizing) and labour migration, and in consumption patterns. Studying these differences at the grassroots level will also allow us to understand better how social and economic change is actually happening (Helland, 1977).

Two further aspects need consideration. The first is access to education. While certainly linked to wealth, it is a partly independent variable which again strongly shapes (and has shaped) the access to roles within the political-administrative system and to resources and advantages provided through it.

The second is the domestic cycle, which has rarely been taken into account in FSR. Households face different options and constraints throughout their career, especially regarding the availability of labour and the need to invest. The influence of the domestic cycle on decision-making has been shown among farmers and pastoralists as far apart as Canada (Bennett, 1980) and Botswana (Bulbransky, 1980).

The type of microeconomic analysis proposed here was mainly the domain of agricultural economists until the 1970s, while anthropologists were for some time locked in a fierce debate over the appropriateness of neoclassical models in 'traditional' contexts (the formalist-substantivist debate). When the sterility of the debate became increasingly obvious, agricultural economic techniques were widely adopted by anthropologists. The field of pastoral studies however has remained comparatively unaffected by this development. Today I see an implicit agreement that peasants (and pastoralists) behave no less rationally than other people and do what pays, albeit under often severe constraints. As a conse-
quence, 'soft' models of resource and labour allocation of peasant households have been produced over the last years. They do not dogmatically imply profit-maximization and rigorous quantification, but take risk-minimization, social security networks etc. into account (Low, 1982; Kemwel and Lobawe, 1985). It has been shown that where market conditions exist, it is possible to do cost/benefit analysis, linear programming and sensitivity analysis and evaluate opportunity costs (Ortiz, 1983; Barlett, 1980; Little, 1981; Cowins, 1983; Upton, 1986). Similar modelling will be attempted on the quantitative data produced in this study. Its relevance lies in the possibility of predicting now different segments of the population will react to and be affected by planned development inputs.

While a focus on the household is deemed important, it is clearly not sufficient. There are two levels beyond the basic production unit that cannot be left out: one is the macrostructural, political economic level that is usually beyond the influence of the household (Little, 1985), the other is the more immediate socioeconomic field, the community to which the household belongs (Ortiz, 1980).

As far as the first of these levels is concerned, this study draws from the debates on the articulation of modes of production (see e.g. Foster-Carter 1978 for a review) and on the 'development of underdevelopment'. Specially stimulating have been the insights on the effects of monopolistic market structures, of the stratification of production, of changes in the division of labour and of labour migration on the reproduction of the peasant household (Meillassoux, 1976). Specifically, it is important to quantify the role of non-pastoral sources of income in the overall reproduction of pastoral peasant formations in order to plan development interventions that are adapted to the multisectoral nature of the households' strategies.

Earlier studies in the pastoral sphere which have tried to integrate a similar view have been Hedlund (1979) and Bonte (1981). Both Little (1980, 1985) and Ensminger (1984) have successfully shown that the integration of micro-level studies and macrostructural concerns are possible.

Somewhat more difficult to study is the integration of households in sociopolitical systems like ethnic units, kin- and agest networks, villages, cooperatives etc. that are important when making decisions. These structures are not fully exogenous, as household strategies articulate on this level. Decisions do not just fall back on their makers alone; some peoples' strategies may become other peoples' constraints. We cannot therefore avoid questions of kin-based loyalties, factions, relations of power and influence that do not rest on the economic field alone but are rooted in sociocultural norms. Investment in social ties may ultimately shape access to critical resources, like water points, stock for recovery
alter losses, labour in difficult times (like droughts). As has been noted above, the lack of attention to dependency relations and their development is especially unfortunate. Further investigations are needed on how egalitarian ideologies, phrased in a kinship or age-set idiom, are mobilized in situations of growing economic differentiation.

The mutual but not necessarily balanced interdependence of households is even more true in pastoral situations, where important resources (pasture, water) are communally owned and where rights in the most important asset, livestock, are overlapping and diffuse. While this has been well described in anthropological monographs, we need more attention on how different household strategies aggregate when collective action is necessary. In many pastoral areas in Kenya this means giving special attention to decision-making within the group ranch framework, through which important inputs are actually or in intention channelled and where collective decisions on land and water management are expected. Given the fact that within Kenya the establishment of group ranches is the major program for socioeconomic change in pastoral areas, amazingly little is known on its microlevel functioning (exceptions are the studies of Schorty 1981, Galaty, 1960; Sekure, de Leeuw and Grandin, 1987).

2. Mukogodo Division—the setting

Mukogodo Division covers roughly 1,100 km² in the northeastern edge of Laikipia District. It also constitutes the northeastern edge of the Laikipia plateau. On its fringe, elevation drops from between 1,800 to 2,200 m to the lowlands of Isiolo District. The eastern third is characterized by a range of mountains, largely demarcated as a forest reserve of c. 500 km². The higher parts are Juniperus forest, while lower parts are mainly dominated by Teclea nobilis. Central Mukogodo is rugged hilly terrain with an acacia savanna vegetation (A. mellifera, A. tortilis, A. etbaica, A. seyal). In the west, the relief is less steep; gently undulating hills, again with an acacia-savanna and open grasslands descend towards the Euaeso Nyiro river which forms the westernmost boundary of the Division.

Rainfall declines from east to west, from c. 700 to 400 mm with a bimodal distribution. Rainfall reliability is fairly low. Apart from the Euaeso Nyiro and the Ngare Ndaro which constitute the easternmost and westernmost boundaries, there are no perennial rivers in Mukogodo.

In the south, the Division is bounded by large-scale ranches, still partly in white hands, which maintain a closed fence along the Division’s perimeter. On the northern and eastern side, the land is officially a Livestock Marketing Division
Mukogodo Division in the present boundaries came into existence in 1936 with the demarcation of a "Native Reserve" intended to cater for a "Dorobo" population left behind on the northern Laikipia plateau after the northern Maasai had been deported from the area in the famous "moves" of 1914. Although the demarcation of the Reserve secured land rights for the Mukogodo groups, they lost two thirds of the land they had still utilized in 1920, mainly the higher potential areas.

From its inception, the main concern of the colonial administration was to keep the boundary towards the white highlands tightly controlled. Inside the Reserve, colonial policy struggled with the problematic definition of who was a "Dorobo", and as a result, there were frequent and haphazard deportations of "undesirable elements".

For most of the time, the administration was unaware of the complexity of the ethnic composition in Mukogodo. In short, the population consists of 5 ethnic groups: the Ngwesi, the Mukogodo (or YaaKu), the Digiri, the Mumunyot and the Leuaso. They differ in historical background and social and ritual organization, although there exists a common "maasai" denominator. As the "Dorobo" label has derogatory implications, they prefer to be called Mukogodo Maasai today. There is no room here to dwell on their anthropological and historical background or on the "Dorobo" problematic, about which a separate paper has been produced (Herren, 1987).

There exists only one short published account of the situation within Mukogodo, the short appendix of Spencer in his book on Samburu and Rendille (1977), based on a visit in 1959. His picture is one of utter neglect, severe confinement and isolation and of growing unrest due to the mentioned deportation policies. Basic educational and health facilities were only provided sparsely and late, mainly in the 1950s. There is no evidence that with independence the situation changed radically, although a number of dams were provided under ALUCV. The main government intervention since independence has however been the demarcation of 13 groups and 34 individual ranches in three steps (1974/1975/1985).

Since the 1950s administration reports have reiterated concern on the development of the ecological situation, deploiring overgrazing and soil erosion. A more direct alarm signal came in the 1965 drought when for the first time food aid had to be provided in Mukogodo. Since then, famine cycles seem to have shortened, food aid being necessary again in 1980 and 1984. There however remains a dearth of basic information on what is really happening.
the Laikipia District Preinvestment Study (Knp. of Kenya, 1963), where missing data on the Mukogodo pastoral system had to be estimated by "importing" data from research in Kajiado District.

The Mukogodo situation had originally been brought to my attention by the joint Laikipia Rural Development Project/Laikipia Research Program (LRDP/LRP), both operating from Nanyuki within the ASAL framework. While there are strong reasons for an ASAL project to get involved in the Mukogodo situation, as already the appraisal mission had noted, it was clear at the same time that better baseline data were urgently needed (Winiger, 1983).

A short survey in 1966 then convinced me that there was considerable interest in a Mukogodo study on the lines set forward above, because of:

- Lack of previous material, both on socioeconomic change as well as on history, social organization and culture of five former "dorobo" groups of considerable comparative interest to Maasai studies
- The possibility of cooperation with LRDP/LRP, and specially with a range management specialist within LRP.
- Apparent social economic and ecological problems due to a long history of confinement, isolation and marginalization
- Rapid market integration, particularly since the last two droughts
- Widespread outmigration, both permanent and as temporary labour migration.
- The possibility to look at group and individual ranches established at different times
- The generally small size and comparatively tight road network would reduce problems associated with pastoral studies elsewhere.

3. Methodology_and data_to_be_gathered

The methodology employed in the current study is a mix of quantitative (economic survey) and qualitative (anthropological participant observation) approaches.

The first are routinely used by agricultural economists and project appraisal/evaluation missions, the main method being questionnaire surveys administered once or recurrently to a sample of farmers (or whatever the target group). When used alone such surveys have been criticized increasingly for their cost-ineffectiveness, their propensity to sampling errors and their tendency to miss out important non-quantitative factors, complex social patterns linking production units, actors' views and meaning systems etc. (Chambers, 1985).
The quantitative approach is equally routinely used by social and cultural anthropologists. The main method is the immersion of the researcher in the local community, producing first-hand knowledge on farmers' behaviour, intentions, problems and views. It is obvious that this approach is more apt to catch complex networks and interdependences within the community and therefore allows one to verify survey data and provide explanatory background for them. Conversely the approach is also criticized for its slowness and fuzziness, resulting in large unreadable reports without any quantitative data necessary for planning interventions.

The advantages to be gained from combining both have been succinctly stated by Haugerud in preparation for a similar research in Kenya and need no repetition here (Haugerud 1979). As I believe that this combination can still be refined, the current research should also be seen as an exercise in methodology. A variety of techniques is used to gauge the amount and quality of data that can be gained within the relatively short period of 13 months and with costs that seem bearable for development projects.

Generally, the mobility and the dispersal of the population in pastoral areas has made quantitative data collection, especially by conventional survey methods difficult. A good example are two recent studies within the South Turkana Ecosystems Project (STEP) where quantitative data collection proved difficult even for a sample of four households (Wienpahl, 1984; McCabe 1983). As samples need to be smaller, it is advantageous that they are highly stratified and non-random. Proportionally more care is necessary to ensure their representativeness.

3.1: "Informant wealth ranking": A method for rapid sample selection
To produce a four-tiered sample of rich, medium, poor and very poor households, an unconventional rapid appraisal technique was used. "Informant wealth ranking" was first used in pastoral settings by Barbara Grandin in the ILCA-study of Kajiado Maasai. Its advantage is that it is lightning quick compared to even a one-factor objective assessment, which in a pastoral society involves counting livestock, something known to be fraught with difficulties. As the method is not well-known, it is given more space here.

The basis is a complete enumeration of the households of the community under study. Given the paucity and unreliability of basic data (like the population figures) it was decided to cover the whole of Mukogodo, except for the areas to the east of the forest. This was done within roughly three weeks with the help of few informants while generally familiarizing myself with the area. In the process, roughly 1,200 households were recorded. Care was taken to include the households
of absentees whose place and type of work was also recorded. At the same time, information on the agemset, the number of wives of household heads and the relation of households sharing one boma was collected.

The next step was to write the names of the household heads on small cards. A local set, in my case those living within the boundary of a group ranch or of a neighbourhood subunit was then presented to 3-5 local informants. They were asked to sort the cards into piles of people that are equal or similar in wealth. Of course, the local vernacular concept had been explored beforehand. It proved to be helpful to select informants of different wealth and age, as wealthy people were more discriminating in the upper ranks, while poor people differentiated other poor people more finely. Packs of roughly 80 households were most manageable; if they were larger, problems of interview fatigue increased. The cards of people whose independence was unclear (brothers, fathers and sons) were kept together by a clip and the decision left to the informant to rank them together or separately. Difficulties of placing individual cards were immediately discussed and proved to be extremely fruitful. The "outsiders" or "newcomers", about whom rankers were uncertain became quickly apparent as well, allowing for a discussion of their status. In Mukogodo most rankers sorted the cards into 6-8 piles. I only intervened when a subpile seemed too large, asking them whether it was possible to subdivide. The ranker was then asked to explain what makes the difference between the piles, yielding local "poverty lines", differences in strategies etc. These discussions provided a wealth of qualitative information that was used to direct further informal questioning and to draw up viable, more formal questionnaires in a short time.

Finally, the cards were indexed by a very simple method. If a card was in the 1st pile of 8, the index is 1/8 x 100 = 12.5 etc. The result was written onto the card immediately. As the ranking was repeated with other rankers, disagreements became visible and could be discussed immediately.

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1) estimates based on informant wealth ranking of 1,270 households

The overrepresentation of rich and the underrepresentation of the very poor households has resulted mainly from the uneven "drop-out" rate. It is compensated for by giving special attention to the very poor among the 26 households sharing bomas with the core sample. Each stratum further contains a roughly equal number of household heads from the four active age sets, which means that the households represent different stages in the domestic cycle. Unfortunately, female-headed households and those of migrants are underrepresented due to the difficulty involved in interviewing women. Unfortunately it has been impossible to find a female research assistant to improve this situation.
Given the east-west ecological gradient, the division of the population in five (possibly diverging) groups and the uneven distribution of infrastructure, it was decided to spread the sample over the whole of the area. This increases logistical difficulties but on the other hand provides a net that allows to hear "what is going on" over most of Mukogodo.

3.2. The household study

Given the difficulties of a regular tracing of households in a seminomadic pastoral setting, the sample has been kept rather small. It is however felt that the small size is compensated for by higher quality of the data due to close personal acquaintance with the sample households. Statistical analysis will therefore suffer less from "noise" in the database.

Of the sample households the following basic data were recorded:
- the full genealogy of the family, including the place of residence, occupation etc. of all those enumerated
- schooling of members
- size and structure of both cattle and smallstock herds
- the "progeny history" of the complete cattle herd (see below)
- boma layout and age, relation to the other households within the same boma and in the immediate neighbourhood
- major possessions

The 31 sample households are being studied by a monthly recall interview, yielding information on:
- changes in household composition
- herd management: grazing and watering patterns, labour allocation and recruitment, disease prevention and treatment, breeding practices
- milking strategy and milk yields
- livestock transactions: sales, buying, lending, borrowing, gifting, exchanges etc.
- changes in the herd: births, deaths, losses, pregnancies
- household budget, giving special attention to livestock-related expenses and expenses on food.

Between the monthly interviews, the households are visited as frequently as possible to "truth" data (like milk yields), get information on domains difficult to ask (beer-brewing, gifting of food, milk or small sums of money). These visits also serve to discuss emerging results of the survey, talk back over transactions and herding decisions, discuss problems, plans, the state of the pasture, the movement of friends and neighbours etc. Intermittently, data are collected on:
- food consumption of the previous day
- time spent on different tasks by all household members on
the previous day
- calf growth

Slowly, life-histories are accumulated for both men and women
in the sample and a series of more formal interviews is car-
ried out on "things-I-want-to-do", on the conceptions of
"good life" etc (Alverson, 1978).

3.3. Further data gathered
Beside the anthropological work of "being there and listen-
ing", further surveys are conducted for special questions:
1. the "progeny history" method records what has happened to
all the calves of a given cow. Then the same is then done for
the cow's mother and its offspring. The data should allow a
discussion of transaction behaviour since the drought of
1980/1 and the calculation of mortality, calving and offtake
rates since that time. Special emphasis was here given to
richer owners who tend to transact more actively.
2. current labour migration and permanent outmigration is
studied by fully genealogically enumerating both an area
(group ranch) and two extended lineages.
3. labour history interviews are conducted on a stratified
sample as large as possible to gauge time depth of migration,
length of migration, reasons for leaving or coming back and
of the level of reinvestment in livestock within Mukogodo.
4. the basic survey is seasonally controlled to record house-
holds that have migrated, changed boma, set up a new one or
sent livestock to grazing somewhere else. It is attempted to
discuss boma-rearrangements with those involved as far as
possible, again opportunistically.
5. all owners of individual ranches are interviewed about the
reasons for acquisition, plans and intentions and asked to
assess what it means to have an individual plot.
6. informal interviews are conducted with important traders
on the development of market integration.
7. interviews are done with all the group ranch chairmen (and
other committee members) on group ranch development. Group
ranch and other barazas are attended if possible.

4. Preliminary findings
This report has been written after 7 months of fieldwork. The
data presented in this section have the aim to show that
there are indeed large differences in wealth between house-
holds in a society that looks homogeneous in many aspects to
an outsider. Although the emerging picture is necessarily
sketchy, some main lines can already be discerned that are
relevant to development planning in the area.
Data are organized into four sections, dealing with the following domains:
1. Basic data on the population and its spatial and social organization.
2. Basic data on pastoral production in Mukogodo. Beside data on the total herd and its spatial distribution, the main issue is the social distribution of livestock wealth. Herd sizes, herd structure, post-drought recovery and labour inputs into livestock production are then discussed according to wealth rank, giving clues to the total strategies of the different wealth strata.
3. Possibilities for non-livestock incomes. Thereby special attention is given to labour migration.
4. Dependency and clientship relations.

4.1 The Population

4.1.1 Current density and distribution
For a semiarid area, Mukogodo is densely populated. The census of 1979 gave a population of roughly 14'000. As there have been two major droughts since, a recalculation was done, based on my own survey and that of Lee Cronk for the forest area (personal communication). A total of 1,271 households were recorded. This figure excluded a number of Ngwesi households to the east of the Forest Reserve and possible Samburu residents in the northern lowland fringes. Their number was only estimated. Based on the average household size (residents only) in my smaller sample (n=52) I estimate the total population to be roughly 11,000. This confirms the residents' contention that after the drought of 1984, the Mukogodo population has indeed declined.

The average population density is therefore 9.8/km². As the population is fairly mobile, areal densities may however vary greatly with the seasons and the condition of the range and water resources. Some areas are virtually devoid of permanent settlement and are only used by seasonal grazing camps; further, a sizeable portion of Mukogodo Division lies in lowland areas only used in emergencies. If we look at the distribution of permanent homesteads, their density increases from west to east, corresponding to the ecological gradient, and from north to south, corresponding to the topography and the concentration of roads and infrastructure in the south. The following table illustrates the extremely dense settlement compared to other pastoral areas.
TABLE 2: Population densities in Mukogodo and in other pastoral areas

<table>
<thead>
<tr>
<th>Area</th>
<th>Density (per km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mukogodo, west and north</td>
<td>11.7</td>
</tr>
<tr>
<td>Mukogodo, central</td>
<td>21.6</td>
</tr>
<tr>
<td>Mukogodo, Doldol area and southeast</td>
<td>23.9</td>
</tr>
<tr>
<td>Mukogodo, forest area</td>
<td>4.2</td>
</tr>
<tr>
<td>Narok Maasai 1)</td>
<td>6.1</td>
</tr>
<tr>
<td>Kajiado Maasai 2)</td>
<td>6.5</td>
</tr>
<tr>
<td>Samburu 1)</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Sources: 1) Ateh, 1986
2) Bekure, de Leeuw and Grandin, 1987

While the southeast definitely has a higher potential than the rest of Mukogodo, the density in the centre remains high despite limited grazing potential because of its nearness to the Doldol centre, the road to Nanyuki and permanent water.

4.1.2. Social and territorial organization

In Mukogodo, the basic production and consumption unit is clearly the household. Normally, it consists of an independent adult man and his dependents. In Mukogodo, the large majority of members come from the nuclear family of the head. Depending on the position in the domestic cycle, households frequently include the mother of the head and young unmarried siblings. Other dependants that are not closely agnatically linked are however rare. Each household has a clearly defined herd over the management of which it (i.e. mainly its head) can decide autonomously. It is therefore the basic production and consumption unit. The following table gives the average size of households (residents only).

TABLE 3: Household size (residents) and polygyny rate of sample households according to wealth rank (n = 50)

<table>
<thead>
<tr>
<th>Size</th>
<th>Polygyny rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rich</td>
<td>11.2</td>
</tr>
<tr>
<td>Medium</td>
<td>8.1</td>
</tr>
<tr>
<td>Poor</td>
<td>6.3</td>
</tr>
<tr>
<td>Very poor</td>
<td>4.8</td>
</tr>
<tr>
<td>Average</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Rich households are bigger due to a higher polygyny rate and the inclusion of a few non-nuclear dependents. Generally, Mukogodo households are fairly small, reflecting the general poverty in the area.
The basic residential unit is the boma, a settlement with a common fence, usually containing more than one household. In Mukogodo the average is 2.3 households/boma. This figure compares to data on the boma size in Kajiado group ranches with a medium market integration (Bekure, de Leeuw and Firand 1967). Borras are clearly smaller than in the past and according to older people, there were no single-household boras twenty years ago (an assessment of past boma sizes from aerial photography is underway). Today, 37% of boras are made up of a single household, 33% of boras contain households closely related agnatically (fathers and sons, brothers or cousins), and 29% also contain in-laws, friends and dependents. Households within one boma usually cooperate closely in daily tasks and while remaining distinct, there is general lending and borrowing of household items, food etc.

Traditionally, people recognize a number of named neighbourhoods (enolta, enkutoto), either a river catchment or an area around a prominent hill. Although neither the territorial boundaries nor the social composition are strictly circumscribed, people living within a neighbourhood feel that they belong together and are referred to collectively (e.g. "the people of ilpolei"). Size varies considerably, roughly from 5 to 30 km² and from 10 to 50 households.

On the next higher level there are both the ethnic group (sing. gloshg, pl. iloshon) and the administrative structure of locations and sublocations. Despite good contacts and frequent intermarriage, the settlement areas of the iloshon are distinct and correspond, through a long process of adjustment, fairly precisely to the locational boundaries set up in 1936. A detailed discussion of the social organization of the Mukogodo Maasai is outside the scope of this paper. It must however be noted that both the clan and agnostic relations seem to play a weaker role than in other Maasai sections.

As has been noted above, group ranching was introduced in Mukogodo in three steps. It is notable that in the first round of adjudication, boundaries were drawn on the basis of neighbourhoods. These boras are therefore very small. In the later adjudications, group ranch boundaries follow the sublocational boundaries, leading to considerably larger group boras.

Although the interplay of traditional territorial and social structures with these new forms of land tenancy is a very interesting issue with high relevance to development planning, space forbids an extended discussion in this paper. It may be sufficient to say that group ranches have not yet taken root in Mukogodo, but their imprint on resource management and socioeconomic decision making is certainly growing.
4.2. Pastoral production

Pastoral production is clearly the mainstay of the Mukogodo economy and will remain so for the future as the potential for crop production (even with irrigation) is extremely limited (GESP, 1979). There can be no doubt that while subsistence production of meat and milk remains an important aim of almost all households, market integration is very high, especially with regard to small stock. Further, it must be kept in mind for the following discussion that the Mukogodo livestock economy is still in the process of recovery from the disastrous drought of 1984.

4.2.1. Size and species composition of the total herd

Calculations of the total herd of Mukogodo (excluding the area east of the forest), based on the absolute figures provided by the “informant wealth-ranking” exercise indicate an overall figure of 24,000 Livestock Units (LSU). LSU were calculated by using conversion rates determined for Maasai herds by an ILCA study. Thereby one head of cattle is counted as .71 LSU and one head of smallstock as .17 LSU (Bekure, de Leeuw and Grandin, 1987).

Of these 24,000 LSU, 45% are cattle and 55% are smallstock. Data are as yet insufficient to determine the proportion of goats to sheep, but a reasonable estimate based on available data is 7:3. For all interventions it is however important to realize that more than half of the liveweight on the pasture is in smallstock, whose importance is especially great for poor people. Today, it is generally agreed that the smallstock have not received sufficient attention in pastoral studies (Wienpahl, 1984) and development research and intervention. The importance of smallstock will therefore receive special attention in the on-going study.

4.2.2. Stocking densities

There is an inherent difficulty of calculating stocking rates, as the area actually utilized throughout the year varies greatly. In times of drought, stocking rates may be completely different from the "normal" pattern; yet it is at this moment when the actual stocking rate is most crucial, both for herd survival and the conservation of the range resource. It must therefore be understood that the stocking rates presented here relate to a situation where almost all stock were grazed near to the permanent homes, where they stay about 8 months during years with average rainfall.

Stocking densities range from 1.1 ha/LSU in the eastern part to 7.4 ha/LSU in the westernmost part, following the ecological gradient. There are however serious difficulties in assessing, let alone calculating carrying capacities (see e.g. Walker and Hoy-Heif, 1962); not surprisingly, there are no reliable figures for Mukogodo. Still, stocking rates in
Mukogodo seem high in comparison to other areas with similar rainfall characteristics. Whether it is critically overstocked and by what factor however remains an open question. A short visit with a range specialist indicated that, despite local soil erosion (both sheet and gully), most areas are certainly not "beyond recovery".

4.2.3. The distribution of livestock wealth
It is one of the basic assumptions of this research that differences in wealth (mainly in livestock) result in qualitatively different household strategies, and therefore affect herd structures, drought recovery, labour input, seasonal movements, productivity etc. Therefore an assessment of wealth distribution must precede discussions of these parameters.

The following table presents comparative data on the mean holdings of different wealth ranks of Mukogodo Maasai, Kajiado Maasai and Galole Orma. The table contains a slight distortion due to the different sampling procedures used in the studies, yet the general orders of magnitude appear clearly and highlight the general poverty of Mukogodo producers. An owner with 32 LSU would be ranked as a wealthy man (olkarai) in Mukogodo, while this is the average holdings of the poorest sample stratum in Kajiado. Data on the highly market-integrated households among Galole Orma are more similar to the Mukogodo data, but again the rich households are much wealthier. The table also shows the generally lower percentage of cattle in Mukogodo holdings, respectively the strong reliance of most households on smallstock.

<table>
<thead>
<tr>
<th></th>
<th>Rich</th>
<th>Medium</th>
<th>Poor</th>
<th>Very Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mukogodo</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average holding (LSU)</td>
<td>41</td>
<td>16</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Cattle LSU (%)</td>
<td>51</td>
<td>30</td>
<td>39</td>
<td>29</td>
</tr>
<tr>
<td>HH/stratum (%)</td>
<td>30</td>
<td>30</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td><strong>Kajiado 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average holding (LSU)</td>
<td>396</td>
<td>87</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Cattle LSU (%)</td>
<td>42</td>
<td>78</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>HH/stratum (%)</td>
<td>33</td>
<td>33</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td><strong>Galole Orma 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average holding (LSU)</td>
<td>130</td>
<td>23</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>HH/stratum (%)</td>
<td>30</td>
<td>20</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

1) Source Bekure, de Leeuw and Grandin, 1987
2) Source Ensminger, 1984. Data for highly market-integrated households
Despite the general poverty, livestock holdings are nevertheless very skewed in Mukogodo. In all areas, the richest 10% own more than 50% of the area herd (in LSU), while the poorest 20% own mainly little flocks of smallstock and an insignificant number of cattle. Divisionwide figures are not yet available, but Musul group ranch may serve as a representative example.

**TABLE 5.1 Livestock wealth distribution in Musul group ranch**

<table>
<thead>
<tr>
<th></th>
<th>Very Poor</th>
<th>Poor</th>
<th>Medium</th>
<th>Rich</th>
<th>Very Rich</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average herd sizes (LSU)</td>
<td>&lt;5</td>
<td>5-10</td>
<td>10-20</td>
<td>20-80</td>
<td>&gt;80</td>
</tr>
<tr>
<td>% of all households</td>
<td>45</td>
<td>4</td>
<td>23</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>% of cattle owned</td>
<td>1</td>
<td>4</td>
<td>19</td>
<td>29</td>
<td>35</td>
</tr>
<tr>
<td>% of smallstock owned</td>
<td>4</td>
<td>4</td>
<td>23</td>
<td>28</td>
<td>41</td>
</tr>
</tbody>
</table>

Sources: the data are calculated on the basis of the wealth ranking exercise and confirmed by herd censuses which paid special attention to the rich and very rich that own the bulk of the livestock.

Several publications over the last years have tried to calculate minimum herds necessary for subsistence or the covering of basic needs. These are fraught with methodological difficulties; yet some results may be indicated for comparative purposes. Jewell (1980) calculates a minimum herd of 44 cattle and 100 smallstock for a family with 5 members to subsist on livestock. Dahi and Hjort (1976) estimate a minimum requirement of 67 cattle to feed 5 adult equivalents throughout a year. A more sophisticated calculation by Kjarby assuming high market integration and including terms of trade for grain and livestock comes to 46 head of cattle for 7 adult equivalents (Kjarby, 1979). While Mukogodo households parallel the above figures for household or family size, it is only the very rich that reach the calculated thresholds. If we suppose that every of the 1,400 household in Mukogodo would reach the minimum threshold indicated by Kjarby, the area would have to support about 45,000 LSU or roughly the double of the current livestock population. This number is
quite obviously beyond the carrying capacity of the area, even under optimistic assumptions. The quintessence of these calculations is that a majority of Mukogodo households was left with insufficient herds after the drought of 1984 and that therefore other incomes are of paramount importance for the physical and social reproduction of most households.

Before looking at the structure of today's herds, it is interesting to have a closer look at the cattle losses in 1984 and at the rate of post-drought recovery. Data on the sample are presented in Table 5.

Table 5: Losses in the 1984 drought and drought recovery.
Cattle only. Percentages

<table>
<thead>
<tr>
<th></th>
<th>Rich</th>
<th>Medium</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Losses in 1984</td>
<td>-72</td>
<td>-81</td>
<td>-86</td>
</tr>
<tr>
<td>Recovery 1985-87</td>
<td>+110</td>
<td>+75</td>
<td>+61</td>
</tr>
<tr>
<td>Current nrs vs. predrought nrs.</td>
<td>-42</td>
<td>-68</td>
<td>-77</td>
</tr>
</tbody>
</table>

While rich households suffered smaller losses due to higher mobility and better treatment of diseases in the drought, they also recovered more quickly although not even they have reached the predrought level again. On the other hand, recovery of poor household has been very slow, reflecting high cash needs even in more favourable years. Generally then, the gap between rich and poor has been widening since the drought despite three years with favourable rainfall.

4.2.4. Cattle herd structures
The following discussion is restricted to a discussion of cattle herds. As several researchers have noted over the last years, smallstock flock structures are difficult to collect (McCabe, 1985; Wienpahl, 1984). Data on those are not yet available. The following table presents the age and sex breakdown of the cattle herds of the sample households as recorded in June/July 1987.
TABLE 4: Cattle herd structures according to wealth strata. A comparison of Mukogodo and Kajiado 1)

<table>
<thead>
<tr>
<th></th>
<th>Rich</th>
<th>Medium</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Muk</td>
<td>Kaj</td>
<td>Muk</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calves</td>
<td>17.0</td>
<td>6.9</td>
<td>16.8</td>
</tr>
<tr>
<td>Immature steers</td>
<td>5.3</td>
<td>2.6</td>
<td>1.7</td>
</tr>
<tr>
<td>Immature bulls</td>
<td>10.0</td>
<td>4.2</td>
<td>4.2</td>
</tr>
<tr>
<td>Young steers</td>
<td>9.3</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Immature steers</td>
<td>14.4</td>
<td>9.3</td>
<td>17.6</td>
</tr>
<tr>
<td>Oxen</td>
<td>3.4</td>
<td>1.9</td>
<td>3.0</td>
</tr>
<tr>
<td>Bulls</td>
<td>3.8</td>
<td>5.0</td>
<td>4.3</td>
</tr>
<tr>
<td>Total Males</td>
<td>39.0</td>
<td>35.0</td>
<td>31.0</td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calves</td>
<td>14.4</td>
<td>9.3</td>
<td>17.6</td>
</tr>
<tr>
<td>Heifers</td>
<td>10.6</td>
<td>19.9</td>
<td>9.7</td>
</tr>
<tr>
<td>Cows</td>
<td>34.4</td>
<td>35.8</td>
<td>45.0</td>
</tr>
<tr>
<td>Total females</td>
<td>39.4</td>
<td>65.0</td>
<td>75.3</td>
</tr>
</tbody>
</table>

1) Source: King et al., 1984

The table shows the distortions one could expect from a total herd divided into small units and in a post-drought situation. Whereas the percentage of females of rich households falls roughly within the normal pattern, medium and poor households keep a very high number of females. The low proportion of heifers is another post-drought characteristic and a consequence of almost total calf mortality in the last drought. A preliminary look at the age of cows suggests a rather young average age, older animals having been culled in 1984. Medium households dispose of their male offspring at an early age, largely to richer producers. These animals show up as a higher proportion of immature steers and even in the herds of rich households. The rich households are able to keep a number of immature steers to the age of oxen, which fetch a proportionally higher price than immature steers. Poor households have a comparatively higher proportion of immature bulls as they try to keep at least one such animal, usually with the intention to breed a working bull. These are virtually absent in small herds. The number of breeding bulls is rather low. Formal borrowing of bulls is however rare. Many small owners just seem to rely on the mixing of herds while out for grazing; future data will show whether this practice results in a lower calving rate.
4.2.5. Pastoral labour inputs

Here, quantitative data are not yet available. It will also have to be seen how for herding arrangements change with the seasons. Given the small size of most herds, cattle of one bomu are usually combined for grazing. In most cases, the herder is a young boy, but quite a few medium and poor households leave cattle unherded if pasture conditions around the boma are fair enough. The animals are just let out or brought to a good spot nearby and then left to themselves. Calves are herded separately only by medium and rich households. The others either leave the calves to graze around the boma or send them out with the smallstock. Smallstock are always herded, but goats and sheep are never separated. Again, herdsboys or -girls are very young, in many cases restricting the possible movement. Young smallstock are just kept around the boma and occasionally controlled by whoever is present. While cattle are often moved to temporary grazing camps in the dry season, only few rich households can afford to split dry and milking herds or to run goats and sheep separately. In comparison to other pastoral systems, the sophistication of herding management is low and declines with wealth. The data being collected will allow to determine whether this affects milk yields, calf growth and mortalities.

A more detailed study of labour management and recruitment of the different wealth ranks is still under way; yet some general remarks are already possible. As has been demonstrated for other pastoral groups (Sperling, 1984), households very often lack the necessary labour for specific tasks, especially early or late in their domestic cycle. Like elsewhere, the possibility to "borrow" a child exists in Mukogodo, but it occurs rarely. Equally, hiring of a salaried herdsman or -boy is only done by a few very rich households that are engaged in cattle trade as well as production. This is in strong contrast to the upsurge in salaried labour in other pastoral societies, e.g. among Galioi Oromo (Ensminger, 1984). Generally then, labour problems are solved by combining labour and livestock from households within one boma, while other ways of recruiting labour are rare. This is true for herding and also for other tasks, like fencing bomas. In comparison to other areas, children engaged in herding are younger and it is more common that household heads or wives do herding labour.

4.3. Non-livestock income

Given the limitations of pastoral production and the distribution of stock holdings, it is evident that other incomes are essential for most households to supplement proceeds from the herds.
4.3.1 Other local income generation

Even rich households engage in a variety of income-generating activities, although they are clearly less dependent on them than the rest of the population. Even the rich however feel that it is a time to build up herds and so to restrict voluntary offtake if possible.

Charcoaling is definitely a poor peoples' activity. It is moreover restricted to the area around Doldol and along the road from Doldol to Nanyuki. While men may help to prepare a kiln, it is mainly a female activity. Kilns are small and often made from one tree; they yield 1.5 to 2 bags, that currently sell for 30/- ksh per bag.

More widespread, both geographically and through wealth strata is the brewing of beer (made from honey and/or sugar, and spiced with roots from an aloe species) and the distilling of liquor (made from fermented whole grain maize and sugar). People are naturally reluctant to talk about these illegal activities, but there is a considerable number of poor households for whom the profit from brewing is the mainstay of the budget.

In at least two of the five iloshon, there exists a tradition of beekeeping, which is however associated with "Dorobo" status. Data collection on this important side line is however still underway.

Both poor and medium households (and both men and women) engage in petty trade. One possibility is acting as a middleman in the trade of smallstock skins, mainly in the areas more distant from the small centers of Doldol and Kitambo. The price the middlemen pay to the original sellers (always the wives in this case) is about 3-4 sh below what shopkeepers offer to the centers other. The middlemen on the other hand get a slightly higher "wholesaler" price from the shopkeepers, allowing them to make a profit of about 7-10 sh per skin.

Other petty trade is less regular and is done as the opportunity arises, like bringing tobacco or miraa or saltlick from a trip to Nanyuki that was made for other reasons. Here again, margins are very small, even for miraa.

4.3.2 Local jobs

Apart from the jobs in the administration, opportunities for permanent wage labour are very limited. Moreover, not many Mukogodo residents qualify for more than manual jobs within government. Most locally employed people are in the administrative police, in MOC or Forest Dept. jobs. The other local jobs are with the missions and the few projects in Doldol.

A number of girls also work as maids in the houses of Doldol employees, salaries being as low as Ksh 80/- per month plus board.

Possibilities for casual work are equally limited and again largely restricted to the centres of Doldol and Kimanjo. These include digging latrines, loading and unloading of lorries like those that come to collect sand in the dry
Labour in Mukogodo is an occasional contract when a building is constructed.

4.4. Labour migration

Given the small livestock numbers and the limitations on other income generation within Mukogodo it is obvious that labour migration has become of major importance, especially since the droughts of 1980 and 1984. Both more permanent migration involving whole households and the migration of individual members of households exist.

The scale of permanent migration can provisionally be gauged from a survey of the member-lists of group ranches. The proportion of medium term absences has been calculated at 27%, ranging from 16% to 38% of registered members.

The scale of individual migration emerges from the sample and the basic survey. In the sample, only 5 of 34 households do not have a core member or a close agnatic relative (father, brother) who is working downcountry. Of the household heads of resident households, 27% are absent for work. This figure does not include younger, unmarried men who are also away in large numbers.

Of the recorded absentee household heads, 33% work in ranches and farms within Laikipia District. There are clear streams of labour migration. People from the southeast prefer ranches near Timau (one of which has an atienanch in Coast Province with a sizable Mukogodo group), those from the center are found in ranches towards Nanyuki while from the west, most are around Rumuruti.

Of the 45% working outside Laikipia District, there is still a large number in ranches around Naijara, an association that goes back into the 70s and 80s. Only a small fraction of household heads are employed as watchmen and in other urban jobs.

Most popular, decently paid and secure are the jobs in the army, the stock theft unit and the police. It is mainly these employees who are able to remit sums regularly and in amounts that occasionally allow substantial investments (like building a mabati-roofed house) or a significant herd build-up. Ranch wages are usually not sufficient for this purpose. Re-mittances to poor and medium households in the sample are invariably used for food, clothes, school fees and other pressing necessities.

4.5. Dependency relations and clientage

From the fact that a large proportion of households is poor, one might expect widespread dependency relations or client relations to richer households. Traditional forms do exist, like giving out milking stock (nilipat) or giving out stock
to look after, where the receiver has full usufruct of the herd and can expect a gift after a long relation (aitaaki). By looking at the sample however, the more formal nkiiipat and aitaaki relations are much less frequent than informants usually maintain. Within the sample cattle herd of 545 head, there are only 12 cattle taken in as aitaaki and 1 given out. All cases involve brothers and fathers and sons. In the same herd, 2 cows are given out for nkiiipat and 3 are received. Again the relations involve close agnatic and affinal kin.

More informal are relations where a poor household shares the boma with somebody better off, whereby the clients perform all kinds of tasks against unspecified "help", e.g. the patron helping by paying the expenses of a circumcision ceremony, or by just giving surplus milk to the client household. These relations are difficult to grasp as they are couched in an egalitarian kinship idiom that obscures the inequality involved. This is one of the research domains where only longterm participant observation will allow to gauge the quality of the dependency relation.

Finally there is the outright charity involving both kin and more distantly related people. Destitutes might just been given a goat to sell or the wife of a poor neighbour might receive milk more or less regularly.

The relatively low frequency of dependency relations may also be related to the fact that the number of households who can afford to give out e.g. a milking cow has become very small. But it also seems that both sides tend to shun longterm involvements with open-ended conditions only loosely defined by tradition. While the dependents usually complain that they are constantly called up for the more onerous tasks (like searching for a lost goat), the patrons complain about the never-ending demands for help, both for daily necessities and special occasions like marriages, circumcision ceremonies etc.

In contrast, a salaried job involves clear-cut expectations on the part of the employer and provides a steady and foreseeable cash income that can be deployed independently. Further investigations are however needed to determine whether the traditional social security networks are being replaced by labour migration.

5. Conclusions

Data presented so far show that due to a long history of enclosure, the density of both human and livestock populations is high compared to areas with similar climatic conditions and production systems. Although quantification is difficult, it is quite clear that it is impossible to support the current population on a purely pastoral basis.
Although the Mukogodo population is generally poor, both absolutely and in comparison to other pastoralists, the distribution of the main form of wealth, livestock, is highly skewed and has become more so over the last decade. While still over 95% of Mukogodo households engage in pastoral production, their stake in this sector is differentiating.

Rich households have been least affected by the heavy droughts of 1981 and 1984 and have recovered more quickly. For this recovery, they have profited from an incipient stratification of production. Thereby, poor and medium households have transferred (by sale or exchange) male and occasionally even female immatures to the richer households, who are able to grow them to maturity or at least fatten them before sale.

Poor but also medium households on the other hand have become increasingly dependent on non-livestock income in order to conserve or increase their small herds. This income is earned by engaging in charcoal burning, brewing or petty trade, but more importantly by labour migration which is widespread and has dramatically increased after the drought of 1984. Due to the late arrival and inadequacy of educational facilities, a large number of migrants are employed in low-salaried ranch jobs that only allow for limited remittances. While some medium households are able from time to time to reinvest remittances into livestock, poor households rarely do so and their herds tend to stagnate.

As the importance of non-pastoral income increases, there are signs, especially among poor and very poor households, that both the sophistication of livestock management and the intensity of labour input into pastoral pursuits declines. Further research must show whether this results in a lower productivity of small herds (despite higher labour input per LSU compared to big herds) and therefore lower returns for the household. This decline can only be compensated for by even more non-livestock income, or as it occurs, by selling off the herd. Already, remittances from wage labour and returns from charcoal burning and illegal brewing dominate in the budgets of a good part of poor and very poor families.

On the communal level, the absence of a quarter of the household heads is already making communal decision making and resource management more difficult and may eventually undermine both the social network still carrying very poor households and the group ranch approach advocated by the government.

It is to be expected that the next drought will entrench the trends outlined so far. The development planning for Mukogodo (and other pastoral areas) therefore has to cope with a situation of increasing divergence of strategies and interests between wealth strata and will involve some thorny policy.
decisions. Given the importance of non-livestock income, a policy mainly aimed at the pastoral sector (e.g., upgrading of breeds, tick control, water development, range management) will not be able to decisively improve the lot of the poorer half of the population for whom pastoral production is more and more a sideline. They might therefore stay away even from activities where their cooperation is crucial, like in efforts to improve range management. On the other hand, interventions to create (or enhance) local income-earning activities in order to slow down permanent and labour migration must be assessed against the ecological costs of a growing number of households keeping marginal, unproductive herds. Being poorly managed and almost stationary, these may in fact exacerbate the problems of overgrazing and soil erosion already apparent today. It is hoped that the ongoing research will provide the data necessary for the careful evaluation of the future impact of development interventions and policy decisions.

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