A Participatory Rural Appraisal

Wei Wei Integrated Development Project

Sigor, West Pokot

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Executive Summary

The Wei Wei Integrated Development Project is a successful irrigation development intervention that has raised the food security of local people dramatically. In order to provide for the sustainability of this project the consultant was asked to do a Participatory Rural Appraisal of the project and with the farmers to develop a set of rules that would provide the legal basis of a Farmer's Association.

This association is structured in keeping with the demands of the market and the needs of the local people. This document then begins with the initial rules for the Farmer's Association as given to the consultant continues with an analysis of the community and the project and ends with the revised of the Farmer's Association as worked out with them.

West Pokot is a semi arid district of northern Kenya broken by a number of wet and wooded mountain ranges, some of which are the sources of rivers that run through the district. The Wei Wei river is one of them. It is home to the Pokot who are divided into pastoral and agricultural sections.

In response to a series of periodic droughts that cause famine in Kenya's northern districts the Kenyan Government asked the Italian government for technical assistance to improve food security in West Pokot.

Lodagri was the Italian company asked to design and implement the project. The engineers and agronomists that made up the team decided to work with a community of Pokot farmers who over the centuries have developed a traditional, gravity fed irrigation system.

The team built an intake, upstream in the Wei Wei river valley, and from which pipes were laid, so that farmers could make use of a gravity fed, overhead sprinkler system which has allowed them to reap two harvests each year regardless of the amount of rain. More than one hundred families have access to plots in the new scheme.

These plots provide for the basic food needs of the farmers. They also allow them to grow seed crops which are sold to seed companies for cash and which in the future could cover the inputs and administration of the project without the financial assistance of the Italian government or the Kerio Valley Development Authority (K.V.D.A.).

The Pokot are proud, highland Nilotes who have lived in the area now called West

Pokot for a number of centuries. The `target community' of the Wei Wei Integrated Development project are a group of Pokot farmers who live in the Wei Wei valley. They practise a multi resource using strategy that includes a form of swidden cultivation (slash and burn) and are distinguished from the other more pastoral Pokot who live on the open plains to the north and east of them. However, both groups consider themselves Pokot. They intermarry and do not raid each other.

The project target community is an organic whole that does not violate the indigenous social classification of the Pokot farmers of the Wei Wei valley. Thus families, lineages, clans and territorial sections all consider themselves part of one community that they call,`Kurut'.

The Kurut is divided into two divisions, the people of Machon and the people of Tokoch. These two divisions correspond to farming and water rights with special regards to the two main branches of the local canal. For the most part, the people of Tokoch irrigate their farms from one branch of the canal while those of Machon do so from the other branch. Likewise, about every two years, each group is responsible for cleaning their part of the canal.

Pokot social organization is complicated. It comprises a number of different systems; the age sets, patrikin, matrikin, a special relationship with uncles, sub clans and clans as well as territorial sections called korok.

The korok is the most important social division in the context of the Wei Wei Integrated Development Project. A korok is a cluster of households made up of members from a variety of clans. Within each korok one clan is more numerous than all the others but rarely constitutes a majority. They have common interests and share much labour. Since the project has organized farming groups as blocks farmers pointed out that this was similar to their traditional `korok' and that could be used as a basis for representation in the farmer's association.

The above mentioned systems have different functions and overlapping jurisdictions within the traditional system of tenure. However, any conflict that may arise among individuals is judged by a local council of elders who decide where and when one system of rights and obligations takes precedent over another.
Such councils also provided farmers with prototypes for the executive, legislative and judicial functions of their new association.

The results of these varied and interacting social systems ends up by leaving men in one place where their sons inherit land while daughters marry out, thus insuring that distant communities are linked through women, and thus inter korok conflict is reduced to a minimum.

The Kurut Pokot still use indigenous systems to classify time and space. These systems structure most of their activities and link their social organization to the manner in which they use the natural resources of the valley.

Kurut Pokot classify the land that they live in into four regions; masop or highland, kamas or `midland', tamka or plain and finally lalwa, or the riverine area. Pokot elders can name and describe the multiple uses of the many wild and domestic plants and animals of each section. They are also aware of changes in the balance of plants, animals and people over the last few decades.

The Masop or highland is that part of the steep hillside on either side of the Wei Wei river and which reaches from the top of the hills halfway down the slope, which is the border with the kamas or midlands. The Masop is good for grazing domestic stock and is also used to grow maize. Irrigation of these plots is rare and their success depends on rain. Farmers do not plant the same plot two seasons in a row. Also, ownership of these plots is not strict and they are not inherited from father to son. They form basically one dimension of a wider system of natural resource management and whose `usufruct' is usually given to the residents of the territorial section whose houses are near these steep slopes.

The Kamas begins midway down the mountainside and ends abruptly where the slope of the mountain or hill rises from the plain. It is the place where most of the settlements which form the divisions of the Kurut are spread on either side of the river in a north/south direction. Here is where most domestic life is focused.

It is the place where most semi permanent dwellings are clustered, where surplus food is stored and where domestic animals are kept each night. This area is sufficiently close to the lowland farming areas to give residents quick and easy access to their plots yet it is far enough away from the mosquito infested riverine forest to prevent constant infection by malaria.

The tamka or plain consists of two parts. The first is that flat area near the river and which can be irrigated from the canals. Here there are plots which average about half an acre and where Pokot do most of their farming. The farming areas are named according to the subsidiary canals. Pokot elders often own up to fifteen plots. However, they are never in one area in order to spread their risks and to benefit from microecological differences.

The plots are inherited from father to son and the quantity of plots being inherited between the generations is declining rapidly. In a few short years there will be land shortages and
and much strife among siblings for access to local farms.
The declining inheritance of wealth ranked families can be seen in the appendices.

Lalwa or river is the source of all irrigation water since

the canals draw off water from the river in order to water the farms. It is also the source of all drinking water and where most domestic livestock drink from while out grazing. The riverine forest which lines the river itself is an area where much wildlife congregate at night to drink. The Pokot until recently hunted a wide variety of ungulates who came there at night to drink.

The key points about these four ecological regions and their relation to the Kurut Pokot are first of all that the Pokot are not just farmers but gain their food through highland rainfed agriculture, lowland irrigation agriculture, hunting, the gathering of wild fruits throughout all four areas, the cultivation of honey hives at points up and down the mountain sides, the herding of livestock for meat and milk and the hunting of wild animals. The second related point is, when due to drought and the agricultural system breaks down the Pokot revert to a hunter/gatherer mode of life whereby they rely on everything but agriculture to sustain them until the rains return.

The Pokot classify time with indigenous divisions of the twenty four hour cycle, a seven day week and what appears to have become a twelve month year that is said to begin in February. As with other Nilotic groups living in East Africa, their yearly cycle is more or less a description of the agricultural cycle.
For example October is called Chepsut, from the verb chepsut which means clearing the grasses that grow on the edges of the canal and that must be cleared if irrigation is to run smoothly.

The Pokot also classify groups of years, about seven or eight on the average and which correspond with circumcision groups of young males. Once a Pokot is circumcised he is no longer a boy, regardless of whether he be twelve or eighteen at the time of the initiation. These circumcision sets are then made part of an age grade.

All Pokot men in the Kurut belong to an age grade. The importance of this system is that senior age grades take precedence and authority over junior age grades. Thus when decisions must be made over who gets water for irrigation, or fines and compensation for not helping in communal work, judgements are usually made by a small group of experienced elders of the most senior age sets. Again this concept of `seniority' allowed the Pokot elders to design rules for their farmer's association where representatives are empowered to make decisions for other korok members.

Thus there is a strong gerontocratic dimension to Pokot life that permeates all decision making in Pokot society. This makes elders sceptical of innovations and has so far prevented better educated and more innovative members of the community of having a positive influence on the project so far.

However Pokot gerontocracy is slowly being offset by the growth of Sigor and other towns like it. These small towns act as government administrative centres as well as the sites of weekly markets, where a local class of Pokot entrepreneurs are establishing themselves. It is also where the local secondary school is located. As more and more farmers send their children to school it is most likely that a new interest group, the school leavers, will become an innovating force in Pokot society in the years to come. When discussing this phenomena with farmers they realized that the school leavers if used wisely could give them much assistance.

Pokot make use of a wide variety of domesticates in their irrigated and unirrigated farms. During the dry season they must clear the farm, burn the detritus and dig up the soil. When the rains begin they plant. This is followed by kapping, weeding, irrigation, second weeding, second irrigation, the cutting of grass, day and night guarding of the farm, cutting again, harvesting and finally separating and storing the food in the storage huts beside the houses in the kamas.

During the drier parts of the year irrigation is the key to farming success. The right to open a canal that irrigates a farm area is held by the local council of elders called the kokwa. In order to receive permission to water a farm the applicant must make a formal request at the council. This is followed up by independent committees of investigation, a ranking of the water needs of various plots, followed by a judgement of who is to be served first.

Those who receive permission irrigate either by day or by night. Daytime irrigation involves preparing the farm for the reception of the water through the use of the `tiwut'

system of water direction. It also involves clearing the subsidiary canal,
letting in the water in front of competent witnesses and monitoring the spread of the water across the farm plot.
Night irrigation follows a similar pattern but often takes more time.

The canal is maintained every two years. The main entrance to the canal is closed off. Kokwa meetings are held to organize the work groups. The division of labour is organized according to household and age set by the two communities who each have their own branch of the canal. Those who do not show up and do not contribute sufficient labour are fined.

Although agriculture is the normative mainstay of the community, herding and hunting are important aspects of food security and the spreading of risks across different food producing systems.

Every household has goats and sheep. Some of the wealthier households have cattle. They are usually herded near the farms by young boys and return home each evening. They do not roam across wide distances like their neighbours on the plain, yet they provide a fair amount of daily milk for each farming household.

The amount of animals that the pastoral Pokot have is much larger than these agriculturalists, yet the desire for livestock may stem from these farmers proximity to or among the pastoral Pokot of the plain. For example, all brideprice payments are made through exchanges of livestock. This means that no man can marry without giving a fair amount of domestic animals to his in laws.

Until recently Pokot have hunted during the day and night. Day hunting usually takes place on the plain while night hunting is carried out along the riverine forest. The principles of the division of the meat are very similar to the way water is divided up. Regardless of who killed the animal most meat is shared out equally among all those who participated in the hunt, with some prejudice in favour of elders from the oldest age sets.

One section of this document gives a fairly detailed account of the lifestyle and opinions of a group of typical elder and recipient of a project plot. It is clear that they have little to no understanding of how the Kenyan state works, how the national market works, and finally why it is that the project expects participants to work in light of the fact that there are many international organizations in the area who make a custom of giving out food for free.

While the project technicians are around they and their families will cooperate with them. However, unless better organized when they are gone these elders, typical project members, will not yet have the skills to help make the new farming scheme sustainable.

The Lodagri/K.V.D.A. development intervention, called the Wei Wei Integrated Development Project, has taken land from within the Kurut and built an overhead sprinkler irrigation system that provides one hundred and five Pokot families with abundant food to eat and with seed crops that are sold on the open market.

The sale of these seed crops have provided local farmers with profits similar to those farmers in the well watered areas of Mount Kenya, a dramatic improvement in local food security.
The project has a team of technical advisors from Lodagri and K.V.D.A. The plots and their management, as well as the marketing of the crop, are supervised by this team.

Support facilities include a nursery, experimental orchard, a meteorological station, a special Joint Management Scheme farm run by K.V.D.A. and Lodagri (which has shown continuous profits since the project began) storage facilities, a mechanic, workshop, tractors, trucks and drivers, offices and a well tended living compound for senior project staff.

There are certain similarities and differences between the traditional Pokot system and the modern system. For example in the traditional system water is a scarce resource whereas in the modern it is almost unlimited and available at all times. In the traditional system land is regulated by custom whereas in the modern system there is not yet ownership of the project plots and inheritance is an unknown factor. Likewise, traditionally most inputs are local whereas in the new plots they are bought.

The farming cycle is determined by the climate while the choice of crops is determined by the demands of the market.
The cycle normally follows a series of set stages: canvasing the buyers, preparing the land, sowing and planting, herbicide application, irrigation, spot weeding, fertilizer, scouting, chemical control of pests, irrigation through the use of overhead sprinklers, harvesting, threshing, packing of the produce in bags, weighing, delivering and then decision making as for cropping patterns for the next season in response to the demands and needs of the buyers.

The participation of traditional farmers in this modern irrigation scheme has depended on intensive work by the project team and their extensionists. Studies of the first twenty farmers, those with the longest experience of the project, have shown that participation is inconsistent. Some farmers started off doing well and then lost interest. Others took a long time to show interest and now work hard.

All of them have difficulties in understanding national market fluctuations and find it difficult to save because of the pressures and demands of the extended family. Because most project members are in their fifties, the better educated younger members of the community have little say or influence because of the gerontocratic nature of the Pokot society.
Thus in the final farmer's association rules there are positions for farmers, monitors and young project trainees to make up for these differences and to provide for consultation and information at all levels.

The farmers do not yet have land titles for their plots. If the project becomes viable then there are likely to be growing disputes over inheritance by the sons of those elders who have received plots. However once collective land tenure is guaranteed by the state the Farmer's Association can then provide the framework for management of the system.

The Farmer's Association will be made of members of all farming blocks modeled on the korok. Each block will elect representatives to serve on a council. This council will have specific voting rights and include younger literate members of the community who can be trained in the technicalities of farm management and marketing. The rules are their to make rules in keeping with Pokot traditional decision making practises.

Once done the farmer's will then have the framework to engage with the private sector so that profits and project infrastructure can be maintained.

I) Introduction

A) Preface

The goal of this consultancy is to present to Lodagri, the implementing company of the above named project, a description and analysis of the community that is the ultimate beneficiary of the irrigation intervention that is the W.W.I.D.P.

The central and dominant concern of Lodagri and K.V.D.A. was that this research should provide the context and content of a practical set of rules for a working Farmer's Association that is in accord with Pokot decision making processes.

This document starts off by presenting the reader with the rules as they were given to this consultant and ends with a presentation of the rules for the association, worked out after a number of months research and consultation with Lodagri field staff, K.V.D.A. staff, both in and out of the field and with farmers from the target community.

The rules of the farmers association take into consideration and build upon traditional Pokot practise, that is they build upon indigenous knowledge. When discussing the new rules Pokot elders were very keen on the separation and rotation of what are technically called legislative, executive and judicial functions. Such a concept is not at all foreign to them as can be seen from an examination of canal maintenance described later in this document. The concept of communal checks and balances is not unknown among the Pokot.

The final rules take into account the dominant values of the agricultural Pokot, such as the egalitarian nature of Pokot society and customary law. These values permeate Pokot society and can be seen at work in the activities described in the various sections of this document.

These include the notion that all Pokot have equal legal rights, the fact that there are not nor have there ever been chiefs (the modern chief system is grafted on to the traditional system and serves more as a communications bridge with the administration) and the formation of small representative councils for small issues and larger councils for larger issues are common.

It also takes into account that the Pokot are not foreign to the idea and practise of proportional representation and to the investigation of claims by trusted and objective observers. Most of all, it demonstrates that Pokot can live in relative harmony and cooperate with other Pokot who are not members of their lineage and clan. The korok system is the key example of this indigenous egalitarian tendency. Farmers endorsed the korok as the model for the farmer's association based on their farming blocks which bring together farmers from different families, lineages and clans as does the traditional korok settlement system.

Finally the system takes into account the question of scale. When dealing with companies and national markets timing in decision making is essential. Not every issue can be debated by all participating farmers on a case by case basis but, a system can be designed where all farmers are in constant contact with their representatives, and each farmer can serve as a representative.

If the plan here laid out is followed then most elders will at one point or another represent their newly constituted but culturally appropriate, project based `korok'. In this way the sustainability of the project and the advantageous relationship that this group of Pokot farmers has developed with the national seed crop market can be maintained in the years to come.

In the next section of this document the reader is presented with the draft set of rules for the Farmer's Association as given to the consultant in 1993. It then gives a description and analysis of the community and the project and ends with the final draft of the farmer's rules that were worked out with them by the consultant.

B) Draft Set of Farmer's Rules-1992

KERIO VALLEY DEVELOPMENT AUTHORITY

WEI-WEI (SIGOR)

IRRIGATION

PROJECT FARMERS RULES

SEPTEMBER 1992

WHEREAS KERIO VALLEY DEVELOPMENT AUTHORITY (herein after referred to as The Authority) a parastatal charged with the development of the area within which the project is situated and WHEREAS The Authority has developed a project known as Wei Wei - Sigor comprising one hectare plots with fully developed irrigation facilities and whereas the Authority now wishes to hand over the plots to farmers.

NOW THESE RULES PROVIDE AS FOLLOWS

1. OWNERSHIP

i) The Authority shall hand over a plot measuring one hectare to each farmer selected by the Farmers Selection Committee. The farmer shall become the owner and manager of the land and shall be responsible for all matters related to the plot.

ii) In the event death, incapacity or other disability affecting the owner, the plot shall devolve upon the first son if he is of 18 years and above, or where the first born son is below 18 years of age or under any other disability or where the farmer has no son, the Farmers Association in conjunction with the local Administration and Kerio Valley Development Authority shall nominate another person to take over the ownership and management of the plot.

iii) A farmer shall lose the rights of ownership over the plot in the event of death or incapacity as provided for in 1(i) above or if he fails to manage the farm in the manner prescribed by the project Management Committee or in any other manner breaches any other provisions of these rules.

2. LAND USE

i) Upon allocation of the plot, each farmer shall be issued with a cropping calender by the Authority which the farmer will have to conform to. Subsequent Cropping calenders will be issued every season.

ii) Initial farm inputs, that is to say ploughing, harrowing, ripping, seed, fertilizer and insecticides for the first season shall be provided by the project. The farmer shall provide labour. The farmer shall meet the cost for subsequent farm inputs specified above from his own resources.

iii) The Authority shall provide extension services to all project farmers and the farmer must comply with such technical advice. Any farmer who fails to comply with any technical advice shall be declared unproductive by the project Management Committee and shall be subject to the consequences thereof.

3. BOUNDARIES

i) Farmers shall confine themselves to marked boundaries
for plots of one (1) Hectare each.

ii) Any farmer who extends his plot beyond the official boundary shall have committed a breach of these rules and shall be subject to disciplinary action by the Project Management Committee.

iii) Farmers shall be provided with tree seedlings by the Authority for planting along boundaries to provide wind breaks and shelter belts. It shall be the obligation of every project farmer to ensure that the wind breaks and shelter belts are properly maintained. No farmer shall be authorised to fell trees from or in any other way interfere with the windbreaks and shelter belts without permission from the Farm Manager.

4. IRRIGATION INFRASTRUCTURE

i) Each plot shall be provided with a specified set of surface irrigation facilities comprising:-

(a) A gate valve
(b) A complete lateral line
(c) Four (4) raised sprinklers and
(d) Four (4) rotary sprinklers (single nozzle)

(ii) The farmer shall take good care of the facilities provided

(iii) Any, damage, repairs and/or replacement shall be the responsibility of the farmer.

(iv) Any farmer who fails to maintain irrigation facilities to the satisfaction of the farm manager shall be declared an unproductive farmer.

(v) Each lot owner (the farmer) shall be charged a fee of Kenya Shillings One Thousand (kshs. 1,000.00) at the end of every season by the Authority for the maintenance of the entire underground system including the intake. The fee shall be subject to revision each season.

5. LIVESTOCK

i) Keeping and/or grazing of livestock (except chickens) is prohibited. Any livestock within the project area shall be confiscated and the owners shall be subject to disciplinary action by the Project Management Committee.

6. BUILDING

i) Each farmer shall be allowed to construct only the following structures on his plot:

a) A temporary house
b) A temporary store
c) A temporary pit latrine

ii) Besides the structures listed in item (i) above, no additional or permanent structures may be constructed on any plot except with the written permission of the Authority.

7. PROJECT MANAGEMENT

i) The project shall be managed by the following:-

(a) The Authority
(b) The Project Management Committee composed of:-

- The Authority's representative
- The Joint Management System
- Local Administration (District Officer, Chief and Assistant Chief)
- Farmer's representatives

ii) The powers of the Project Management Committee shall be the following, among others:-

a) To allocate and/or reallocate plots
b) To discipline farmers
c) To expel farmers

I.....(Project Farmer) of ID No..... Post office Box Number.....LOCATION.....
..... do hereby acknowledge that I have read and understood the contents of the rules herein/that the contents of the rules herein have been read and/or explained to me by

NAME.....ID/NO.....
DESIGNATION.....
ADDRESS.....
I understand the contents thereof.
I accept to take over the plot No. allocated to me and that.
I shall abide by and be subject to all the rules herein.

SIGNED BY THE FARMER

NAME.....
SIGNATURE.....
IN THE PRESENCE OF

NAME OF
WITNESS.....
DESIGNATION.....
SIGNATURE.....
ADDRESS.....
SIGNED ON BEHALF OF THE KERIO VALLEY DEVELOPMENT AUTHORITY BY:-
NAME.....ID/NO.....
SIGNATURE.....
ADDRESS.....
IN THE PRESENCE OF
NAME.....
DESIGNATION.....
SIGNATURE.....
ADDRESS.....

II The Project Context

A) The Wei Wei Integrated Development Project in its Historical and Geographical Context.

1) West Pokot

The administrative and geographical boundaries of the Kenyan District West Pokot are on its Western side Uganda, to the north and east the district of Turkana, to the southeast the District of Baringo, and to the southwest the District of Trans Nzoia. Pokot frequently cross the Ugandan border, where fellow tribesmen also live and thus participate

in two national economies.

Turkana District is the home of a predominantly agro-pastoral people called Turkana, West of Lake Turkana. The Turkana compete with the Pokot for grazing land and water. They often raid the Pokot or are raided by them.

The District of Baringo consists of low lying plains with some ranges of wooded hills. It is the home of pastoral and agro-pastoral Pokot, Tugen and Ilchamus. South of West Pokot are the highlands of Elgeyo Marakwet, home of the Geyo and Marakwet peoples. Their life style is similar to the Pokot farmers of the Wei Wei river valley. However their irrigation system is constructed on a much larger scale.

(see Appendix #2, District Atlas Map #1).

Although the Pokot are closely related to the Geyo and Marakwet, the early 1990s have been a time of growing suspicion among these groups. This may be due to growing populations and dwindling resources which sometimes leads to intertribal raiding.

Trans Nzoia is a fertile, well watered highland plain bordering the slope of Mt. Elgon, where European and Afrikaner farmers once practised mechanized farming and modern stock breeding until independence in 1964. After independence the farms were taken over by a variety of immigrants from other parts of Kenya, some of whom maintained their farms as modern commercial enterprises, while others divided them into small family farms.

The District of West Pokot is characterized by three major features:

* Social and economic development started later here than in other parts of Kenya.

* It has a rugged and mountainous topography with large plains and few roads, and thus it has not had much contact with the rest of the country.

* It has no major towns of consequence, industries or large scale farming.

Therefore, during the last ten years the Government has opened up roads and schools to help integrate the District with the rest of Kenya (see Appendix #3, District Atlas map #8).

While the Pokot of West Pokot comprise a traditional clan based agro-pastoral society, the socio-economy of Trans Nzoia is marked by family based subsistence and commercialized farms serving the food needs of the local population and the residents of nearby cities such as Kitale, Eldoret and Nakuru.

The Government of Kenya aims at eventually transforming, Districts like West Pokot into areas like Trans Nzoia, where

* land is held by individuals, according to title deed;
* schools are available;

* the economy is monetized and commercialized and there is a creation of a surplus that can be traded or sold;
* electricity is available;
* the population is interested in improving the standard of living through development interventions.

The K.V.D.A./Lodagri W.W.I.D.P is one such project whereby the Government of Kenya is trying to implement these goals of guided social and economic transformation.

In West Pokot such a radical transformation of a traditional economy is expected to be achieved through the District Focus approach. Projects, whether multilateral or bilateral, are organized in such a way as to fulfil the above-mentioned development goals.

Part of this approach includes land adjudication. Land that was once under collective tenure is parcelled out into individually owned plots (see Appendix #4, District Atlas Maps #33e and 33b).
In the case of the W.W.I.D.P. has attempted to modify this move towards individual tenure will be modified or `encapsulated' by advocating a collective agreement between the Farmer's Association and the local government authority, where the integrity of the land within the project will not be reduced through fragmentation of holdings and sale to outsiders.

2) Sigor Division and the Wei Wei River Valley

West Pokot is administratively divided into a number of Divisions such as Lorokumu, Katikekile, Loro Karasuk, Kapochoket, Turkwel Gorge, Nakujit, Sekerr, Aamler, Kanyarkwat, Kongolai, Sigor and Chesegon. These units and names had been subject to frequent changes in pre-and post-independent Kenya and do not correspond to indigenous classifications of the land based on family, lineage, clan or grouping of koroks (to be defined in a later section-see Appendix #5, District Atlas map #30).

Sigor Division is located in a large plain with a number of substantial rivers that flow through it in a highland to lowland, south to north direction, many with eastern and western tributaries.

To the West of Sigor there is the Northern branch of the Cherangani hills, and northwest of this, across the Marich pass, another high area of hills called the Sekerr Range. Elevations in these two areas sometimes reach over ten thousand feet. (see Appendix #6, District Atlas Map #7).

3) The Wei Wei Integrated Development Project.

Since 1988, and based on a bilateral assistance agreement between the Republics of Kenya and Italy, the Italian Company Lodagri and the Kenyan Kerio Valley Development Authority (K.V.D.A.) in the Wei Wei District of Sigor Division, have together been implementing an innovative agricultural development project.

The central aim of the Wei Wei Integrated Development project is, through technological innovation and engagement with the local community, to provide more food for the growing population of the northern section of the Wei Wei river valley and to provide cash to farmers through the sale of seed crops, so that they can pay for necessities and for a number of development needs such as school fees and local hospital services.

Among farmers who still use a traditional furrow based canal system to water their river-side farms, a modern gravity fed, overhead sprinkler system of farm irrigation near their fields has been established. While this technical intervention has been the strength of the project, detailed understanding of the local community's has been unavailable on the social organization and natural resource management of the `kurut' community. Much of this document fills this gap.

In the few years of the project's existence the first thirty-six participating farmers and their families have achieved a marked rise in their standard of living. Once inputs have been paid for by the farmers from their profits they are left with a cash income that is a little less than that of small holders in the successful farming areas around Mt. Kenya.

The water for this project has been diverted from the Wei Wei river (see Appendix #7, District Atlas Map #9b) through a diversion weir and a large underground pipe that flows from an intake built by Lodagri, upstream from the project plots. It runs beside the

traditional riverine farming areas whose names and relationships can be seen on the maps in the Appendices. Within about an hour by foot from his house a farmer can move from his plot on one system to that of the other.

The Wei Wei river flows all year round. Its source is near the Lelan forest from which it flows to the Wei Wei itself. North (downstream from the forest) at the market town Tamkal it is fed by the rivers Kale and Marin.

Pokot elders told me that in the woods there live still a group of non-pokot called Mei. They are hunters and gatherers, who in times past taught the Pokot how to make honey hives which can now be found in the tree branches up and down the hill sides and the plains of the river valley.

Elders also mentioned to me the English agricultural officer Chaundy, who worked in the valley during colonial times and who introduced new crops like the mango trees and maize which replaced sorghum as a staple cereal. So while many aspects of Pokot life in the Wei Wei valley appear to be traditional, the local community has shown an open mind to agricultural innovation.

4) The Local Community and the Project Area

The project area rests within an altitude of 4000-5000 feet above sea level. However, the river which feeds it rises quickly from Sigor to Tamkal (see Appendix #9, map taken from page 25 of the District Atlas) to an area at 7000-8000 feet in height. Thus the flow of the river is rapid and powerful, but elders say that in times past it has been reduced to a trickle and some claim that it has dried up completely during serious droughts.

The new farming blocks are in the semi-arid zone that begins just outside of the valley. They are one or two kilometres away from a dramatic change in altitude and vegetation. Parts of this newly opened area were once farmed in the traditional manner, using river water through the traditional irrigation furrows. These plots were at the end of the canal and before the project began were fallow. Part of them are now part of the project plots and fed by the underground irrigation pipe coming from the intake (see Government map of Kapenguria, Series Z503, Sheet NA-36-12).

The water that feed the project is called by geographers the Wei Wei catchment area (see Appendix #10, District Atlas Maps 9b). The Wei Wei river descends from the southern highlands
to the northern plains through the Wei Wei valley until it eventually merges with the Turkwel river, just north of the newly completed Turkwel Gorge hydroelectric dam.

At the project site it cuts through the extreme northern end of the Cherangani hills. A variety of detailed information about the kinds of rocks and soils found beside the river, the flow of the river and the rainfall pattern since 1952 can be examined in the West Pokot District Atlas (published) and from the Wei Wei Location Profile (unpublished).

Rainfall each year varies from less than 400mm in the low areas to more than 1500mm in the high areas. There are records for Sigor that go back to 1952. The long term mean is 885mm (see Appendix #11, District Atlas chart 3e-Rainfall, Sigor).

The ecosystem of the project area is characterized by reasonable annual rainfall, a flowing river and a community which practices traditional canal fed irrigated agriculture as one of the mainstays of its system of natural resource management. Thus, the attitude of the community towards the modernisation of farming and innovation in irrigation is good and attractive.

5) The Nature of This Study

This study gives an outline of traditional and innovative Pokot natural resource management in the Wei Wei valley with the primary goal of understanding traditional social organization and authority structures, from which to base a set of rules for the Farmer's Association. Thus certain topics such as hunting, honey gathering and fishing and which an important form part of the Pokot repertoire of natural resource management but are not farming do not feature here.

This document explains the principles of the target community's social organization, how farmers organize their work and household, how they decide on who gets water for irrigation and under what condition, and how they maintain the canal. It explains who owns what and who has rights to what as members of different institutions based on gender, lineage, clan, territorial section and member of the Pokot ethnic group. It also shows some of the impact of the project on those farmers who now participate in both systems.

Land is transferred from father to sons which practice results in diminishing amounts of land since more people survive now due to a decline in intertribal raiding and a decline in fatalities at birth. Therefore it is unlikely that the present system of agriculture will in future provide enough food for all the community's members.

The success of the project now depends in part on how the participating farmers, whose ultimate allegiance is to the local community, are helped to organize themselves so that they can more effectively deal with K.V.D.A. and with the commercial seed companies to whom they have been selling their crops.

Some indigenous Pokot natural resource management terminology is included in this study so that project staff can better understand how local farmer's classify and analyze their world.

For example, project staff were unaware that residence areas in the Wei Wei valley are not the same as clan groupings but overlap in many areas, and there are two if not more systems of social organization that exist concurrently and form the social framework of life in the northern Wei Wei valley. Likewise in unpublished documents such as the Wei Wei District Locational Profile the system of koroks is not clearly understood or its functions explained.

Some key areas which needed to be better understood before the new farmer's rules were developed were organization of the project community's traditional farming system, the irrigation system, tenure and the problems and prospects of some of those farmers with the longest project experience.

Part III - Community Organization of Time and Space

A) Indigenous Geography

1) Introduction

Local Pokot have names for over four hundred wild plants and trees in their area which they put to a number uses. We have collected the names of the ten most important plants and trees as well as animals and birds of each indigenous ecological unit in order of their local ranking. We have a hand-written list of the uses of most of the plants which is available on request.

The lists of indigenous plants and animal names, ranked in importance from the point of view of the elders are found in the Appendices (see Appendix #12). At the end of this section I will explain why this abiding concern with wild plants and animals is so important among the Pokot, as well as its relevance to the project.

2) Ecological Zones

The Pokot of the Wei Wei valley divide their environment into four ecological units, the plain-tamka, the river and the land bordering it-lalwa, the foothill or `midlands'-kamas, and the highlands-masop.

Although there are neighbouring, autonomous settlements (korok) in the highland areas, from the intake built by Lodagri to the market town of Tamkal, twelve kilometres upriver, none of these highland areas contain settlements of people who have received plots on the project. As we will later see these households are not within the `kurut' community. Therefore, the settlement and farming pattern of the community that has participated in the project is concentrated predominantly in the kamas, temka and lalwa areas.

These four ecological areas are covered with large numbers of trees, bushes and plants, domestic and wild. The Pokot have local names for all of them and use for building materials, medicine, fodder, fuel and food.

3) Pokot Natural Classification

a) The Masop

On either side of the Wei Wei Valley, left and right, east and west, there are enormous, steep and partially wooded hillsides that often rise up to and beyond eight thousand feet and which form the northern end of the escarpment. From the high ridges or peaks of these hills to a point about half way down the mountainside is the area that the local Pokot call masop.

In the masop there are communities made up of clusters of households called Korok, that own and have rights to the use of the land and water of that specific part of the mountain side. Members of households who live there have rights to build a house, farm the mountainside, pasture livestock, build beehives in trees, and if possible cut small canals from rivers that flow down the mountain and pass their living space on their way to the river in the valley.

Rainfed slash and burn agriculture is the norm for most of the hillside plots. Since the highland areas are large relative to the clusters of houses in any one settlement only a small part of it is farmed at any one season.

According to local understanding it is not worthwhile to farm a plot in the same place each year in this area. Therefore, the land is not distributed in plots that are inherited from father to son, as it is near the river, and access is korok based. Thus there is clearly a difference between altitude, tenure and fallow. Highland plots are not owned by individuals and have long fallows. Lowland plots are owned by individuals and have shorter fallows.

The range of crops growing in these higher altitudes is much smaller than those found below, beside the river. Highlanders grow mostly sorghum and some maize.

Elders have told us that when the inter-ethnic violence between the valley and mountain dwelling Pokot and their plain-dwelling enemies, the Turkana, turns to the Pokot's dis-
advantage, the lowland Pokot, such as those in the project area, temporarily move to highland neighbours.

It is to be understood that korok, or settlements are not the same as clans or lineages, although they are often dominated by the members of one clan which is usually thought of as the founding lineage. Clan is defined here as a large group of families and lineages descended from a common ancestor. So from the individual Pokot's point of view , it is always easy to find temporary refuge in the territory of a neighbouring clan member through relatives or clan mates of a wife, who has married into your family, and perhaps taken up residence in your korok from a distant or neighbouring community.

The paths that move from the lowlands and the highlands connect the various korok, especially on Thursdays and Tuesdays, when there are the weekly markets in Sigor town or Tamkal. There is also the Saturday market in the lowlands at Lomut. These markets ensure that there is trade and friendly communications between Pokot farmers and pastoralists and function to ensure that the inconsistent surpluses of farm production are turned into pastoral products like milk through barter or cash through sale. Thus there is an extensive inter Pokot market for both agricultural and pastoral products.
The most important two trees in the masop are

- the Poyotwo, used for meetings of the local councils called kokwa while its fruits are eaten by humans and goats. The dry leaves are eaten by goats. The gum is chewed as a sweet

by Pokot children;

- the Tingoswo (Flacourtia Indica). The fruits are eaten raw by humans. The tree can be cut for firewood. The leaves are used as fodder for goats.

The most important plants are

- Tumot, which is used for thatching the roofs, for making mattresses for circumcised girls to recuperate upon, and, at the instigation of local religious specialists (werkoyon), for the burning of a special fire that has curative properties. The leaves are eaten by domestic animals.

- Koyoiwon (Pellaea Longipilosa Bonap). It is used for thatching roofs, and the whole plant can be eaten by domestic animals.

b) The Kamas

The kamas abruptly rises from the valley plain and moves half way up the mountain side until it merges with the masop. During the first months of 1993 the following types of land use were observed:

In the lower parts of the kamas scattered households were concentrated. Together they make up named communities or korok, the boundaries of which are distinguished by ridges, slopes or a seasonal stream. The koroks of the project area can be seen with their names in the maps in the Appendices.

In the higher areas there are swidden plots.
Like in the masop there are still large pockets of indigenous forest where wild fruits are gathered. Beehives can be put up in the trees and firewood can be collected in abundance. There are some swidden farms, but informants say that many of them have been left fallow during the last few years, as the project has taken up more of the local farmers time and has given them higher and more profitable yields.

These highland swiddens are cultivated much less than the intensified ones near the river. It may be that the Pokot are aware that,

` Long fallow swidden recreates the diversity ,complexity and use of the biomass for nutrients that existed in the forest. The term alternative forest-like structures (AFS) has been used to describe the "resonance" between the forest and the swidden field. Swiddeners actively recreate the forest in their fields so as to "preserve with some stability the analogical relationships between the cultivation cycle and the natural cycle, and to replace the wild species by domesticated ones that fill the same `functional and structural niches as their wild precedents"(Olafson 1983: 153 citing Oldeman 1981:81) In some swidden groups the boundary between forest and fields may blur, as forest species are planted in the swidden and domesticated species in the forest (Olafson 1983: 155 citing Schlegel 1979).' (quoted from Warner, K. **Shifting Cultivators-Local Technical Knowledge and Natural Resource Management in the Humid Tropics**, FAO, Rome 1991, p.15)

The Pokot/Kurut household comprises one round beehive thatched-roof house surrounded by squat standing storage houses on stilts. Polygamy is common, and a man must build a house for each wife, usually in his korok, which in the project area is usually in the kamas.

A typical elder divides up his riverine plots equally among his wives. An odd numbered plot he will `keep for himself' in order to reduce conflicts. In case of quarrels among the wives, the elder can arrange for one of them to live in a different korok.

Since the kamas is a place where most people live, it is also a place for much socializing and drinking, a place where most livestock is kept and to which they return at the end of the day. Here, also, the elder is surrounded by his children, livestock and a few personal possessions.

Yet it is not the place where most of the farming is done, nor is it the place where formal group deliberations take place and binding public decisions are made.

The two most important trees in the kamas are

- Tuwot (Diopyros Scabra), used for shade and as a tree to have local council sessions under. Branches and leaves are used for brooms while trunk and branches are used to build houses and storage huts. It is also used for firewood and its fruits are eaten by children

- Tuyonwo (Balanites Aegyptica). The leaves are boiled and eaten. The bark is cut and boiled in water and is used as a sort of medicine against symptoms of malaria (puchon). It is cut for firewood, and its branches are used to make a wooden cooking stick.

The two most important plants are:

- Musanya, which is used for thatching roofs and as fodder for domestic animals. Musanya may be used as a cork to seal oil drums filled with `maratino' (honey mead) and to cover the bottom of storage huts before harvested maize is put in;

- Keremut (Helichrysum glumaceum). It is boiled and eaten, and its leaves are used as fodder for animals.

(c) The Tamka

The temka is the flat plain on either side of the Wei Wei river ending with the rise of the steep, wall-like sides of the lower hillside called kamas. In the tamka there are the majority of the irrigated farms. It is an area of good soil. These farming areas lie above the river between the canals (arapogh) that cut across the higher parts of the plain near the border of the kamas. From there the water flows naturally downhill towards the river since irrigation subsidiary canals are cut at right angles to the arapogh.

The farming areas stretch from what the local farmers call the `Lodagri' intake downstream. The canals are between five to six kilometres long. The farming areas have different names and their boundaries are defined by the area that can be irrigated by one subsidiary canal.

The canal that feeds the farming areas is itself divided in two. This division corresponds to the two divisions of the community and which constitutes two groupings of `korok'. These are the people of Machon and the people of Takoch. The settlements or koroks belong to either the Machon or the Takoch division.

Individuals usually own plots across a number of different farming areas. The farms are on the average about one fifth of a hectare. The head of the farm which is upslope is called `mut, the middle is `kwen', and the bottom or tail is `ket

There may be up to seventy plots in any one farming area. The plots may be worked on or left fallow. There is much land litigation for irrigated plots among relatives.

When one looks at the map of the farming areas and plots of an area like Chepilat, it becomes clear that within the last thirty years land and water near the river have become and is considered to be scarce.

Archaeological evidence of cultures of the `irrigation belt'
that stretches from west Pokot down to Tanzania suggests that during the last centuries communities in this belt have worked out a number of solutions to the problem of growing populations and dwindling resources.
These `solutions' probably included:

a) out migration of part of the community
b) total ecological depletion and the migration of the whole community
c) occupation of the lands of enemies
d) technological intensification of production means

The Pokot of this project living in the kurut area could be one example of these kinds of indigenous social and technological `experiments of intensification' where the majority of their livelihood now comes from their irrigated riverine plots.

Between the kamas and the tamka there are the meeting places called kokwa. They are usually under large shady trees and near a major path. Elders together with the younger men meet there to settle disputes and to make collective decisions. These are run in a fairly egalitarian style but those with experience often make the final decisions. The kokwa are the legal and social epicentres of local Pokot life and are central to decision making processes in particular with regard to irrigation and canal maintenance and any form of litigation.

The plain has experienced the most dramatic effects of recent social change during the last twenty-five years, probably because of easy access by outsiders. There is a road on the eastern border between the plain and the kamas. Another one continues south up the Wei Wei valley to the market town of Tamkal. These roads facilitate the market trade for farm produce among farms up to and including Kitale. People sometimes change their profession from secretaries or teachers to that of a trader which gives a better income.

With education there has come changes in religion. There are many churches who send out preachers among the traditional elders and who have social programs in the valley: the Catholics, Anglicans and Lutherans. The rate of their activity is high. (comp. Appendix #13, West Pokot District Atlas, Map 80) despite the elders
strong inclination to cling to their traditional beliefs.

Yet the charitable acts of the often foreign missions and humanitarian organisations like World Vision, the Protestant and Catholic Churches and other have made it difficult for W.W.I.D.P project members to explain to farmers that making them pay for the inputs is not a lack of charity on the part of K.V.D.A and Lodagri, but a necessary first step towards local food security and the management of their own affairs. This is because during drought seasons charitable organisations often gave food donations freely local elders assume that outsiders have infinite resources. Thus no local groups have ever achieved sustainability in their projects without outside assistance during times of drought.

Signs of social and technical change are the setup of primary schools, the abandonment of the traditional housing style for square dwellings with corrugated aluminium roofs, the running of diesel driven maize mills, and which save some women hundreds of hours of domestic labour since grinding a kilo of maize in the mill costs one shilling and takes a few minutes.

The mills serve also as social meeting places for the women and exchange of gossip, since they are mostly excluded from the formal mens' councils.

The boundary between the kamas and the tamka is also a place where enterprising individuals, men and women, make and sell local brew. These are places for socialising frequented by elders, teachers, members of the Farmers Association, and young women. Such drinking sessions may often lead to the explosion of latent conflicts between neighbours and relatives and end in fist fights and litigation.

The two important trees of the plain are:

* Oron (Tamarindus Indica). Its fruits are eaten raw or are mixed at times to food to make a kind of porridge `musar.'
The juice can be used as an eye drop in cases of eye irritation. The leaves are eaten raw, and the branches can be cut for firewood. The tree is also a shady tree for kokwa meetings.

* Tulungwa. During the rainy season the fruits are eaten raw. The branches are used for constructing the roofs of storage huts. Branches can also be cut as firewood.

The two most important plants are:

* Warerian used for thatching houses and storage huts.

* Solyon (Schizachyrium Sanguineum) which is used for thatching houses and storage huts that contain maize and sorghum. It is also used to make external cover for beehives (moghen). Domestic animals can eat it, and children chew on its stems while it is still growing.

The plain merges slowly with the drier areas in the region such as the Masol plain, northeast of the Wei Wei valley, inhabited by pastoral Pokot. Pokot farmers also have hunting rights there, while the pastoralists are free to move into the farming areas with their domestic animals so long as they do not graze farms with growing crops. Both pastoralists and farmers conceive of themselves as one people who live in the Pokot homeland,`korenja' and do not raid each other.

During the harvest pastoralists often show up at farmer's plots and may help in harvest in exchange for their rights as gleaners of rejected maize cobs, called the `children of the corn'.

The pastoralists have not gained much from the project, and there have been some violent incidents in some project plots as a result of fencing on experimental farms and the subsequent adoption by the farmers association of a rule to ban livestock from grazing on the new plots. Such new land usage rules are very often not observed by traditional pastoralists and herds of cattle are sometimes seen roaming freely across project plots.

d) The Lalwa-Lalwa

The Wei Wei river is considered by the local people as the source of water and the source of life. It is also the source of all canal water. People fear the occasional drying up of the river which elders remember has caused severe famine in the past. The elders claim that they can establish contacts with the spirits of the river. Individuals explain their temporary disappearances by having been kidnapped by water spirits. Children are warned to be careful in the water.

Men, women and children have their bathing places in different parts of the river. Most domestic livestock is watered at the river, and drinking water for homesteads is fetched from there. Game comes to the river for water and is hunted there although KWS has tried to restrict this activity. The river is also the source of fish as a supplement of the diet. Since there is wood and water in abundance the river is also an ideal place for making brew and shady trees offer a resting place to sleep off the effects of drink.

Although the Pokot hunt a wide range of wild animals they do not hunt elephant and lion for their subsistence. These two animals are killed only once they threaten livestock or destroy the farms.

The most dramatic change in the appearance of the river has been construction of the intake a few kilometres upstream from the project plots, at the top of the indigenous canal that irrigates the local farming areas. Records of local rainfall and by implication river flow can be found in the District Atlas Map referred to above.

The two important trees in the riverine forest are:

* Makang, which is used for shade, while the fruits are eaten by humans ,sheep and goats. The sap is used to draw decorative designs on arrow shafts and stools. The branches are used to make the body of beehives.

* Murkukong. Its roots are boiled to prepare a medicinal drink for intestinal disorders and enlarged spleens. The leaves are also used for goat fodder.

The two most important plants are:

* Kusoyo, which is collected, boiled and eaten by people. It is also used as fodder, and it serves as a medicine for stomach disorders;

* Suroyo (Gynandropsis gynandra), Its leaves are boiled and used as a vegetable; goats and sheep use it as fodder.

According to elders in cases of drought and famine wild animals and plants function as back up systems to keep people alive until they can return to farming.

The entire system of knowledge and use of wild animals and plants acts a back up system to the agro-pastoral economy. When farming fails they can gain enough food from hunting and gathering in order to survive drought and stay alive until the next rains rejuvenate the farming system.

Organizations such as the FAO are beginning to realize that slash and burn systems like that of the farming Pokot make sense when seen from the point of view of the farmers themselves than from that of outside experts who see swidden as a damaging from of natural resource management. As one analyst puts it:

` The strategy of swiddeners makes sense in terms of game theory, for as decision makers they determine how much labour to put into each of the various subsystems so as to receive the best "pay-off under given circumstances " (Smith 1972: 421-22). It is because they utilize more than just the agricultural subsystem that shifting cultivators are sometimes perceived as being "part-time" agriculturalists; in fact they also hunt, fish and gather wild produce for market (FAO 1070). This multi niche strategy, combining agriculture with hunting, fishing and gathering, with labour being invested as needed, creates an agro ecosystem that can be highly productive, stable and sustainable. If one system fails, the utilization of another subsystem can be intensified to provide sufficient food (Warner 1981). In some instances, if the agricultural subsystem loses its reliability because of land shortage or degradation, fishing and gathering may become the central focus of subsistence activities (see Nietschmann).
(quoted from, Warner, K. **Shifting Cultivators-Local Technical Knowledge and Natural Resource Management in the Humid Tropics**, FAO, Rome 1991, p.12)

For the local Pokot life is lived within the narrow geographical confines of the masop, kamas, tamka and lalwa. In one respect this report is an analysis of the daily life of the local community and its interaction so far with a major engine of social change, the Wei Wei Integrated development project. If it succeeds then the Pokot will no doubt incorporate it into one of its many subcomponents in the food system. If not then energy now concentrated on the project will be redistributed along other resource using lines.

B) Time

Time is measured according to parts of the day, weeks, months and years, but also according to age sets.

1) Parts of the Day

The Pokot of the Wei Wei conceive of a twelve hour cycle as one sun, and both the day and night are divided up into units - not all of which are of equal duration. The day is called poghet. The first part of it is called tokwogho, which in turn is divided into two parts.

The first is keywas (referring to the light of the sun from below the horizon until the sun shows itself), and the second kapusu asis, which lasts until koghyo asis, when the sun is upright, that is noon. At keghyo asis shadows begin to form. This period lasts until about three p.m. Then follows mnun. The late afternoon is called the kekona asis kogh, which means `the sun sits on the stone,' that is the sun is close to the cliffs. The next general period before dusk and dark is called kekona asis, when the sun is descending.

The night is called nangat/agho, the first of which is kararis from seven until eleven p.m. The second half, kamuta ends at kchip being the red glow of the sun before sunrise.

2) Days of the Week

There is no proper word for the western concept of week. Practically the week is often counted from market day to market day. The names of the days are:

a) Akong kassa (one), kassa (from Swahili), the first working day Monday.

b) Odeng kassa - day two

c) Samuk kassa - day three

d) Makut-chepakachora (from English `market)
/Chepakachora- a gathering of people in order to exchange things)

e) Mut kassa - day five

f) Mut ngo aking - five plus one, day six

g) Mut ngo adeng - five two, day seven

3) The Months

The months can be seen in the appendices (see Appendix #15, chart `kony akong')

Arawa is the word for month. There are twelve months in each year. The year begins in what corresponds to February.
Kony akong means a duration or a season. Konyis in the plural and means one of our western years. The term may have changed during the last sixty years to correspond with the western calendar.

The beginning and the end of the month is calculated by the position of the moon in the sky, kerel being the day that the crescent moon shows itself, keyech the last day of the month when the moon rises in the morning, almost at the same time as the sun.

The names of the month seem to have been given according to the main action that takes place in the farming cycle. These names are particular to the agricultural Pokot, and apparently the pastoral Pokot adopted them from the farmers.(For the organization of the labour cycle and its relation to the crop cycle see Appendix #16, the two seasonal calendar graphs).

Calendrical understanding effects the ruling of the elders in irrigation requests, since it is known that different kinds of sorghum, for example, need water at different times of the year and this is a regular annual cycle.

The names of the months and their agricultural activities are as follows:

a) Tapach (September), when sorghum is appearing in different places on different plots in one farming area. It is

a time to clear the farm for sorghum, and for preparation, clearing, burning, irrigation, planting and digging.

b) Kopsut (October) Clearing the grasses growing from the banks to the centre of the arapogh, the irrigation canal.

c) Kokelian (November) A constellation of stars, that appears first in the night sky and which is accompanied by a cold wind. It is time for the third irrigation but also for weeding and separating clumps of germinating sorghum seeds in plots planted during Tapach.

d) Kwowe (December) The mating season for goats, and the time of chasing birds and wild animals away from the plots.

e) Mu (January) Guarding the fields continues day and night.

f) Terter (February), The name means `raindrops' referring to raindrops that disturb the work of the women in the fields. The women come to their fields and take some of the semi-ripe stalks of sorghum to dry them. Clearing of an overgrown shamba is started this month.

g) Pokokwa (March). This is the beginning of the second series or the second traditional year. Pokokwa means belonging to kokwa, the traditional council of elders, since most elders are meeting at this time. It is the time of clearing and burning plots for the coming season and the time for harvesting the crop of the previous season. Rain is expected to fall, and people believe that this rain brings disease. They pray that the rain will come gently.

h) Aruksa (April) is the time of the full rains, from planting and replanting. Feeding is done during the last week of the month.

i) Porowa (May) refers to rainfall occurring in distant places while there is no rain at home. It is the month of weeding and irrigation.

j) Melwan (June) is the month of the first harvest. Maize farms are irrigated.

k) Sukuk (July) means that there are clouds in the sky but no rain. Women do slashing with a panga in the maize fields. Men build shelters for night guarding in the fields.

l) Mukeyon (August) is the time of cutting maize plants which are then put in heaps to dry.

The above calendrical sequence in some ways is similar to that of the new project. Yet it is at the same time more flexible and unpredictable than the sprinkler irrigations system. No doubt each elder is modifying the allocation of time, labour and resources to try and incorporate the old and the new. However for those readers who want to jump ahead to the section on the first farmers they will notice that a significant number of farmers appear to be overwhelmed by their newly created food surpluses and cash wealth and spend much of their time drinking away their profits.

4) Year Groupings

Groups of years are put together in such a way that they correspond to an age set, a group of circumcised males of roughly the same age. Such periods used to last twelve years. Today the gaps between the age sets are getting smaller and boys are circumcised younger and more frequently. The decision to circumcise a group of boys comes today from the plains of Baringo, from where the news of ceremonies there spread to the Wei Wei valley, and then groups of young boys demand that they all be attended to.

The age sets constitute a significant institutions among the kurut Pokot. As will be seen in the sections on irrigation and canal maintenance it is the oldest ages sets that have the most authority. Such a system can create a conservative environment when a society is confronted with technical innovations. Also it must be given a from fro expression in the new rules for the farmer's associations. In an elective situation no doubt many elders will be asked to serve the proposed committees. At the same time they will sit with younger trained Pokot who understand the project. Thus their respect will be maintained yet the influence of younger age grades will be strengthened.

C) Social Geography

1) The Rural Community

The Pokot of the northern Wei Wei valley are divided into two groups of koroks. One group is called Machon while the other is called Takoch. They are distinguished from each other by among other things access to canal water.

Each of the groups thinks of itself as being part of an overall community that they call Kurut. It is from the households of this overall community, as part of a natural and socially recognized unit in the valley, from which the chiefs, together with the local councils or kokwa, allocated the project plots in the last few years.

The koroks of the people of Machon are:

Chepkoser, Tiyam, Tikit, Sangat, Poto, Kocheloi, Sukotket.

The koroks of the people of Tokoch are:

Orolwa, Katapes, Atarel, Korolach, Puman.

Each group has access to one of the two branches of the canal.

The boundaries of the korok, the divisions of Kurut and the clan composition of each korok are varied (see Appendix #17, tree diagrams; kurut, koroks and farming areas).

Each korok is made up of a group of neighbouring and cooperating households from a number of different lineages and clans who live together in a common hillside territory and who help each other. However, korok is just one kind of social organization which can offer group solidarity, help and hospitality. There are other, sometimes overlapping but often distinct social groupings.

It is also important to note that in the farming areas 75% of the households of Takoch farm within their own farming areas. The other 25% is carried out in the area of Machon. Similar figures may be given for the people of Machon, where about 25 %farm in the area of Takoch. The boundaries of farming systems are never the same as communities of korok or parts of the kurut. There is always overlap.

The overlap in farming may be explained by a combination of three situations:

- a plot may be rented for one or two season;
- 'inheritance practice', that is a plot is transferred through the female line temporarily, and is then claimed by the children of the male line who have married
- confiscation of a plot by the elders is common in cases of manslaughter; the plot is transferred to the family of the victim.

2) Overlapping Local Social Systems

A brief description of the social systems that affect Pokot daily life is given below:

a) Korok

A korok is a named territory, dominated by males descended from a common ancestor thus forming parts of a clan. However, most koroks have more than one clan residing within its borders. It is possible that the system is changing and that in the past clan and korok membership were the same.

Each korok has a kokwa, a place where elders discuss the issues of the day and settle minor disputes. There are larger kokwas located near the river to settle disputes among several koroks.

b) Clans and Sub-Clans

In contrast with the korok which are people that one cooperates with on a daily basis, clan members live far away, yet still being people who you can call upon.

Clans comprise groups of lineages who by claiming a common ancestor stand in relation to one another according to a set of rights, obligations and avoidances, the most important of these being exogamy.

Exogamy defines the rules that any one society adheres to as to who you can and cannot marry. Among the Pokot members of the same clan may not marry each other, no matter how far removed they are from each other in time or space.

Exogamy ensures that a woman usually enters a man's household from outside. Exogamy generates 'out-migration' of daughters, while the sons remain near their father's household and the farming plots which they stand to inherit. Exogamy also explains why women do not inherit land in the Wei Wei valley. Women are bound to work for someone else's family, and in the section on tenure we will see that this is the reason that they own only the clothes on their back.

From the father's point of view, there is no return on the investment of the rearing of a daughter. Thus, the

custom of brideprice could be explained where the groom's family gives animals to the bride's family in compensation for their child rearing efforts and for the loss of productive labour. It is important to point out that a good portion of livestock are kept in order to pay these bride prices from a man to a woman's family.

c) Kapor

Kapor refers to all the brothers and half-brothers of one father, although they may have different mothers. Wives who marry into a family become part of the kapor but only through residence, not descent. Kapor members often live in the same korok, all belong to the same clan. In this sense they form the basic lineage.

They have rights and obligations towards each other, the most important of which is the levirate, where a man is expected to marry his deceased brother's wife and take over his children.

d) Kapitei

Kapitei is a group which includes your wife's father, mother and sisters of the wife's father and mother, your wife's brothers, sisters and half-sisters who usually live at a distance. Through your wife, and vice e versa, they may make claims on you when in need.

e) Kamama (Mother's Brother)

Should sons not get on with their fathers, they may turn to the family of their mother's brother, since the mother's brother is expected to help pay the brideprice of his sister's son. This may be one of the reasons that when examining the clan basis of Korok in Kurut not all brothers end up living in the same Korok.

f) The Age Sets (see Appendix #18, age set chart; most senior on top to junior on bottom).

Every few years a group of youngsters past puberty are circumcised as a group. After a few of these groups are circumcised they are named and form part of an age set.

Membership in an age set serves to create organizational categories that establish relations of authority in situation like irrigation adjudication and

canal maintenance. In the past the younger age sets would often spearhead raids against enemies

The age set also eliminates the inequalities that arise in a polygamous situation where the first born child of a son can be older than the last child of his father, thus confusing the usual correlation between age, generation and time.

The age sets equalize individuals according to their actual age and provide for a level of ordered authority between groups of age-classed males, who move up the ladder over the time. The system provides for a degree of gerontocratic authority which permeates local Pokot society.

The overall purpose of these interacting social systems, despite the ecological autonomy of a korok, provide the society with a number of services, while the movement of women into and out of the korok, and clan members being spread across koroks ensure that there are cross cutting interests, sympathies and relationships which allow for mobility and peace within the Pokot in the valley. The possibility of one family, clan or korok ever gaining enough power or resources to lord them over other korok is thus reduced. Although there are richer and poorer families, these are not concentrated in any one place and do not (yet) form a class.

Thus the above mentioned local institutions of the Pokot of the Wei Wei valley could make one think that they constitute a kin-based or clan-based democracy. The headman, though often hereditary, is merely primus inter pares, who can not compel compliance. He rather offers advice. Decisions are reached through discussions and informal consensus, and sanctions are applied exclusively through the operation of informal mechanisms and social control.

It has to be noted that the community leaders at present are actually the few surviving members of the oldest age sets which thus give a gerontocratic slant to Pokot authority structure.

Taking this into account the organization of the first draft of rules puts most decision making authority into the hands of outside government authorities. Given what we know of Kurut egalitarian tradition such an agreement would not be honoured by the local people. Pokot feel that for them to receive or give compensation it must be within their local concepts of justice which put much store in levels of responsibility at the individual, lineage and clan level. This principle of graded responsibility forms the context for the rules as worked out with the farmer's themselves.

At the same time the recommendation that the literate male children of plot owners should be trained to manage their block and all blocks in an equitable and representative way does not significantly conflict with local customs of governance since elders recognize that they have new skills which can bring all local Pokot agricultural and financial benefits.

3) The Urban Community

Reference is made to the town of Sigor, the largest urban area near the project site. It is a market town where farmers and pastoralists meet, markets taking place on every Thursday. The town includes a full secondary school.

As of May 1993 the expenses per student per year have been eight thousand shillings, a high amount £or the families on the project. Some elders hesitate sending daughters to school for fear that they will prefer a life of comparative physical comfort (as a lady of the night) to coming home and taking care of their families and households.

The town is the location of the divisional headquarters. It also has a number of shops and butcheries, most of them owned and run by Pokot. Its economy is not dominated by Somali, unlike in many similar towns in northern Kenya. Probably a number of local Pokot entrepreneurs would be willing to take on or jointly carry out various aspects of the farmer's association work, such as accounting, marketing, engagement in local transport and the like.

There is a branch of the Kenya Wildlife Service. Sigor is also a Matatu station between Kainuk on the road to Lodwar and Ortum on the way to Eldoret.

There is also the Cereal Board storage facility built with the assistance of the Italian government a few years ago. Under present Kenyan law farmers are not allowed to sell or barter anything but a small amount of their maize crop. The grand part of it must be sold to the Government. Recent legislation has changed that but it is still not widely perceived at the local level.

Once this is the case then in addition to selling sorghum on the seed market farmers may also sell maize nationally.

Part IV-The Division of Labour

A) Traditional Farming

1) Introduction

Farmers grow a number of crops on their irrigated farms that are fed by two local canals (see Appendix # 20,charts on kinds of food) Traditional crops are still grown such as finger millet but more and more maize is grown wherever possible.

Although farm and canal management appear to be organised according to century old traditions, farmers are open to changes in kinds of crops. The best example is the English agricultural officer Chaundy, around WWII who introduced maize and mangos.

Crops grown on riverine plots are maize, include cassavas, mangos, oranges. A few experiments with pineapples are made on one plot near the canal on the road to the Lodagri intake. The most important crop is maize.

The following is a description of farming stages of a one-year period when one farmer runs a series of plots in different areas. The-case described here is a rain-fed maize farm which needs irrigation at key stages in the growing cycle.

In a polygamous marriage each wife is given a lifetime right to use a plot which is then inherited by her sons. Thus, although the sons of one father legally inherit their plots through their father it is via their mother that they work on them while he is alive and they are still unmarried. Daughters do not inherit plots.

2) The Maize Cycle (s. Appendix #21, chart-farming activities)

Farming activities throughout one year are divided between activities during the dry season and those during the wet season (see corresponding chart).

a) Dry Season Activities

i) Preparation

A typical Pokot elder owns plots in different farming areas between the two canals of the Kurut and spread across different parts of the river. When choosing a plot for

farming he must ensure that there is a fair number of farmers around who plan to work in the same area at the same season.

A farmer alone cannot protect his crops against wild animals. A group of farmers have a better chance in the kokwa to get permission to get water for irrigation. Water is allocated to farming groups that use secondary canals rather than individuals.

The main sochot that leads from a canal and which acts as a local, subsidiary canal for a group of adjacent farms, is rarely opened by the local council for one person, since it is groups of farmers who share in the use and the maintenance of their sub canal. During sessions of the kokwa farmers themselves together decide the period when they start to clear their plots.

The typical farming tools include a panga which is used for clearing vegetation, cutting of firewood, and during irrigation, to clear the canals and to channel water across the plot. Komo is the name of the wooden stick with a hook on one end which is used for holding a plant in such a way that it can be easily cut. During the last fifteen years slashers have been used for clearing low lying grasses.

They have come in use since 1978 and can be obtained in local shops. Ngintuyan is a wooden stick which is V-shaped at the top and which is used for gathering cleared grasses or branches and heaping them into piles for burning.

ii) Rasa-Clearing

Clearing a plot begins in the morning. The farmer will work together with all his grown sons. If the farm has not been cultivated and has reverted to bush, he and his sons are responsible for cutting down trees and grasses. It takes about four men working from morning to afternoon for one week to clear one plot in the irrigated zone. The wives prepare food at home and take it to the fields. The traditional food container is called 'korop'.

Every farm in these irrigated areas has a top and a bottom called 'mut' and 'kel'. The sides of the plot are called 'kamass' (not to be mixed up with the land zone 'kamas'.) Every plot has a resting place under a large shady tree, where tools, shirts and sandals may be kept.

Each day a certain amount of space on the plot will be set aside which must be worked on and finished during the day. This space, which is the work goal, is called 'matin'.

The size of the matin depends on the number of workers at hand, on the strength and speed of the farmer himself and/or his assistants, and on the nature of the work. The work on the 'matin' begins at the line that demarcates the goal of the day's work. The workers face uphill, towards the 'top' of the farm and they work inwards until they reach the top again. A farmer will not clear from the top down but from his matin boundary inwards. When the plot is irrigated, it is the first place to where water is directed (see section on irrigation)

During the clearing period, once a matin is marked out it has to be finished the same day. The average amount of clearing done in a day is two matin, no more.

Clearing the undergrowth of a farm that was used the previous season takes about three to four days. A farm that had been fallow for more than one season takes up to week.

The owner of a farm will often tell his neighbours at his korok that he needs help in clearing, and he will mention that he is able to give the local alcoholic brew busaa made out of maize to anyone willing to lend him a hand.

The request is made openly and most people feel obliged to help if they can. The custom is known as 'kiyech'. Yet there are no ill feelings if someone cannot make it to come to help.

iii) Burning-Pelat

Burning is done during the afternoon or evening. Once the plot is cleared, cut shrubs and grasses are left as they fall in order to dry.

After two weeks the owner sweeps them together with the ngintuyan, and he puts the dried material up in small piles in the middle of the farm or, on top of a large mound of accumulated agricultural detritus, which is kept at the end of most farms. It is called kopta. If the owner does not have his own kopta he takes any excess from his farm to the kopta of his neighbour.

Fire is lit by means of firesticks 'piyghon'. One stick is prepared with a hole. This one is put firmly on the ground. The other one has a sharpened and pointed end which is inserted into the hole of the first one. The farmer rubs the sharpened stick with his both hands back and forth until a glowing ember

starts burning.

A piece of ember is to pop off onto a piece of bark which serves as a tinder. By means of a panga ember and tinder are then put on dry grass. The farmer blows onto the dry grass and adds dry grass and bits of wood from his piles. This is the starter fire for all his piles. If fire gets out of hand and invades neighbours' farm, there is a fine of goats to the kokwa.

If the farmer has put some stuff on his own kopta he burns it. If he has put some on his neighbour's, because he does not have his own, he burns that bit last. Finally he uses his ngintuyan to distribute ashes around parts of the shamba to cool down the last burning stems.

iv) Ngorat-Digging

The next morning the farmer and his grown-up sons and daughters will commence digging. The wives stay at home to prepare food which is taken to the fields. Digging is done with the jembe. The farmer will decide on the size of the first matin, which is normally quite large, and then on the size of the next ones depending on how tired people become.
Two matins may be worked on a day. The clearing of a plot with about five workers takes from four to seven days.

b) Wet Season Activities

The long rainy period of the bimodal season begins around April (Aruksa). This is the time of planting (Katakata). Elders normally wait for the first rain as a signal to begin planting.

The activities described below are the ones for one plot.If a farmer is taking care of a number of plots these stages will intentionally be staggered so that if he cannot participate in every aspect of the work he is at least there to participate in and supervise.

Note that the average farmer, who has several wives, has to attend to all the plots that he owns and to work with his respective wives and their children.

This staggering of plot management is advantageous when the farmer later requests water for irrigation at the kokwa. Irrigation takes a lot of time, sometimes a whole day and night. In the initial stages the farmer is usually engaged full time in irrigation. It is extremely difficult for the farmer to irrigate the same day two or several plots that are far away from each other.

i) Katakata-Planting

Katakata is the first part of the wet season cycle. Seeds, most often from the last harvest, or obtained from shops in Sigor, are kept in the house. The farmer normally waits for the first rain to fall and takes this as a sign that planting can begin.

Planting usually starts at the head, mut, and it is done facing the sides of the farm, kamass.

The farmer, his wife and his sons and daughters help in planting. The man and his elder sons have jembes to make holes, his wife carries a bag of seeds. The-rules of planting are:

* plant two to three seeds in any one hole
* if some insects have got at some of the seeds four or five have to be put into one hole
* seeds are not to be buried in hard compacted soil, only within loose soil.

(If one looks ahead at the section on the project planting regime one will notice that the organization and style of planting is much more reminiscent of agricultural practises than here which is technically a horticultural system-for a comparative chart of similarities and differences between the two systems see the chart in the section on project problems and prospects).

The father and the elder sons dig holes with the jembes, normally one stride (kel akong-one leg) distant from each other. The wife, elder daughters and younger uncircumcised sons follow to place the seeds in the holes.
The seeds are put in the holes with the hands and press them down with their feet. The women plant two seeds in one hole and three in the next one, and so on.

This pattern often occurs because the farmer has a small amount of seeds available. The planting takes place throughout the day.

ii) Kapping-(replacement of seed) Kiliput

One week after planting the farmer checks whether the plants have begun to germinate. Normally for each hole two plants to begin growing are to be expected. If some holes

have not started, the farmer takes his jembe and puts in two or three more seeds. If there is only one plant germinating in one hole, two seeds are added. Kapping begins at mut and ends at kel. It takes up a few hours of one working day.

iii) Ratakwa-Weeding

One week is allowed for the new seeds to germinate. Weeding begins once the plant has developed four sets of leaves on the stalk, and it is easy to distinguish the plant from the weeds. Weeding is done by the whole family. Only one daughter is left at home to prepare food. The matins for the day are this time allocated by the wife according to the number of people helping. There will be a two-hours rest at noon. Husband and sons then leave for the kokwa, and the wife and daughters continue to weed until about five p.m.

At the kokwa the farming cycle and the state of the main sochot, the subsidiary canal, are discussed, since a consensus for the organisation of necessary repair work must be achieved. In olden times men would often go hunting antelopes and gazelles with bows and arrows. Most likely this is still the case although it is against the law.

iv) Chalat-Irrigation

Four days are normally the period for the cut weeds to dry out, while irrigation begins right after weeding. Elders have to make sure that their requests for water will be heard. The requests are not always granted on the first day they are presented, the requests often have to be repeated. Normally the farmer is given one or two days notice for irrigation. Before irrigation, the farm has to be levelled to ensure that the water will-flow evenly.(see section on irrigations).

v) Ratakwa Odeng-Second Weeding

The second weeding begins three weeks after the first one and takes about five to six days. This is often the first week of the month of Paro (May). Second weeding is done exclusively by the wife and daughters of the household. The mother may ask her younger sons for assistance, yet these may prefer going hunting for small animals instead. The farmer himself may have to be at the kokwa to ensure that he gets permission for irrigation, in particular once he has several plots under cultivation.

vi) Cholsio Odeng-Second Irrigation

The 'second' irrigation is necessary just when the crop is about to flower, yet at this time of the year it is difficult to obtain irrigation rights during the night or day. It is up to the kokwa to decide, and there is much potential conflict because the need is great and timing is important. Such conflicts can become violent.

Often four instead of the usual three or four users of a main sochot are permitted to irrigate together, using subsidiary canals to water their shambas during the same day or night. These demands reduce the water level in the canal, which is one of the causes of social tension. (one example is given in the appendices).

vii) Susat-Cutting Grass

Maize usually flowers towards the end of the month of Sukuku (July). At this time grass that grows on the plots is cut, which is normally two to three weeks after the second irrigation. Like weeding it is a women's task. The women begin the work rather late in the morning since the morning dew has to have dried up which makes the work easier.

As is the custom, the women start the work at the head of the shamba (mut) and work the way down to kel. Grass is cut with the panga, and the grass is left to dry where it falls. Elders believe that grass growing among maize plants will prevent the maize leaves from spreading and stop the plant from gaining height.

viii) Ripot-Guarding

Once the crops are high, they have to be protected against wild animals, in particular against baboons that live in the forest near the farming areas. Other animals are porcupines and small rodents.

a) Ripot Agho-Nighttime Guarding

Nighttime guarding begins when the plant starts flowering. A 'sopotwa', that is a tiny gazebo-like pavilion in the middle of the farm has to be built. The 'sopotwa' has to have poles for the support of the roof and a different type of poles for the roof itself. To build a sopotwa takes about one day, the work being done by the farmer himself. The grass for thatching is taken from the one being cut on the farm during the 'susat' period or from nearby fallow farms.

The farmer uses his bow and arrow and spear to fight the animals; he also has a blanket against the cold and some

corn flower to cook a meal. He regularly makes sorties and walks around the plot. He may even make noises and throw lumps of soil to chase animals away. Once he detects intruding animals he may kill them and even cook and eat them. In between he may take a nap at the sopotwa.

b) Ripoto Poghet-Daytime Guarding

Daytime guarding begins at the end of July when the maize is beginning to ripen (kanamakwa), and the crops have to be protected against birds.

The farmer makes a platform ('parayun') to stand upon out of poles, cross bars and smaller poles for the raised floor and some for a sort of ladder. The pieces have to be tied together. It takes about two days of work.

Farmers prefer to set up their platform on the fallow farm of a neighbour and if this is not possible beside or near the sopotwa. The younger boys and girls will come early in the morning and watch throughout the morning and sometimes the day. They have sticks with mud at the end and fling it at the incoming birds, yet they also have to chase baboons and monkeys away. The mother will bring food during the day. The children may leave the platform and may go home in the afternoon. Girls may go and gather wild fruits or grind maize, while boys usually go hunting.

The farmer spends most of his time at the kokwa, he will sometimes take a nap there, since he has to take care of the night guarding. Guarding continues until the maize is cut and heaped.

ix) Putin-Cutting and Heaping

Cutting and heaping is carried out by men only. It takes about three days. The men go early to their farms to cut and heap before the heat of the sun is up. They begin this job working from 'mut' to 'kel', and they cannot use the 'matin' system to organize the work load. A farmer may be assisted by his older as well as by his younger uncircumcised sons. The maize is piled up like infantrymen's rifles at rest.

Women make sure that their storage huts in their household compounds are in good shape. There are three types of store huts the first two of which are outside the house:

choka - a small hut raised on small stilts
katar -a large storehouse, almost as big as a human dwelling

kapatapot- a small one located inside the house.

It is important that the grass in the storage place is changed before every harvest, otherwise insects lodged in the old grass will eat up the new crops.

x) Ilot-Separating and Storing

The cut stalks are left on the fields for two weeks. Farmers stop nighttime guarding yet continue daytime guarding to protect the maize from baboons. Ilot takes place during the month of August (Mukeyon) for about four weeks depending on whether planting had been done early or late in April. All the family members work together.

Work begins early in the morning and consists of two activities: The maize seed has to be separated from the plant. Everyone throws the maize in one place and then when separated from the head, throws the stalk over the shoulder. Work begins at the head of the shamba, `mut', and must end at the end, `kel'.

The owner makes sure that they only collect as much maize cobs as they have participants who are able to carry bags of corn back to the household the very same day. The elder in charge will also make sure that only the best quality maize cobs are selected to be put into the bags.

The wife will fill the bags of the younger children. Damaged or smaller cobs are left for gleaning the right of which rests exclusively with the pastoral Pokot from the plain. This is one customary way of maintaining symbiosis between highland and lowland, farming and herding Pokot.

The bags with the maize are tied with ropes and carried home. People normally rest for thirty minutes half way.

The maize crop is often stored high up in the house rather than in the outside storage huts. The woman of the house will climb up and her husband will hand her one bag at a time which she will store from one end to the other.

Sometimes two runs a day are done by those whose farms are nearby, otherwise only one. In case people are hired, busaa is prepared, which-the workers can take home in their own containers.

Pokot farmers of the Wei Wei valley live in what appears to be a complex symbiotic relationship with the pastoral Pokot, many of whom live within a few kilometres of the Kurut and the project. Every market day (Thursday) in

Sigor has 50% pastoral Pokot visitors who come to exchange
milk for local agricultural products like maize in what anthropologists call a none monetarized barter system. wild animal meat is also available in town to those who know but this again is against the law.

The underlying theme is that a part of the harvest is set aside for pastoral neighbours who share the same language and culture, and this is one aspect of ensuring that conflict between farmers and plains dwelling pastoralists is kept to a minimum (see Appendix # 22 for charts that outlines slightly different routines different crops such as the sorghum irrigation cycle and the cassava farming cycle).

B) Chalat-Traditional Irrigation

(see Appendix # 23, chart on basic irrigation stages)

1) Introduction

Each farming area is served by its own subsidiary canal called sochot and from which farmers draw water for their plots. These farming areas are bound by the irrigation rules described below. For example `Sos' farming area is exceptional in that it is only irrigated at night while Reper is exceptional in that the sochot is open continuously, probably, because it is right beside the intake.

Pokot in the Kurut area use irrigation because they say there is not enough rain to water all their plots throughout the year. This system is called arapogh - ara means way and pogh means water.

It is the elders of the most senior age set called `sowo' who ultimately decide on the distribution of water. When all the members of that age set die off the senior members of the next age set (kapsas) inherit the authority over canal water distribution. They are also in charge of arrangements for maintaining the canal.

Since there are two branches of the canal which correspond to the two major social divisions within the local community Kurut (Machon and Takoch), it is the elders of Machon who decide upon irrigatlon rights for the people of Machon, and the elders of Takoch, who decide for the irrigation rights of the people of Takoch.

The council that discusses and decides upon water distribution is the kokwa. The members of a kokwa are all the males who belong to the age sets in order of seniority. Yet, despite the openness

of the councils and the fairness of the adjudication system,
it is ultimately the few old men of the sowa age set who
have the final say. This gives an oligarchic and gerontocratic aspect to the system where a few individuals decide on water distribution, despite the fact that it is shared out equally among those who ask for it.

The periods during the year where most irrigation are needed are:

* For the growing period during the short season irrigation clusters around September (Tapach) and November (Kokelian);

* During the long rains irrigation clusters during the months of June (Melwan) and July (Sukuku).

There are two kinds of irrigation, one for the day called `pogh poghet', and one for the night called `tighot'.

2) Preliminaries

a) Kimwaghat-The Request.

During the farming season the kokwa is open every day, the sessions taking place normally under a fig tree called mokongwo. When farmers travel from their houses to their farms they usually pass this tree which is at the edge of the residential and farming areas. After work on the farm they come to the kokwa for rest and discussion.

During the farming season dryness affects people's plots around the same time, even if planting is staggered. Requests for irrigation have to be submitted to the kokwa for permission, yet they do not come in the same day.

Permission for irrigation must be obtained for each plot on a one by one basis. The applicant has to come to the kokwa and explain why he needs water and where. After all applicants had their cases heard, a senior elder gets up and formally announces that they have heard their requests. The decision to let out water in one place is influenced by the number of requests coming in from one area near the main sochot.

Requests by a group of people from one and the same farming area are dealt with first; opening the main sochot for one person only is considered a waste. At any one time, that is during an irrigation period of twelve hours, in a major farming area with a major sochot, the elders will only allow up to three farms to receive water.

b) Inspection

The elders ensure that neutral observers inspect each farm whose owner has requested water. Then the elders select a group of junior elders from the kapsas age set (second most senior) to go themselves and visit each farm alone, unaccompanied by the owner. The junior elders visit each farm and compares them according to the degree of dryness. There are three categories to rank farms:

* kanam silanot-the beginning of the withering or dryness
* silanot-withering, the whole plot is dry
* yamat- so dry that the maize crop changes colour.

After inspection the elders present their findings to the kokwa and rank the farms from each farming area according to their need. The farms are ranked within their areas, such as motokorwa or sos (which are also irrigation units) and according to their farming areas from the most dry to the least dry.

The priority always goes to that shamba which has crops which are almost ripe and ready to flower. the reason is that the dew keeps the new and short cropped shamba moist, but it will not be sufficient for the higher growing crops. Another factor to be taken into consideration is the soil: Loose, sandy soil is often said to burn (pelat) a man's crops if it is left alone.

Yet the ranking and presentation of information on the dryness of farms does not automatically determine the elders' decision as to who gets water first.

c) Chamtagh-Judgement

Once the elders have heard the ranking of plots, the senior elder will declare that they have heard all of the information and he then names the farming areas that will be irrigated and main sochots that will get water.

He may change his opinion if another senior elder paints out something that he has missed. He will then announce which sochot will be open for the night and which for the next day. Then he announces the names of the farmers who will have access to this water.

Since it is usually three people who irrigate during their allotted time, they do it simultaneously, and they have not to agree on an order of irrigation. Farmers who have the permission to water their farms leave immediately to get ready.

The slope of the plot is an important factor in the decision of the elders since larger flat farms where the water will tend to spread slowly and evenly are usually irrigated at night. Farms located on sloping ground will have day irrigation.

Farmers who have received water rights can further divide these rights from three to four users if they have friends in need whose farms are in a position to be watered at the same time. At a later time such a service is likely to be returned.

Requesting and doing irrigation is time consuming. A farmer normally has to go a minimum of twice a season for each plot for water. The elders' judgement is considered impartial, the their decisions are final.

3) Pogh Poghet-Day time Irrigation

a) Tiwut (At this period private subsidiary canals or sochots are closed. They are dry).

The farmer starts working in the morning from the head (mut) on. He cuts two pieces of wood, takes some grass and soil and positions these lumps in ways to ensure that if the water later begins to flow away, they will deflect the water back to his plot. Such `tiwuts' are made all around the farm.

b) Kara Sochot-Clearing the Canal

Once the tiwuts are prepared any grass or debris in the farm's sochot and in the one irrigating the farm are cleared.

c) Yatatapogh-Letting in Water

Since irrigation water is allowed to enter by someone who directs its flow, it has to be noted that there are usually two groups of three farmers from two different farming areas who will water on the same day, one group being downstream/canal of the others.

Those who are downstream let the water in from the arapogh through the main

sochot and directly to the two or three farms to be watered that day. Elders point out that this ensures a fair
flow of water.

There are three ways of letting in the water to the main sochot:

* Depending on the flow of the canal the height of the earth that prevents the water from coming in is reduced, and the water flows over the top;

* If the land is flat, an opening for the water is cut into the side. This often means removing stones which functions as a little wall.

* A flat stone (koghin) is used to deflect the water at a determined angle.

This process ensures that each group does not feel cheated, and that there are peaceful relations over the division of scarce resources.

d) Sakapogh-Secondary Division of Water

Sakapogh is similar to yatapogh except that it is carried out on a smaller scale. The division of water for that day's irrigation is among the farmers who are irrigating their plots from the subsidiary canal or sochot on which they are dependent. This usually includes two to three farmers at any one time.

The three farmers go together to the first opening of the first private sochot. The opening is done by the colleague of the man whose sochot is the first to be opened, while the third man supervises and gives instructions whether to increase or decrease the flow. Sometimes they use a stick to measure the height- of the water in order to better judge its volume.

This is yet another example of the typical committee work and the system of checks and balances that is common to Pokot farmers when they are acting under the jurisdiction of their kokwas.

e) Kikarakaret-Monitoring

Once the water has been let in the farmer can concentrate on making sure that the water is well used. This

process is called kikarakaret. It includes watching the placing of the small deflections `tiwut' to make sure the water flows in the right direction. Adjustments are made with a jembe.

Water is not supposed to flow too fast since otherwise the plants will be uprooted or the top soil will be carried away which would reduce the yield for the next season. On sloping land the water flows more quickly. The head (mut) is higher than the bottom. Depending on the slope of the land, irrigation can take between five to ten hours.

Whether or not the farmer has finished irrigating his plot, at about five in the afternoon those farmers who were given permission to irrigate their plots in the evening will come and close off the main sochot of their farming area in preparation for the watering of their own farms.

(Night irrigation is usually reserved for large farms in flat areas. The flow is slow and someone to watch it all night is not needed.)

4) Night Irrigation

a) Introduction

The first three stages of night irrigation are similar to those of day irrigation: the request, the investigation, and the judgement are all the same. Yet the preparations are different.

The night irrigation cycle differs from the day one most notably since the farmer gets ready right after the kokwa gives the watering permission. The farmer goes rightaway to his farm, prepares the tiwut and closes his neighbour's sochot who may have been using the water that day. These measures will ensure that the later flow and volume of the water will be used exclusively for the farm.

b) Rupatapogh-Closing the Entrance

This is the third stage of night irrigation. The farmer returns from his plot to the kokwa where the nighttime irrigation group meet around 4 p.m (munun). The farmers will walk together along the main canal and they will close the entrance to the main sochot for anyone who was using daytime water.

They usually move from the kokwa tree (such as kokwa Meschak) to the intake closing up other sochot, and then backtrack until they arrive at their own. The closing of the sochot is done collectively to ensure that all sochot are closed and that no friend, relative or clansmen can initiate a grievance about water as the result of a partially closed sochot during the night irrigation.

One of the reasons for this caution is that people with farms close to the main sochot can water their plots without anyone being able to see it unless they practically walk on to their plot.

c) Yatatapogh-Opening the Canal

The main sochot for night irrigation has to be opened. As in daytime irrigation it is done so that the downstream irrigationists open the subsidiary canal of the upstream irrigationists to ensure an equal division of the flow of water. The upstream irrigationists discuss the judgement of others if they feel it is uneven. The members of the

upstream irrigation group are equally responsible for ensuring that there is an equality of flow. It is in everyone's interest to be scrupulously fair.

d) Sakapogh-Secondary Division

The same principle of allocation applies when the irrigation group of one main sochot direct the water from their subsidiary canal towards their shambas. In this situation those whose plots are downhill from the others have the right to direct the water into a person's shamba and so on down the line. (The place of where the water is diverted into a private sochot is called saka).

Once saka is finished each farmer then takes a brief look at how the water is entering his plot. If he is satisfied that there is a great likelihood of the water flowing slowly and steadily throughout the night he can go to sleep on his farm in the small shelter called `sopotwa' or he may even go home.

If anyone is caught diverting someone's water to his own farm the kokwa will fine him to pay one goat. Such a case was known to have happened in 1991. It was presented to the kokwa yet the culprit had taken refuge at another kokwa. The case was presented there, too, and the elders of the second kokwa fined him with a goat to be paid to the first kokwa. The victim of water theft will be granted water compensation called `kito'. Kito is an optional stage of water to someone who asks for more water the morning thereafter.

This shows clearly that Pokot farmers have a basic notion of the relative value of violating their system. No doubt once they feel that the rules for the new farmer's association are just and fair they will not hesitate to penalize and fine farmers who breech the rules through cutting down windbreaks or grazing animals on the fields of their project. On the other hand something like extending a plot to protect others from wild animals will no doubt be seen as the opposite of a violation of the farmer's rules.

e) Kito-A Second Request

Kito is requested from the kokwa once the farmer finds out that he has still dry patches on the plot. The kokwa may then grant an hour's water and allow that the farmer opens his main and private sochot full blast to finish watering.

Since farmers with their irrigation needs are dependant on the decisions of the kokwa, participation and regular attendance at local councils is in the farmers' interests. Thus this institution has powerful interests keeping it

going. The same can be said for any sort of new farmer's association. If farmers' are shown show that their decisions are binding and are not to be overturned arbitrarily by some unwanted outsider then compliance again will be high

f) Exceptional Situations

In case a farmer has died and his children are still young, the elders will give water rights to his surviving wife, even though she has not applied since formally, women are excluded from kokwa deliberations.

They will also assign someone to water her plot. The person who takes over this work will have priority when requesting water the next time.

During the few last years apparently more and more farmers are not obeying the kokwa and divert water at night directly to their plots from the main canal. Elders have explained to me that this is because in an area where the land is fertile such as the plots near the river, the ratio of arable land to individual is rapidly declining.

It is a situation of competition for dwindling resources, which will result in greater social conflict and the avoidance or violation of traditional customs that formerly regulated natural resource management.

One solution to this problem, that of Lodagri K.V.D.A. is to intensify agricultural production to feed the new mouths and take pressure off the escarpment and the remaining indigenous forest. Of equal value and perhaps much less costly in the long run would be an intensive, sustained and culturally appropriate family planning program that would constrain runaway population growth as it concentrated on raising the local standard of living and conserving local water resources and biodiversity.

C) Chepsot-Canal Maintenance

1) Introduction

Every two years the two branches of the main canal used by the people of Machon and Takoch are cleared and renewed. In the months before the rain, and which comes before planting, elders at kokwa will discuss, among other matters, the condition of the main canal.

During the months of February (Terter) and March (Pokokwa) two elders from any one korok will begin to raise the issue of canal repair with people of similar age sets. This will continue until most of the elders in the area are aware that the issue is to be raised in a kokwa.

Elders will make a date for a kokwa meeting and will ensure that all concerned elders from the groups of Machon and Takoch will attend. Between the first meeting and the second one there are normally five days.

During these five days elders who live near the intake of the main canal (the present site of the project dam) will take advantage of their closeness and the fact that the water from the river is not flowing through the canal with any force, and they will close off the canal by means of grass, rocks and soil. The canal will have no water from the start to the finish of the canal maintenance thus to some degree enforcing compliance since noone can irrigate.

2) The Case of 1991

a) The Beginning

A typical example of the canal maintenance decision process and implementation occurred in March 1991. A meeting took place where the two irrigation canals branch off from one another, chief, subchiefs, elders and young men, about 60 males, took part in the deliberations. Not only canal maintenance issues but also other issues were discussed.

Elders of both groups agreed to maintain the canal and provide the necessary labour within the coming days. Senior elders of the sowa age set announced that at least one member of each household from the farms of which draw water from the canals should be available for work, whether or not they had paid jobs with government offices. He also encouraged the younger men to volunteer.

The workers, according to custom, would be allowed to eat reasonable amounts of sugar cane, banana, cassava and mangos that are found growing along the edge of the arapogh in farmers' private plots. The elder also warned that the workers should be on time and not disappear during the work.

If a household sends no worker, the request for water during irrigation periods would not be given. In fact, in such eases a fine of a goat to the kokwa will be due and requests will be dealt with as a matter of last priority, yet one more example of the disciplinary power of a duly constituted kokwa.

In 1991 canal maintenance began two days after the kokwa meeting, one week before the end of March. Work started two days later. On Monday one elder from a household in each division, Tokoch and Machon, blew their horns early in the morning. The horns are made from the

horn of a bull, or in times past, a tusk of a young elephant. The horns will be blown throughout the day, when these blowers walk towards the meeting place where work will begin, at the meeting place itself, when work begins, and then almost every hour for the rest of the day.

The two elders come from two different clans, the one from Machon being from Ngusur. It is common for members of these two clans to bless assembled elders before and after ceremonies. They are thought of as literally belonging to sweet clans which means that their influence is spiritually beneficial.

In 1991 when householders near Sigor heard the blowing of the horns, they all went to the called kokwa Poyotwa. They brought with them a number of tools necessary for the work, a panga, jembes and hand held mattocks for cutting the growth around the canal and for digging up the canal. A spade is made from the bark of the mokongwo tree which will be used to scoop out soil from the canal.

The leader of the elders consulted and then decided where the goal of the first day's work should be (see Appendix # 24, map for the stations of work). In 1991 the first goal of the first day's work was a tree, about three hundred metres downstream from the intake.

The division of labour for this task was made up of three groups:

* young men whose job it would be to clear the growth within and at the edge of the canal

* another group of young men to dig out the canal

* a third group of mostly married men and elders who were to remove the soil cut out of the canal and who had to make the sides of the canal level. Elders were there to supervise.

b) The First Day

The working force of about one hundred and fifty men from both Machon and Tokoch went to the starting point of the day, one hundred metres from the intake. Latecomers were noted by the elders. The people were divided into three groups.

The first one of thirty men started at the assembly point; they had to clear grasses and shrubs along the edges and insides of the canal. The second group consisted of ten people; they did the same but from a point half way from the

starting point to the day's destination. The third group started at the end of the day's destination and began working towards the centre. All of them worked at the same time.

The remaining workers were again divided into three groups who, once a sufficient amount of the canal was cleared, had to take away the grass and dig out the canal. The older, married men had to shovel and take away from the canal the excavated material.

A small fire near the canal serves tobacco smokers and roasting of bananas and cassavas. The maintenance of the fires is the responsibility of supervising elders. Tired workers may cut a piece of sugar cane and eat it. Throughout the day the horns are blown periodically.

In 1991 the first day's work lasted five hours and the work units were completed. Elders named the absentees from both Machon and Tokoch. Once it became obvious that several households had not sent volunteers at all they were fined a goat each to be paid at a joint kokwa meeting at the end of the week. The horns were blown to signal the end of the working day.

c) Further Work Units

Work followed the above routine for three days, after which there was a day, a Thursday and market day, and on Friday work began again. The morning however was spent at a kokwa meeting just a few metres downstream from the branching point. The position of the stars and weather predictions were discussed. Young men had to go to offending householders and ask for the goats, which were supposed to be consumed at the joint kokwa on the spot.

Saturday morning the two groups split to take care of their own sections of the canal. Each group set their own daily work goals which they felt they could achieve in one day and whose length depended on a proper measuring of the meandering of the canal (see Appendix # 25, map with the local land features named).

Those who came late were given longer areas to clear. In the afternoon the elders went back to the kokwa to eat their goats from the fined households.

For the next three days the work group of Machon consisted of about sixty to eighty members. They ended their work at the main sochot or subsidiary canal of

Chepilat, where a survey of plot ownership and irrigation precedents for 1992 had recently been carried out.

Without canal maintenance such a farming area could not be used. Work continued until beyond the next Thursday market.
Elders kept track of who did not show up to help.

d) Progress and Results

Elders have pointed out that progress in this kind of work depends on a number of key factors:

* the meandering of the river
* the condition of the terrain
* the number of workers available each day
* the thickness of the growth that needs to be cleared and hauled out

After the groups broke off to clear their respective channels most of the work was done in the afternoons. The groups discussed among themselves what was to be done next day and everyone knows whether they can work on their plots for part of the following days.

In 1991 the volunteers stopped when entering at the end of the work, the farming areas of Korotina and Sos, a maize growing area where there was no roadside food at the time of canal maintenance work. Work slowed down the last days of work on this final branch of the canal.

In the end and contrary to the pleas of the Chief and Sub Chiefs the elders did not extend the canal as close to the project compound as possible. This is a good example of when elders do not listen to what they consider authorities that they do not fully recognize.

The following are the number of days of labour that it took to complete canal maintenance between local stopping points:

Saka to Akwa Keerwokin	2 days
To Socho Chepilat	2 and one half days
Socho Chepilat to Socho Korotuno	3 days
Socho Korotuna to Kokwalokoma	6 days
Kokwalokoma to Kokwakimokon	2 days
Kokwakimokon to Kokwasos	6 days
Kokwasos to Sorumosos	2 day

Part V-The Division of Ownership

A) Introduction

Now that we have seen how the environment is classified, how natural resource management is carried out and how irrigation and canal maintenance are implemented let us look at the system from the point of view of rights and obligations individuals and groups within the traditional system of tenure. This will be followed by how selected and representative elders feel about the whole system as it now exists, that is to say a local, synchronic participatory evaluation of conditions as they now stand.

Implements and equipment are owned by the plot owner, whether the owner is a man or a woman who is in charge of her husband's plot. They are also the ones who buy the equipment if this has not come down to them by inheritance.

Equipment is handed down to the eldest son who is responsible for distributing it among the younger brothers. Implements, tools, equipment are used by the family when working on the farm and also by neighbours who may help or who may borrow the equipment.

Women's jewellery is inherited by the children, normally the daughters. Yet today the daughters may also sell jewellery to people of other tribes or to foreigners.

Informants said that they owned smaller domestic animals like goats, sheep, and chickens, male and female. These animals provide means for payment of bride wealth, also to raise the fees for hospital treatment. Yet animals provide also meat, skins, milk and eggs for home consumption.

Some informants indicated that keeping domestic animals gives them some prestige. Only the reproduction rate for goats was mentioned, one to three per year. Animals may also be bought.
Children look after the animals, and neighbours children may help. Animals are normally allowed to roam throughout the kurut, yet they are not allowed to intrude into a neighbour's plot. Offspring belong to the owner and head of the family.

There was a difference in the number of animals for bridewealth. Some informants mentioned 30 goats and five cows as the highest, and ten goats and two cows as the lowest. For Kurut the highest number given was 15 goats and four cows, the lowest 10 goats and three cows.

In case of divorce, bridewealth is to be returned by the wife' s family to the husband if the wife has no children. Once there are children the bridewealth is not to be returned. While a boy is to remain with the father (husband), a girl may stay with a grandmother until she marries. Then the father (husband of the divorced mother) may claim bridewealth (cattle, sheep) for his daughter while the grandmother is given one heifer. Specific animals can not be pledged.

Answers with regard to bond friendship differ. Some informants maintain that such a bond friendship is possible only with fellow Pokot. Others maintain it is possible also with people from other tribes and foreigners.

With regard to repayment of debts by labour again the answers differ. If at all possible then only for minor debts.

B) Gender, Clan and Territory

1) Married Man

A *married man* is expected to have a house, livestock and land. He has inherited the land from his father and he may buy more. Since he is married he has wife and children.

He and his family, and also visitors have the right to use the house and to live in his house. He, his family and relatives may use the animals. He may sell or eat his animals, yet he may discuss the question of sale first with his wife. A loaned cow maybe returned.

One cow now has the value of six goats. Animals are often necessary for ceremonies. He and his wife (comp. below) have the control over the property. The wife has control over all the farm produce in store, and the husband must agree with the wife on any food disposal. In cases of helping needy persons (relatives) the husband can overrule his wife.

Property may be lent to other people. There is some return from this transaction in that the borrower returns the piece of property with a small gift.

The head of the family has the right to cultivate his

land. Land may be let or borrowed. The traditional compensation is 40 kg of either maize or sorghum. The father has to inform his elder son that he has lent out land since the elder son is always watchful of his inheritance If the yield is small, the lender cannot claim the traditional compensation.

2) An Unmarried Man

An *unmarried man* is now expected to have a house and to use it if he makes wages. He may buy livestock and land once he earns more money. Once the young man is away from home, he may be proud to mention that a certain cow belongs to him, yet he cannot do so at home in the presence of his parents.

Although he may acquire land and livestock, he cannot sell it because the right of disposal is vested with the father. He may lend a piece of land to someone, yet not sell.

However some informants maintain that an unmarried man has no right to property whatsoever. Others contend that he is not permitted to lend to someone a piece of property or to dispose of property.

3) A Married Woman

A *married woman* may have livestock, a plot, a house and household utensils. In a polygamous household the head of the household must divide his land into equal portions to avoid conflicts among sons. The married woman has no right to dispose or lend any property. One informant said that the married woman is "nothing but another property herself". Since she cannot lend property to someone she does not gain income from such transactions. She has a decisive say in the control of farm produce in storage and of food.
In the scheme every wife has keys for the stores for the food from her plots.

4) An Unmarried Woman

An *unmarried woman* has hardly any property at all, just her clothes. If she is on wage labour she has some income which she may use for purchases. She has no right to decide over or dispose of family property.

5) Children

Children have - apart from their clothes - no

property as long as their parents are alive. Relatives may promise property to a young man once he comes of age. Children have no right to dispose of any piece of property.

6) ***A man and one of his wives in a polygamous family***

The head of the household has the control over the house. It is the wife's duty to ensure that animals come back in the evening, but she has no right to sell them. The wife has the right to cultivate the plot and to eat the food but she has no right to lend the land to someone or to sell it. Food disposal must be discussed with the wife. Once husband and wife agree on lending pieces of property there is no income.

Should the wife may own a plot of land which is kept fallow the husband may ask her for permission to lease it. The traditional compensation then goes to the wife, the amount depends on the yield.

In a polygamous household there can be conflicts with regard to a husband's wish to sell plots, because the wives do not know how many children they have to feed in the end. Education fees are also a problem, once a father decides to give education to the child of one wife but not the child of another wife.

7) Korok

Informants maintain that elders and members of a *korok* have full rights to use or to dispose of any property within the korok. Yet others maintain that the clans who settled down there have more rights to dispose of pieces of property like forests, stones and grazing grounds. With the exception of underground wells korok residents have no control over land nor water, however they have an interest to cope with diseases and infestations.

The korok elders have the right to close and open certain grazing sites in their area on order to allow pasture to grow and to keep out infected animals. In case of drought pastoralists are allowed to graze their animals in the kamas, and they have to kill a bull for the korok residents.

The korok supports individuals in a land dispute. The korok elders have the right to accept or to reject any outsider as a settler. If a prospective settler applies for acceptance he has to kill an animal for the korok elders. The settler would then have to comply with all the rules governing the korok. Equally the korok elders have the

right to banish a korok member.

8) Lineage or sub Clan

The lineage or sub-clan (or) has rights over forests yet not over game which belongs to all the residents. The lineage is exogamous The lineage may show outsiders where to get water for their animals.

In every korok there is a founding lineage who has a certain claim over the korok. The lineage may sell arable land and thus gain an income. This land may be reclaimed later on by the founding lineage if the buyer misbehaves.

9) Clan

The *clan* (kapor) has the rights over forests in the riverine and kamas area, the right over farm land, apiary sites, but not over grazing grounds. A "forest beer" can be taken to the founding clan to obtain permission for felling trees.
The distinction between clan and lineage was sometimes unclear among a wide variety of informants.

10) Age Sets

The *age sets* (pinwoy) of the settling and founding lineage (ko) can lend or allocate land to anybody with traditional compensation (redeemable debts). They hear cases and settle disputes and they decide over the canal route. They also determine circumcision times and have a decisive role in ceremonies.

11) The Pokot

The *Pokot* have the rights to own and to use livestock, plots, houses, wives and children, and their motherland which they call `korenchja'. Due to Turkana raiders other people (pastoralists) are permitted to graze their animals in the kamas, otherwise the cattle may destroy the fields. Pokot people are not allowed to gain an income from having other people use their land, because the Pokot land is considered the motherland.

12) Women's Groups

Women's groups are a recent institution, as are men's groups like the farmers' association. Not all

informants were aware of such institutions. Several women's groups were mentioned, and among their activities the running of the posho mill was referred to.

13) Disputes

The *settlement of disputes* is often achieved with the help of neighbours who come together in informal meetings. Disputes may arise because of "odd plots", that is land which is not given to wives since it would upset the equality of plots among them. In more serious cases a kokwa meeting consisting of elders of several koroks will be convened.

Land can be leased due to the following reasons: sickness, debts, and leveraging (investing surplus value from one system to another). Three farmers among the 20 pilot farmers of the project have leveraged their traditional plots.

C) Collective Rights

As the largest group that may claim ownership to land some informants named the clan, others the lineage. There are links between households, lineages, clans and land. As examples informants mentioned that Sos area belongs to Oro, Motokorwo belongs to Lakenia. Chepilat is dominated by the Oro clan.

While there is no system of reallocation of land from the ones who have more to the ones who have little, it is possible to have people who are short of arable land use a fallow plot which belongs to someone else. Some beer or a goat has to be provided in exchange. The boundaries of land property are marked by the sochot and by stones which come from within the Land by the river may be sold.

The types of land are masop, kamas, temka and lalwa. People have plots in all areas, some of which are inherited from a lineage. They may cultivate the land themselves, leave it fallow, or give it to clan members for use. Some informants mention a lease of land without receiving the traditional compensation.

The farm produce is divided up to daughters, married sons, relatives and any other people who barter with food or goats. Hired labour is often paid with farm produce.

The source of fuel are the forests within the korok,

the source of thatching material the kamas also in other koroks. People get firewood from within their korok.

Elders have rights over the kokwo tree. Any other tree may be felled. Afterwards green grass has to be put on the trunk to show the good faith of using the tree.

Water is fetched from the Wei Wei river, and rain water is also made use of.

Hunting is not possible within the korok of someone else, however it is in the plains. In case hunting takes place near another korok, the game can be shared with the elders. Grazing is possible anywhere.

D) Personal Inheritance

Property may be transferred during an elder's life time, and this can also be reclaimed. Once a man dies his property is inherited by the children and the mother manages the property. She will transfer the responsibility to the eldest son.

The brother of the deceased is in charge or the reallocation of the property among the sons. There may be disputes over land once the sons are already married. Wives may be "inherited", for instance some clans may permit the younger brother to inherit the wife of the deceased. However, he has no unquestioned rights to her inherited land and its produce. The wife and her new husband will be watched by the relatives of the deceased.

They can use the farm produce for food consumption but they cannot sell land. In inheritance the sons rank first with regard to inheritance of property. Debts are also part of the inheritance. People can claim land plots or livestock from the deceased's family in order to have debts recovered.

E) Change

Young men and women who earn wages or salaries can now buy land and their children may inherit the land. Payment in money is possible today. Some informants maintain that the kokwa agrees with the administration, others that the kokwo apparently often disagrees with the administration. Informants maintain that they prefer the kokwo, since the kokwa is more honest than the administration.

About what happens to the plots once the elder members of the farmers' association die, some informants maintained they would prefer the plots to be subdivided. Others maintained that the project plots will not be sub-divided and that the yield will be divided. The elder son would have the responsibility.

Part VI-Participatory Evaluations of Ecology, Society and Change

1) Introduction

Pokot of the Wei Wei valley are not totally dependant on their crops, yet farming is their most guaranteed short term mode of production. Swidden farming as practised by the Pokot has a number of complementary `back up' systems that take up much time and effort, even when farms are well watered: that is livestock herding, hunting, gathering and fishing, setting up beehives which is done in the various ecological zones of the valley.

Authority and decision making are largely in the hands of a small number of senior elders. The burden of physical labour is, as is common throughout sub-saharan Africa, greater for women than for men. Despite the fairly democratic and egalitarian nature of Pokot society,women do not participate in the local assemblies. There is an age and gender bias towards men (elders) and away from women.

Following are the perspectives of a group of typical householders from Machon as well as from Tokoch, who were interviewed by the research group. The information given was discussed extensively by the research group and seems to conform with other data collected during the fieldwork as well as read about in secondary literature.

2) Family and Clan

The elders were about fifty to seventy years old, or they did not know their age. Some younger informants were about thirty to forty years old. They were the fathers (or heads) of their household, some of them had several wives and a greater number of children, some of which had died.

Many children are married. Family members visit each other, primarily during those seasons when there is little work on the farms or when there are ceremonies. The elders named their own clan and those of their mothers and wives, and they named their own totems.

Clans have special brand marks for their own animals, for instance cutting the ears of their animals. Although clans and places of origin of mothers and wives are

remembered, it is descent through the father's line which gives a person his corporate identity.

Some families have relatives by intermarriage among the Marakwet. Thus there appear to be fluid ethnic definitions and tribal identities which conflict with that of fixed district borders. This may explain why it is that since the turn of the century the districts of Kenya have been redrawn every few years.

While the elders never went to school, some of their children and younger relatives did so, some of them even having reached form four and having a job with a ministry or are school teachers.

3) Dwelling

Dwellings are not on the farm. The traditional house is made of wattle and daub and has a thatched roof. The window is just an opening. These are not permanent houses in a village, since people abandon them every few years and move within or even outside of the Korok.

4) Farming

Elders have several plots along the river spread over the area which may be inherited or bought. Some plots are kept fallow.
Some but not all of the plots are part of the project. Goats as means of payment play a great role. A number of crops are grown like maize, sorghum, green grams, cassava, bananas, mangos,sugarcane and tobacco. Surplus crops are sold either in the market or along the road. Farm implements are the simple modern Kenyan type like pangas and jembes.

Since farmers must have several of such implements, they are quite from the farmer's point of view expensive once bought at one time. They have to last several years. Some traditional implements are also still in use. Seeds are either reserved from last harvest or bought in Sigor.

5) Fertilizers

Dung may be used as fertilizers, but also different types of grasses which are left on the soil to rot. The farmers mentioned chemical fertilizers for their farms on the protect.

6) Soil, Wind and Pests

To prevent soil runoff in the kamas often stones are arranged in a series of lines that run diagonally across the plot, and which often form a barrier that controls the speed of water during heavy downpours.

To calm down dangerous winds to blow off the soil the Pokot use some sort of prayer: An elder whose first born child is a girl, addresses the storm and asks that it goes to a different direction. He will say, `we have not wronged you. '

The traditional storage facilities are not sufficient to prevent crops from pest infestation. To control pests farmers prepares a layer of twigs and leaves of two kinds of trees from the kamas, temka and masop zones. In the project plots chemical pesticides are used. Younger informants mentioned the use of thiodan.

7) Problems in Agriculture

Some elders praise their elders who gave them advice and guidance in farming. Others complained that elders were never formally instructed how to farm. And younger informants maintain that at present the elders of the sowo age set are too old to give substantial advice. Also, they are too much interested in drinking beer instead of looking after the maintenance of the canal.

In olden times it was the fathers who taught the youngsters. Yet the elders who acted as informants have quite detailed knowledge, experience and observation about when and under what soil and weather conditions certain farmwork activities have to be carried out.

The major problems are lack of rain and lack of water. Some of them refer to poor soil. Elders explain from the position of the stars whether there will be rain or not.

Pests sometimes attack the crops, and farm tools are not always available. Traditional farmers sell goats to purchase items they do not have. Once the soil is exhausted some farmers still leave their plots fallow. Some farmers use traditional ways of controlling pests while some of them may use pesticides. To overcome water problems they again and again

turn to the kokwa. Another problem is lack of labour since the young people run away to town and leave the heavy work to the older generation.

8) Population Growth

Some elders recognise that there is an increase in population during the last years, and they are aware that there is more demand for land. This explains the growing tendency to fight with relatives over the inheritance of land.

Health officials advise about family planning apparently do not come to see the households, and the Pokot have their own traditional ways of birth control. Yet in general Pokot are not interested in birth control and in restricting the number of children.

9) Livestock

Small livestock of the traditional Pokot breed are kept while keeping of cattle is rare. Livestock as well as crops are in danger of being killed and eaten up by wild animals. Domestic animals are bled during the dry season when there is less food. Fresh and sour milk or honey may be mixed with blood and then it is drunk. Bleeding is also done once it is felt an animal is sick and must get rid of dirty and unwanted blood. It is believed that animals will then recuperate and return to normal.

Ticks and certain insects are a problem to the animals. Dips are far away or not available. Yet one younger informant who had several cows took all his cows to the dip twice a month. He maintains that dips are very popular with the people. The veterinary department in Sigor is consulted and drugs are purchased there. The veterinary specialist may accompany the farmer to treat ailing animals.

The farmers also prepare traditional concoctions of herbs to give to animals, since they maintain that there were many illnesses that afflict animals. Some informants gave quite detailed information about animal diseases.

10) The Forest

Elders are quite knowledgeable with regard to plants and game in the forest. They know what timber is good for houses and what herbs are good for medicine or what plants or fruits are good for food. Traditionally some trees are

not felled because they provide shade and space for rests and for meetings.

Timber, that is trees, are needed for building modern square houses as well as for firewood although firewood is most often obtained from dead and dry trees. Clearing land also depletes the forest reserves.

The elders feel that something has to be done about deforestation and about planting trees but that the forestry department does not offer enough help. K.V.D.A. sometimes offers seedlings. One informant maintained that Pokot do not plant trees.

Putting up beehives in trees is known, and the elders said that the Pokot of Kurut learnt to make and use beehives from a forest dwelling group of hunter/gatherers called Mei who are said to live in the Lelan forest near the source of the Wei Wei river. Some elders can give a detailed description of how to make a beehive.

11) Hunting

Wild animals mentioned are monkeys, baboons, leopards, antelope, warthog and the wolf. Baboons in the kamas eat goats and maize. Leopards and wolves eat goats and sheep. Warthogs eat maize.

While gathering is mostly done by women, hunting is done by men using poisoned arrows and bows. Animals, like buffalos, warthogs, giraffes and antelopes were and probably still are hunted for food and in order to decrease their number since they destroyed crops and killed domestic animals. This refers in particular to the baboon, wolf, leopard, hyena, lion and elephant. Their meat might be eaten, and their skins are used to make bags or sandals. Yet because of strict and tough government regulations hunting has supposedly been given up. There is an active KWS station in Sigor.

12) Fuel and Energy

Firewood comes from dead and dried branches. Fresh trees are never used. Sometimes charcoal is made. Elders are familiar with the problem of deforestation. Provision of electricity they believe would help to solve the fuel and firewood problems.

13) Water

Water is most precious. It is needed for irrigation, for drinking, making local brew, washing and cooking. Medical concoctions are prepared out of herbs boiled in water.

Household water has to be brought from the river or from the irrigation canals, which are sometimes at quite a distance from the households. It is the task of women and girls to fetch water, and they get about 10 to 20 litres a day. Some women have to spend about two hours a day to fetch water. But also men are aware that fetching water demands a lot of walking.

Water supply depends on whether it is the rainy or the dry season, and the quality of water depends on whether there are torrents of rain which cause the water to become dirty. People then refuse to drink the water and look for water places elsewhere. In the dry season the water level is low, and elders congregate in the kokwa for the organization of the distribution of water. It is felt that only the river with its water is permanent. Elders are familiar with the names of all the sochots or subsidiary canals.

The pipe system for the project plots is admired. Some elders would like to see piped water which is permanent in the riverine plots and in the hillside houses.

It is felt that there are more farmers nowadays and that there is more conflict about water in the riverine plots. The permanent supply of water in the project plots makes it so that people do not fight over water. In addition the Lodagri plots produce high yield crops, the produce is sold to the market and always fetch better prices. The disadvantage of project plots is that they are very far away from the residential areas. Older people, like the elders, cannot manage to get to the plots.

Elders have some misgivings about the Lodagri plots. According to them the plots owned by Lodagri were once individual plots which were left fallow. Lodagri and K.V.D.A. took the plots and gave them to some owners while others were left out. Yet everyone should get a plot. People stay on in speculation. If this fails, the elders will curse all those who got plots and they will die.

14) Health

For diseases in the valley there are traditional as well as modern treatments. Yet people feel some sort of a resistance to modern treatments and often go to a hospital when it is already too late.

Diseases such as malaria and diarrhoea were named. The elders have detailed knowledge of symptoms of various diseases and of herbs which may be used as traditional medicine. They also know about how to make a stretcher to carry a sick person to the hospital. Yet sometimes people go to government hospitals and then the drugs needed are

not available. Government hospitals are preferred to private and to mission hospitals because government hospitals give free treatment.

Hunger is felt to be related to diseases. During the dry season there is often not enough food in the plains where pastoralists live, and children and old people develop protruding stomachs.

To some informants, one of the nearest health centres was Sigor.

15) Education

Elders rarely experienced school education. Occasionally they mention that a brother of theirs went to school. Children are more often sent to school today. Adult education classes were not taken seriously since. Elders feel that education is something for the young. Schools and the adult education classes suffered because teachers were not paid over the months and they went to some other places looking for jobs.

Some elders felt that the schools in their sub-locations are not good. Suggestions were made to have better classrooms and better latrines. School fees are felt to be too high, and parents find it hard to keep children at school. Parents with many school fees to pay should therefore be given more plots.

The effects of education are not always felt to be positive. Once having received education, boys often disappear into towns and become spoilt. The old people have to do the heavy farmwork. Some youngsters become uncaring towards their own parents. They may even steal everything from their parents' house leaving them destitute. Girls may end up as prostitutes. Elders feel very strongly about this. It was expressed that schools should be built near the places where parents can visit and oversee the raising of the training of their children.

16) Transport and Communication

Most people travel by walking and they carry loads on their backs. Bicycles and donkeys might be a solution but they are too expensive.

Roads were built under the colonial rule often by means of forced labour, and a modern road was built by Lodagri. For the maintenance of the roads most often the Ministry of Public Works and the Department of Road Works

are responsible.

Elders feel that it is difficult to transport farm produce to the market. Many runs carrying sacks are necessary which is felt to be tiring. The situation is worse, once sick people have to be taken to hospital.

17) Outside Institutions

Elders are familiar with the different kinds of traditional and modern groups that form part of their social world. They refer to the kokwa council, the korok, women's groups and churches, World Vision, Lodagri and K.V.D.A.

One women's group is running the milling machine just close to the intake. World Vision assists in paying school fees and used to buy some farm implements and seeds for farmers. They also built schools around the location. Lodagri assisted in modern methods of farming and market the farm produce.

Some elders feel they would not like to belong to any of the new groups since they have too much work on the farm. The elders' council kokwa is the only one attended by all since matters are discussed there which give direct benefits to the farmers.

The policy of World Vision to give implements free of charge and to pay school fees is highly appreciated. Also the wish was expressed that Lodagri and K.Y.D.A. expand their plots much further so that all the people around the area can get plots. It was also expressed that the women's group find an even more effective and faster milling machine, since the present milling machine is breaking down every now and then, does not function for months, and the women have not enough money to pay for repairs. It was mentioned that perhaps the CPK could help paying for such a machine.

Some problems, like the purchase of a new milling machine, may be overcome since harambees may raise the necessary funds. Yet for many problems elders cannot think of a solution.

* * *

The Wei Wei Integrated Development Project is an

Italian project in a tropical country that deals with drought, desertification and the food problem.

It can be thought of as a pilot project. If the capital is there and the technical expertise as well, projects like the W.W.I.D.P. show that on a relatively small amount of land, profits from the sale of seed crops can range into the millions of shillings, while at the same time providing facilities for local farmers to raise their subsistence crops alongside.

The first four years of the project concentrated on the experimental farm and the farms of thirty- six `first farmers'. The work is well described in the Project Technical Reports.

The first twenty farmers who were engaged were, without the project staff realising this, all drawn from the people of Machon. Later on, and following a protest by representatives of the people of Takoch, further sixteen farmers were added giving a better balance to the project's ultimate beneficiaries.

Phase Two of the project began a few months ago.There now more than two hundred farmers working on the project. The funding of Phase Three is not yet fully secured due to a stated policy by the democratic donors group of which Italy is a member to reduce Kenyan dependency on foreign aid. This is part and parcel of the World Bank's SAP or structural adjustment programme.

Any plans for the projects sustainability must therefore take a time frame into account of only the next twenty-four months of full Lodagri/K.V.D.A. support. It is unlikely that the same level development assistance will continue after July 1995.

The next sections give a summary outline of the geography of the project, its annual, seasonal farming and marketing cycle, a profile of some of the first twenty farmers selected according to korok, an analysis of project problems and suggestions for project sustainability. The summary outline of the project is only for those unfamiliar with the project itself and can be skipped over. The essential differences between the traditional system and the modern system are charted in the section on project problems and prospects.

Part VII-Technical Interventions: Scope, Problems and Prospects

A) Project Geography

1) Introduction

The project map shows the plots now in use, the first twenty farmers, the next sixteen, the JMS farm, the nursery and the blocks of farms given over to the Pokot farmers of Kurut during the last year.

The irrigation project is located just outside of Sigor. There are the Lodagri offices, shared with K.V.D.A., beside the project compound with guest houses, a swimming pool, club house and kitchen. Behind this there is a storage area for irrigation equipment, a pump for petrol and diesel, two diesel powered generators and a fully equipped mechanical workshop.

2) The Nursery and the Orchard

The nursery is down the road as one moves towards the fields. It is a small fenced enclosure. A number of trees are grown in small bags to be transferred to the farms.

Most of the trees are to be used for windbreaks, others are multipurpose such as Leucaena which provides fodder and the neem tree which serves as an insect repellent. Grafted mango trees have been developed to be sold to buyers in nearby cities like Kitale. New varieties of types of fruit are now available, fruits that had been grown locally for decades. The present Project Director explained that the climatic and soil conditions of the project area are favourable for extensive orchards.

The orchard is a small farm opposite the nursery where experiments in growing local and imported crops are made. One of the experiments is a small plot of chili, part of it being grown with fertilizers, part of it without. Special grasses are grown to encourage soil conservation. Suggestions are developed to control erosion slopes of more than 5%.

The orchard also provides support to farmers in

the inclusion of an agro-forestry component to the project.
The orchard has now a staff of six people.

3) The Meteorological Station

The meteorological station near the orchard measures the rainfall. If it is high, then , according to the calculations of the weather station, the irrigation will be less and vice versa. Information of the rainfall is given to the farmers through the extension team.

The station has been running since the beginning of the project, and other stations have data that go back ten years.

4) JMS Block-the Pilot Farm

The Joint Management Scheme is an over fifty hectare farming area run by Lodagri and the K.V.D.A. with locally hired labour. They grow cash crops. The goal is to provide a revolving fund with which one day the project can be maintained without donor support. A few months ago one area was given over to sixteen farmers of Tokoch on a temporary basis. Each plot serves two farmers. It has two hectares, and it is bounded by windbreaks that also mark boundaries. The windbreaks reduce the wind which can interfere with the orderly direction and sequencing of the overhead sprinklers. Since the irrigation pipes can fetch a high price on the open market each plot has a pipe security area and other security measures are taken.

5) The First Twenty Farmers

Since 1988 the first twenty farmers have been farming their plots alongside with JMS. Each farmer was given one hydrant and pipes, with couplers and four sprinklers. The cropping pattern is to alternate their plots every season between legumes and cereals, half a plot and half a plot. Hired labour, if needed, costs twenty shilling a day. Each farmer may build a house on the compound and an enlarged traditional storage container. Some farmers began to grow some citrus fruits.

6) Kenya Seed Co. Plot

The Kenya Seed Co. was given a plot for trials in a farming area where it does considerable business. No research data have as yet been given to the W.W.I.D.P.

7) Phase Two

This phase is the climax and in some sense the goal of the first five years. Farming blocks A,B, and C have had their plots allocated to one hundred and five farmers since September 1992. As of March 1993 another one hundred farmers have been given plots.

8) A Note on Block D

This block has received the sixteen farmers that left the pilot farms and who were allowed to squat there temporarily (the protesters of the people of Tokoch). However block D consists of black cotton soils which are heavier than clay soils and which demand a different watering routine.

B) The Project Crop and Marketing Cycle

1) Introduction

There are two growing periods in the Wei Wei valley, one during the long rains (March with the end of the growing season in July) and one that starts around the short rains of October. There are slightly different routines for the JMS farm, the first farmers' farms, and those of Phase Two. The main kinds of crops are legumes and cereals, while there have been experiments with other crops.

The whole system has an extensive back-up of personnel and equipment which is responsible for the project's success so far. Lodagri personnel have over the last five years included a large number of agronomists and civil engineers, and all the tasks carried out depend on the staff and their equipment as well as the back-up provided by offices, telephone and the Nairobi Lodagri office.

The following are the basic stages of the crop cycle (see Appendix # 30, chart on crop cycle).

a) Canvassing the Buyers

The basic problem is the rapport and relationship with buyers. The project now deals with three companies. It has done so to spread the risks, increase the profits and keep up competition between the buyers.

Buyers, large companies in particular, have to indicate the kind of crops and the quantity demanded and have to pledge to buy the crops they have requested. Otherwise the growers would be put in a delicate situation in case buyers change their mind, pay with delay or don't pay at all.

b) Land Preparation

It is estimated that the preparation of one hectare of project land takes about five hours if one uses tractors and caterpillars. Afterwards the land has to be harrowed. This has to be done immediately after harvest when the soil is soft. By irrigation dry and hard clots can be softened. It has to be borne in mind that the average householder has a number of other things to do among them religious ceremonies and dances which have not been mentioned in this report. The solution may be the delegation of a family member who can be contacted if the plot owner is not around. Blocks of farmers then can act together, especially if they decide to rent equipment for the farm work.

c) Sowing and Planting

On the project, sowing and planting plus fertilizing one hectare of land with the planting machine and with mechanical assistance takes thirty minutes. The soil has to be soft and smooth. With many hard clots the machine can break down.

The regimen of spacing differs from the traditional plots. Sometimes farmers don't space exactly or they drop the seeds. Once too much seed is used the crop has to be thinned later.

d) Herbicide Application

With the boom sprayer of the pilot farm herbicide application takes about one hour. 0n the other farms it is done by hand. On the JMS it is done right after planting with a large sprayer.

The fact that they must now weed regularly ensures that farmers return to their plots on a regular basis. When they weed in the traditional manner they often see what pests and diseases need to be looked after and they can also thin the crop.

Spraying is for only one person and does not spread the work nor the wealth, since many people get wages doing repetitive tasks.

e) Irrigation

The project has the advantage of the intake and the installation of the gravity fed overhead sprinkler. For the local people this means that there appears to be unlimited water and therefore kokwa deliberations are not necessary.

The goal of the extension workers is to:

* inform farmers to use sprinklers according to the rainfall fluctuation
* ensure that farmers need to watch the JMS activities and take this as an example
* make sure that irrigation patterns move down the line and farmers copy each other.

Irrigation lines must cover all the plots The farmers have to make sure that the overhead sprinklers are in the same line. Water supply should be watched and not left on all night.

Extension is needed to persuade elders that what appears to be a scarce resource three kilometres away, on the project plots is a plentiful resource that if used too liberally can kill the crops.

f) Spot Weeding

There are weeds that are herbicide resistant and farmers must spot weed their own plots. Weeds should be uprooted not cut.

g) Fertilizers

The project uses two kinds of fertilizers
For all crops base fertilizers. Prices are increasing quickly and farmers find it difficult to make the connection between good crops and fertilizers. Since new soil gives good crops, without rotation and fertilizers the same soil will not produce. Some farmers do not yet understand this and they sell the fertilizers for cash.

h) Scouting

Scouting means regularly checking the farm for diseases and for weeds. This should be done at least twice

a week.

i) Chemical Control

Chemical control is done by hand sprayers. If upon scouting a problem is discovered it is referred to the extension worker. Then treatment is given.

Farmers are not yet used to this system and often get anxious. Yet it is the proper regimen of treatment which is the key. Extension workers try and persuade elders by comparing it to malaria control.

Chemicals are getting more and more expensive. Farmers also loathe to use protective clothing and this-complicates health matters.

With regard to biological control the use of a local plant called 'Nim' (azadirachta indica) might be helpful.

j) Continuous Irrigation; calibrated for the rain

This irrigation follows the same procedure as earlier. The amount of water and the time on the plot must be monitored. So does the wind. Sometimes the wind blows the water in such a way that dry patches remain and this must be avoided.

k) Scouting

At this point in the cycle scouting must be done once or twice a week plant by plant, spot checking for pests, weeds and disease.

l) Spot Weeding

Spot weeding is done the same way as before. But farmers need to be especially alert for special weeds like `itch grass' (Rotbellia exaltata) which is the worse weed in tropical Africa.

m) Irrigation

Irrigation continues but it is reduced as the crop grows according to the growth pattern, there being different irrigation requirements for different crops.

n) Harvest

Harvesting is done manually, sometimes using the trailer for support and the bags are loaded manually. As in secondary irrigation the timing of the harvest depends on the crop.

o) Threshing

Threshing and shelling is often done by machine while some farmers do it by hand. Sorghum is usually done by machine and green gram and cow pea by hand. On the JMS farm the thresher is used.

p) Packing in bags

Packing is done in jute bags of equal weight.

q) Weighing

The bags are then weighed and sewn up.

80 kgs. sorghum
90 " maize
100 " for green gram
100 " cow peas

r) Delivery

Delivery is done according to the contract with the buyer. The company usually provides transport.

s) Cropping Pattern

During July and August the next cropping pattern is decided upon based on a number of factors referred to earlier and at the end of July or August land preparation begins.

t) Planting

The regime is the same for the short season. The only question that arises are what kind of adjustments need to be made for a growing season with less rain. Basically the irrigation is adjusted according to the rain. There are a greater number of pests during the dry season when compared with the wet season and therefore scouting and treatment is more important.

During the rainy season irrigation is complementary whereas during the dry season it is vital.

Each one hectare of the farmer's plot is divided into two parts, one half legumes and the other cereals. Each season they switch. The pilot is almost the same but plots are not divided. There the whole plot rotates.

The above describes in very basic form the technical sequence of the project .Let us now see how some of the original farmers on the project have fared.

C) Profiles of Some of the First Twenty Farmers-Peoples of Machon

*1) Sipot (Korok Orolwa) - 13,000 KSh per season, age set; kaperur
2) Loripongole - 13,000 KSh
3) Madakwong - 12,000 KSh
4) Longura - 11,000 KSh
*5) Lilimo/AlemNnyang-(Ptokow) - 10,000 KSh per season, age set: karongoro
*6) Limato (Chepkoser) - 9,000 KSh per season, age set: kaperur
7) Lokwanga - 9,000 KSh per season
8) Ngoriatena - 8,000 KSh per season
*9) Joel-(Ptokow) 7,000 KSh per season, age set: kaperur
*10) Kapelingura (Seketket) - 6,000 KSh per season, age set: kaperur
11) Ngoriaang - 6,000 KSh per season
*12) Korwadomo-Tikit) - 6,000 KSh per season, age set: kaperur
13) Kedikwang-Korelach) - 5,000 KSh per season, age: 68 years old
*14) Kauka-Atarel) - 4,000 KSh per season, age set: Korongora
15) Lokwaki - 3,000 Ksh per season, age: 69 years old
16) Lopeingole - 3,000 KSh per season
17) Cosmas - 3,000 KSh per season
*18) Michael-(Tiyam) - 2,000 KSh per season, age set: korongora
*19) Ywalaripo-Chepkoser) - 2,000 KSh per season, age set: kaperur
20) Madanyang

1) Sipot

Sipot is the most successful of the first twenty farmers. He is about forty-five years old. He is from Orolwa. He has one wife only and four sons all of them under fifteen. He has been with the project from the beginning and was given a plot by the chief. He is a traditionalist and does not belong to any church. He is a diligent farmer. He never went to school and he can neither read nor write.

He has ten plots along the river, forty goats, two mango trees, and one project plot. He has left those traditional plots fallow for the last few years since he got his project plots.

He has made an average of 12,000 KSh per season that is about 24,000 KSh per year after deductions are taken off for inputs and after he keeps anything from up to seven bags for his personal consumption. He produces about thirty-five to

forty bags of sorghum. He works his plot and during harvest he hires pastoralists to come and help, one person for twenty shillings a day. It takes about twenty-five man days, about five hundred shillings, that is twice a year another thousand shillings.

One son goes to secondary boarding school at Sigor which costs him ten thousand shillings a year, about 50 per cent of his profits. Three daughters and one son are in primary school. Expenses run four hundred per student per term, this is a total of another five thousand shillings.

He also has to use money to buy clothes, sugar, cooking fat, soap, farming implements and emergency medical treatment.

He may save a few thousand shillings a year for emergency, transport or personal spending. Sipot has not yet opened a bank account. He resents the rising cost of inputs to be paid to E.V.D.A. as fifteen bags per farmer.

He says he spends most of his time on the project farm. He has made a mbati house which cost him about 4,000 KSh to complete. He sleeps there. He has a bike that cost him 2,500 KSh. He wants to be a successful and disciplined farmer.

He hopes to make enough money to buy a plot in Kapenguria which is rainfed and has good soil, and he feels that farming there will always work. It now costs about thirty thousand shillings an acre. He says if he got a title deed for his land in Sigor he would use that to get a loan to buy a shamba.

He also hopes of convincing the other ten first farmers to give forty thousand shillings each to buy a planting machine so that they can use it and lease it to others on the scheme.

2) Limato

Limato is 38 years old. He has never been to school nor can he read or write. He has one wife and four children, a boy and three girls. All of them are under ten. He comes from Chepkoser.

He has four plots near the canal, eight goats, no cattle, and one mango tree. Limato still grows cassavas and sugar cane.

He is a diligent worker and spends much time on his plot. He often sleeps on his project shamba.

After deductions he makes around 9,000 KSh per season. He produces about thirty five bags of sorghum, some of them are probably kept for home consumption.

All his children go to primary school. If he makes 18,000 KSh a year, he spends one quarter on school fees. He has neither a bike nor a mbati house.

He is not a known drinker. He is keeping money for future school fees. He keeps his money in the trust of a local Pokot shop keeper in Sigor town.

His main complaint is the same as that of Sipoti. And he said he would like more land and less payments.

3) Korwadomo

Korwadomo is about fifty years old. He comes from Tikit. He has one wife and eight children, two boys and six girls. The eldest girl is twenty and is married, but the two boys are under seven years old. He cannot read nor write and he had never been to school.

He has six plots, about ten goats and three mango trees. He still farms cassavas, maize and mango on all his plots. On the project plots he makes about seven thousand shillings a season, that is about fourteen thousand shillings a year.

He says it is up to him to decide how much money he gives to kin. Both daughters and their husbands came and work on the project plot. Each daughter's family, that is herself and her husband and their children give about eight man weeks of labour. It is calculated that the family members are working as if receiving ten shillings a day for work on the project plot. This is offset by them receiving food from the plot at the end of the growing season. Then he gives each family one bag of maize. The calculation of labour remuneration and food would then be as if he pays his family members thirty shillings a day to work on his farm.

He should have about six to eight thousand shillings left over. He then must pay school fees for the three children in Sangat primary school which amounts to two hundred per child per term, which is two thousand shillings a year. Then money is needed for cooking oil, clothes, etc.

He has a house on the farm where he himself will cook food after his drinking binges. When there is money he will go on two or three binges a week. He will drink twice a week moderately during the farming season and goes on binges after he has been paid. He goes on considerable binges with his daughter's husband John, who works at the Sangat maize grinding machine-owned by the local women's group with about twenty members. One drinking area is on the masol plain near the project plots. Pastoralists sell brew there.

However after each season he usually gives his two married daughters five hundred shillings a season for household expenses.

He complains that when he harvests he must pay fifteen bags of sorghum per growing season to K.V.D.A. for inputs. The farmers have no objective way of measuring the support and the value of the inputs. They constantly compare K.V.D.A. and Lodagri to the Catholic and Lutheran churches in the valley which give out food for free.

His general aspirations are not towards independence. He gives the impression that he expects other people to take care of him.

4) Wyalaripo

Wyalaripo is forty-six years old. He comes from Chepkoser. He has one wife and seven children. He has eight farming plots near the river and two mango trees, eight cows, and about fifteen goats.

He has also a job with K.V.D.A. as-a watchman at night at Eldoret and makes from that probably around 1800 shillings. So it is basically his wife and her brothers who run the shamba.

In this case his wife controls the money, and she comes into the K.V.D.A. office to sign for it. She makes about eight thousand shillings a season on her plot. Wyalaripo has had a bank account for five years and some of the money goes to the bank. He decides how much stays and how much goes.

Four boys are in primary school which costs them about four thousand shillings a year. That leaves them with about twelve thousand in disposable income.

He does not use his money for local drinking. It is thought he has saved up about twenty to thirty thousand shillings. They are saving it for secondary school fees, for Ortum hospital fees, etc.

If their first born son does not go to secondary school, they will build houses locally for rent in Sigor centre. This is something that Chiefs already do, making them in some ways part of a new landlord class.

He gives each brother-in-law six hundred shillings each season but he doesn't give them maize or sorghum at the end

of the month.

He does not complain about inputs. His experience has made him realize that everything costs something

5) Michael Apaloren

He farms all of his plots through his wife and daughters. He is fifty years old. He has one wife and eleven children, three boys and the rest girls. The eldest boy is around 13 years, the second is 8. The eldest girl is 28 and is married, the second eldest is married, the third one is separated with one child and lives nearby.

Michael is from korok Tiyam. He has seven traditional plots, twenty goats and two mango trees.

At the beginning of the project he was making eight thousand shillings a season and now he is making about six thousand a season. As of last year he has begun to drink heavily.

He has no bank account, hasn't bought a bicycle nor is he saving any money for a mbati house. He has two boys and two girls in primary school so that takes about four thousand shillings a year

He is known not to give his grown children any money at the end of the growing season. At the beginning his daughters and their husbands helped him with the planting and weeding but he did not give them money, only food.

His wife began drinking heavily at first and then he joined her. Neighbours have criticized him about drinking.
However the elders criticize him not so much for drinking as such but for drinking with his wife. In their opinion men should drink by themselves and women should drink alone.

He comes to the farmers' meetings regularly and he is known by his neighbours to be rude and aggressive who won't even give a burning ember to start a fire.

6) Lilimo's plot

Before he died, Lilimo had already stopped farming all traditional plots. He was sixty and died last year. He had one wife, six children, four boys and two girls. Two boys were married, and one girl is married. He was from Chepkukui.

He had around seven plots, around thirty goats, no mangos. From 1988-1992 until

when he died only one son was working on his plot. The other is in the Administration Police.

The brothers of the deceased man decided how the land was to be distributed with advice from his widow whom they handed it-over to manage. The wife owns the plot until she dies. So the son hasn't inherited but he decides who gets the food and money. According to tradition he must divide his money and food among himself and his three brothers including his mother. So the money gets divided five ways.

The name of the son is Kadingura. He has one wife and one boy and one girl. Neither go to school. He makes around 10,000 shillings a season but must distribute the money across five people according to their needs, and thus this is the first case study of what will soon happen on the project, more people dividing up the same amount of resources and which may lead to land fragmentation.

The recipients are among others his mother who directs the distribution to his two other brothers, to his two sisters. It appears that he keeps the food from the project plot for himself and the mother but he must distribute the money. The key point to note here is that according to custom, when sons of the same mother inherit something, they inherit it in equal portion regardless of the work any individual may have put in the potential.

The problem of fragmentation is already happening. On a plot in Phase One, plot number eight. which was not part of our ranking sample, a man died. His first wife had five boys and the second wife had two boys. The first wife insisted that the second wife hire three labourers at her expense to work in place of the missing sons which became an argument .

The sub-chief who was a brother of the late man solved it by persuading them to each pay 500 shillings to hire
labour and then split the money once it has been made.

The key here is it is the right of the late man's brother who decides on the-distribution. However, when he dies there will be many people claiming rights to the plot.

When he dies the first wife's first born son will decide on land use and division of resources. This will result in the eldest son of his first wife defending his and

his brother's interest against his half-brothers from the other wife.

7) Kapelingura

Kapelingura farmed traditionally last in 1990 and since then has not farmed. He is thirty-five years old. He has one wife and six children, four boys, two girls. The first girl is eighteen, and she did not go to school. He has about seven plots in the traditional farms. He has eighteen goats no cows, and two mango trees. He is from Ptokow.

His sons go to school. One is ten, and one is seven. The other two are still young. Two boys going to primary school cost him about two thousand shillings a year.

After inputs are paid, he makes less than nine thousand shillings a season. He does always come to his project shamba. He drinks sometimes. He lets weeds proliferate. He has close relatives who would come and help if asked, but he does not ask them. He finds it easy to succumb to staying with drinking groups on the way to his shamba, because he has many friends.

Unlike our earlier example who is an anti-social solitary drinker this man is social and is well liked by many who drink just as much.

* Note that the Pokot have a series of graded terms in their language for degrees of drunkenness. These could be used as clear tokens of fines for not doing certain kinds of work and enforced by the farmers' association.

Yet informants maintain that some people can drink a lot and work and others drink only a little and get drunk easily so it is not just quantity of drinking which is the problem.

Kapelingura does not have a bike nor a house, nor a bank account, and he saves no money with a local duka owner. He has a tendency to replenish his drinking money by wandering off into the forest, cutting trees, burning them for charcoal and selling them in order to buy more brew.

Most of the alcohol is made by local pastoralists and bought by the farmers. Oddly enough at farmers' meetings Kapelingura often talks about the problem of alcoholism.

8) Joel Limanian

Joel is forty years old. He has one wife and five boys and two girls. He is from Seketket. He has about nine plots and his brothers are farming them, and he has more than twenty goats.

He makes about six thousand shillings a season. He has four children in primary school so that leaves him about four thousand a year. But he has a job as a road clearer for the Ministry of Transport and Communications. Luckily he is based in Sigor. He makes about two thousand a month and he works on his project plot on weekends.

He shows up at around fifty percent of the farmers' meetings which is not bad for local standards considering that he runs nine shambas, one project plot and has a job. He has a bank account in Kapenguria, no bike and no mabati house.

He is often helped by his brother in farming. His job prevents him from being on the farm most of the time.

He has been to school for two or three years so he can write a little. He is sending four children to primary school which costs him four thousand shillings a year. He recently got a farm near Kitale and he farmed it for the first time this year, which is another reason why he is not around.

He drinks moderately and has no political aspirations. He is very critical of a variety of organizations working in the area.

9) Kauka

Kauka is about sixty-five years old with one wife and seven children, four boys and three girls. One boy is married and the first daughter is married. He is from korok Atarel. He has about eight plots, no mangos and forty goats.

He has to pay for school fees. One boy is in Wei Wei secondary school. Three boys are in primary. One girl is also in primary school. Therefore he must pay about twelve

thousand shillings a year in school fees.

He makes about 12,000 shillings a season and is an average farmer.

10) Conclusions

The elders who were given plots do not have the skills to manage them. They do have the authority to mismanage them if they so desire. By doing so they create work for the Lodagri/K.V.D.A. staff who must ensure their farms are well maintained. There is a tendency to drink away profits which seems to be related to the fact that the elders have little savings, investments and the like.

Part VIII- Project Recommendations

A) Problems and Prospects

The one and overriding problem that the project faces is its sustainability. What this means is that in the coming months a transition plan towards project independence must be undertaken without assuming that the project can hire more permanent staff to do so.

Quite the contrary, the project must use its staff and resources in such a way as to maintain the project momentum and to link it with other institutions who are already working in the commercial system of Kenya, so that it will be in these partner's interest to share profits and invest in the project to keep it going.

K.V.D.A. and Lodagri are organized. The private sector is organized and only the farmer's remain to be organized along lines that they can feel comfortable with.

Let us now reexamine some of the project problems against some of these proposed solutions.

Short Term Problems

Short term problems include:

* most plot recipients have not gone to school and lack the literacy and numeracy skills to take any more than minimal responsibility for project implementation

* the nature of age grading among the Pokot puts the greatest amount of authority with elders who have the least understanding of the commercial situation in Kenya and necessary to the project's success

* those family members who have been to school cannot make decisions on behalf of their parents without first convincing them that they are acting in their interests

* most Lodagri/K.V.D.A. extension staff are not members of the local community thus elders feel that they do not have a long term commitment to project continuity

These first four problems cluster around one key institution of Pokot society which permeates much of Pokot daily life, that is an age grade system that puts maximum authority and control into he hands of older men.

It is their children who have been to school but who do not have the power yet who do have the potential to be trained to run the farmer's association and maintain the project. So far they have not been made a clear target of project training.

Thus it is necessary to conceive of the project using its resources and prestige to `modify the age grade system' without dismantling it.

So far project staff have spent many months in the field showing farmers how to use the new techniques developed by project technicians. These are described in their general outline and stages in the previous sections.

A comparison of traditional and improved techniques shows a number of similarities and differences between the two systems shown below.

	Traditional	**Modern**
1) Water	restricted	unrestricted
2) Labour	kin based	kin and wage
3) Rotation	over space	over time
4) Treatment	grasses	fertilizers
5) Decisions	hunger based	market based
6) Land tenure	traditional	unregulated
7) Confl. res.	kokwa	kokwa and chiefs
8) Inputs	most local	most bought
9) Planting	open	fixed
10)Harvest	open	open
11)Management	active	passive

With continuous and constant extension work the farmer's learning gap between the two systems can be overcome and traditional farmers can become successful overhead sprinkler irrigationists.

However most users of the new plots are elders. They come from those age sets which have much authority over their family and over the younger members of society. They often are followers of the traditional religion, are illiterate, have not gone to school and have travelled little in Kenya.

As a result they do not have an objective understanding of the organization of the nation state, Kenya's position as an independent African state and as a developing country. Nor do they understand the market economy and frightening phenomena such as banks, interest and inflation.

As a result they are at a loss at what to do with their extra cash and investments that could be made in their interest. Because of this one project member was known to stash cash in a plastic bag and bury it under the house, only to dig it up months later to find out that the termites had eaten the paper.

If the goal of the project is the development of a farmer's association with elders as members and who are supposed to organize themselves in such a way as to maintain technological innovation and deal with the private sector, then the chances of doing so with such personnel are slim.

Such a situation presents the present project management with three options.

* The first one is to extend the project for a number of years in the hope that project elders, through adult literacy programmes and further extension work can run their part of the project independently. The present cut back in foreign aid due to the recent political crisis in Italy makes that option appear most unlikely.

* The second option is to hand over this function on a temporary or even permanent basis to the K.V.D.A., thus in essence making the farmer's and their association a rather unique `commercial ward' of the state. The problem here again is whether the K.V.D.A. will be around in its present form in two years time, if Kenya follows the structural adjustment plan of the I.M.F. and dismantles the parastatals.

* The third option would be to find a target group of people who have some sort of stake in the project's survival, have personal relationships with the farmers concerned and who can work with them in such a way and within a framework that takes aspects of the old system and modifies it to deal with changing conditions. This would focus on creating `kokwa councils' within the project whereby literate project trainees would be given a greater say in community decision making.

The literate children of project plot users are one such target group. Many of them are in secondary school and if the present growth in unemployment in Kenya continues, their prospects of being anything but farmers is limited. They have the literacy skills, the understanding of arithmetic and basic maths and many of them have some training in metal and wood work or car mechanics.

They do have an understanding of basic science, some basic knowledge of geography, history and the outside world, a fascination and desire for money and modern consumer goods, as well as respect for modern technology.

What they do not have is a role within the project. And, they are hampered by the fact that they belong to the younger age sets that traditionally have little authority. Therefore, it is suggested that a select group of literate children of project farmers be given this role and that they receive training in the project for the next twenty four months.

They could be selected according to a means test from families on the different blocks. An equal number taken from Koroks within Machon and Takoch would prevent any protests from arising as happened with the case of the first twenty farmers. Or better still they could be drawn from the farming blocks of the project farmer's which are in effect de facto korok.

The criteria for selection of the candidates should begin from all those children of farmers on the project who are either in or have finished secondary school. Each one of them should be given a standard interview to be decided upon by project staff. Then the first batch of candidates should be given some sort of test-basic English, basic maths, basic geography and some problem solving exercises. The final candidates should know that they had to struggle to qualify and that if they do not behave there are many others waiting in the wing to be trained as project assistants.

The reason for this goes back to the problem of the outsider as benefactor. Since the elders see outsiders as givers of charity this training course has to be seen as an elite group who will have to work hard. At the end of the course they will receive a K.V.D.A./Lodagri certificate attesting to what they have learnt-but only after a written and oral test.

The goal of this kind of approach is to create an identification and understanding of the project from the point of view of those people who may stand to inherit plots and who have already contributed much labour to their upkeep.

It is this group who will act as an intermediary and representative group. They will be able to explain the constraints of the market and the responsibilities of the project in such a way as to persuade their fathers to act in ways that take into account the long term needs of the family.

They could be the recipients of training and assistant in the program to create project operation manuals and could also serve apprenticeships with buyers/partners in the commercial sector, and who may find it in their financial interest to sustain the project after their two year training period is over. They would be supervised by Lodagri staff who would set the training standards with their K.V.D.A. counterparts. They could be fed at the farmer's expense with grains and legumes from the project.

If given as much understanding of the whole project as possible they would be motivated to act to persuade their fathers to cooperate in new arrangements and ensure that participation was coordinated and voluntary.

Other problems are:

* there are no title deeds for the new or old plots thus they can not be used with banks to get loans for their development either individually or collectively

* similarly the long term problems of inheritance of each plot by at least three or four sons suggest inevitable fragmentation of plots and plot owners and lack of project cohesion

A quick look at the surveys and wealth ranking of koroks and members of the project show that the higher income groups across koroks were among the first twenty farmers. The rest followed later. But this is not a central point. The number of plots that male sons stand to inherit within the next decade decline significantly, often by more than fifty percent.

As many elders have told me the valley is filling up with the people and there is not enough land. It is most unlikely that most Pokot understand that although there are rich and poor in the community (as demonstrated by our wealth ranking charts) the overall number of plots and ownership of fruit trees is declining. Therefore all sons look enviously at the project plots.

The only solution to this is land adjudication. But the present style of land adjudication of the Kenyan government is to give title deeds to individuals.

Following this solution land fragmentation will be inevitable. If this occurs the project will not be viable, relationship with commercial buyers will collapse and the overhead

necessary to run the project will not be available. In order to avoid this the following is suggested.

All owners of plots be registered as shareholders in a company. The company represented by the farmer's association will be legal owners of the land. Shares in the company can be divided and inherited but they cannot be sold by project members. Some system of dividends or profits based on work put in on the plots and ownership of land must be worked out to guarantee the system.

A first step towards this is the giving of collective tenure to farmers by the local administration. This will prevent farmer's from giving or selling plots to outsiders and as the farmer's association begins its work with a move towards a more legal form of commercial association can evolve over time.

The key here is the prevention of land fragmentation.

Other problems:

* there is no training program for the literate children of farm recipients

The training program needs to have a simple schedule and a method that is tried and true. If there are twenty four months left to this phase of the project and there are twenty stages in the project cycle then each month should concentrate on the development of a Project Operation Manual that outlines the basic steps. At the same time students should be placed with users as apprentices to learn the marketing and banking basics of the project.

* the farmer's association has not negotiated directly with buyers but has gone through the auspices of Lodagri/K.V.D.A.

K.V.D.A. must decide how much support it is able to give the farmer's association in its direct negotiation with buyers. Perhaps it can concentrate on marketing for the JMS and encourage the farmers, through their trained children to develop relationships with the seed companies that will include less profit for more and longer term supervision.

Medium term problems:

* the ability of the K.V.D.A. to supervise the project after Lodgari pulls out is in question by World Bank and other donors pressure on Kenya to dismantle parastatals

K.V.D.A. and Lodagri staff need to spend the next twelve months developing two scenarios:

1) Project with K.V.D.A. as implementing Kenyan agency

2) Project acting autonomously in an institutional environment where there are no para-statals or they have been privatized.

* K.V.D.A. senior staff are often rotated from Head Office causing a time consuming retraining by Lodagri staff that reduces the effectiveness of technical assistance

A special request can be made to K.V.D.A. by Lodagri not to transfer staff for the next twenty four months during this transitional phase.

* the inflationary spiral that has hit Kenya plus the rise in the actual cost of inputs reduces profits, since payment and invoices are often separated by a period of up to six months and are not linked to foreign currency rates

Two quotations to buyers can be given, one for prompt payment and one for late payment. The prompt payment quotation can be a number of percentage points lower than late payment to motivate buyers to maintain the project cash flow through prompt payment.

Long term problems:

* the project as it now stands depends on the offices, equipment and support staff of the present K.V.D.A./Lodagri team-without them the farmers would not make it through one commercial growing season

One solution to this problem would be another form of joint venture. This one would be in the tourist industry. The project compound is ideally constructed to act as a modest but well paying lodge. An agreement could be worked out that when Lodagri stops its technical assistance a well know tourist company could use it as a base for hiking in the Wei Wei valley, wildlife viewing in the project area and the nearby southern Turkana reserve as well as Nasolot park. Profits from this joint venture could ensure that the compound and the office overhead would be covered.

* the change in government in Italy and the dramatic scaling back of development assistance calls into question how much Phase Three will be financed

* if the project is made viable for the long term, polygamy and the demands of all sons for a share in the ownership or proceeds of the plots will cause much social conflict

Many of the above project problems and prospects are contextual aspects of a participatory rural appraisal. The central goal of this participatory rural appraisal was to formulate with the farmers, and based on an intensive familiarization with their way of life a set of rules which can organize the farmer's and allow them to become equal partners with Lodagri and K.V.D.A.

B) The Rules of the Farmer's Association

The following rules were worked out with over forty farmers in a series of meetings which ended with enthusiastic blessings on all who participated.

As pointed out in the introduction to this document, the rules of the farmer's association take into consideration and build upon traditional Pokot practise.

Pokot elders were very keen on the separation and rotation of what are technically called legislative, executive and judicial functions. As can be seen from an examination of canal maintenance the concept of communal checks and balances is not unknown among the Pokot.

The final rules take into account the dominant values of the agricultural Pokot, such as the egalitarian nature of Pokot society and customary law. All of these can be seen at work in the various sections of this document.

These include the notion that all Pokot have equal legal rights, the fact that there are not nor have there ever been chiefs (the modern chief system is grafted on to the traditional system and serves more as a communications bridge with the administration) and the formation of small representative councils for small issues and larger councils for larger issues.

The Kurut Farmer's Association

Draft Constitution and Clarifying Notes

November 1993

The Framework of the Kurut Farmer's Association

1) The farmer's association should be called the Kurut Farmer's Association, recognizing that the project has been active among farmers who are all members of a group of cooperating koroks (bounded settlements with specific rights) and which is often erroneously referred to by outsiders as `Sangat' (which in fact is only one small korok of three households within the Kurut)

2) The farmer's association should be organized as closely as possible along the social and legal traditions of the Kurut, especially those aspects of customary law that deal with cooperation and conflict resolution among individuals who do not belong to the same household, lineage or clan

3) The guiding principle of the Kurut Farmer's Association (KFA) should be that it is a rule making body that over time can create new rules on a case by case basis, hopefully drawing on Kurut tradition to deal with new conditions while protecting the rights of each farmer

3) Each farming block should be considered similar in function to a traditional korok

4) As among the koroks of the mountainside each member of the korok farming block on the scheme has rights to his plot, equal access to water and collective responsibility for resources such as trees (e.g.wind breaks).

5) Each block will elect three representatives for different terms of office to serve on what will be called the council or kokwa of fifteen and which will be described below

6) The first will be a korok representative.

His responsibilities will be as follows:

a) to meet with and discuss with other members of his korok issues that are of common concern at a general meeting of all korok members to be held in the middle of each month

b) to bring the issues of concern mentioned at these meetings to a smaller meeting of all project korok representatives of the Kurut Farmers's Association to be held at the first of each month (to be known as the kokwa of fifteen)

c) to bring back issues of concern from the kokwa of fifteen, new information, reports, and decisions of the meeting of the KFA to be shared with all his korok members

d) the korok representative will have the right to vote at any Kurut Farmer's Association meeting (kokwa of fifteen)

e) however his vote will not be valid unless throughout the entire meeting he has been accompanied by the two other members of his korok committee described below, his korok member of the management committee and the korok monitor

f) the korok representatives shall only serve a term of one season each in rotation

g) he will relinquish his authority when the money for the harvest has been received by his fellow korok members

h) once this is done they will then together elect another member of the block/korok to serve for the next season

i) a member cannot serve for two consecutive seasons

7) The second person to be elected to the korok/block committee will be the korok monitor

a) he will not have the right to vote

b) his job is to insure that all issues, information and other concerns raised by the kokwa of fifteen have been faithfully transmitted by his and the korok representatives to all of his korok members

c) he has the right and obligation to participate fully in both korok and kokwa of fifteen meetings to express his opinion and to try and persuade any members of the rightness of his views, but he cannot vote

d) he must abide by the decisions of the majority once a vote has been taken and make sure they are explained at this local korok/block meetings

e) once the harvest has been paid for, he will together with the korok rep. step down as monitor while a new monitor is selected by he and his korok members

f) no monitor can serve two consecutive terms

8) The third person will be a literate, educated son of one of the families in each of the five koroks

a) each of these candidates must ideally be from different koroks on the hillside and from different clans

b) each one of these five young men should have finished form four

c) if that korok/block does not have a form four graduate than a standard eight or higher graduate will be canvased

d) it is wise that these five should not all be first born sons

e) each of these five will be apprenticed to part of the project-e.g. accounts, marketing etc. in order to receive on the job training from Lodagri/ K.V.D.A. for the next eighteen months

f) each korok will supply him with the equivalent of one thousand shillings in cash or kind each month to provide for his subsistence and to take care of his basic needs during training

g) each member of this trainee group will participate in all korok
and kokwa of fifteen meetings, but as non voting advisors

g) they will not have the right to vote

h) their tenure will last until the end of Phase Two since their accumulated technical expertise will be crucial for informing the farmers of their options for action

9) the representatives of the Kurut Farmers Association, that is the kokwa of fifteen -the five korok reps, the five korok monitors and the five managers in training shall meet at the beginning of each month to discuss important matters

10) any vote will be carried by majority of three out of five voting representatives

11) the fifteen members of monthly meeting will once a year together elect a treasurer and secretary from outside of the fifteen members to handle project finances and implement financial decisions

12) the treasurer and secretary will not have any rights to vote while they are serving their term

13) each time they write and cash a cheque they must inform the accounting company that will come and do the KFA quarterly audit

14) the secretary will make notes of the monthly meetings of the kokwa of fifteen

15) these notes should be typed out in Pokot and English and distributed so that they can be read back to the elders at each of the five korok meetings held mid month, thus guaranteeing continuity of information for those who cannot read and write

13) the secretary and treasurer shall work for two growing seasons

14) it is to be understood that the treasurer and the secretary
are nonvoting members of the council of fifteen

Ownership

1) collective ownership for the land shall be made through application to the DDC by the elected representatives of the Kurut Farmers Association (with technical assistance from the council of fifteen)

2) Once received each member can sign an agreement with the KFA that his land will not be fragmented through inheritance
and individual title deed if later received from the government will be bound by this initial decision

3) It is recognised that this implies some sort of shareholding arrangement whereby the descendants of the owner will receive portions of profit in cash or kind from the plot and that the KFA can work these out in the years to come

4) The married man with children, that is the father, should own and manage the plot within the collective agreement of group land tenure

5) The ownership and management of the plot should be taken over by the first born son upon the death of the father

6) If the first born son shows that he is irresponsible while growing to maturity then the father has the right to publicly transfer future ownership to a second born or even third born son

7) Plots cannot be rented or sold. `Plots are like a lactating cow'.

8) If the owner of a plot is not distributing enough food and money to close family and relatives then neighbours should meet with him to warn him.

9) If he continues to drink away or excessively misuse his profits the male relatives of his wife,`the kamama' will bring pressure on him to transfer ownership and management to the first born son before the man dies.

10) If the son is not old enough one to run the farm one of the male members of the `kamama' can stand in for him until he reaches maturity

11) To insure that the elected representatives of the farmers, and who have rights to appoint a secretary and treasurer with signatory rights to the bank account do not run off with the money, the Kurut Farmer's Association will hire, in advance, an independent outside accountant to give them a quarterly financial report which will then be given to all members of the KFA

12) This report will be made available to all farmers.

Land Use

1) The cropping pattern will be given to the farmers in advance as has been the custom so far.

2) If a farmer cuts down his windbreak he will be investigated by his block korok council, a kokwa of elders of that block shall be held and he will pay them the customary fine of one goat. He will still be responsible for planting a new tree and watering it regularly.

3) Farmer's whose plots face bush or forest should be allowed to extend their plots into the forest since this is done to protect it and neighbouring plots from the depredations of wild animals .

Maintenance

1) Pipes, sprinklers and the intake should be jointly maintained and financed by the JMS and the Farmer's association, since the water and technology is shared and both growing and selling is coordinated.

2) The JMS contribution to this account should be the same as the farmers and calculated at the same rate per plot per season.

2) Defective sprinklers should be fixed and repaired immediately.
If not farmers should make arrangements with the jua kali sector of Kenya's towns and industrial centres to see if replicas of these sprinklers can be made locally. Farmers are concerned over sustainable maintenance of sprinkling systems that must be imported from abroad.

Livestock

1) Livestock should not be allowed to graze on plots.

2) Livestock should not be allowed on plots overnight.

3) Livestock should not be allowed to be kept in temporary houses.

4) Any livestock belonging to Kurut farmers should be confiscated if found. The confiscator should trace the owner and a kokwa be called by his block. A fine should be paid to the block of the farmer who caught the animals.

5) The same rules should apply to the stock of incoming pastoralists. However, this must be by means of persuasion since by custom they have the right to bring their cattle anywhere where one is not planting since both they and the farming Pokot belong to one nation, `the korenja'.

Pokot/English Glossary

akong kassa-first day of the week
arapogh-main irrigation canal
arawa-month
aruksa-April

busaa-local brew

chalat-irrigation
chamtagh-judgement
chepsot-canal maintenance
cholsio adeng-second irrigation
choka-samll hut

harambee-charity drive

ilot-seperating and storing

jua kali-the informal sector

kanam silanot-beginning of dryness
kanamakwa-ripening maize
kamas-midlands
kamama-
kamass-the sides of a farmer's plot
kamuta-second part of the night
kapatapot-small storage place in house
kapitei-
kapor-
kara sochot-cleaning canal
kararis-first part of night
kapusu asis-second part of tokwogho
kapsas-next to senior age set
katar-large storehouse
katakata-planting time
kchip-sunrise
kekona asis kogh-fourth part of the day
kekona asis-fifth part of the day
keremut (helichrysum glumaceum)-muli purpose tree
kerel-first moon
ket-bottom of a plot
keyech-last moon
keywas-first part of first part of tokwogho
kiliput-seed replacement

kikarakaret-monitoring
kimwoghet-request for irrigation
kito-compensation
kiyech-custom of asking farm labor from neighbours
ko-founding lineage
koghin-a flat stone
koghyo asis-second part of the day
kokelian-November
kokwa-council or council meeting place
komo-a wooden tool
kony akong-season
kopsut-October
kopta-pile of plot detritus
korenja-the Pokot homeland
korok-hillside settlement
korop-food container
koyowon-(pellaea longipilosa bonap)-multipurpose tree
kwen-middle of a plot
kwowe-December
kurut-collective name given to two groups of cooperating korok
kusoyo-multi purpose plant

lalwa-river

machon-a group of korok
mangat agho-night
makang-multipurpose tree
makut kassa-fourth day of the week
maratino-honey mead
masol-plain where pastoral Pokot dwell
masop-highlands
matatu-private commercial transport for pulbic use
matin-a day's work allotment
mnun-third part of day
mokongwo-fig tree
mei-hunter gatherers of the Lelan forest
melwan-June
moghen-beehive
mu-January
mukeyon-August
murkukong-multipurpose tree
musar-a kind of porridge
mut-top of a plot
mut kassa-fifth day of the week
mut ngo aking-sixth day of the week

mut ngo adeng-seventh day of the week

ngintuyan-a wooden tool
ngoret-digging

odeng kassa-second day of the week
oron (tamarindus indica)-multipurpose tree

panga-machete
parayun-raised platform
pelat-burning of agricultural plots
pinwoy-age sets
piyghon-firesticks
poghet-day
pogh poghet-daytime irrigation
pokokwa-March
porowa-May
poyotwo-multipurpose tree
putin-cutting heap

rasa-clearing
ratakwa-weeding
ratakwa odeng-second weeding
ripot-guarding
ripoto poghet-daytime guarding
rupatapogh-clsoing the entrance

saka-place of water diversion
sakapogh-second division of water
samuk kassa-thrid day of the week
silanot-dryness
sochot-secondary and tertiary irrigation canals
solyon-(schizachyrium sanguineum) multipurpose plant
sopotwa-small night shelter
sowo-senior age set
sukuk-July
suroyo-(gynandropsis gynandra) multipurpose plant
susat-cutting grass

takoch-one group of korok
tamka-river
tapach-September
terter-February
tighot-night irrigation
tingoswo (flaciartia indica)-multipurpose tree

tiwut-small stones and mud used to direct irrigation water
tokwogho-first part of day
tulungwa-multi purpose tree
tumot-multipurpose tree
tuwot-multipurpose tree
tuoyonwo(balanites aegytica) multi-purpose tree

warerian-plant used for thatch
werkoyon-local shaman and divinor

yamut-excessively dry
yatatapogh-letting in water

Bibliography of Books and Articles Consulted For This Report

Allways J.,Cox P.M., `Forests and Competing Land Uses in Kenya' in **Environmental Management** Vol. 13, No.2, pp. 171-187

Andiema, R. ,**Division of Labour in The Pokot Society**
GOK, A.S.A.L. Kapenguria, September 1989, unpublished manuscript

Barrow, E.G.C., `Building on Local Knowledge-the challenge of agroforestry for pastoral areas', **Agroforestry Today**, Vol. 3
#4 Oct/Dec 1991

Beech, M. W. H. **The Suk-Their Language and Culture**, Oxford, Clarendon Press, 1911

Bwisa, H. `Small Business-The Way Ahead' **Management** Vol. 11 No. 5 1992

Conklin Harold `An Ethnoecological Approach to Shifting Agriculture',in **Environment and Cultural Behavior** edited by A.P. Vayda, Natural History Press, N.Y., N.Y., 1969

`Notes on the Tribes Inhabiting the Baringo District, East Africa Protectorate' the Hon. K.R. Dundas' **Journal of the Royal Anthropological Institute #** 40 1910

`Empirical Approaches to Household Organization' Fratkin, E. and Johnson L., in **Human Ecology** Vol. 18 # 4, 1990

Englemann,`Towards a Culturally Based Entrepreneurship Concept'
in **Management** Vol. 11 No. 5 1992

Government of Kenya, **District Focus for Rural Development.**
Government Printing Office, Nairobi 1985

Harrison, Paul **The Third World Tomorrow,** Penguin Books Second ed. 1983

Hendrix, H. **District Atlas West Pokot**, Ministry of Planning and National Development, General Printers Limited, Nairobi, 1985

Hogg, Richard **Pokot Traditional Irrigation And Its Future Development-A Report on Traditional Irrigation Agriculture in West Pokot District,** GOK, A.S.A.L. 1984

Kesby John D., **The Cultural Regions of East Africa**, Academic Press, London, 1977

Mascarenhas, James `Participatory rural appraisal and participatory learning methods: recent experiences from MYRADA and South India' in **Forests, Trees and People** Newsletter # 15/16

Meyerhoff, Elizabeth, **Taking Stock-Changing Livelihoods in an Agropastoral Community'** Acts Press, Nairobi, Kenya 1991

Nyerges, A. E.`Coppice Swidden Fallows in Tropical Deciduous Forest: Biological, Technological and Sociocultural Determinants of Secondary Forest Successions' **Human Ecology,** Vol. 17, No. 4, 1989

Nyerges, A. Endre `Coppice Swidden Fallows in Tropical Deciduous Forest: Biological, Technological, and Sociocultural determinants of Secondary Forest Successions' in **Human Ecology** Vol. 17 No. 4 1989

Ochieng, William Robert, **An Outline History of the Rift Valley of Kenya,** Unpublished Manuscript, 1975

Quiroga, E.R. `Irrigation Development in the Sahelian Countries: The Kirene District in Senegal' **Human Ecology** Vol. 18, No. 3, 1990

Snell, G.S. **Nandi Customary Law**, Kenya Literature Bureau, Nairobi 1986

Stromgaard, Peter,`Adaptive strategies in the Breakdown of Shifting Cultivation: The Case of Mambwe, Lamba and Lala of Northern Zambia' in **Human Ecology,** Vol. 17, No. 4 1989

Unruh, J. D.`Integration of Transhumant Pastoralism and Irrigated Agriculture in Semi-Arid East Africa' **Human Ecology** Vol. 18 # 3 1990

untitled, `**The Pokot Traditional Furrow Irrigation'**, E. and S.S. Ltd. January, 1986, unpublished manuscript

USAID, **Private Enterprise Strategy**, October 1990

Warner, K. **Shifting Cultivators-Local Technical Knowledge and Natural Resource Management in the Humid Tropics**, FAO, Rome 1991