

Some Preliminary Results of a Survey of Kiga<sup>1</sup> Resettlement

Schemes in Kigezi, Ankole and Toro Districts, Western Uganda\*

By

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RURAL DEVELOPMENT  
RESEARCH PROJECT

1. Introduction:

This paper concentrates on the results which have been obtained from a field survey of four areas; one over-populated area in southern Kigezi, and three resettlement areas; in northern Kigezi, in northern Ankole and in southern Toro.

A historical review of Kiga resettlement and an outline of this survey have been presented in a previous paper<sup>2</sup>.

The four areas from which the samples were taken were chosen subjectively to represent the major features of the Kiga resettlement programme in the Western Region. The first sample area, Katokye, was chosen from the most densely populated sub county - Kyanamira, to represent the over-populated home area of the Kiga. The second sample area in Kigezi, Kihanda, in sub-county Kirima, Kinkizi county in North Kigezi was chosen to represent the older schemes of the period 1946-50. In Ankole two samples had originally been chosen, one in the Masha area in Isingiro county to represent spontaneous settlement and another one at Nyansimbo in North Ankole to represent a later period of assisted settlement schemes. This latter area was later dropped partly because of a shortage of money and failure to obtain a suitable enumerator in the area and partly because of the apparent similarity with the sample scheme in Toro which was a relatively short distance from Nyansimbo. The Toro sample area was at Bigodi where settlement took place after 10-acre farms had been demarcated and passable tracks made in the area.

\* Not for citation.

1. The densely populated counties of southern Kigezi are inhabited mainly by people of the Kiga tribe, with the exception of Bufumbira county, which is inhabited mainly by Nyarwanda people. Apart from a few individuals who were living in the predominantly Kiga areas, Nyarwanda were only resettled in significant numbers in the second series of schemes in Northern Kigezi, especially at Kikiki in Kinkizi County. For convenience, however, settlers are referred to as Kiga throughout the paper.
2. Katarikawe, E.S., "Agricultural Aspects of the Kiga Resettlement Programme In Western Uganda". R.D.R. 11.

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The main emphasis of the survey was to obtain first-hand information on how successful the Kiga have been in the various areas where they have been resettled and therefore how successful the whole resettlement programme has been. In the selection of farmers emphasis was placed on the Kiga and Nyarwanda from southern Kigezi; the few people who were found already resident in the various resettlement areas were excluded from the sample.

## 2. Research Methodology.

The farmers in each sample were randomly selected from the taxpayers lists with the help of the local chiefs who knew them. Reading down the taxpayers register, all those with Kiga and Nyarwanda names were picked out and given numbers. These numbers were then put on pieces of paper which were put in a container, shaken and the first thirty numbers picked out. Reliance on taxpayers lists has its weaknesses but it was found to be the only quick method of drawing a reasonably representative sample in the required areas.

As the emphasis was on the Kiga and Nyarwanda some difficulty was met in getting enough farmers in Masha area where the Kiga have moved in spontaneously and are scattered over a very wide area but after some searching fifteen Kiga farmers were found. In the other samples where the required number was obtained easily the actual number being studied declined as the farmers who were unwilling to provide information gradually dropped out. Thus, the data contained in this paper has been collected from 14 farmers in Katokye, 16 farmers in Bigodi, 15 farmers in Masha and 14 farmers in Kihanda.

In a survey of this kind data collection problems are usually encountered; these will be discussed under the appropriate sub-headings but a few general problems will be mentioned briefly here. Firstly, it was found very difficult throughout the survey to allay the suspicions of some farmers especially in the Masha sample. Here the farmers had settled on their own accord and they thought that the survey was aimed at finding out how much land they claimed with the intention of either removing that land from them or else taking them back to Kigezi. These suspicions were more intense in those sample areas where Kiga were living side by side with other tribes such as the Toro and Nyankole who were not included in the samples. Explanations were given to the selected farmers who would appear to understand the aims of the study and promise to co-operate but later their unselected friends would influence them against co-operating thus making it difficult for the enumerators on their next visit.

In order to reduce this suspicion local enumerators, known to the farmers were recruited, chiefs were as much as possible excluded from the work of the survey and the enumerators were instructed not to visit the farmers with chiefs at all. But in spite of these precautions it was found quite difficult to extract information from some farmers in some samples especially in the

Masha area. The Masha data therefore must be looked at with some suspicion.

Secondly, the farmers who co-operated at the beginning of the study tended to become less co-operative as the survey went on because they were being visited once every week and being asked the same questions. This was necessary in order to obtain as much data as possible before the farmer forgot it but even at such short intervals much slipped the farmers' memories. Declining co-operation, suspicion and forgetfulness reduced the actual quality of the data obtained and it should be treated with these facts (and several other problems to be pointed out later) in mind.

### 3. Summaries of Survey Data:

In this paper much emphasis will be laid on land and labour as factors of production. This is done not because other factors of production are not available but they are the most important factors in peasant farming in Kigezi, Ankole and Toro. In general, levels of capital are more or less the same in all the areas studied and management is also broadly similar, decisions being taken by both the farmer and his wife or wives, or at times by the wives alone. In some cases, children take decisions on what to grow on the plots the father allots to them.

#### (i) Land Availability and Cultivated Area:

In all samples studied, land is held under customary rights. In Kigezi a land registration programme has been operating since 1959 but none of the farmers in the two samples had actually registered their land, although in Kihanda 50% of the sample had applied for their farms to be surveyed.

In Southern Kigezi almost all farms are fragmented; all the fragments belonging to one farmer will be referred to as "the farm". In the settlement areas because of the freedom the farmers had in choosing land some settlers have more than one block of land in several localities. As this was only discovered after the survey was in progress, it was difficult to reorganise the survey, so that it was decided to concentrate on the block where the farmer actually resided. Clearly, this is likely to introduce error into the final result but on the other hand it was found that those who had such land have either set it aside for their sons or wanted to sell it when a suitable buyer appeared. At present such land is almost unused by the farmer except for having a small hut and a few bananas there to indicate to new settlers that it has been claimed by somebody.

The average farm sizes in the various sample areas are tabulated in Table 1 below.

Table I Average Farm Sizes in Four Sample Areas (acres)

	<u>Average Farm Size</u>	<u>District Average Farm Size</u>
Katokyé	6.3	} 6.0
Kihanda	16.1	
Pigodi	10.4	n.a.
Masha	24.5	11.9

Source: Report on Uganda Census of Agric., Vol. III, 1966 (typescript version).

The sample averages were calculated from physical measurements of the farms. In Katokye every fragment belonging to the farmer was actually measured. In the resettlement samples it was found impossible to get the exact acreages either because some farmers did not know the boundaries to their farms or they were unwilling to indicate the exact boundaries because of the fear that some of their land would be taken away from them. In some cases, it was physically impossible to walk through uncleared boundaries where the farmers appeared to know them and were also willing to indicate them. In addition the instrument used for area measurement, the "trumefer wheel", was unsuitable for certain types of ground. Table I must therefore be examined with these points in mind.

The differences in average farm size depends on the area and the type of scheme. The average size for Katokye is the lowest because of the high population density. In Kihanda and Masha farm size is high because these were areas where the settlers claimed land on their own where they wanted it, whereas in Bigodi the farms are fairly uniform - just over 10 acres - because the plots were actually demarcated prior to settlement. The Masha average is very high for two main reasons: firstly the farmers went there on their own in search of land and hence claimed as much land as they could; secondly, because the area is dry for long periods of the year and is infested with tsetse fly, it is unsuitable for keeping livestock, which makes it an unpopular area. Hence those settlers who went there were able to claim as much land as they wanted as the demand for it was on the whole not very high.

Variation in farm size in the four areas is shown below:

Table II Frequency Distributions of Farm Sizes in the Four Samples

Size groups (acres)	Katokye - %	Kihanda - %	Bigodi - %	Masha - %
Under 4.0	21.4	20.0	Nil	Nil
4.1 - 8.0	57.1	20.0	Nil	Nil
8.1 -12.0	7.1	13.3	93.3	12.5
12.1-16.0	14.3	6.7	6.3	31.3
16.1-20.0	Nil	6.7	Nil	18.8
Over 20.0	Nil	33.3	Nil	37.5

Absolute ranges 1.5 - 15.1 1.01 - 40.0 10 - 14 10 - 70  
(highest/lowest)(acres)

Most of the farms in Katokye (over 57%) fall between 4 and 8 acres, whereas most of the farms in the resettlement areas are over 10 acres in size. Variation in farm size is greater in Kihanda than in other resettlement areas because the land which was acquired by the first settlers twenty

years ago has over time been sub-divided amongst the sons. In one case a farmer had only 1.01 acres. This did not mean that he could not extend his acreage but that this was the only land which the father had given to him under customary procedure. In case of need he could use his father's land on a temporary basis, and eventually he would inherit more of his father's land. In Bigodi farm sizes fall between 8 and 12 acres for reasons already mentioned; similarly the absence of farms below eight - twelve acres in Masha indicates the ready availability of land there previously mentioned.

(ii) The Farming Systems

In all the samples similar crops were grown but in the resettlement areas more perennial crops - coffee and bananas - are grown (Table II). In Katokye more annual crops - namely sorghum, sweet potatoes, beans, maize and field peas are grown; the average acreage under these food crops during the time of the survey is given in Table II. In addition, because the climate of the Katokye area is cool, European vegetables are grown on a significant scale for the Kampala market. Only very small amounts of European vegetables are grown in Masha; these are marketed in Mbarara township, about fifteen miles away.

In all samples nearly every type of crop was found growing in association with another and this made it difficult to measure the total area under any one crop. As there are numerous combinations of mixtures no attempt is made to classify them here. In Table III average acreages only of various mixtures has been given. Where a particular crop was very dominant, that crop was regarded as growing in pure stand.

Table III Average areas per farm under various crops/crop mixtures during the survey period : Sept. 1965 - Aug. 1966, (acres).

Crop	Katokye	Kihanda	Bigodi	Masha
Coffee	0.18	0.34	0.23	0.35
Bananas	0.06	0.27	0.91	2.46
Coffee/Annual Food Crop mixtures	≠	0.02	0.10	0.04
Banana/Annual Food Crop mixtures	0.01	0.04	0.06	≠
English vegetables	0.95	≠	≠	0.02
Banana/Coffee mixtures	≠	1.09	≠	1.02
Banana/Coffee and Food crops mixtures	≠	0.45	0.01	≠
Pure stands* Food crops	1.40	0.59	2.11	2.09
Mixed stands Food crops	1.95	0.64	0.69	1.07
Other crops (tobacco, cotton, etc.)	0.03	≠	0.01	≠
Resting land	1.78	0.63	1.14	0.67
Total cultivated land	6.35	4.07	5.26	7.72
Cash crops as % total (estimates)	3.9	54.3	24.9	50.1

\* Average acreage calculated using the Jansonius/Casley method, see Casley, D.J.L., "Some Problems of Agricultural Censuses in Africa", 1966, unpublished paper.

≠ Either not available or below 0.01 acres average size.

These figures in Table III are averages of the actual measurements on three visits at four monthly intervals. Due to the irregularity of the edges of plots some errors were inevitable. Where it was difficult to divide plots into rectangles, triangles were used. The measurements obtained were usually checked again by the writer to see whether the enumerators had measured reasonably accurately.

In order to obtain the figures recorded in Table III the Jansonius/Casley method was used. In this method the area of perennial crops obtained from the three measurements are averaged and the average within-year area is obtained. In the case of annual crops, which in some cases were grown more than once in the twelve month survey period, the average of the three acreage figures obtained was multiplied by the reciprocal of the period the crop was in the ground - expressed as a fraction of the survey period - (365 days). For

example, in the case of sorghum where the growing period is some 182 days the estimated area under this crop was calculated as : Average acreage of the three figures x  $\frac{365}{182}$ . This method was only used where the crops had been planted in pure stands. For mixtures this method was not used as the farmer could have any crop combination at any time in the year. The average acreages for the mixed stands were therefore obtained by taking the average of the three measurements of them. Duplication has been avoided because crops growing on the farm at any particular time had been recorded by the enumerator.

As Table III indicates the resettlement areas grew far more coffee than the home area, whilst the latter area grew more annual food crops. In Katokye more than 50% of the cultivated area was under both pure and mixed stands of annual food crops. This pattern may be attributed to four main causes. Firstly, climatic conditions in the resettlement areas tend to favour the growth of coffee and bananas.

Secondly, the high population density in southern Kigezi, necessitates more food production, given the priority for subsistence production. Thirdly, the settlers have tended to adopt the dietary pattern of their new home areas which is predominantly composed of bananas, whilst finally over 80% of the farmers in the samples had either worked as labourers on the coffee/banana farms of Buganda or had close relatives who had told them how profitable coffee growing was.

The large acreages under pure stands of annual food crops in Bigodi reflected the large areas under the beer-type, sorghum grown in this area and which finds a ready market in Fort Portal where much banana beer brewing takes place.<sup>1</sup> Katokye is also unique in having the highest acreage under European vegetables. This is an industry which has sprung up recently in southern Kigezi, particularly in Ndorwa and Rubanda counties, where the climatic conditions are suitable for vegetables and where an initial external initiative was taken in providing marketing arrangements<sup>2</sup>.

The figures for resting land in Table III do not give the full picture in the various samples. They represent those areas which had been used at some stage during the survey period. In Kihanda all the land the farmers have has been opened at some stage but owing to exhaustion much of it is now resting whereas in Bigodi and Masha large areas still remain for future exploitation. A summary of major land-use categories is given in Table IV below.

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1. Personal impression based on knowledge the writer has of Fort Portal and its suburbs.

2. For further details, see Kabigabwa, J.K., Small Scale Vegetable Production in South Kigezi, unpublished Special Project, Faculty of Agriculture, Makerere University College.

Table IV : Major Types of Land-use in the Sample Areas (acres)

Sample Area	Perennial Crops & Perennial/annual crop mixtures	Annual Crops	Short-term Resting Land	Long-term Resting Land	Unopened Land	Residual Land*	Average farm size
Katokye	0.25	4.32	1.78	0	0	0.45	6.80
Kihanda	2.21	1.23	0.63	11.58	0	0.45	16.10
Bigodi	1.31	2.81	1.14	0	4.78	0.45	10.40
Masha	3.87	3.18	0.67	0	16.33	0.45	24.50

\* Land occupied by houses and other farm buildings, tracks, plot boundaries and waste areas, based on the measured area for Katokye sample only.

(iii) Labour Availability:

Nearly all the farmers depend predominantly on family labour. Mechanical cultivation is practised in the various areas using the Government tractor hire scheme but no farmer in the sample used it during the year. Hired labour (Table VII) was employed by most farmers on all activities on the farm but was essentially supplementary to family labour.

The average family size in the samples is tabulated in Table V:

Table V Average Family Size

Sample	Average No. wives	Average No. children over 16	Average No. child. under 16	Average No. child. in school	Average family size
Katokye	1.14	2.36	3.64	2.43	8.07
Kihanda	1.19	1.81	3.63	1.63	7.63
Bigodi	1.13	0.63	3.81	0.69	5.38
Masha	1.56	0.19	2.63	0.25	4.94

From the Table V it is apparent that the Masha sample had the highest number of wives whereas Katokye had the highest number of children over 16 years of age and the largest family sizes. In addition it had the largest number of children at school.

In all the samples all wives were full-time workers on the farm. In Katokye and Kihanda over 90% of children at school were available for farm work at the weekends, whereas in Bigodi only about 50% of the children at school were old enough to work on the farms. In Masha a good number of children at school were either too young or were actually studying in Kigezi.



(iv) Labour Inputs.

The average labour inputs per month during the period of the Survey are summarised in Table VI. These averages were calculated from the hours given by the farmers. Because of the complexity of the cropping system, the fairly low frequency of visiting to collect the information and the inadequate sense of time the majority of farmers had, it was difficult to obtain accurate details of the time spent on various farming activities. Reliance was therefore placed on checking the farmer's estimate of <sup>time he had</sup> ~~the~~ worked on particular crops on the farm. As the majority of farmers had no means of telling the time, the enumerators were instructed to test the farmers' sense of time by asking each farmer on casual visits what time he thought it was. Then the enumerator would ask him the time he went to a particular plot and the time he left the plot. Working back from the earlier simple test the enumerator would work out a reasonable estimate of the time spent on the plot in question. In order to check on the reasonableness of the various periods given by less reliable farmers, plots were visited to see where farmers had worked and to decide, considering the local physical conditions, whether the time given was likely to be reasonable or not.

Table VI Average Total Labour Inputs per Month (man-hours):

Sample	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May	June	July	Aug.	Annual total Av./ sample
Katokye	204.2	228.3	166.0	190.5	251.4	176.3	232.9	262.9	315.9	144.4	171.9	134.4	2478.6
Kihanda	59.1	30.7	99.3	**	190.1	139.2	272.1	235.1	259.5	231.9	156.2	*	
Bigodi	76.1	198.1	110.5	89.9	159.0	172.5	127.6	164.4	139.6	73.5	148.6	50.9	1509.9
Masha	80.9	160.6	221.6	199.8	237.0	232.4	237.0	251.6	291.2	264.8	193.6	193.6	2533.9

\*\* Not complete owing to illness of the enumerator.

\* Final figures still to come in.

N.B. Owing to the drought which hit Western Region during the Survey period, the distribution of the labour inputs shown in this table is not typical.

From Table VI it is apparent that in Katokye more labour is applied in January when the majority of the sorghum, the most important single crop to the Kiga in the area, is planted. Labour inputs were also high in March, April and May when most of the sorghum is weeded and beans and peas planted. In September and October, the labour input is also high because this is the time when preparations start for sorghum and finger millet planting which take place towards the end of the calendar year. June to August are normally dry and are mostly devoted to harvesting sorghum, beans and peas and also preparing and cleaning stores for the harvested products.

Masha and Kihanda follow more or less the same general pattern as Katokye because they tend to get rainfall at the same time but in these areas the labour input in September is not as high as in Katokye. In Katokye the high population density has forced farmers to grow more of the crops in mixtures than in the resettlement areas. This, coupled with the times when the areas get their rainfall, has forced farmers in Katokye to spend more labour in September and October planting beans, maize and field peas in which finger millet and sorghum are later inter-planted. In Kihanda and Masha, on the other hand, most of these crops are planted in pure stands in December January and February.

Bigodi tended to have more or less regular labour inputs throughout the year which may be largely attributed to the evenly distributed rainfall in the area. In addition, this area did not suffer from drought to the same extent as the other three samples during the survey period.

The average labour input per acre, calculated from the information already given in Tables III and VI (is given in Table VII) below. This indicates that the farms in Katokye used more labour per acre than the resettlement samples. This might be explained by the fact that in Katokye labour is needed to deal with the weeds which have had a chance to multiply after lengthy perpetual use of the land in that area, whilst Table II has shown a larger area of annual crops, which require more labour than the perennial crops, are grown in this area.

Table VII : Average Labour Input per Acre

Sample	Average area cultivated(acres) <sup>1</sup>	Average total labour input(hrs.) <sup>2</sup>	Average labour input per acre (hours) <sup>3</sup>
Katokye	6.35	2473.6	390.3
Kihanda	4.07	*	*
Bigodi	5.26	1509.9	287.05
Masha	7.72	2583.9	334.7

1. Given in Table III

2. Given in Table VI

3. Calculated by dividing (2) by (1)

\* To be completed when final figures are obtained from the field.

Another factor which may explain the Katokye figures is the commonly found system of fragmentation (summarising the available data on fragmentation is still proceeding).

In Table VI the average labour input per acre in Bigodi was lower than other areas. This was due to the relatively little hired labour which the farmers in this sample employed (Refer to Table VIII below).

(v) Hired Labour

Average man-days of hired labour per month (both permanent and casual) is tabulated in Table VIII below:

Table VIII : Average Man-days worked by Hired Labour per Farm per Month

Sample	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Total average for the sample
Katokye	18.1	27.4	32.9	23.9	25.6	17.1	44.5	33.5	50.6	32.6	22.7	11.6	339.9
Kihanda	1.9	Nil	Nil	Nil	4.0	3.2	31.4	17.3	29.1	40.4	3.2	0.5	131.0
Bigodi	3.8	5.6	2.1	3.5	1.6	Nil	Nil	2.5	Nil	Nil	0.4	-	19.2
Masha	3.7	4.0	2.0	13.7	4.8	17.9	5.1	6.5	11.9	13.0	9.3	9.6	101.4

The Katokye area employs far more hired labour than the other three re-settlement samples. As one would expect Table VIII shows that more labour is hired when more activities are being performed. In Katokye much more labour is employed because over 21% of the sample employed permanent labour while just over 71% hired casual labour for at least 6 hours during the period of the survey. Only 7% did not employ some hired labour. In addition to this, 21% and 14% of the farmers in Katokye and Kihanda samples respectively exchanged labour with their friends, whereas no labour was exchanged in Masha and Bigodi (although it must be emphasised that there was some free labour which was not recorded because the enumerator could not visit the farms daily). It is common in Kiga societies when a woman visits another and finds her in the field working she joins her and they work together until the former decides to return home. During the survey it became clear that this kind of labour was not being recorded as the farmers and their wives did not regard it as important.

(vi) The Allocation and Division of Labour:

Having described the average total labour input on the farms it may be useful to examine the allocation of this labour between the various crops grown on the farm. This will be examined here in relation to three categories of crops grown in all the sample areas. These categories are perennial crops, perennial/annual crop mixtures and food crops, the latter category including both mixtures and pure stands, but with no (or only very slight) intermixture with perennial crops. These categories have been chosen because it was found very difficult to separate the labour inputs on individual crops owing to the predominance of crop mixtures in the farming system and the farmers inability to tell the time spent on individual crops or plots.

The perennial crops in the sample areas were bananas, coffee, (robusta and arabica), cassava and a very small number of citrus trees. Cassava and citrus were so scattered about each farm that they could not be associated with any crop mixture or any plot. It was thought better to exclude them from areas of mixtures as they were very insignificant in the overall farming system.

Table IX. Mean Total Labour Input per Farm on Perennial Crops (Coffee, Bananas & Banana/Coffee Mixtures) (hours)

Sample	Farmers' (hrs)	% of the total	Wives (hrs)	% of the total	Children (hours)	% of the total	Hired Labour	% of the total	Av. total*
Katokye	39.1	55.9	9.8	14.0	2.7	3.8	18.4	26.3	70.0
Kihanda	244.1	65.2	57.6	15.4	41.7	11.1	30.8	8.2	347.2
Bigodi	30.1	48.6	24.8	40.2	6.6	10.7	0.3	0.4	61.7
Masha	238.1	46.6	213.9	41.9	32.0	6.3	27.0	5.3	511.0

\* (input on perennial crop (hrs.)).

The last column of Table IX indicates a wide range of hours spent in the production of perennial crops. In Masha, where the average area under these crops is the highest (about 3.85 acres), the highest labour inputs are spent on them and in Katokye the opposite is true. The most important point to note in Table IX is the comparative percentage spent on perennial crops by the men, wives, children and hired labour. In all samples the men spend far more labour on perennial crops than the wives and children. In Katokye and Kihanda the differences between the men's and women's percentages tend to be bigger than in Bigodi and Masha. This would suggest that in Kigezi the perennial crops, which are the major cash crops, are regarded more as the man's preserve than in the resettlement areas; this may reflect the fact that women have to spend a larger proportion of their time securing the family food supply because of the more intensive agriculture required and the larger families which require support.

The opposite emphasis is portrayed in Table X below where women spend more time on food crops than the men. Except in Katokye it is clear that hired labour is employed predominantly on the perennial crops, (especially coffee).<sup>1</sup>

Table X Mean Total Labour Input per Farm on Food Crops (hrs.)

Sample	Farmers	% of total	Wives	% of total	Children	% of total	Hired Labour	% of total	Av. total spent on food crops
Katokye	183.2	10.7	1067.4	46.3	728.5	31.6	326.7	14.2	2305.8
Kihanda	345.2	30.6	575.5	50.8	141.4	12.5	69.1	6.1	1132.0
Bigodi	347.0	27.9	709.8	57.2	165.6	13.3	19.5	1.6	1241.9
Masha	480.0	25.4	1067.3	55.3	300.5	15.6	71.8	3.7	1929.6

1. Possible reasons for this feature in Katokye are discussed on p. 15 below.

The large contribution by children to the work on food crops can be attributed to the larger number capable of work in Katoyke compared with the other sample areas.

Finally, in Table XI the labour spent on mixtures of perennial and annual crops tends to follow the pattern in Table X, with women spending generally more time on these mixtures than the men. The Katoyke percentages should be discounted, however, as the very small acreages under these mixtures reduces the significance of the observed pattern of division of labour.

Table XI Mean Total Labour Inputs per Farm on Perennial/Food Crop Mixtures (hours)

Sample	Farmers	% of total	Wives	% of total	Children	% of total	Hired Labour	% of total	Av. total labour input
Katoyke	-	Nil	0.6	50	0.6	50	-	Nil	1.2
Kihanda	63.0	24.6	152.9	59.7	17.1	6.7	23.2	9.1	256.2
Bigodi	25.1	30.9	38.1	46.9	13.1	22.3	-	Nil	81.3
Masha	12.7	18.7	44.7	65.7	8.0	11.7	2.6	3.8	168.6

(vii) Physical Product and Cash Incomes:

During the survey it was found extremely difficult to obtain reasonable estimates of physical outputs from the various plots on the farms. In a survey of the present size and scope the researcher was not able to take individual measurements of whatever the farmers harvested. The farmers, as we all know, plant their crops over a long period and harvest them whenever the crop is ready. Consequently, most of the crops were harvested when the enumerators were absent from the farm. Other difficulties arose from the patterns of immediate consumption, or storage in bulk quantities, or in changes in form and weight in the processing stage. The drought which hit the sample areas during the survey period caused severe food shortage in some areas. This forced some farmers to start harvesting some crops as soon as they were about two months old. Beans provide a good example of the complexities involved; cases were found where leaves were picked after about forty days, followed by harvesting the green tender pods then the hard pods and finally the dry pods that remained when the plant had died.

Under these circumstances it was impossible to get reasonable data of physical output. What is available is data concerning the value of off-farm sales of produce. As it was difficult to obtain the actual quantities sold it was decided to ask the farmers the actual cash received. The average total cash incomes from both cash crops and sales of food crops are tabulated in Table XII. In addition to the saleable surplus, each farm, of course, provides its own subsistence. This was also recorded in terms of quantities of home-grown food consumed (N.B. this differs from production by net change in stored food and in the livestock inventory), as well as sales and purchases of food.

Unfortunately, this information is not yet in a form that can be incorporated in this paper. It will therefore be assumed for the present that the amount consumed varies according to family size (See Table VII).

Table XII Average Cash Incomes : (Sept. 1965 - Aug. 1966)

Sample	Average Income from Food Crops per farm \$	Average Income from Cash Crops per farm \$	Av. Income Livestock per farm \$	average income per farm \$	Av. non-farm income per farm \$	Total Av. income per farm \$
Katokye	137.31	137.00	47.72	322.03	871.05	1193.08
Kihanda	57.12	498.72	28.82	498.72	123.75	622.47
Bigodi	284.99	111.52	4.04	400.42	42.06	442.48
Masha	139.08	107.99	18.17	265.24	62.48	327.72

The figures in Table XII are averages of the cash receipts which farmers in the various areas admitted to the survey team. In nearly all the samples farmers were reluctant to give their actual receipts from crop sales; in some cases, therefore, farmers were asked the quantities sold and an estimated price was used, based on knowledge of the local market situation to estimate the actual sale value.

In compiling Table XII income from bananas sold mainly for food, i.e. the 'matoke' type, has been included under food crop sales and all beer-type bananas sold, together with any sales of beer, have been included under Cash Crops, reflecting the farmers own attitudes which differentiate between the two banana types. Income obtained from sales of food crops is highest in Bigodi where much beer-type sorghum is grown for the Fort Portal market. In Masha also the income is high because Matoke-type bananas find a good market in Mbarara township. In Katokye, the average income indicated in the table is obtained from sales of surplus food crops especially the 'sweet' type of sorghum favoured by the Kiga and Nyarwanda in southern Kigezi.

With the exception of the Masha, income from crop sales is higher in the resettlement samples in Katokye. Further, in Katokye income is mainly from annual crops whereas in the resettlement areas it is mainly from the less labour intensive perennial crops - robusta coffee and bananas. Total farm income is higher in the older scheme at Kihanda and lower in the areas which have been settled more recently. The first settlers in Masha moved there in 1955 and the latest arrival in the sample moved there in 1964<sup>1</sup>, so

1. Dates of settlement in the three resettlement areas are as follows:

1. Kihanda	2. Bigodi	3. Masha
75.00% moved in 1946-47	12.5% moved in 1955	50% moved between 1955-59
18.75% " " 1947-49	25.0% " " 1956	50% moved between 1960-64
6.25% " " 1951	12.5% " " 1957	
	25.0% " " 1961	
	25.0% " " 1962	

that the average date of farm establishment is relatively recent. The relationship between the phasing of farm development, the cycle of the household structure and farm output and income at any one point in time requires further discussion on the basis of an analysis of inter-farm variation within the four sample areas. Katokye has the highest non-farm income and hence the highest gross cash income. This could be attributed to the nearness of the sample area to the main town of the area, Kabale, where the opportunities for employment are relatively good and also because the tendency to year-round under-employment in agriculture due to the greater shortage of land results in a more assiduous search for employment by the men. Another observed tendency was that men generally do not like working on the scattered pieces of land; given access to paid employment, it is more attractive to use the savings from wages to acquire a wife or wives, whose recognised role it is to till the land and/or to pay for hired labour, as reflected in the high hired labour figures in the area. In addition, the information contained in Tables IX, X & XI indicates that in the resettlement areas the men have a greater tendency to work with their wives on the farm than in Katokye.

Table XIII Average Cash Income per Acre

Sample	Average Cultivated Area (acres)	Average Farm Income (Sh)	Average Income per acre (Sh)
Katokye	6.35	322.03	50.71
Kihanda	4.07	498.72	122.54
Bigodi	5.26	400.42	76.13
Masha	7.72	265.24	34.36

On a per acre basis Kihanda still has the highest average income and Masha the lowest. This very low average for Masha is partly attributed to understatement of cash incomes by the farmers in this area, and partly to the relatively recent date of establishment of many of the farms. At the same time, the area is quite dry most of the year and the farming is mostly on an extensive rather than an intensive pattern, as indeed the large area under crops tends to suggest. The area under perennial crops - over one half of the cultivated area - is too large for the limited family labour and hired labour available. Even so, the recorded sales appear to be too low. On the basis of the initial information recorded in a previous paper\* Masha was judged "as having the highest income from both the food crops and cash crops", but the present data based on a full survey over 12 months suggests the opposite. The initial impression supports the view that the Masha farmers were not giving the correct information and that Masha data is therefore under-recorded.

\* Katarikawe, E., op. cit., F.F.R. no. 11.

#### 4. Discussion and some Preliminary Conclusions:

As the cropping system data indicates, resettlement has not led to technical improvements in farming practices - perhaps the reverse. In Kihanda the transfer of farmers from southern Kigezi has enabled them to acquire more land per head of population. This has in turn enabled them to revert to the practice of shifting cultivation with a result that in the twenty years since the area was resettled the farmers have opened all the land they claimed, used initial virgin fertility and left the land to recuperate. In the younger schemes more land is still being opened and there are quite large areas of land waiting to be exploited.

As far as labour use is concerned, the movement from the home areas has withdrawn the young Kiga settlers from living in <sup>the</sup> traditional extended home-stead pattern to one characterised by individual households, and with the resulting reduction in available family labour and the new tasks of establishing farms from the bush, a new pattern of division of labour has emerged, with the men in the resettlement areas more co-operative with their wives in the production of both food and cash crops, compared with the home area where the men tend to leave the food crops to their wives or to hired labour.

Resettlement has helped the settlers to obtain more income from their crops especially the cash crops which are very limited in the home areas. The additional income obtained in the resettlement areas does not appear to have been reinvested in the land in either fixed or working capital e.g. the small amounts of hired labour employed, but would have been consumed in higher living standards. In southern Kigezi, however, even labourers were found employing paid casual labour instead of working on the land themselves. This reflects the settlers view that the land can offer a reasonably living, whereas in southern Kigezi it is generally felt that paid employment must be obtained in order to live happily. This view doubtless reflects a lower marginal value product to labour in the more densely populated home areas, which is further reduced by fragmentation. This point, however, awaits more complete analysis. One surprising feature is that there is no very great difference in the average area cultivated per farm (Table II); presumably because of the limitations of hand labour and shifting cultivation where land is still plentiful. However, it seems probable that the level of soil fertility would tend to decline faster under the continuous cropping pattern in southern Kigezi, and that a more technically advanced rotation system has been introduced which is able to offset this effect. If this is the case, the Kiga are considerably in advance of the Department of Agriculture. The whole question of course, requires more discussion than can be accorded to it here. At the same time the Kiga do not appear to be in anyway worried about the long distances they walk to their various fragments, reflecting a situation of labour surplus and low opportunity costs of the time so involved. The vexed question of the failure of the consolidation programme and the series of



alternative approaches which may be preferable in the present context will receive full discussion elsewhere.

It is clear that the resettlement areas represent a missed opportunity as far as raising the technical and economic level of agriculture through sound farm planning is concerned. The people of southern Kigezi therefore look at resettlement simply as a way of obtaining more land whereas it might also have been worthwhile raising productivity per acre and therefore increasing the result of the addition of further units of land, through shifting the whole plane of the farm production function through the synchronous application of applied research, extension and farmer training inputs. This point raises interesting questions of a benefit-cost nature concerning the scale and intensity of resettlement schemes. **At present, in the resettlement areas land is not limiting.** Plenty of land still exists to be developed and policies to utilise this land more intensively either by injecting more capital and planning into these areas or by placing more people from southern Kigezi within the areas should be considered. As most of the land has been claimed by individuals, the former proposals would seem a better approach, avoiding inevitable social and political problems. As far as southern Kigezi is concerned, a long-term development strategy is still required which would embrace the following aspects:

1. Maintaining soil fertility by improving the present systems of continuous cropping; this suggests research on crop varieties and rotations, and the exploration of possible benefits of a subsidised fertiliser programme.
2. Raising the marginal productivity of labour by introducing higher value crops, improving marketing efficiency, etc. and thereby raising the opportunity costs of time spent in working fragmented holdings.
3. Institutional arrangements, possibly including credit for land purchase, enabling a gradual move towards a less fragmented pattern, should be explored and experimented with.

Alternative strategies for these and other problems will receive discussion in further papers.

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∠ productivity of labour by more than the

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