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MINISTRY OF AGRICULTURE



**LARGE FARM
REHABILITATION STUDY**

PROGRESS REPORT NO. 1

CONSULTANTS

WARD ASHCROFT & PARKMAN (EAST AFRICA)

In association with

HUNTING TECHNICAL SERVICES LIMITED

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End July '66.

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Dear Mr. Lijoodi,

LARGE SCALE FARM STUDY

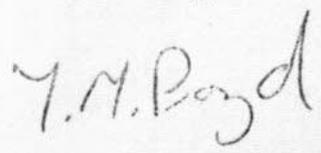
We have pleasure in submitting our first Progress Report covering the six weeks since commencement of the project at the end of May. The report presents our initial review and analysis of the main large farm areas and our approach to selecting a number of farms for detailed study.

We have also discussed two of the problems, unregistered owners and sub-division of large farms and raised a number of issues for the consideration of the first Steering Committee. These include:

- the registration of currently unregistered shareholders
- the need for rational planning and provision of services to areas already sub-divided
- the clarification of Government policy on sub-division

Lastly we would like to express our appreciation of the considerable help and co-operation we have received from officials of the Ministries of Agriculture and Co-operative and Social Welfare and from the AFC.

Yours sincerely,



T.M. Boyd

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1. INTRODUCTION AND SUMMARY

This report is the first of a series of informal Progress Reports which will be submitted by the consultants at intervals of approximately two months. It covers a period of six weeks since the arrival of the main body (4 members) of the study team at the end of May.

The primary objectives during this period were;

- to appraise the present state of the large farm sector with regard to general aspects such as, the physical resource base, the present performance of the sector in terms of production and the current technical, economic and social problems facing it;
- to obtain an overall picture of the composition of the sector in terms of the number of farms, the sizes, the type of ownership, the extent of present subdivision, the types of enterprises on the farm and an indication of the present standard of management.

The former was achieved through meetings with officials from the Ministry of Agriculture, the World Bank, the Agricultural Finance Corporation, the Ministry of Co-operatives and Social Services, the German Agricultural Team and from the Provincial and District Administrations, supplemented by documents and reports already published on the sector.

The latter has been achieved by study and discussion of the compiled lists of farms with District and Divisional Officers from the Ministry of Agriculture (and in some instances AFC Branch Managers) and recording their local knowledge of each farm. Analysis of these data coupled with a review of physical resources such as soils and climate has resulted in the identification of five farming systems into which the majority of farms fall. A description of these farming systems which will be the primary grouping into which farms will be divided for the purpose of more detailed survey, is given in Section 2.3.

Analysis of these data has also been used to determine the size and importance of each farm grouping (ownership, sub-division, etc.) and ultimately to determine the distribution of the 100 farms to be selected for detailed survey, between each group (Section 4).

A draft questionnaire for use in the farm survey has been prepared and will be submitted to the Ministry of Agriculture. It has yet to be tested in the field and may be subject to modification after testing.

The study terms of reference require that two major problems, namely the extent of sub-division and the number of un-registered owners, be quantified by the consultants. Alternative methods of doing this are discussed in section 4. We emphasise the importance of an accurate measure of these before any solution can be reached and recommend that with regard to un-registered ownership, consideration should be given to offering formal recognition to un-registered owners as the best way of accurately estimating their number.

During the next two and half months the team's efforts will be directed almost solely towards carrying out the survey and analysis of some 100 farms. Having already determined the distribution of the sample between districts, farming systems and other groups, the immediate priority is to select, in consultation with District and Divisional Officers, (section 4) the farms for detailed survey.

Concurrently, the data collected during the past six weeks will be up-graded in order that the extent of each farm group can be more accurately quantified. This will be done by issuing a questionnaire to Extension Officers at the Area level and will include districts such as Kiambu, Nandi and Nyandarua (which did not have information readily available or were not included in the initial visits) in addition to the major large farming districts of Nakuru, Uasin Gishu, Trans Nzoia and Kericho. The questionnaire will be confined to obtaining information on ownership, type of enterprises, extent of sub-division and standard of management.

2. SOILS, CLIMATE AND FARMING SYSTEMS

2.1 Soils

The soils of the large farming area generally fall into one of three types:

- (a) Soils derived from volcanic ash, which occur principally on the slopes and pediments of the tertiary and quaternary volcanoes. Such ash weathers give strong brown and red clays of high mineral content, usually of considerable depth, as on the slopes of Elgon and Londiani. Shallower soils, often with murram close to the surface or with rock outcrops, occur on the upper mountain slopes and on the higher plateau areas in Uasin Gishu.
- (b) Soils derived from the Basement Complex occur over much of the central part of Trans Nzoia and extend southwards into Uasin Gishu along the Nzoia valley. On weathering the parent materials yield brown to dark red friable clays and sandy clays.
- (c) Alluvial soils are scattered widely throughout the area along valley bottoms, on the floor of the Rift and on parts of the plateau in Uasin Gishu.

Soils derived from volcanic ash and from the Basement Complex are generally fertile, deep and well drained and have moderate to high agricultural potential. Alluvial soils, often of 'black cotton' type, are poorly structured, have a low organic content, tend to be acid and usually have more or less impeded drainage: agricultural potential is limited and the soils are generally used for livestock production.

2.2 Climate and Ecological Zones

The ecological zones of Kenya has been described by Pratt, Greenway and Gwynne (J.appl.Ecol.3 : 369 - 382). Six climatic zones were identified based principally on rainfall and altitude.

Within the large farming area of the Rift Valley Province the following three climatic zones occur:

II Equatorial. Humid to dry sub-humid with a moisture index not less than -10. (Thorntwaite, Geographical Rev. 38 : 55 - 94). Original vegetation was probably closed forest with derived grasslands and bushlands. Within the large farming area this zone is found at altitudes in excess of 7 000 feet with rainfall of over 40". Such areas are found in the west of Trans Nzoia on the eastern slopes of Mount Elgon; down the eastern side of Trans Nzoia, in the east, central and southern parts of Uasin Gishu, in that part of Kericho which has a large farming system, in Nakuru west of the western Rift Wall and in the north-eastern part of Narok; and in the eastern part of Nakuru from the top of the eastern Rift Wall.

III Dry Sub-humid to Semi-arid. Moisture index -10 to -30. Original vegetation not forest but a variety of moist woodland or savanna with broad-leaved trees and evergreen shrubs. This zone occurs at slightly lower elevations (6 000' to 8 000') and at lower levels of rainfall (30" 50") in the large farming areas, than does Zone II. Much of Trans Nzoia and the northern and western parts of Uasin Gishu occur in this zone as well as a small area in the north and north-west of Nakuru and along the lower Kinangop east of Naivasha.

IV Semi-arid. Moisture index - 30 to -42. Original vegetation probably a dry woodland, often modified by fire to an Acacia - Themeda association. This zone is found at elevations of about 6 000 feet and below with rainfall generally less than 30 feet. It occurs in Nakuru in the extreme north and along the Rift floor in the basins of Lakes Nakuru, Elementaita and Naivasha.

2.3 Farming Systems

A number of farming systems have developed primarily as a result of altitude climate and soil. In addition social factors such as type of ownership, number of owners, sub-division and size of holding have clearly influenced the system adopted.

Although it was not always possible to make clear cut distinction between the types of farming, as there is some overlapping, it was possible to identify five major systems.

1. Wheat/Maize/Dairy. This system is found largely in Ecological Zone III where soils are not limiting, at intermediate altitudes of 6 500 feet to 7 500 feet. Much of Uasin Gishu and both sides of the rift in Nakuru are typical of this system. Wheat is the dominant arable crop but some maize and barley are grown.
2. Maize/Dairy (Wheat). A similar system to the previous one, found in areas of similar ecological potential, possibly at slightly lower altitudes with a higher rainfall. Maize is the dominant arable crop but wheat and barley are also grown. Changes in farm ownership pattern since the mid-sixties have contributed to the expansion of this system, and it is found in some areas (Kipkelion division) which on purely ecological grounds would be considered more suitable for other systems. The whole of central Trans Nzoia, the Kipkelion division of Kericho and the Timborora division of Uasin Gishu are typical of this system.

3. High Altitude - High Rainfall. Largely related to Zone II at altitudes in excess of 7 500 feet, the system often embodies intensive land use with a wide mix of crops and livestock. Pyrethrum is typical of this system with wheat and barley as the principal grain crops. Livestock enterprises include dairy, intensive beef production and sheep for fat lamb and wool. Parts of Kipkelion and the Molo and part of Babati divisions of Nakuru are the main areas of this system.

4. Extensive Livestock Production. Associated principally with Zone IV usually at altitudes below 6 500 feet with rainfall below 30". The system is largely devoted to production of beef from improved indigenous and from indigenous/exotic stock. A limited number of ranches also produce some milk in addition to beef. The rift floor from Nakuru south is largely of this system, with individual ranches occurring in other areas. In our analysis distinction has been made between ranches with an emphasis on dairy or beef production and farms have been classified into two sub groups 4(a) Dairy Ranching, 4(b) Beef ranching.

5. Plantation Agriculture. Coffee, tea, wattle and Sisal are the main crops of this system. Relatively, they are small in number and total area, although single estates may be quite large. The system is found throughout the area in a variety of ecological situations best suited to the individual plantation crop grown.

3. APPRAISAL OF THE PRESENT SITUATION

The purpose of this appraisal is to provide a basis upon which the selection of individual farms for detailed study could be made. It was essential that before a farm was selected, its place in the overall pattern of farming systems and other grouping was established. A first priority was therefore to assess the composition of the large farm sector in terms of farm enterprises, types of ownership, extent of sub-division and current level of performance.

Lists of farms giving the farm name, its size and type of ownership have already been compiled in the District Offices of the main large farm areas. These were made available to the study team who separated them into Divisional lists. The Divisional Offices were then visited and in discussion with Divisional Land and Farm Management Officer and Crops Officer and other staff the information available locally for each farm was recorded. In particular, information was collected on the farm enterprises, the number of owners, the extent of sub-division and the present standard of management. In some instances Branch Managers of AFC and Area Extension Officers were included in discussions. In all some 12 Divisional Offices were visited and 1600 farms discussed in the Nakuru, Uasin Gishu, Trans Nzoia and Kericho Districts.

Visits were also made to the Kiambu and Nyandarua Districts. As these are important small farm and settlement areas very little information is available in the District Offices. In Kiambu three divisions, Limuru, Kiambu and Thika have a total of over 600 large farms. Of these about 70 per cent are single enterprise farms (tea, coffee) and the remainder mixed. Although data on those mixed farms was not available for analysis in this report, arrangements to collect it have been made.

Nyandarua is less important, as much of the district has been allocated to settlement. About 35 large farms (30 in the Northern Division) remain, and as in Kiambu, arrangements have been made to collect data on these.

Neither the Nandi or Narok districts have been visited but they will be included in the survey during the following months.

A considerable amount of information regarding the large farms is available at the Area Office level but could not be collected in time for inclusion in this report. Lists of farms by area are currently being prepared and will be circulated amongst the Area Offices. The Area Extension Officers will be requested to complete the lists filling in data on farm ownership, enterprises, subdivision and performance. In this way a more accurate estimate of the extent and importance of each group will be obtained.

3.1 Analysis of Data

The analysis of the data collected is aimed at establishing the size and importance of each group. No attempt has been made to quantify the relationship between different groups. The groups considered in this review are:

- farming system
- type of ownership
- extent of sub-division
- level of management

Farming System

The farming system has been accepted as the primary grouping for all farms. Five major systems were identified from analysis of the farm data collected at the Divisional Offices and have been described in Section 2 which argues that they result mainly from the interaction of soils, climate and altitude but are also influenced by social factors such as the number of owners living on the farm and the extent to which farms have already been sub-divided.

The results of the analysis of farms by farming system is summarised in Tables 1 and 2. The data forming the basis of this summary are given in Appendix I (Tables I.1-I.3). In terms of area, System IV, Extensive Livestock, was the most important occupying approximately 38 per cent of area of farms covered. In terms of the number of farms however it accounted for less than 9 per cent. With regard to the

Table 1. Analysis of Farming Systems: Proportion by Number of Farms

Farming System	Kericho ²		Trans Nzoia		Uasin Gishu		Nakuru		All District	
	No. of Farms	% of Total	No. of Farms	% of Total	No. of Farms	% of Total	No. of Farms	% of Total	No. of Farms	% of Total
1. Wheat (Maize) Dairy	16	14.0	0	0.0	255	53.6	104	22.9	375	26.
2. Maize Dairy (Wheat)	68	59.6	357	98.9	192	40.3	73	15.4	690	48.
3. High Altitude	9	7.9	0	0.0	9	1.9	160	32.7	178	12.
4. Extensive Livestock										
(a) Dairy Ranching	0	0.0	0	0.0	8	1.7	43	9.0	51	3.
(b) Beef Ranching	1	1.0	1	0.3	2	0.4	70	14.7	74	5.
5. Plantation	20	17.5	3	0.8	10	2.1	25	5.3	58	4.
	114	100.0	361	100.0	476	100.0	475	100.0	1426	100.
No Information	19		41		45		157		262	
									1688	
									128	

Note: 1. Forestry and horticultural crops are not included: There were eleven farms involved in growing horticultural crops under irrigation in Nakuru.

2. Kipkelion Division only; it is regarded as the Long Farm Division of the Kericho District.

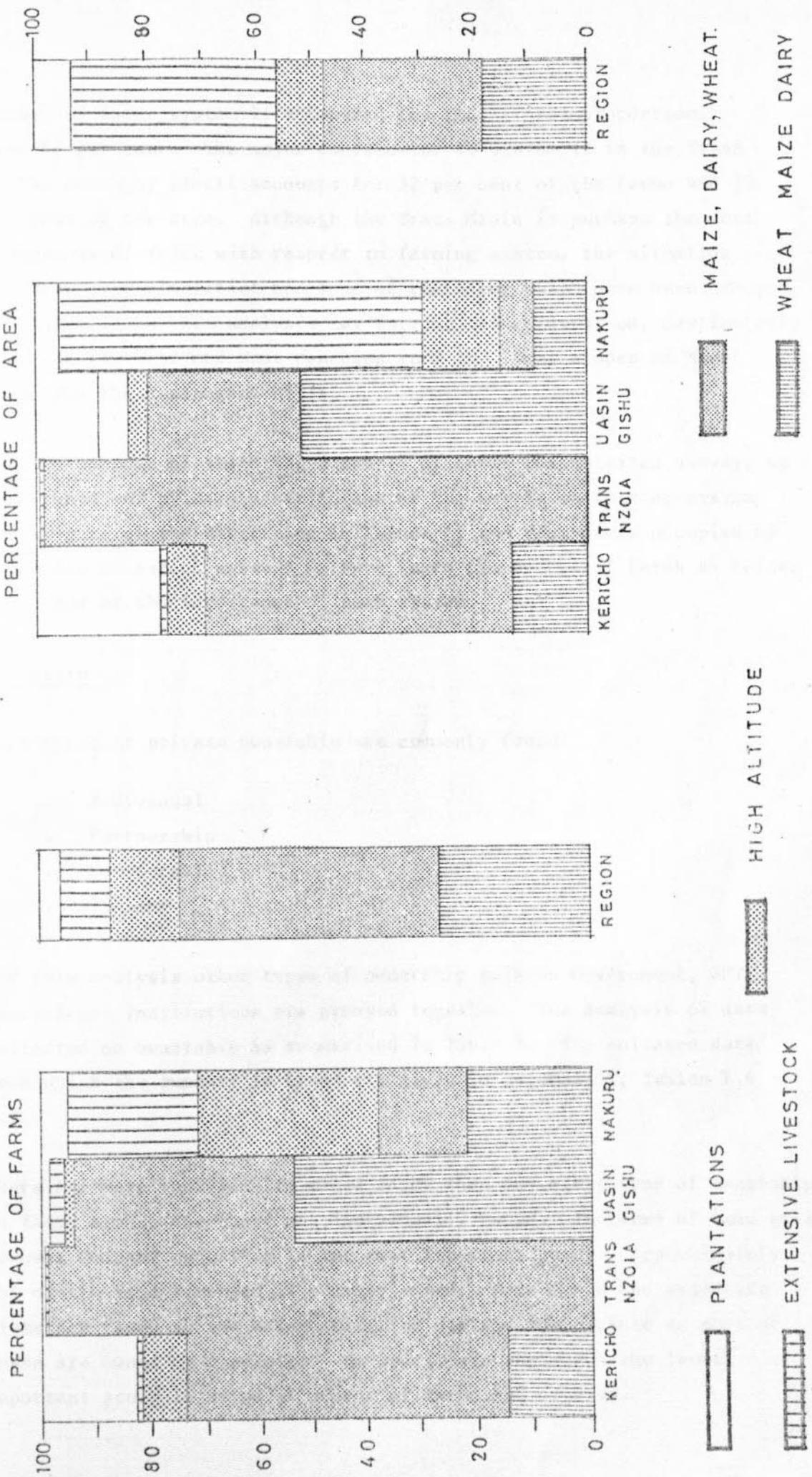
Table 2. Analysis of Farming System: Proportion by Area (Ha)

Farming Systems	Kericho ²		Trans Nzoia		Uasin Gishu		Nakuru		All Districts	
	Area	% of Total	Area	% of Total	Area	% of Total	Area	% of Total	Area	% of Total
1. Wheat (Maize) Dairy	6585	12.2	-	-	132424	51.2	48896	8.3	187905	17.1
2. Maize Dairy (Wheat)	30720	56.8	170622	97.9	73776	28.5	37741	6.4	312859	29.1
3. High Altitude	3941	7.3	-	-	8319	3.2	80598	13.7	92858	8.6
4. Extensive Livestock										
(a) Dairy Ranching	-	-	-	-	6504	2.5	21105	3.6	27609	2.6
(b) Beef Ranching	348	0.6	1372	0.8	7483	3.0	368765	63.0	377968	35.1
5. Plantation	12484	23.1	2253	1.3	30145	11.6	29139	5.0	74021	6.9
	54078	100.0	174247	100.0	258651	100.0	586244	100.0	1073220	100.0
No Information	12050		19709		17412		68142		117313	

Note: 1. Does not include forestry or horticultural crops; 2379 ha of forest were recorded and 7315 ha of horticultural crops.

2. Kipkelion Division only.

REGIONAL FARMING SYSTEMS



number of farms, system II accounted for the largest proportion, over 48 per cent. The major contributor to System II is the Trans Nzoia, which by itself accounts for 52 per cent of the farms and 55 per cent of the area. Although the Trans Nzoia is perhaps the most homogenous district with respect to farming system, the situation has been over simplified and some of the farms which have been grouped in System II in this analysis may warrant reconsideration, particularly those to the West and East reaching into the lower slopes of Mount Elgon and the Cherengani hills.

For the purpose of selecting a sample of farms for detailed survey, we have based our primary distribution of the sample on farming system and because of the distorting influence of the vast areas occupied by extensive livestock systems we have taken the number of farms as better indicator of the importance of each system.

Ownership

Four types of private ownership are commonly found:

- . Individual
- . Partnership
- . Co-operative
- . Company

For this analysis other types of ownership such as Government, SFT, Educational Institutions are grouped together. The analysis of data collected on ownership is summarised in Table 3. The collated data upon which the summary is based are given in Appendix I, Tables I.4 - I.7.

There are more individually owned farms than any other type of ownership. In fact, almost one-third are individually owned. In terms of land area however Company ownership is the most important group. Approximately 43% of the land surveyed is company owned. Here again the extensive livestock farms in the Nakuru District distort the picture as most of these are owned by companies. Co-operatives represent the least important group in terms of number of farms and of area.

Table 3. Types of Ownership of Large Farms by Numbers and Area

District	Type of Ownership											All Farms	
	Individual		Partnership		Co-operative		Company		Other		No. of Farms	Area (ha)	No. of Farms
Nakuru	175	5937	52	17359	69	52342	214	280077	38	64655	547	473760	
Uasin Gishu	144	54401	225	96764	28	22662	93	86298	21	15938	511	276063	
Trans Nzoia	150	40101	99	38086	29	13551	54	32691	61	61931	393	186360	
Kericho	31	9945	21	5840	12	8187	46	27846	4	2260	114	54078	
Total	500	163774	397	158049	138	96742	407	426912	124	144784	1565	990261	
%	32	17	25	16	9	10	26	43	8	15	100	100	

Note: 1. No information was available on ownership for 128 farms on 57258 ha

$$\bar{x} = 634 \text{ ha}$$

36

72

Sub-division

Our estimate of the extent of sub-division is largely based on the local knowledge of Ministry of Agriculture Officers at the Divisional level supplemented in some instances by Branch Managers of the AFC and Area Extension Officers.. From the information obtained, five groups were identified:

- A - No sub-division
- B - A minor proportion (40% or less) sub-divided for subsistence or small holdings
- C - A major proportion (around 60% or more) sub-divided for subsistence or small holdings
- D - Completely sub-divided into subsistence sized holdings or small holdings
- E - Completely sub-divided but into holdings which can still be regarded as large scale farms

A summary and analysis of the information obtained is given in Table 4. The basis of Table 4 is collated in Appendix I Tables I.8 - I.10.

Table 4 Extent of Sub-division of Large Farms by Number and Area of Farms.

District	Extent of Sub-division										Total	
	A		B		C		D		E		No.	Area
	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area
Uasin Gishu	186	110961	37	25131	30	15651	134	77748	79	31773	466	261264
Nakuru	275	265110	88	73056	54	46983	43	26097	10	3881	470	415127
Kericho	46	14793	24	15082	5	4562	30	13066	9	6675	114	54178
Total	507	390864	149	113269	89	67196	207	116911	98	42329	1050	730569
%	48	53	14	16	8	9	20	16.0	9	6	100	100

Table 4 indicates that 52 per cent of the number of farms are sub-divided. This 52 per cent however includes 14 per cent of farms which are only partly sub-divided and on which the major part is still farmed as a large unit.

It includes a further 9 per cent which are completely sub-divided, but into a small number of units which can still be regarded as large farms. In terms of area approximately 47% of the land is sub-divided to some extent. Allowing that some of this is sub-divided into units which could still be regarded as large farms and that some farms within the sub-divided groups still have a major proportion of their land in a large block, the proportion of land sub-divided into smallholdings or subsistence sized holdings is approximately 30 per cent.

The Trans Nzoia has not been included in this analysis. There is good reason to believe however, that the extent to which sub-division has continued there, is even greater than the districts considered. Sub-division in Trans Nzoia will be included in the next Progress Report.

Performance:

The assessment of performance was again based on the local knowledge of Divisional and Area Officers of the Ministry of Agriculture. The Officers were asked to give an opinion on whether management on the farm was good (G) average (A) or bad (B). They were also asked whether the farm was managed by the owner/s or hired manager or a committee. A summary of the information obtained is given in Table 5.

Table 5 Management of Large Farms by Number and Area of Farms

District	Management Performance							
	G		A		B		Total	
	No.	Area (ha)	No.	Area (ha)	No.	Area (ha)	No.	Area (ha)
Uasin Gishu	130	98248	165	72645	171	90371	466	261264
Nakuru	126	219823	237	129060	107	66244	470	415127
Kericho	23	12504	32	13412	50	28262	105	54178
Total	279	330575	434	215117	328	184877	1041	730569
%	27	45.3	41	29.4	32	25.3	100	100.0

* = 1125

496

563

701

4. SELECTION OF 100 SAMPLE FARMS

4.1 The Distribution of the Sample Between Farm Groups

Time will allow a maximum of only 100 farms to be analysed in detail. The number is low (about 6 per cent of the large mixed farms and 4 per cent of all large farms) and the variability of farms within the large farm sector is great. Because of this we have decided not to select farms at random. With such a small sample it is likely that in a random sample some important groups may not be represented.

We have decided therefore to distribute our sample initially between the various farm groups on the basis of their extent and importance as determined in the analysis in Section 3.2. The approximate distribution of the sample farms by Farming System is given in Table 6. We have been advised by the Ministry of Agriculture to concentrate mainly on large mixed farms, consequently neither coffee or tea estates (farms) have been included in the sample. Should we be required to include a number of these it will be largely at the expense of Farming System 2 and particularly in the Trans Nzoia District where the most homogenous pattern of farming applies. The distribution of the sample by farming system and district is given in Tables 7 and 8.

The selection of specific farms will be made in consultation with local Area or Divisional Officers from the Ministry of Agriculture. A number of farms falling into each group will be selected at random by the consultants; these will be discussed with the local Officers and a final selection made.

Table 6 Approximate Distribution of the Farm Sample Between Farm Groups

Farming System 1. Ownership	I	P	Co-op	C	Total	
	5	5	5	10		
Performance	G A B	G A B	G A B	G A B		
	1 2 2	1 2 2	1 2 2	1 4 4	25	33
Farming System 2. Ownership	I	P	Co-op	C		
	9	9	9	18		
Performance	G A B	G A B	G A B	G A B		
	2 3 4	2 3 4	2 3 4	4 6 8	45	40
Farming System 3. Ownership	I	P	Co-op	C		
	3	3	3	6		
Performance	G A B	G A B	G A B	G A B		
	1 1 1	1 1 1	1 1 1	2 2 2	15	9
Farming System 4. Ownership	I	P	Co-op	C		
	2	2	2	4		
Performance		G A B				
		3 4 3			10	4
Farming System 5. Ownership	I	P	Co-op	C		
	1	1	1	2		
Performance		G A B				
		1 2 2			5	2
Total					100	

Table 7 Approximate Distribution of the Farm Sample by District
and Farming System

Farming System	District				Total
	Kericho	Trans Nzoia	Uasin Gishu	Nakuru	
1. Wheat Maize Dairy	2	-	15	8	25
2. Maize Dairy Wheat	4	24	12	5	45
3. High Altitude	1		1	13	15
4. Extensive Livestock	-	-	1	9	10
5. Plantation	1	-	2	2	5
	8	24	32	37	100

Table 8. . Distribution of Sample by District Farming System Ownership and Performance

	I			P			Co-Op			C			Total
	G	A	B	G	A	B	G	A	B	G	A	B	
<u>Kericho:</u>													
Farming System 1	-	1	-	-	-	-	-	-	-	-	-	1	2
Farming System 2	1	-	-	-	1	-	-	-	1	-	-	1	4
Farming System 3	-	-	-	-	-	-	-	-	-	-	1	-	1
Farming System 5	-	-	-	1	-	-	-	-	-	-	-	-	1
<u>Trans Nzoia:</u>													
Farming System 2	1	2	2	1	2	2	1	2	2	2	3	4	24
<u>Uasin Gishu:</u>													
Farming System 1	1	1	1	1	1	1	1	1	1	1	2	3	15
Farming System 2	1	1	-	1	1	1	1	1	1	1	1	2	12
Farming System 3	-	-	-	-	-	-	-	-	-	-	-	-	1
Farming System 4	-	-	-	-	-	-	-	-	-	-	-	-	1
Farming System 5	1	-	-	-	-	-	-	-	-	-	1	-	2
<u>Nakuru:</u>													
Farming System 1	1	-	-	-	1	-	-	1	1	1	1	2	8
Farming System 2	-	1	-	-	-	1	-	1	-	-	1	1	5
Farming System 3	1	-	1	1	1	1	1	1	1	1	2	2	13
Farming System 4	-	1	1	1	-	1	-	1	1	1	1	1	9
Farming System 5	-	1	-	-	-	-	-	-	-	-	-	1	2

5. UNREGISTERED OWNERSHIP AND SUB-DIVISION

The Terms of Reference request that the number of unregistered owners and extent to which sub-division has already occurred be quantified. Alternative methods of achieving this have been considered.

Unregistered Ownership

Three possible ways of estimating the number of unregistered owners or shareholders are given below:

- from farm interviews and visits as part of the detailed farm survey ✓
- from group or farm leaders responsible for the initial recruitment of the shareholders. In most instances receipts have been issued and duplicates may be available. ✓
- from various institutions which have information on specific farms, e.g. Ministry of Co-operatives, AFC, District Administration etc. ✓

The question has been discussed in numerous meetings and the consensus of opinion is that, although an indication of the order of magnitude may be obtained by combining all three methods, it is unlikely that an accurate estimate will be obtained. This is mainly due to the reticence of most registered owners, partners or leaders to discuss the question. Nevertheless the question of unregistered ownership is one of the most serious problems currently confronting the large farm sector. It is closely associated with sub-division and contributes to pressure for sub-division. In many cases the only right or recognition an unregistered shareholder has, is to be seen to occupy a piece of land. Thus the present pool of unregistered shareholders represents considerable potential for further sub-division. The situation is dynamic in that more unregistered shareholders are being recruited daily.

It is essential that the situation is first stabilised by preventing further recruitment of unregistered shareholders and the current numbers accurately estimated. Only then when the size of the problem is known can an appropriate solution be proposed.

We believe that the numbers of un-registered shareholders could be obtained by formally recognising them, and accepting that they have some rights even if it is no more than the right to be refunded their subscriptions. A register of shareholders names and amount subscribed could then be compiled.

Sub-division

It has been estimated in Section 3 that approximately 30 per cent of the land in the large farm sector has already been sub-divided into subsistence sized holdings or small-holdings. This proportion is important, particularly as it includes mainly high potential land. Because in most instances the sub-division is illegal, it has gone unrecognised and has not benefitted from rational planning or services that are available to settlements or other small-holder areas. Furthermore it has led to a change in the land use pattern, from what was once a system of agriculture based on rotation to continuous maize growing.

It is generally agreed that in those areas where sub-division has already occurred the process is irreversible and that land already broken down into small-holdings will remain so. The problem now, is how best can a rational pattern of land use be introduced to these areas, and how best can supporting services be extended to them in order that an acceptable level of output can be achieved and sustained.

The method used to estimate the extent of sub-division in our initial appraisal was based on the local knowledge of officers from the Ministry of Agriculture at the District level. A better estimate could be made by collecting similar information at Area level and arrangements are being made to do this. It is likely that detailed farm survey will also help to refine the initial estimate.

The possibility of using aerial photography has also been investigated. Unfortunately the most recent photography was taken in 1967 and there has been a considerable increase in sub-division since then. We are confident however that a reasonable estimate can be obtained without photography and that the expense involved in providing new photographic cover could not be justified in terms of improved accuracy.

The Government's policy regarding future sub-division has been raised in meetings with various Government Officials. The discussions indicated an official policy which was against sub-division. This however conflicts with the policy outlined in the 1974-78 Development Plan which clearly states (paragraphs 10.10 - 10.15) that in the long run sub-division will be encouraged. Advice on guidelines on Government's current policy would be welcomed at the earliest possible time. In view of the uncertainty we propose during the course of the study to examine the technical, economic and social implications of sub-division taking account of the wide variation of social and physical conditions which exist and particular requirements of various agricultural enterprises.

APPENDIX I

COLLATED FARM DATA

Wheat Mixed Yield	78.74	52.33	75.53	100.0	100.0
Maize Yield (Wheat)	96.12	98.74	98.74	98.74	98.74
High Alkalide	0.0	0.0	0.0	0.0	0.0
Dairy Revenue	0.0	0.0	0.0	0.0	0.0
Cost Feeding	13.23	13.23	13.23	13.23	13.23
Blanket	0.0	0.0	0.0	0.0	0.0

Table I.1

Trans Nzoia: Farming Systems

Appendix I

	EAST		NORTH		WEST WARD		SOUTH		DISTRICT
	No. of Farms	Area (ha)							
Wheat	0	0	0	0	0	0	0	0	0
Maize Dairy	48	38090	78	43032	118	41597	113	47903	357
Dairy	98.0	96.52	98.73	98.27	98.33	96.53	100.0	100.0	98.90
High Altitude	0	0	0	0	0	0	0	0	0
Dairy Ranching	0	0	0	0	0	0	0	0	0
Beef Ranching	1	1372	0	0	0	0	0	0	1
Plantation	2.0	3.48	0.0	0.0	0.0	0.0	0.0	0.0	0.28
	0	0	1	757	2	1496	0	0	3
	0.0	0.0	1.27	1.73	1.67	3.47	0.0	0.0	0.82
NO INFORMATION	11	5634	4	2026	13	5234	13	6815	
FORESTRY					1	2379			

Table I.2

Uasin Gishu: Farming Systems

	MOIBEN No. of Area Farms (ha)	TIMBOROA No. of Area Farms (ha)	TURBO No. of Area Farms (ha)	KAPTAGAT No. of Area Farms (ha)	SOY No. of Area Farms (ha)	PLATEAU No. of Area Farms (ha)	DISTRICT No. of Area Farms (ha)
Wheat Maize Dairy %	61 44413 85.92 83.57	10 4951 14.29 17.14	33 11934 44.60 34.57	58 25397 78.38 80.82	59 30366 71.95 49.82	34 14863 35.79 30.27	255 132424 53.57 51.20
Maize Dairy (Wheat) %	4 2818 5.63 5.30	48 14585 68.57 50.49	38 14285 51.35 41.38	16 6146 21.62 19.18	20 14123 24.39 23.17	56 21819 58.95 44.44	192 73776 40.34 28.25
High Altitude %	0 0 0.0 0.0	9 8319 12.86 28.80	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	9 8319 1.89 3.22
Dairy Ranching %	5 5471 7.04 10.29	3 1033 4.26 3.58	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	8 6504 1.68 2.51
Beef Ranching %	1 444 1.40 0.84	0 0 0.0 0.0	1 7039 1.35 20.39	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	2 7483 0.42 2.89
Plantation %	0 0 0.0 0.0	0 0 0.0 0.0	2 1267 2.70 3.67	0 0 0.0 0.0	3 16463 3.66 27.01	5 12415 5.26 25.29	10 30145 2.10 11.65
NO INFORMATION	27 15271	2 910	15 1207	1 24	0 0	0 0	45 17412

Table T.3

Nakuru: Farming Systems

	MOLO		BAHIATI		NAVAHA		NJORO		DISTRICT
	No. of Farms	Area (ha)	No. of Farms	Area (ha)	No. of Farms	Area (ha)	No. of Farms	Area (ha)	
Wheat (Maize) Dairy	33 33	11378 4976	33	13537	138 138	18783 18783	52	30383	136 104 74/61 48896 8.34
%	11.38	6.89	31.73	21.18	0.0	0.0	52.53	41.95	21.89
Maize Dairy (Wheat)	13 13	1833 1716	40	18239	0 0	0 0	22	17786	73 15.37 37858 6.44
%	6.59	2.38	38.83	28.54	0.0	0.0	22.22	24.56	15.37
High Altitude	126 134	58339 64344	6	7762	70 0	5618 0	20	8492	150 160 80598 13.75
%	80.24	89.06	5.77	12.15	0.0	0.0	20.20	11.72	33.68
Dairy Ranching	0	0	1	357	42	20748	0	0	43 21105 3.60
%	0.0	0.0	0.96	0.56	4000	5.49	0.0	0.0	9.05
Beef Ranching	1	777	5	9312	63	356921	1	1755	70 368765 62.90
%	0.60	1.08	4.81	14.57	60.00	94.51	1.01	2.42	14.74
Plantation	2	434	19	14693	0	0	4	14012	25 29139 4.97
%	1.20	0.60	18.27	23.00	0.0	0.0	4.04	19.35	5.26
NO INFORMATION	10	1634	76	38393	20	4994+	51	23121+	157 68142
Horticulture					4841	7315 3296			

107m

136

Table 1.4

Numbers and Areas of Large Farms by Type of
Ownership Nakuru District (areas in hectares)

Divisions	No. of Farms	Total Area	INDIVIDUAL		PARTNERSHIP		CO-OPERATIVE		COMPANY		OTHER	
			No.	Area.	No.	Area	No.	Area	No.	Area	No.	Area
Molo	177	73881	58	12877	14	2905	26	8335	62	36420	17	13344
Bahati	104	63900	25	4836	7	3373	16	12669	46	32234	10	10788
Naivasha	116	240430	39	19926	6	1099	15	25699	51	159028	5	34678
Njoro	150	95549	53	21688	24	9982	12	5639	55	52395	6	5845
TOTAL	547	473760	175	59327	51	17359	69	52342	214	280071	38	64655
PERCENT	100		32	12	9	4	13	11	39	59	7	14
Other Farms												
Bahati	76	38393										
Naivasha	20	4994										
	96	43387										

547
647

Note: 1. Information on ownership status not available.

Table I.5

Numbers and Areas of Large Farm by Type of Ownership in
Trans Nzoia District (areas in hectares)

Division	No. of Farms	Total Area	INDIVIDUAL		PARTNERSHIP		CO-OPERATIVE		COMPANY		OTHER	
			No.	Area	No.	Area	No.	Area	No.	Area	No.	Area
East Ward	60	45096	13	4723	17	6362	8	6765	13	9483	9	17763
North Ward	83	45815	27	4678	17	7373	16	2860	9	5304	23	25600
West Ward	134	47546	57	15633	37	10424	3	3543	14	6197	17	11749
South Ward	113	47903	53	15067	28	13927	2	383	18	11707	12	6819
TOTAL	393	186360	150	40101	99	38086	29	13551	54	32691	61	61931
PERCENT	100	200	38	22	25	20	7	7	14	18	16	33
OTHER FARMS ¹	13	6815										
GRAND TOTAL	403	193175										

Note: 1. Information on ownership status not available.

Table I.6

Numbers and Areas of Large Farms by Type of Ownership
Uasin Gishu District (areas in hectares)

Division	No. of Farms	Total Area	INDIVIDUAL		PARTNERSHIP		CO-OPERATIVE		COMPANY		OTHERS	
			No.	Area	No.	Area	No.	Area	No.	Area	No.	Area
Moiben	98	68417	29	17248	45	26160	4	7258	13	13115	7	4636
Timboroa	72	29798	14	3879	38	11732	10	5567	8	6467	2	2103
Turbo	89	35732	33	13106	41	12450	0	2850	12	8068	3	2108
Kaptagat	75	32067	29	7563	29	13141	4	2492	9	5237	4	3634
Soy	82	60952	21	6659	31	18362	4	4658	23	29626	3	1647
Plateau	95	49097	18	5946	41	14869	6	2687	28	23785	2	1810
TOTAL	511	276063	144	54401	225	96764	28	22662	93	86298	21	15938
PERCENT	100	20100	28	20	44	35	6	8	18	31	4	6

Table I.7

Numbers and Areas of Large Farms by Type of Ownership
and Farming System: Kericho District

Farming System	INDIVIDUAL		PARTNERSHIP		CO-OPERATIVE		COMPANY		OTHER		ALL	
	No. of Farms	Area (ha)										
1. Wheat Maize Dairy	2	346	5	1160	1	384	8	4695	0	-	16	6585
2. Maize Dairy (Wheat)	21	7997	13	4039	7	4643	25	12948	2	1093	68	30720
3. High Altitude	1	45	2	212	-	-	6	3684	-	-	9	3941
4. Extensive Livestock	-	-	-	-	-	-	-	-	-	-	-	-
(a) Dairy Ranching	1	348	-	-	-	-	-	-	-	-	1	348
(b) Beef Ranching	-	-	-	-	-	-	-	-	-	-	-	-
5. Plantation	6	1209	1	429	4	3160	7	6519	2	1167	20	12484
NO INFORMATION	-	-	-	-	-	-	-	-	19	12050	-	-

Table T.8 Kericho: Summary of Sub-division and Performance by Farming System

Farming System	SUB-DIVISION					PERFORMANCE		
	A	B	C	D	E	C	A	B
Wheat Maize Dairy	6	6	-	2	2	5	7	4
Maize Dairy (Wheat)	24	8	5	25	6	8	17	43
High Altitude	4	5	-	-	-	4	4	1
Dairy Ranching	-	-	-	-	-	-	-	-
Reef Ranching	1	+	-	-	-	-	-	1
Plantation	11	15	-	3	1	6	4	10

Table T.9

Nakuru District: Summary of Sub-Division and Performance of Farming System

Farming System	Division	Sub-Division					Performance			
		A	B	C	D	E	G	A	B	
1. Wheat Maize Dairy	Molo	9	6	3	1	-	-	15	4	
	Bahati	19	3	5	3	3	9	18	6	
	Naivasha	-	-	-	-	-	-	-	-	
	Njoro	33	10	5	2	2	18	32	2	
	District	61	19	13	6	5	27	65	12	
2. Maize Dairy Wheat	Molo	9	-	2	-	-	-	9	2	
	Bahati	20	2	8	8	2	3	22	15	
	Naivasha	-	-	-	-	-	-	-	-	
	Njoro	7	4	-	11	-	3	8	11	
	District	36	6	10	19	2	6	39	28	
3. High Altitude Altitude Mix	Molo	63	42	14	13	2	34	67	33	
	Bahati	2	-	4	-	-	-	3	3	
	Naivasha	-	-	-	-	-	-	-	-	
	Njoro	17	2	1	-	-	9	8	3	
	District	82	44	19	13	2	43	78	39	
4. Dairy Ranching	Molo	-	-	-	-	-	-	-	-	
	Bahati	-	-	1	-	-	-	-	1	
	Naivasha	29	8	4	1	-	18	16	8	
	Njoro	-	-	-	-	-	-	-	-	
	District	26	8	5	1	-	18	16	9	
5. Beef Ranching	Molo	1	-	-	-	-	-	1	-	
	Bahati	-	-	-	-	-	-	-	-	
	Naivasha	47	10	2	4	-	20	29	14	
	Njoro	1	-	-	-	-	1	-	-	
	District	49	10	2	4	-	21	30	14	
6. Plantation	Molo	1	-	1	-	-	-	1	1	
	Bahati	13	1	4	5	1	7	8	4	
	Naivasha	-	-	-	-	-	-	-	-	
	Njoro	4	-	-	-	-	4	-	-	
	District	18	1	5	-	1	11	9	5	
Total	470	275	88	54	43	10	126	237	107	
Percent	100	59	14	11	9	2	27	50	23	

Table 1.10 Uasing Gishu: Summary of Sub-Division and Performance

Farming System	Division	Sub-Division					Performance		
		A	B	C	D	E	G	A	B
Wheat	Moyben	44	3	6	5	3	23	25	13
	Timboroa	6	1	1	1	1	7	1	2
Maize	Turbo	17	3	0	9	4	12	10	11
	Kaptagat	31	10	7	5	5	25	19	14
Dairy	Soy	20	5	4	21	9	20	21	18
	Plateau	11	5	4	7	7	10	12	12
	DISTRICT	129	27	22	48	29	97	88	70
Maize	Moyben	1	1	-	2	-	-	1	3
	Timboroa	10	3	1	21	13	7	11	30
Dairy	Turbo	13	-	-	17	8	7	18	13
	Kaptagat	6	1	-	8	1	1	7	8
(Wheat)	Soy	6	1	1	7	5	7	8	5
	Plateau	8	2	3	25	18	3	21	32
	DISTRICT	44	8	5	80	45	25	66	91
High Altitude Mix	Moyben	-	-	-	-	-	-	-	-
	Timboroa	1	1	3	4	-	3	1	5
	Turbo	-	-	-	-	-	-	-	-
	Kaptagat	-	-	-	-	-	-	-	-
	Soy	-	-	-	-	-	-	-	-
	Plateau	-	-	-	-	-	-	-	-
	DISTRICT	1	1	3	4	-	3	1	5
Dairy	Moyben	2	1	-	1	1	-	3	2
	Timboroa	1	-	-	-	2	-	1	2
Ranching	Turbo	-	-	-	-	-	-	-	-
	Kaptagat	-	-	-	-	-	-	-	-
	Soy	-	-	-	-	-	-	-	-
	Plateau	-	-	-	-	-	-	-	-
	DISTRICT	3	1	-	1	3	-	4	4
Beef	Moyben	1	-	-	-	-	-	1	-
	Timboroa	-	-	-	-	-	-	-	-
Ranching	Turbo	1	-	-	-	-	-	1	-
	Kaptagat	-	-	-	-	-	-	-	-
	Soy	-	-	-	-	-	-	-	-
	Plateau	-	-	-	-	-	-	-	-
	DISTRICT	2	-	-	-	-	-	2	-
Plantation	Moyben	-	-	-	-	-	-	-	-
	Timboroa	-	-	-	-	-	-	-	-
	Turbo	2	-	-	-	-	1	1	-
	Kaptagat	-	-	-	-	-	-	-	-
	Soy	2	-	-	1	-	2	-	1
	Plateau	3	-	-	-	2	2	3	-
	DISTRICT	7	-	-	1	2	5	4	1
Total	466	186	37	30	134	79	130	165	171
Percent	100	39.91	7.94	6.44	28.76	16.95	27.89	35.41	36.70 %
		40	8	6	29	17	28	35	37

